# EMS Medical Policy and Procedures
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# Aurora Regional EMS

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# Abuse (Partner, Child and/or Elder Abuse) Recognition and Reporting

**Policy:**

Domestic violence is physical, sexual, or psychological abuse and/or intimidation, which attempts to control another person in a current or former family, dating, or household relationship. The recognition, appropriate reporting, and referral of abuse is a critical step to improving patient safety, providing quality health care, and preventing further abuse.

Child abuse is the physical and mental injury, sexual abuse, negligent treatment, or maltreatment of a child under the age of 18 by a person who is responsible for the child's welfare. The recognition of abuse and the proper reporting is a critical step to improving the safety of children and preventing child abuse.

**Purpose:**

Assessment of an abuse case based upon the following principles:

- **Protect** the patient from harm, as well as protecting the EMS team from harm and liability.
- **Suspect** that the patient may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the patient and family.
- **Collect** as much information and evidence as possible and preserve physical evidence.

**Procedure:**

1. Assess the/all patient(s) for any psychological characteristics of abuse, including excessive passivity, compliant or fearful behavior, excessive aggression violent tendencies, excessive crying, behavioral disorders, substance abuse, medical non-compliance, or repeated EMS requests. This is typically best done in private with the patient.

2. Assess the patient for any physical signs of abuse, especially any injuries that are inconsistent with the reported mechanism of injury. Defensive injuries (e.g. to forearms), and injuries during pregnancy are also suggestive of abuse. Injuries in different stages of healing may indicate repeated episodes of violence.

3. Assess all patients for signs and symptoms of neglect, including inappropriate level of clothing for weather, inadequate hygiene, absence of attentive caregiver(s), or physical signs of malnutrition.

4. EMS should not accuse or challenge the suspected abuser.

5. Immediately report any suspicious findings to the receiving hospital (if transported).

For cases of possible child abuse, notify law enforcement. Document the law enforcement officer's name and badge number in the patient care report. It is a legal requirement to report possible child abuse, not an accusation. In the event of a child fatality, law enforcement must also be notified.

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# Air Transportation

**Indications:**

A helicopter may be considered if any the following criteria are present:

1. Patient meets Red Criteria of the National Guidelines for the Field Triage of Injured Patients (Appendix A).

2. The patient is entrapped and extrication is expected to last greater than 20 minutes.

3. The ground transport to an appropriate facility poses a threat to the patient's survival or recovery.

4. There is a need for specialized Critical Care intervention or equipment (i.e. blood products) to adequately care for the patient.

A helicopter may also be utilized when any of the following is present:

- A situation approved by the medical director or medical control physician
- Mass Casualty Incident (MCI)
- The patient meets burn center criteria

**Procedure:**

1. Any provider may request Aero-medical services for a patient. Usually, the provider should be the highest level provider on scene. An on-scene Fire/EMS Department Officer may request a helicopter to expedite its arrival.

2. That provider will request that the appropriate dispatch center contact a helicopter service for a scene transport or intercept. The dispatch center will communicate the need for Aero-medical services and relay the appropriate general landing zone information.

3. A safe landing zone should be established. Use of pre-determined landing zones is preferred.

4. If the helicopter does not arrive prior to the extrication of the patient, the patient should be immediately placed in the ambulance and transport begun to the closest most appropriate hospital.

5. The closest, most appropriate hospital should also be notified of the situation in the event ground transportation will be required.

6. Prior to fire field cancellation of the aero medical service, hospital medical control shall be consulted.

7. **Under NO circumstance will transport of a patient be delayed to use a helicopter.**

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# Approved Medical Equipment

**Please reference the most up to date list of approved medical equipment on Vector Solutions. This list can be found on the Bulletin Board near the New Product/New Scope Request Form.**

Current equipment does not need to be replaced simply because it is not on the list but should be updated next time item is replaced. If equipment/device is not listed, please submit a request via new Product/New Scope Form on Vector Solutions for review/approval prior to purchase.
Items on the list with an *asterisk* are currently approved **BUT** are sunsetting and will not be approved for replacement in the event they cannot be repaired. These devices should instead be replaced with one of the approved devices.

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# Atypical Protocol Utilization and Online Medical Direction

**Purpose:**

The purpose of this policy is to:

- Give direction to providers who encounter complicated, unusual, and atypical patient encounters.
- Establish an orderly method by which clinical issues can be rapidly addressed.
- This policy does not affect administrative issues related to employee/employer relationships (sick outs, injuries, narcotic replacements, etc.)

**Policy:**

1. Clinical encounters requiring use of this protocol may be divided into two types:
    a. those whose clinical situation is covered by existing protocol but who are presenting an operational/administrative challenge (e.g., difficulties extricating/transporting bariatric patients) and require non-medical control guidance or

    b. those whose clinical situation is not covered by existing protocol (e.g., modification of drug dosage, termination of resuscitation not covered in current policy) and thus require medical control orders via on-line medical direction (OLM).

2. Patients that present an operational/administrative challenge should be discussed with the company officer or shift commander.

3. For patients that require OLM, contact medical control and ask to speak directly with a physician. The provider requesting OLM must be at the scene with the patient.

4. Request OLM from a physician at either Aurora Medical Center – Grafton or Aurora Sheboygan Medical Center via radio/cell phone on a recorded line. Please note that only physicians can provide medical direction; other staff, including nurses, may not provide online medical direction.

5. In the electronic call report, the name of the individual (providing OLM) will be documented in the narrative section.

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# Automatic Notification of the Medical Director

**Purpose:**

The purpose of this policy is to:

- Ensure collaborative focus that the highest quality of care is being provided when any incident which potentially has an adverse or negative impact on the patient, or the system occurs.
- Identify situations when immediate notification of a medical director, or in his or her absence, his or her designee as soon as possible after the completion of the call should occur.

**Policy:**

1. A member of the EMS crew should notify the medical director as soon as possible after the completion of the call via telephone call if any of the following events occur:

    a. Cardiac and/or respiratory arrest occurring after administration of midazolam, fentanyl, or ketamine.
    b. Cardiac arrest occurring after administration of an antiarrhythmic agent in a previously stable patient
    c. Any attempt (successful or unsuccessful) at needle and/or surgical airways
    d. Incorrect medication administration with patient complication (Ex. excessive amount, wrong dose, Incorrect medication etc.)
    e. Any cardiac and/or respiratory arrest or patient injury related to the use of physical restraints.
    f. System provider operating outside of scope of practice. The scope or practice is defined by the Wisconsin EMS Scope of Practice as well the provider's level of approved practice within the system.
    g. Unrecognized misplaced advanced airway device or other complication related to advanced airway management.

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# Blood Policy

**Purpose:**

- The purpose of this policy is to ensure that each blood carrying paramedic agency properly procures, stores, tracks and utilizes blood.

- Normally, agency specific operational policies are not reviewed or approved by the medical director. However, because blood is a limited and precious resource, an agency specific blood policy must be submitted and approved by the medical director.

- Each agency has slightly different methods for procuring, storing, tracking and utilizing blood. As a result, a systemwide policy is not feasible, necessitating the need for a department specific policy.

**Policy:**

1. Each blood carrying paramedic agency must develop an agency specific blood policy.

2. An agency specific blood policy must be approved, in writing, by the medical director.

3. Any updates to an agency's blood policy must also be approved, in writing, by the medical director.

4. An agency's blood policy should include, at a minimum:

    a. How blood will be procured, including what day, time and who will obtain blood products.
    b. Indicate where blood is kept (ambulance, in station, etc).
    c. How blood cooler will be monitored via BloodComm, including role/rank/title of who is expected to receive alerts and who to contact if a remote alert is received.
    d. How blood will be checked daily and documentation of daily check.
    e. Process for notification of Medical Direction Team in the event an ED physician signature is not obtained on the emergency release form at time of patient delivery to the hospital.
    f. How blood will be disposed of if unusable.
    g. Identify a person responsible for alarm tracking. All cooler alarms should be logged including how the alarm was addressed (temperature excursion, battery alarm). This log must be maintained and sent to transfusion services each month.
    h. Process for switching blood to spare/backup cooler. Outline the process for switching BloodComm monitoring to spare/backup cooler.
    i. Process and timeline of when coolers will be returned to transfusion services for periodic temperature checks and other maintenance.

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# Blood Restock/ Exchange

**Definition**

Blood should be restocked/exchanged at the blood bank in the following situations:

1. One or more units are administered to a patient
2. Routine weekly blood product exchanges per local agency policy
3. Concern that a unit may have gone bad
4. Cooler is failing to hold temperature and blood needs to be returned to the blood bank while maintenance is performed.

**What to bring into the blood bank to do an exchange:**

- ENTIRE Delta Cooler with blood contents

**Directions to blood bank:**

- Aurora Medical Center Grafton: See Appendix D
- Aurora Medical Center Sheboygan County: See Appendix E

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# Blood Quality Control and Daily Inspection

**Definition**

Quality assurance of blood product storage via Delta Ice Coolers is maintained with a process for calibration, maintenance and validation of equipment as defined by the Aurora Transfusion Services. Quality assurance is critical to ensure the provision of refrigerated blood products conforms to the Association for the Advancement of Blood and Biotherapies (AABB) Standards and other applicable regulations and requirements.

In addition to daily documentation of inspections and scheduled preventative maintenance, all blood product quality elements and administration will be reviewed by the Continuous Quality Improvement Committee.

**Continued Cooler Monitoring**

Delta Ice Coolers are continually monitored via bluetooth, Wifi and cellular technology to alert leadership regarding faults or temperature failures.

**Daily Inspection - Process**

Delta Ice Coolers and blood products contained within are inspected daily by the Med Unit crew and documented in ImageTrend. The following information will be evaluated daily.

Daily inspection is broken into 3 steps:

1. Delta Ice Cooler Inspection
2. Temperature Control Insert (TCI) Swap
3. Blood Inspection

**Part 1 - Delta Ice Cooler Inspection**

1. Cooler Integrity
2. Properly closing lid
3. Cooler is plugged in
4. Any alarm notifications?
5. Digital display functional (see fig 1)
    a. Press the Power/Awake button on the front display panel to wake up from sleep mode. If it does not turn on, hold the button down for 3 seconds to power on the device.
    b. Analyze the screen for the following information:
        i. Check “Remaining storage time”
        ii. Confirm “Cellular/Bluetooth status” is set to cellular
            1. Press “Wireless communications button” as needed to cycle back to cellular.
        iii. Check “Battery Remaining
        iv. Confirm blood temperature

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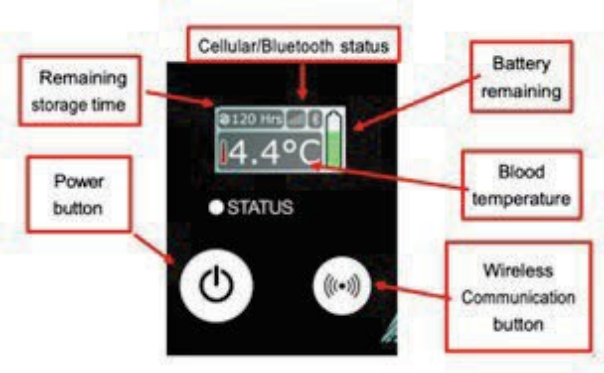


6. Perform Ice Pack Swap
   a. See instructions below

**Part 2 – TCI Ice Pack Exchange**

While the ice packs are validated for multiple day use, they will be swapped **each day** during a daily rig check. Here is process to do this:

1. Remove ice pack from freezer and place on the conditioning mat at room temp (to conduct any condensation until temperature reaches 2c (10-20min).
   a. The temperature can be checked by placing it in the container while viewing the display screen.
2. Once the ice pack reaches temperature, remove the current ice pack containing the blood from the cooler
3. Wipe down the conditioned ice pack to remove the condensation.
4. Place the newly conditioned ice pack inside the insulated container, matching pin connectors on the base of the pack with the connection inside the cooler. **The device should be set in gently**
5. Perform **Part 3 - Blood Product Inspection**
6. Insert blood into cooler and close cooler
7. Perform a final check to ensure the cooler is ready for storage
   a. Pack is inserted into the container properly and has reached temperature of at least 2c
   b. External screen displays current temperature (between 2-6c) and the number of thermal storage hours remaining before going out of temperature range
   c. Status LED light is illuminated green indicating pack is within proper temperature range
8. Place the old ice pack into the freezer

**Part 3 - Blood Product Inspection**

- Inspect daily for
  - Integrity of packaging
  - Hemolysis, clots, discoloration
  - Change in color/breach of temperature sticker
  - Expiration dates
- If a problem is encountered with the product on daily inspection:
  - Contact the EMS Division Chief/Medical Director
  - Return blood to the blood bank.

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**Daily Inspection - Documentation**

- Records of the daily inspection and swap of the Smart Unit will be documented

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**Weekly Blood Product Exchange**

In order to cycle blood back to the hospital for it to be utilized prior to expiration, Med Units will need to exchange blood **weekly per local agency policy.**

**Monthly Cooler Maintenance**

- See Delta ICE Cooler sheet for information on monthly cooler maintenance

**Cooler Calibration and Validation**

- In accordance with Aurora Transfusion Services processes, Delta ICE Coolers will be validated by the blood bank on a quarterly basis.
- The Delta ICE continuously performs a self-check to monitor the system. If an error is found, the red LED light on the front panel will illuminate and an error message with be displayed.
- NIST traceable calibration is performed on each device and each ice pack.
- Calibration expiration date is located on each ice pack. If a device is past its calibration expiration date, it must be returned to DELTA DEVELOPMENT TEAM for recalibration.
- Any temperature excursions must be documented and recorded in a tracking form (see Appendix F) or a similar tracking form. Date and time of alert, current temperature of storage device and corrective action taken should all be recorded.

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# Children with Special Healthcare Needs

**Policy:**

Medical technology, changes in the healthcare industry, and increased home health capabilities have created a special population of patients that interface with the EMS system. It is important for EMS to understand and provide quality care to children with special health care needs.

**Purpose:**

The purpose of this policy is to:

- Provide quality patient care and EMS services to children with special health care needs.
- Understand the need to communicate with the parents and caregivers regarding healthcare needs and devices that EMS may not have experience with.

**Procedure:**

1. Caregivers who call 911 to report an emergency involving a child with special health care needs may report that the emergency situation involves a special needs child.

2. Responding EMS Personnel should ask the caregiver of the special needs child for a copy of the Emergency Information Form (EIF) if available.

3. EMS personnel may choose to contact medical control for assistance with specific conditions or devices or for advice regarding appropriate treatment and/or transport of the child in the specific situation.

4. Transportation of the child, if necessary, will be made to the hospital appropriate for the specific condition of the child. In some cases, this may involve bypassing the closest facility for a more distant yet more medically appropriate destination.

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# Controlled Substance Policy

**Purpose:**

- The purpose of this policy is to ensure that each paramedic agency properly procures, stores, tracks and utilizes controlled substances while meeting all local, state and federal laws.

- Normally, agency specific operational policies are not reviewed or approved by the medical director. However, because the medical director holds the DEA license for a given paramedic agency, an agency specific controlled substance policy must be submitted and approved by the medical director.

- Each agency has slightly different methods for procuring, storing, tracking and utilizing controlled substances. As a result, a systemwide policy is not feasible, necessitating the need for a department specific policy.

**Policy:**

1. Each paramedic agency must develop an agency specific controlled substance policy.

2. An agency specific controlled substance policy must be approved, in writing, by the medical director.

3. Any updates to an agency-controlled substance policy must also be approved, in writing, by the medical director.

4. An agency-controlled substance policy should include, at a minimum:

    1. How controlled substances will be procured
    2. How controlled substances will be stored
    3. How controlled substances will be logged
    4. How controlled substances will be checked daily
    5. How controlled substances will be logged when used
    6. How controlled substances will be wasted when only a partial dose is used
    7. How controlled substances will be disposed of when expired
    8. How any discrepancies will be reported and documented

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# Criteria for Death/Withholding Resuscitation

**Policy:**

CPR and ALS treatment are to be withheld only if the patient is obviously dead per criteria below or a valid Wisconsin Do Not Resuscitate bracelet is present.

**Indications:**

- One or more of the following is present:
  - Rigor mortis and/or dependent lividity.
  - Decapitation
  - Tissue Decomposition
  - Traumatic cardiac arrest with injury obviously incompatible with life
  - Traumatic arrest with apnea and either asystole or wide complex PEA at a rate less than 40 (Paramedic only)

**Procedure:**

Do not resuscitate any patient who meets the above criteria. If resuscitation efforts are in progress, consider discontinuing the resuscitation efforts.

**Notes:**

If you are unsure whether the patient meets the above criteria, continue resuscitative measures and contact medical control.

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# Critical Skills Review

**Policy:**

All EMS providers under the medical direction of Aurora Regional EMS will be required to complete regular, semiannual Critical Skills Review.

**Purpose:**

Semiannual Critical Skills Review will be completed to help verify skills competency for high risk, low frequency skills, in addition to other skills/procedures as determined by the Medical Director. These reviews will be conducted by the Medical Director and/or his designee(s).

**Procedure:**

- A schedule for Critical Skills Review sessions will be published by the Aurora Regional EMS Office and posted on Vector Solutions.
- All EMS providers under the medical direction of Aurora Regional EMS will be required to sign up and successfully complete a Critical Skills Review session semiannually, once during the first half of the year and once during the second half of the year.
- For EMS providers with Vector Solutions accounts, sign-ups for Critical Skill Review sessions are available under the "Events" tab on their home screen. For EMS providers *without* Vector Solutions accounts, sign-ups for Critical Skill Review sessions will be handled by their agency Service Director.
- EMS providers are encouraged to sign up for Critical Skill Review sessions held at their home department. However, if a provider is not able to attend a session at their home department, they may sign up for a session at another agency.
- If an EMS provider fails to attend a Critical Skills Review session within a given 6-month period, their local credentialing agreement (LCA) may be withdrawn by the Medical Director until the provider is able to attend the next scheduled Critical Skills Review session.
- One-on-one Critical Skills Review sessions will not be scheduled to bring delinquent providers up to date
- It is the individual EMS provider's responsibility to make sure they attend a Critical Skills Review session as outlined above.

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# Deceased Subjects

**POLICY:** Deceased patients will be managed in a professional and respectful manner under these guidelines developed in conjunction with the County Coroner's Office/Medical Examiner's Office.

**DEFINITIONS:**
Resuscitation attempt: Initiation of basic or advanced life support procedures in an attempt to reverse cardiac arrest of medical or traumatic origin. These procedures include, but are not limited to, CPR, placement of an advanced airway and cardiac monitoring/defibrillation.

Suspicious death: Patient's death is considered to be from other than natural causes, including suspected sudden infant death syndrome (SIDS), crimes, suicide and accidental death.

Non-suspicious death: Patient's death is apparently due to natural causes.

Potential crime scene: A location where any part of a criminal act occurred, where evidence related to a crime may be found, or suspicions of a criminal act may have occurred.

**PROCEDURE:**
Resuscitation will be initiated on all patients in cardiac arrest, unless one of the following *Criteria for Death* is met:

- Decapitation
- Rigor mortis
- Tissue decomposition
- Dependent lividity
- Valid State of Wisconsin Do-Not-Resuscitate order
- Fire victim with full-thickness burns to 90% or greater surface area
- Traumatic arrest with apnea and EKG showing either asystole or wide complex PEA at a rate less than 40 (Paramedic only)

A responding paramedic may cease a BLS initiated resuscitation attempt if the patient meets the above Criteria for Death, if no treatment is provided other than CPR, blind-insertion airway device, and/or AED application with no shock advised OR if the patient is in traumatic arrest and the EKG shows asystole or PEA at a rate less than 40. A patient may be pronounced en-route to a hospital if condition warrants. In such cases, the Coroner's Office/Medical Examiner's Office should be contacted and the body should be transported to the Coroner's Office/Medical Examiner's Office.

If the patient does not meet criteria in the note above, an ALS resuscitation attempt, once in progress requires an order from medical control to terminate the attempt, regardless of circumstances.

Medical control is to be consulted on all questionable resuscitations. CPR and ALS procedures will neither be withheld nor delayed while the decision regarding resuscitation is made.

Once resuscitation is terminated, a medical provider on scene shall ask dispatch to notify the Coroner's Office/Medical Examiner's Office of the death. The body shall be left in the care of law enforcement and the EMS crew may return to service.

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For a potential crime scene:

- Notify law enforcement if not already involved
- Include potential crime information in patient care report
- Observe, document and report to law enforcement anything unusual at the scene
- Protect potential evidence
    - Do not “clean up” the body
    - Leave holes in clothing from bullet or stab wounds intact
    - Do not touch or move items at the scene
    - Observe, document and report to law enforcement and the Coroner’s Office/Medical Examiner’s Office any items disturbed by EMS at the scene
- Turn the body over to law enforcement
- Law enforcement has the legal responsibility to maintain scene integrity

For all other patients:

- Do not remove lines or tubes from the deceased
- Do not “clean up” the body
- Do not disturb the scene
- If covering the body, use only a clean, disposable blanket

Disposition of the body:

- Do not leave the body unattended
- The body may be turned over to law enforcement, which has the legal responsibility to maintain scene integrity
- If the resuscitation attempt took place in the ambulance, include the information in your report and transport to the Coroner’s Office/Medical Examiner’s Office.
    - Do not transfer the body to another vehicle
    - If the death is considered suspicious, a police officer or detective may accompany the body in the ambulance to the Coroner’s Office/Medical Examiner’s Office to maintain integrity of evidence

**DOCUMENTATION:**

A patient care record will be completed for all expired patients. Documentation will include:

- Pertinent information regarding patient’s known medical history
- Treatment provided; if no treatment was provided, the reason for not initiating a resuscitation attempt
- The time of determination not to initiate resuscitative measures, or the time CPR was discontinued

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# Discontinuation of Prehospital Resuscitation

**Policy:**

Unsuccessful cardiopulmonary resuscitation (CPR) and other advanced life support (ALS) interventions may be discontinued prior to transport or arrival at the hospital when this procedure is followed.

**Purpose:**

The purpose of this policy is to:

- Allow for discontinuation of prehospital resuscitation after the delivery of adequate and appropriate ALS therapy (Paramedic only).

**Procedure:**

1. Discontinuation of CPR and ALS intervention may be implemented after contacting medical control if **ALL** of the following criteria have been met.

    a. Adequate CPR has been administered
    b. Airway has been successfully managed with verification of device placement. Acceptable management techniques include orotracheal intubation, blind insertion airway device (BIAD) placement, or cricothyrotomy
    c. IV or IO access has been achieved
    d. Rhythm appropriate medications and defibrillation have been administered according to protocol
    e. Persistent asystole or agonal rhythm is present and no reversible causes are identified after a minimum of 3 rounds of ACLS resuscitation
    f. Failure to establish sustained palpable pulses or any continued neurological activity such as eye opening or motor responses
    g. All EMS paramedic personnel involved in the patient's care agree that discontinuation of the resuscitation is appropriate

2. If all of the above criteria are met and discontinuation of pre-hospital resuscitation is desired, **contact Medical Control**

3. Refer to Management of Deceased Patients Policy

4. Document all patient care and interactions with the patient's family, personal physician, medical examiner, law enforcement, and medical control in the EMS patient care report (PCR).

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# Disposition (Patient Instructions)

This policy applies to all credential levels:

- Mentally capable patients maintain the right to refuse care and/or transport. If unsure, contact Medical Control. Medical control may not order a patient who demonstrates decision-making ability to be transported but may be able to talk with the patient directly and convince them to seek appropriate treatment.

- All patients refusing service will be:
  - Informed of the availability of service and offered treatment and transport in a non-confrontational, polite manner.
  - Advised to call 911 for emergency service if desired and that refusal has no impact on future emergency responses
  - Advised that they accept full responsibility for their actions

- Patients are considered to be able to refuse care if they do not endorse suicidal or homicidal ideation, are oriented to person, place and time (or to their baseline mental status but otherwise able to communicate), and can express understanding of the risks of refusal.

- The individual's judgement MUST NOT BE SIGNIFICANTLY IMPAIRED by illness, injury or drugs/alcohol intoxication. If the patient continues to refuse transport, consider law enforcement assistance.

- Documentation:
  - In the report narrative, describe the patient encounter, vital signs, and advice given. Documentation should include that the patient understands instructions given to him or her.
  - If possible, have the patient sign the refusal section of the patient care report and have a third party witness the signature. If not possible, document the reason why this was not accomplished (patient refused to sign, etc.)
  - Minors cannot sign a refusal. A parent or guardian must sign unless the patient is an emancipated minor. If no parent or guardian consent is obtained, consider law enforcement support.
  - Complete the patient care report.

- At no time will EMS personnel mention cost of transport, status of system/unit availability, or any other non-clinical subject in an attempt to influence a patient's decision to accept or decline treatment and/or transport

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# Documentation of Patient Care Report

**Policy:**

For every patient contact, the following must be documented at a minimum:

1. A clear history of the present illness with chief complaint, onset time, associated complaints, pertinent negatives, mechanism of injury, etc. This should be included in the subjective portion of the PCR. The section should be sufficient to refresh the clinical situation after it has faded from memory.

2. An appropriate physical assessment that may include pupil assessment, breath sounds, motor function, abdominal exam, chest exam, head exam, extremity exam, etc. When appropriate, this information should be included in the assessment exam section of the PCR.

3. At least two complete sets of vital signs for transported patients and one complete set for non-transported patients (pulse, respirations, pulse ox and an auscultated blood pressure). These vital signs should be repeated and documented after drug administration, prior to patient transfer, and as needed during transport of an ALS Patient. Attempt to obtain blood pressure in pediatric patients but document if unable to obtain.

4. For drug administrations, you must document the dosage, route, administration time, and response.

5. A complete list of treatments in chronological order. Response to treatments should also be listed.

6. For patients with extremity injury, neurovascular status must be noted before and after immobilization.

7. For patients with cervical immobilization, document motor function before/after cervical immobilization.

8. For IV administration, the catheter size, site, number of attempts, type of fluid, and flow rate.

9. A lead II strip should be attached for all patients placed on the cardiac monitor. Any 12-leads should also be included. Any significant rhythm changes should be documented. For cardiac arrests, the initial strip, ending strip, pre and post defibrillation, pacing attempts, etc. should be attached.

10. Any requested orders, whether approved or denied, should be documented clearly.

11. Any waste of narcotics should include the quantity wasted, where wasted, and name of the person who witnessed the waste. Hospital personnel should be utilized (if available).

12. All crew members are responsible for and should review the content of the PCR for accuracy.

13. Once the call is completed, patient care information may not be modified for any reason. Corrections or additions should be in the form of an addendum.

14. Complete PCRs need to be submitted to the receiving hospital within 24 hours.

Non-transporting first responder agencies refer to Appendix B for more information on report writing requirements.

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15. A copy of the PCR (including appropriate cardiac monitor tracings, original DNR forms and, when applicable, documentation of refusal to accept an appropriate assessment, treatment, or hospital destination from EMS) shall be provided to the receiving hospital.

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# Documentation of Vital Signs

**Policy:**

Every patient encounter by EMS will be documented. Vital signs are a key component in the evaluation of any patient and a complete set of vital signs is to be documented for any patient who receives some assessment component.

**Purpose:**
To insure:

- Evaluation of every patient's volume and cardiovascular status
- Documentation of a complete set of vital signs

**Procedure:**

1. An initial complete set of vital signs includes:
    a. Pulse rate
    b. Systolic and diastolic blood pressure
    c. Respiratory rate
    d. Pain/severity (when appropriate to patient complaint)
    e. GCS for injured patients

2. When no ALS treatment is provided, palpated blood pressures are acceptable for repeat vital signs.

3. Based on patient condition and complaint, vital signs may also include:
    a. Pulse Oximetry
    b. Temperature
    c. End Tidal CO2 (if invasive airway procedure)
    d. Breath Sounds
    e. Level of responsiveness

4. If the patient refuses this evaluation, an assessment of decision-making ability must be done and a patient care report (PCR) must be completed with refusal signatures as outlined in the Disposition Policy.

5. Document situations that preclude the evaluation of a complete set of vital signs.

6. Record the time vital signs were obtained.

7. Any abnormal vital sign should be repeated and monitored closely.

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# DNR, Advanced Directives

**Policy:**

Any patient presenting to any component of the EMS system with a Valid State of Wisconsin **Do Not Resuscitate** (DNR) Bracelet shall have the DNR honored and CPR and most ALS therapy withheld in the event of cardiac arrest.

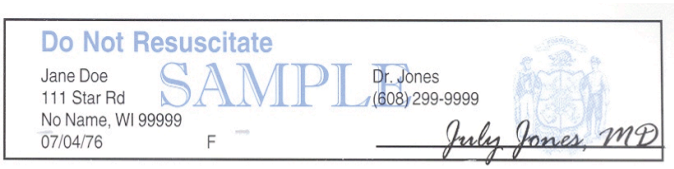
**Purpose:**

- To honor the terminal wishes of the patient
- To prevent the initiation of unwanted resuscitation

**Procedure:**

1. When confronted with a cardiac arrest patient, the following conditions must be present in order to honor the DNR request and withhold CPR and ALS therapy.

    a. Original, intact Wisconsin DNR Bracelet which includes the inscription "Do Not Resuscitate"; the name, address, date of birth and gender of the patient; and the name, business telephone number and signature of the attending physician issuing the order.




**OR**

    b. A StickyJ® permanent metal bracelet which displays the internationally recognized symbol Staff of Aesculapius on the front and the words "Wisconsin-Do-Not-Resuscitate-EMS" and the qualified patient's first and last names engraved on the back.


2. Follow Cardiac Arrest Guideline

3.

| Emergency provider as appropriate will provide: | Emergency provider will **NOT**: |
|---|---|
| • Clear airway (including Heimlich maneuver)<br>• Administer oxygen<br>• Position for comfort<br>• Splint<br>• Control bleeding<br>• Provide pain medication<br>• Provide emotional support | • Perform chest compressions<br>• Insert advanced airways<br>• Administer cardiac resuscitation drugs<br>• Provide ventilator assistance<br>• Defibrillate |

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| | |
|---|---|
| • Contact hospice or home health agency if either has been involved in patient's care, or patient's attending physician | |

4. The patient, legal guardian or health care agent can revoke the DNR order by any of the following methods:
    a. The patient, legal guardian or health care agent expresses to the emergency personnel the desire that the patient be resuscitated.
    b. The patient, legal guardian or health care agent defaces, or otherwise destroys the DNR bracelet.
    c. The patient, legal guardian or health care agent removes the DNR bracelet or another person, at the request of the patient, legal guardian, or health care agent removes the DNR bracelet.

5. If family members or other persons are present and ask that resuscitative efforts be withheld in the absence of an advanced directive, determine their relationship to the patient and the patient's history. Contact medical control for further guidance. Resuscitation should NOT be delayed while determining the resuscitation status of the patient.

6. Living wills or other documents indicating the patient's desire to withhold CPR or other medical care may be honored only in consultation with the patient's family and medical control. Resuscitation should NOT be delayed while determining the resuscitation status of the patient.

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# EMS Data Quality

**Policy:**

. Each individual patient requires a separate, complete PCR to be completed.

**Definition:**

A complete Patient Care Report (PCR) must contain the following information (as it relates to each EMS event and/or patient):

- Service delivery and Crew information regarding the EMS Agency's response.
- Dispatch information regarding the dispatch complaint.
- Patient care provided prior to EMS Arrival.
- Patient Assessment as required by each specific complaint-based protocol.
- Past medical history, medications, allergies, and DNR status.
- Trauma, Stroke, and Cardiac Arrest information, if relevant to the EMS event or patient.
- All times related to the event.
- All procedures and their associated time.
- All medications administered with their associated time.
- Disposition and/or transport information.
- Communication with medical control.
- Appropriate Signatures (written and/or electronic)

**Purpose:**

The purpose of this policy is to:

- Promote timely and complete EMS documentation.
- Promote quality documentation that can be used to evaluate and improve EMS service delivery, personnel performance, and patient care to the county's citizens.
- Promote quality documentation that will decrease EMS legal and risk management liability.
- Provide a means for continuous evaluation to assure policy compliance.

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# Hospice Patients

**Policy:**
When providing care for a patient enrolled in hospice, provide supportive care to patients while respecting their goals of care.

**Purpose:**
1. Provide relief from pain and other distressing symptoms.
2. Affirm dying as a normal process.
3. Integrate psychological and spiritual aspects of patient care, including supporting family/caregivers

**Procedure:**
1. Perform general patient management.
2. Engage with the patient's hospice or end-of-life care team or their primary care physician if possible. If not a viable option, contact medical direction
3. If the patient can communicate and has the capacity to make decision regarding treatment and transport, consult directly with the patient before treatment and/or transport. If patient is not able to communicate their wishes, may utilize other end of life documents in coordination with medical direction.
4. Treat pain (acceptable to treat and not transport):
    a. Opioid medications are frequently the most appropriate choices for pain management.
    b. Multimodal analgesia may be required for pain relief.
    c. Do not withhold opioids for fear of respiratory depression as patient comfort is the primary goal for hospice and end-of-life care.
5. If the patient is experiencing severe respiratory distress, consider:
    a. Oxygen and bedside/handheld fan
    b. Noninvasive ventilation (BiPAP/CPAP) if aligned with patient care goals
    c. Opioids are the drug of choice for dyspnea for hospice and end-of-life care.
    d. Anxiolytic if needed for anxiety: benzodiazepines
    e. Antiemetics for nausea
    f. If the patient has excessive secretions or aspiration, provide suctioning
    g. If the patient is anxious or has delirium, consider nonpharmacologic interventions such as creating a quiet environment, frequent reassurance, touch and verbal orientation
    h. If the patient appears dehydrated
        i. Encourage PO fluid intake if patient can swallow
        ii. If available, offer ice chips and swabs soaked in ice water
        iii. Consider administration of normal saline
6. In collaboration with hospice or end-of-life care clinician, coordinate with guardian, power of attorney, or other accepted health care proxy if non-transport is considered.

**Patient safety considerations**
1. Careful and thorough assessments should be performed to identify complaints not related to the illness for which the patient is receiving hospice or end-of-life care.
2. Care should be delivered with the utmost patience and compassion.

**Notes and educational pearls**
Key considerations
1. Social interactions with family may affect end-of-life care.
2. Scene safety should be considered when deciding on management.

Pertinent assessment findings
1. Vital signs
2. Pain score
3. Neurologic exam
4. Lung sounds

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# Interfacility Transports

**Policy:**

For the purposes of this policy, an interfacility transport is a transport of a patient from one hospital to another hospital. Interfacility transports may occur at the BLS, ALS or Critical Care level.

The Interfacility Transport Guidelines should be utilized for all interfacility transports.

**Critical Care Transport:**

Critical Care Transport should be strongly considered for patients that may need interventions beyond the WI Scope of Practice for Paramedics and/or Aurora EMS Protocols for paramedic providers. This will include, but is not limited to:

- Patients requiring or potentially requiring the administration of any blood product
- Patients with advanced airway devices (BIAD, endotracheal tube, etc) or non-invasive ventilation devices (CPAP/BiPAP).
- Patients requiring any medications not listed on the Aurora Regional EMS Medication List.
- Patients with invasive monitoring devices including arterial lines, central lines with CVP monitoring and Swan-Ganz catheters
- Two or more infusing medications (or greater than 2 requires critical care)

The minimum staffing requirements in the patient care compartment for all critical care transports will consist of 1 critical care paramedic. Additional staff (paramedic, 2nd critical care paramedic, etc) in the patient care compartment will be at the discretion of the critical care paramedic based on the acuity of the patient. At all times, patient acuity and ongoing patient care requirements will determine additional staff requirements for transport.

In addition, the following circumstances are examples that require the referring facility to provide additional qualified personnel to accompany the patient and the critical care team:

- Active Swan-Ganz catheter hemodynamic monitoring
- Intra-Aortic Balloon Pump
- Chemotherapy Infusion (excluding ambulatory pump managed by patient)
- Pregnant patients in active labor with imminent delivery
- Pediatric ICU specialty equipment
- Active Intracranial Pressure (ICP) monitoring
- Equipment requiring Specialty Technician or Product Representative management
- Any equipment beyond Critical Care Paramedic training; consult service EMS management or Medical Director as needed
- As needed for the safety of an unstable patient

Additional personnel from a referring facility may include a nurse, respiratory therapist, balloon pump technician, physician assistant or physician.

Of note, when additional personnel from a referring facility accompany a patient during transport, they function under their own license, standing or written orders and liability as an extension of the referring facility.

For all critical care transports, the critical care paramedic should call a brief report to medical control at Aurora Medical Center – Grafton prior to leaving the referring facility. This will help facilitate patient care orders and allow for expedited care if the patient should deteriorate enroute. Exceptions to calling prior to

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departure from the referring facility include cases when expedited transport is required (i.e., STEMI, trauma, etc.). In these cases, radio or phone contact should be made as soon as practical, once enroute.

**Online Medical Direction vs Sending Facility Physician Orders:**

On all out-of-hospital responses, online medical direction will be provided in accordance to established policies, procedures and guidelines for such. However, there will be times during interfacility transports when the referring facility physician will be better suited to give specific orders if they are aware of the patient, know the capabilities of the EMS provider and are readily accessible for direct consultation with the EMS crew. In such cases, it is acceptable to follow orders from those referring physicians if they are within a given Wisconsin EMS Scope of Practice. These orders must be clearly documented such as "In consultation with Dr. X., the referring ED physician, orders for Heparin 5000 units bolus was initiated." If doubt exists about following a given order, contact your agency medical director for further clarification and guidance.

The interfacility guidelines are intended to be used ONLY when caring for patients being transported from one hospital to another in accordance with the agency's operational plan on file with the Wisconsin State EMS Office. In cases of out of hospital responses, providers must utilize the Out of Hospital Guidelines and are *NOT* allowed to use the Interfacility Transport Guidelines.

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# New Provider Process

**Policy:**

This policy applies to all new EMS providers for agencies that receive medical direction from Aurora Regional EMS.

**Purpose:**

- This policy is aimed to provide a framework for a new EMS provider to obtain system specific training to function within the Aurora Regional EMS system.
- EMS Department training is not outlined in this policy and remains under the direction of the individual EMS department.

**Procedure:**

- Please see the following page for the New Provider Process algorithm.

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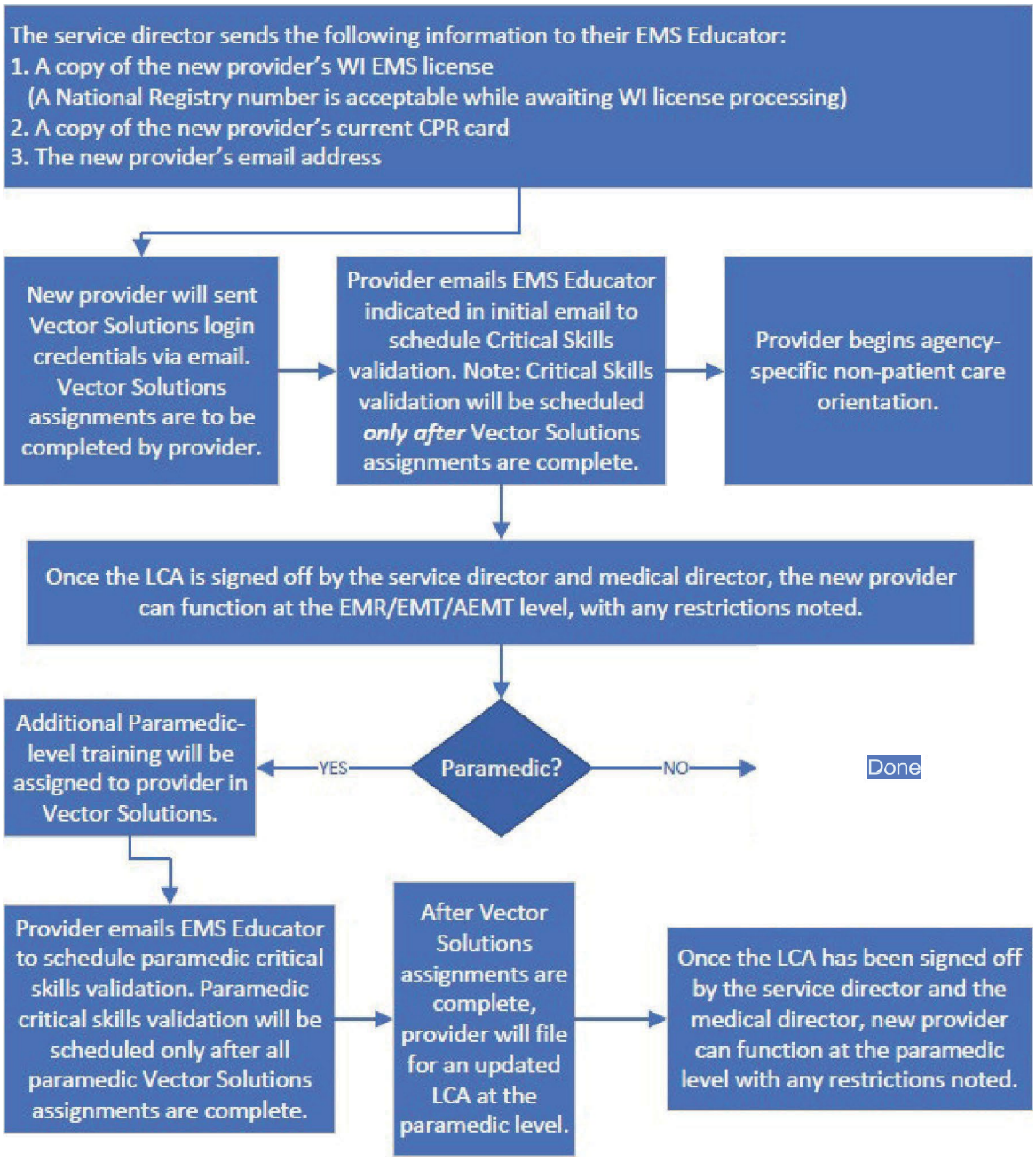
# Aurora Regional EMS
# New Provider Process




EMS Educator contact information can be found on the Vector Solutions home page above the calendar under Contacts.

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# Newborn Abandonment

**Policy:**

Wisconsin State Statute 48.195 (Taking a newborn child into custody) provides a mechanism for unwanted newborns to be taken under temporary custody by a law enforcement officer, social services worker, healthcare provider, or EMS personnel if a newborn is presented by the parent within 30 days of birth. Emergency Medical Services will accept and protect newborns who are presented to EMS in this manner, until custody of the child can be released to the Department of Social Services.
Under this Statute, a parent can leave their unharmed newborn (equal to or less than 30 days old) anonymously and without fear of prosecution in a newborn infant safety device as defined in 48.195 or with law enforcement, EMS practitioner or hospital staff member.

**Purpose:**

To provide:
- Protection to newborns that are placed into the custody of EMS under this Statute
- Protection to EMS systems and personnel when confronted with this issue

**Procedure:**

1. Initiate the Pediatric Assessment Procedure.

2. Initiate Newly Born Protocol as appropriate.

3. Initiate other treatment protocols as appropriate.

4. Keep infant warm.

5. Call local Department of Social Services or the county equivalent as soon as infant is stabilized.

6. Transport infant to medical facility as per local protocol.

7. Assure infant is secured in appropriate child restraint device for transport.

8. Document protocols, procedures, and agency notifications in the PCR.

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# Opioid Overdose/Misuse

**Policy:**
Patients who have experienced an opioid overdose/misuse should be offered a variety of options to more appropriately manage their care where available in the community. All care should be provided within the rules and regulations of the state of Wisconsin.

**Purpose:**
- To ensure patients are offered options for treatment of opioid misuse where available.
- Provide harm reduction measures related to opioid misuse.

**Procedure:**
1. Patients must be over 18 years of age and experienced unintentional overdose or misuse of an opioid medication(s) only. Patients must NOT have experienced cardiac arrest defined as administration of chest compressions by first responders or EMS during the incident.

2. The patient must regain a normal mental status and respiratory effort after the administration of naloxone, NOT have suicidal or homicidal ideations/intentions, NOT ingested substance(s) for intentional self-harm and have not co-ingested other substances.

3. Transport to an Emergency Department should be offered to all patients.

4. In order to decline transport, the patient must meet the following criteria:
a) Be 18 years or older
b) Maintain a GCS of 15 (alert, and oriented to time, place, person, and situation)
c) Demonstrate decision-making ability as outlined in Universal Protocol (UP 1) Pearls.

5. If patient declines transport to an Emergency Department, if available, a naloxone kit should be left with the patient, family, and/or friends on scene. EMS should provide brief education on how to properly use these kits and refer them to read all package related material and instructions provided by the manufacturer.

6. In addition to naloxone kits, the following items should be offered where possible/available:
a) Offer to properly dispose of any dirty needles
b) Refer to a community peer support team if available
c) Provide literature outlining resources for substance misuse treatment programs in the community
d) Provide Medication Assisted Therapy if available and per your agency policy and protocols.

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# Physician on Scene

**Policy:**

The medical direction of prehospital care at the scene of an emergency is the responsibility of those most appropriately trained in providing such care. All care should be provided within the rules and regulations of the State of Wisconsin

**Purpose:**

- To identify a chain of command to allow field personnel to adequately care for the patient
- To assure the patient receives the maximum benefit from prehospital care
- To minimize the liability of the EMS system as well as the on-scene physician

**Procedure:**

1. When a non medical-control physician offers assistance to EMS or the patient is being attended by a physician with whom they do not have an ongoing patient relationship, EMS personnel should identify themselves and assume care from the physician.

2. When the patient is in the presence of a physician with whom they have an ongoing patient relationship, EMS personnel may follow orders given by the physician if the orders encompass skills and/or medications approved by Aurora Regional EMS protocols, agrees to document the interaction, and if the physician signs the PCR. Notify medical control at the earliest opportunity.

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# Safe Transport of Pediatric Patients

**Policy:**

Without special considerations children are at risk of injury when transported by EMS. EMS must provide appropriate stabilization and protection to pediatric patients during EMS transport.

**Purpose:**

To provide:

- Provide a safe method of transporting pediatric patients within an ambulance.
- Protect the EMS system and personnel from potential harm and liability associated with the transportation of pediatric patients.

**Procedure:**

1. Drive cautiously at safe speeds observing traffic laws.
2. Tightly secure all monitoring devices and other equipment.
3. Ensure that all pediatric patients less than 40 lbs. are restrained with an approved child restraint device secured as per manufacturer's instructions.
4. Ensure that all EMS personnel use the available restraint systems during the transport.
5. Transport adults and children who are not patients, properly restrained, in an alternate passenger vehicle, whenever possible.
6. Do not allow parents, caregivers, or other passengers to be unrestrained during transport.
7. Do not attempt to hold or allow the parents or caregivers to hold the patient during transport.
8. For patients with medical conditions that may be aggravated by stress, make every attempt to optimize safety when comforting the child.
9. Do not transport the pediatric patient who is assessed as meeting trauma center criterion in a child seat that was involved in the collision that produced the child's injury.

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# Transport

**Purpose:**

To establish a uniform protocol for the transportation of the sick and injured.

**Procedure:**

All sick or injured persons requesting transport shall be transported to the closest, most appropriate open receiving hospital, taking into consideration:

- Patients' medical condition
- Patient's request
- Location of regular care, primary medical doctor, and /or medical records
- Insurance/HMO

Patient needs will dictate transport to a specialty hospital. Documentation in the patient care record should support the decision to transport directly to a Specialty Receiving Center.

- STEMI patients should be transported to the closest STEMI Receiving Center
- Trauma patient destination should be determined according to the Wisconsin Field Triage Guidelines (Appendix A).
- Stroke patients should be transported to the closest Stroke Receiving Center.
- Strong consideration should be given to transport resuscitated cardiac arrest patients directly to a STEMI Receiving Center.
- Patients whose condition is covered by a formal destination protocol (Pediatric, Post-Resuscitation, STEMI, Stroke, Trauma, etc.) shall be transported in accordance with those specialty algorithms. All other patients should be transported per the policy.
- In unusual circumstances (such as an MCI), transport in other vehicles may be appropriate when directed under the authority of the Medical Director or Medical Director's designee.

**Specialty Receiving Centers**

| STEMI | STROKE | TRAUMA | PEDIATRICS |
|---|---|---|---|
| AMC - Grafton | AMCSC | FMLH (level 1) | CHW (level 1) |
| St. Agnes | AMC - Grafton | Theda Clark (level 2) | Theda Clark |
| Aurora BayCare | St. Nick's | Aurora BayCare (level 2) | |
| | St Mary's Ozaukee | AMC – Grafton (level 3) | |
| | Aurora BayCare | St Mary's Ozaukee (level 3) | |
| | | AMCSC (level 4) | |
| | | St. Nick's (level 4) | |
| | | Holy Family (level 3) | |
| | | St. Agnes (level 3) | |
| | | | |

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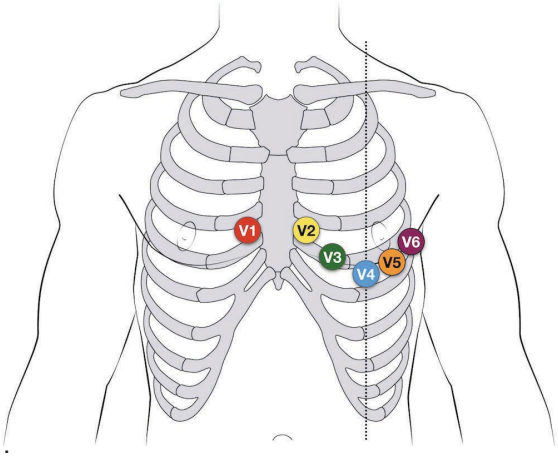
# 12 Lead ECG

**Clinical Indications:**

- Suspected cardiac patient
- Suspected overdose
- Electrical injuries
- Abdominal Pain
- Unresponsive/Unconscious
- Diabetic with vague symptoms
- Weakness
- Syncope

**Procedure:**

1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient is unstable, definitive treatment is the priority. If patient is stable or stabilized after treatment, perform a 12 Lead ECG. In general, 12-lead should be obtained in the first 10 minutes of the patient encounter, unless unstable.
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter patient name and age 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:
    a. RA - Right arm
    b. LA - Left arm
    c. RL - Right leg
    d. LL - Left leg
    e. V1 - 4th intercostal space at right sternal border
    f. V2 - 4th intercostal space at left sternal border
    g. V3 - Directly between V2 and V4
    h. V4 - 5th intercostal space at midclavicular line
    i. V5 - Level with V4 at left anterior axillary line
    j. V6 - Level with V5 at left mid axillary line




8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG .
10. If 12-lead indicates STEMI or consultation is required, transmit the 12-lead to the appropriate receiving hospital.
11. For patients with cardiac complaint, keep all leads connected at all times practical to allow automatic ST-segment monitoring to proceed
12. Contact the receiving hospital to notify them that a 12 Lead ECG has been sent.
13. Monitor the patient while continuing with the treatment protocol.

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14. Download data as per guidelines and attach a copy of the 12-lead to the PCR.

15. Document the procedure, time, and results on/with the patient care report (PCR)

**Certification Requirements:**

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 Aurora Regional EMS System.

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# Airway: Non-Invasive Positive Pressure Ventilation (NIPPV)

**Clinical Indications for NIPPV Use:**

- NIPPV is indicated in patients for whom inadequate ventilation is suspected. This could be as a result of pulmonary edema, pneumonia, COPD, asthma, etc.

**Procedure:**

1. Ensure adequate oxygen supply to ventilation device.
2. Explain the procedure to the patient.
3. Consider placement of a nasopharyngeal airway.
4. Place the delivery mask over the mouth and nose. Oxygen should be flowing through the device at this point.
5. For patients with altered mental status who cannot be treated with CPAP or BIPAP, utilize PEEP valve with BVM. Ensure a good mask seal and adjust PEEP to same recommended levels below. For patients without altered mental status, secure the mask with provided straps starting with the lower straps until minimal air leak occurs.
6. Adjust the NIPPV beginning at 3 cmH20 of pressure and slowly titrate to achieve a positive pressure as follows:
    - 5 -10 cmH20 for Pulmonary Edema, Near Drowning, possible aspiration or pneumonia
    - 3 -5 cmH20 for COPD
7. Evaluate the response of the patient assessing breath sounds, oxygen saturation, and general appearance.
8. Titrate oxygen levels to the patient's response. Many patients respond to low FI02 (30-50%).
9. Encourage the patient to allow forced ventilation to occur. Observe closely for signs of complications. The patient must be breathing for optimal use of the NIPPV device.
10. Document time and response on patient care report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office

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# Airway: Endotracheal Tube Introducer (Bougie)

**Clinical Indications:**

- Patients meet clinical indications for oral intubation (appropriate to use with any attempt)
- Strongly encouraged for all intubation attempts

**Contraindications:**

- Three attempts at orotracheal intubation (utilize failed airway protocol)
- Introducer larger than ETT internal diameter

**Procedure:**

1. Prepare, position and oxygenate the patient with 100% oxygen;
2. Select proper ET tube without stylet, test cuff and prepare suction;
3. Lubricate the distal 1/2 of the Endotracheal Tube Introducer (Bougie) (note: failure to lubricate the Bougie may result in being unable to pass the ETT).
4. Using laryngoscopic techniques, visualize the vocal cords if possible, using Sellick's/BURP as needed.
5. Introduce the Bougie with curved tip anteriorly and visualize the tip passing the vocal cords or above the arytenoids if the cords cannot be visualized.
6. Once inserted, gently advance the Bougie until you meet resistance or "hold-up" (if you do not meet resistance you have a probable esophageal intubation and insertion should be reattempted or the failed airway protocol implemented as indicated).
7. Withdraw the Bougie ONLY to a depth sufficient to allow loading of the ETT while maintaining proximal control of the Bougie.
8. Gently advance the Bougie and loaded ET tube until you have hold-up again, thereby assuring tracheal placement and minimizing the risk of accidental displacement of the Bougie;
9. While maintaining a firm grasp on the proximal Bougie, introduce the ET tube over the Bougie passing the tube to its appropriate depth;
10. If you are unable to advance the ETT into the trachea and the Bougie and ETT are adequately lubricated, withdraw the ETT slightly and rotate the ETT 90 degrees COUNTER clockwise to turn the bevel of the ETT posteriorly. If this technique fails to facilitate passing of the ETT you may attempt direct laryngoscopy while advancing the ETT (this will require an assistant to maintain the position of the Bougie and, if so desired, advance the ETT);
11. Once the ETT is correctly placed, hold the ET tube securely and remove the Bougie;
12. Confirm tracheal placement according to the intubation protocol, inflate the cuff with 3 to 10 cc of air, auscultate for equal breath sounds and reposition accordingly;
13. When final position is determined secure the ET tube, reassess breath sounds, apply ETC02 monitor, and record and monitor readings to assure continued tracheal intubation.

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14. Complete Airway QA Form using the link in Vector Solutions.

**Certification Requirements:**

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 Aurora Regional EMS Office. Assessment should include direct observation at least once per certification cycle.

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# Airway: 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.

- Respiratory arrest where ventilation cannot be accomplished after repositioning of airway

**Procedure:**

1. Assess the degree of foreign body obstruction

    a. Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing.
    b. 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**, with the head positioned inferiorly, 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.

    a. First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved.
    b. 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 any ventilations. If a foreign body is visible, remove it.

6. **Do not perform blind finger sweeps in the mouth and posterior pharynx. This may push the object farther into the airway.**

7. In unresponsive patients, EMT and Paramedic level professionals should visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign body using Magil forceps.

8. Document the methods used and result of these procedures in the patient care report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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# Airway: Intubation Oral Tracheal

**Clinical Indications:**

- Inability to adequately ventilate a patient with a Bag Valve Mask or longer EMS transport distances requires a more advanced airway.
- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.
- Risk to benefit ratio of oral tracheal intubation to BIAD insertion

**Procedure:**

1. Prepare position and oxygenate the patient with 100% Oxygen.
2. If patient is in cardiac arrest, monitor pre-intubation ETC02 for post-intubation comparison.
3. Select proper ET tube (and stylet or bougie if using), have suction ready.
4. Using laryngoscope, visualize vocal cords. (Use Sellick maneuver/BURP to assist you).
5. Limit each intubation attempt to 30 seconds or less with BVM between attempts.
6. Visualize tube passing through vocal cords then inflate the cuff with 3-to-10 cc of air
7. Auscultate for absence of sounds over epigastrium and presence of bilaterally equal breath sounds. If present unilaterally or unequal, adjust tube position or consider whether this may be patient's baseline. If unsure of placement, remove tube and ventilate patient with bag-valve mask.
8. Apply end tidal carbon dioxide monitor. Monitor for appropriate waveform and numeric values. Remove ET tube and ventilate by BVM if appropriate waveform or numeric values are not obtained.
9. Record initial, ongoing, and final ETCO2 values on the PCR.
10. Document ETCO2 waveform before and after each patient movement.
11. Secure the tube to the patient's face.
12. Consider using Blind Insertion Airway Device if ET intubation efforts are unsuccessful.
13. 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 tube placement. Also document positive or negative breath sounds before and after each movement of the patient.
14. Consider placing an NG or OG tube to clear stomach contents after the airway is secured with an ET tube.
15. Complete Airway QA Form using the link in Vector Solutions.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Airway: i-gel

**Clinical Indications:**

- Cardiac arrest where initial BLS airway management has been completed per protocol or sufficient personnel are present to perform without interruption in other cardiac arrest care.
- Respiratory arrest patient without a gag reflex.

**Absolute Contra indications:**

- Deforming facial trauma
- Gag reflex

*Relative Clinical Contraindications:*

- Pulmonary fibrosis
- Toxic ingestions
- Known esophageal disease

**Procedure:**

1. Prepare position and oxygenate the patient with 100% Oxygen.
2. Choose i-gel size per package recommendations.
3. Apply lube to i-gel cradle and lube sides, back and tip of device.
4. Apply chin lift and introduce device into center of mouth against the hard palate.
5. Apply consistent, gentle pressure until you feel the device release from the hypopharynx and seat against the glottis.
6. Connect the i-gel to end tidal CO2 and an ambu bag and ventilate. Secure with strap included with the i-gel
    a. Verify absence of gastric sounds and confirm presence of bilateral breath sounds.
7. Consider the placement of a gastric tube if available and trained.
8. Re-verify i-gel placement after every move and upon arrival in the ED.
9. Document the procedure, time, and result on the patient care report (PCR).
10. Complete the Airway QA form at the conclusion of the patient care using the link in Vector Solutions.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Airway: Nebulizer Inhalation Therapy

**Clinical Indications:**

- Patients experiencing bronchospasm.
- As defined in Suggested Medical Guidelines

**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 6 liters per minute or adequate flow to produce a steady, visible mist. When necessary, this may be used in conjunction with CPAP or with BVM ventilations.
5. For the spontaneously breathing patient, instruct them to inhale normally through the mouthpiece of the nebulizer or through the appropriate mask to which it is attached.
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in utilizing all of the solution.
7. Monitor the patient for medication effects. This should 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 on/with the patient care report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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# Airway: Needle Transtracheal Jet Insufflation

**Indications:**

- Needle Transtracheal Jet Insufflation as Indicated by the Pediatric Failed Airway Protocol

**Procedure:**

Preparing the transtracheal device

1. Connect the transtracheal device pressure hose to the oxygen supply.
2. Pull out the pressure regulator knob and turn counterclockwise until the gauge reads 0 psi.
3. Release the pressure in the system by pulling the trigger.
4. Adjust the ventilation pressure by turning the pressure regulator knob clockwise until it reaches the desired pressure as outlined on ventilation handle. Set the pressure by pushing the pressure regulator knob in.

Inserting the catheter

5. Pre-oxygenate patient when possible.
6. Assemble all available additional personnel.
7. Position patient and locate cricothyroid membrane. Place a finger on their thyroid cartilage and slide the finger down to the cricoid cartilage. Palpate the V notch.
8. Stabilize and clean area.
9. Using the appropriate size catheter, puncture the skin and cricothyroid membrane.
10. Check position using a 10cc syringe half-filled with NaCl solution (check for rising air bubbles when plunger is pulled back).
11. Advance the plastic cannula until the flange rests on the neck. Remove the needle.
12. Attach the female Luer Lock end of the connection tubing to the cannula.
13. Attach the male end of the connection tubing to the transtracheal device.
14. Pull the trigger to ventilate patient (1 second on/3-4 seconds off for peds patients under 12).
15. Observe patient at all times. Watch for chest rise to indicate successful ventilation and for complete chest fall to ensure complete exhalation. **Care must be taken not to stack breaths.**
16. Secure the device.
17. Complete Airway QA Form using the link in Vector Solutions and notify the medical director immediately via phone regarding surgical airway procedure.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Airway: Placement Confirmation-Capnometry/Capnography

**Clinical Indications:**

To assist in determining and documenting the correct placement of an Endotracheal tube, surgical airway, or BIAD

**It is strongly recommended that continuous waveform capnography be used in place of or in addition to the use of a colorimetric device. Continuous waveform capnography is required for Paramedic services.**

**Procedure:**

1. Complete advanced airway placement per procedures.
2. Place device over the proximal end of the ETT. Squeeze the BVM and observe for color change/wave form/numeric value.
3. Document time and result in the patient care report (PCR) and on the Airway QA Form.
4. Document and print out waveform after advanced airway placement and before/after each patient movement. Attach to PCR.

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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# Airway: Suctioning-Advanced

**Clinical Indications:**

Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an airway adjunct such as an endotracheal tube, BIAD, tracheostomy tube, or a cricothyrotomy tube.

**Procedure:**

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient as is possible.
3. Attach suction catheter to suction device, keeping sterile plastic covering over catheter.
4. Measure the suction catheter from the suprasternal notch to the end of the airway into which the catheter will be placed as a guide, (judgment must be used regarding the depth of suctioning with cricothyrotomy and tracheostomy tubes).
5. If applicable, remove ventilation devices from the airway.
6. With the thumb port of the catheter uncovered, insert the catheter through the airway device.
7. Once the desired depth (measured in #4 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
8. A small amount of Normal Saline (10 ml) may be used if needed to loosen secretions for suctioning.
9. Reattach ventilation device (e.g., bag-valve mask) and ventilate the patient
10. Document time and result in the patient care report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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# Airway: Suctioning-Basic

**Clinical Indications:**

Obstruction of the 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 with suction tip in place.
2. Preoxygenate the patient as is possible.
3. Explain the procedure to the patient if they are coherent.
4. Examine the oropharynx and remove any potential foreign bodies or material which may occlude the airway if dislodged by the suction device.
5. If applicable, remove ventilation devices from the airway.
6. Use the suction device to remove any secretions, blood, or other substance.
7. The alert patient may assist with this procedure.
8. Reattach ventilation device (e.g., bag-valve mask) and ventilate or assist the patient
9. Record the time and result of the suctioning in the patient care report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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# Airway: Surgical Adult

**Clinical Indications:**

- Surgical Airway as Indicated by the Adult Failed Airway Protocol

**Procedure:**

1. Pre-oxygenate patient when possible
2. Assemble all available additional personnel. Lubricate the distal 1/2 of the Endotracheal Tube Introducer (Bougie) (note: failure to lubricate the Bougie may result in being unable to pass the ETT).
3. Locate the cricothyroid membrane. Place a finger on their thyroid cartilage and slide the finger down to the cricoid cartilage. Palpate the V notch.
4. Slide the index finger down into the depression between the thyroid and cricoid cartilage. Raise the skin to form a tent-like appearance over the cricothyroid space, using the index finger and thumb.
5. Stabilize and clean area.
6. With the blade, make a 1 ½" vertical incision through the raised skin to the cricothyroid space. Do not cut the cricothyroid membrane with this incision.
7. Open the incision to visualize the cricothyroid membrane and the cricothyroid space.
8. Use the other end of the scalpel or your finger to make a blunt dissection down to the cricothyroid membrane if needed.
9. Stabilize the larynx with one hand while keeping the incision open; make a 0.5-1cm vertical cut through the cricothyroid membrane.
10. Insert a bougie in the incision, directing it towards the lungs. You should feel the clicks of the tracheal rings and the bougie should "hold-up" at about 12-14 cm for a normal adult sized patient.
11. Place an appropriate sized endotracheal tube or cric tube (6.0 for a normal adult sized adult) over the end of the bougie, into the airway. The balloon of the cuff should be approximately 1-2 cm past the incision.
12. Inflate the cuff with 5 to 10 cc of air.
13. Remove the bougie.
14. Secure the endotracheal tube or cric tube.
15. Apply a colormetric ETCO2 detector or monitor with continuous ETCO2 capnography.
16. Confirm placement with the use of breath sounds, pulse ox, and ETCO2.
17. Ensure 100% Fi02 to BVM via supplemental 02.
18. Complete Airway QA Form using the link in Vector Solutions.

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**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Airway: Tracheostomy Tube Change

**Clinical Indications**

- Presence of Tracheostomy site.
- Urgent or emergent indication to change the tube, such as obstruction that will not clear with suction, dislodgement, or inability to oxygenate/ventilate the patient without other obvious explanation.

**Procedure:**

1. Have all airway equipment prepared for standard airway management, including equipment for orotracheal intubation and failed airway.

2. Have airway device (endotracheal tube or tracheostomy tube) of the same size as the tracheostomy tube currently in place as well as 0.5 size smaller available (e.g., if the patient has a #6.0 Shiley, then have a 6.0 and a 5.5 tube).

3. Lubricate the replacement tube(s) and check the cuff.

4. Remove the tracheostomy tube from mechanical ventilation devices and use a bag-valve apparatus to pre-oxygenate the patient as much as possible.

5. Once all equipment is in place, remove devices securing the tracheostomy tube and/or supporting bandages.

6. If applicable, deflate the cuff on the tube. If unable to aspirate air with a syringe, cut the balloon off to allow the cuff to lose pressure.

7. Remove the tracheostomy tube.

8. Insert the replacement tube. Confirm placement via standard measures except for esophageal detection (which is ineffective for surgical airways).

9. If there is any difficultly placing the tube, re-attempt procedure with the smaller tube.

10. If difficulty is still encountered, use standard airway procedures such as oral bag-valve mask or endotracheal intubation (as per protocol). *More difficulty with tube changing can be anticipated for tracheostomy sites that are immature -i.e., less than two weeks old. Great caution should be exercised in attempts to change immature tracheotomy sites.*

11. Document procedure, confirmation, patient response, and any complications in the PCR.

12. Complete Airway QA Form using the link in Vector Solutions.

**Certification Requirements:**

Maintain knowledge of the indications, contra indications, 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 Aurora Regional EMS Office.

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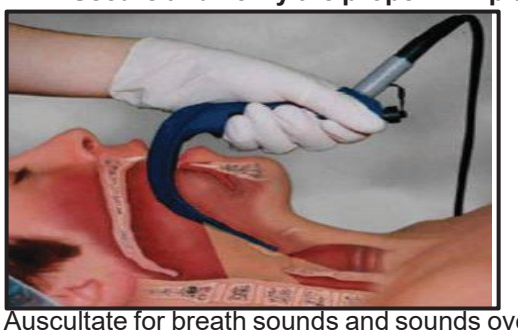
# Airway: Video Laryngoscopy – Glidescope

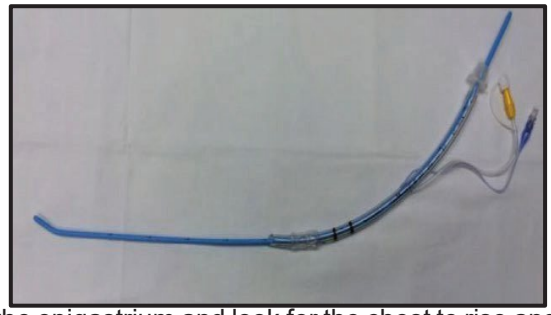
**Clinical Indications:**
• Patient requires advanced airway.

**Procedure:**
1. Preoxygenate the patient.
2. Select the appropriate ETT size and bougie/stylet for the patient. Ready suction.
3. Power on GildeScope and allow 30 seconds for anti-fog mechanism to warm.
4. Using GlideScope visualize the vocal cords and facilitate the intubation:

**In the mouth:** looking directly into the patient's mouth and with the VL blade in left hand, introduce GlideScope VL into the midline of the oral pharynx.
Look into the mouth to prevent soft tissue damage.

**At the screen:** With GlideScope VL inserted, look to monitor to identify the epiglottis, then manipulate the scope to obtain the best glottic view.
**In the mouth:** Looking directly into the patient's mouth, not at screen, carefully guide the distal tip of the bougie/ETT into position near the tip of the GlideScope VL.
Insert the bougie/ETT behind or adjacent to the VL blade.
**At the screen:** Look to the monitor to complete tracheal intubation. Gently rotate or angle the bougie/ETT to redirect as needed.
Avoid excessive lifting or pushing of the glottis with the VL blade.
Reducing the elevation applied to the VL blade may facilitate intubation.
**Advance the ETT** and then withdraw the bougie/stylet.
**Secure and verify the proper ETT placement.**





5. Auscultate for breath sounds and sounds over the epigastrium and look for the chest to rise and fall.
6. Secure the ETT tube with tape or mechanical tube holder.
7. **Confirm tube placement using end-tidal CO2 detector.**
8. **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
9. **Complete the Airway Form.**

**Certification Requirements:**
- 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 should include direct observation at least once per certification cycle.

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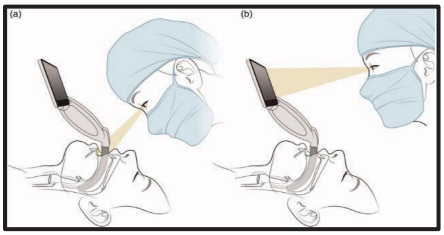
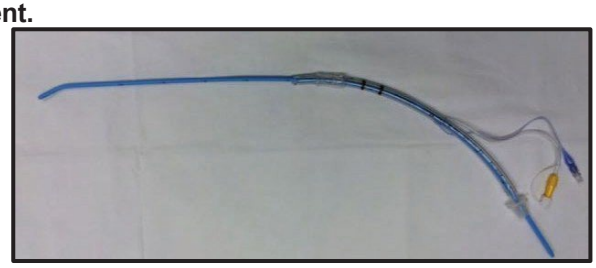
# Airway: Video Laryngoscopy - McGrath

**Clinical Indications:**
• Patient requires advanced airway.

**Procedure:**
1. Preoxygenate the patient.
2. Select the appropriate ETT size and bougie/stylet for the patient. Ready suction.
3. Power on McGrath and choose appropriate blade size.
4. Using McGrath visualize the vocal cords and facilitate the intubation:
   **In the mouth:** looking directly into the patient's mouth and with the VL blade in left hand, introduce McGrath VL into the right side of the oral pharynx and sweep the tongue to the left when moving McGrath VL to Center line. Look into the mouth to prevent soft tissue damage.
   **At the screen:** With McGrath VL inserted, look to monitor to identify the epiglottis, then manipulate the scope to obtain the best glottic view.
   **In the mouth:** Looking directly into the patient's mouth, not at screen, carefully guide the distal tip of the bougie/ETT into position near the tip of the McGrath VL.
   Insert the bougie/ETT behind or adjacent to the VL blade.
   **At the screen:** Look to the monitor to complete tracheal intubation. Gently rotate or angle the bougie/ETT to redirect as needed.
   Avoid excessive lifting or pushing of the glottis with the VL blade.
   Reducing the elevation applied to the VL blade may facilitate intubation.

**Advance the ETT** and then withdraw the bougie/stylet.
**Secure and verify the proper ETT placement.**



5. Auscultate for breath sounds and sounds over the epigastrium and look for the chest to rise and fall.
6. Secure the ETT tube with tape or mechanical tube holder.
7. **Confirm tube placement using end-tidal CO2 detector.**
8. **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
9. **Complete the Airway Form.**

**Certification Requirements:**
- 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 should include direct observation at least once per certification cycle.

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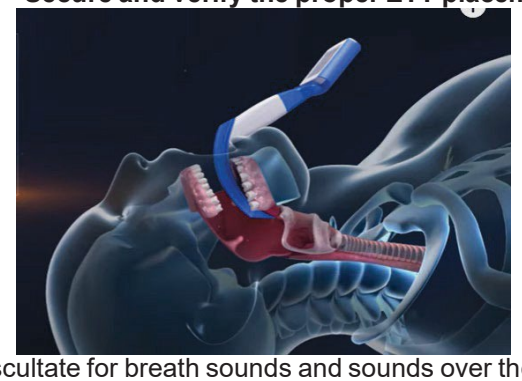
# Airway: Video Laryngoscopy – UeScope

**Clinical Indications:**
• Patient requires advanced airway.

**Procedure:**
1. Preoxygenate the patient.
2. Select the appropriate ETT size and bougie/stylet for the patient. Ready suction.
3. Power on UeScope and allow 30 seconds for anti-fog mechanism to warm.
4. Using UeScope visualize the vocal cords and facilitate the intubation:

**In the mouth:** looking directly into the patient's mouth and with the VL blade in left hand, introduce UeScope VL into the midline of the oral pharynx.
Look into the mouth to prevent soft tissue damage.

**At the screen:** With UeScope VL inserted, look to monitor to identify the epiglottis, then manipulate the scope to obtain the best glottic view.
**In the mouth:** Looking directly into the patient's mouth, not at screen, carefully guide the distal tip of the bougie/ETT into position near the tip of the UeScope VL.
Insert the bougie/ETT behind or adjacent to the VL blade.
**At the screen:** Look to the monitor to complete tracheal intubation. Gently rotate or angle the bougie/ETT to redirect as needed.
Avoid excessive lifting or pushing of the glottis with the VL blade.
Reducing the elevation applied to the VL blade may facilitate intubation.
**Advance the ETT** and then withdraw the bougie/stylet.
**Secure and verify the proper ETT placement.**



5. Auscultate for breath sounds and sounds over the epigastrium and look for the chest to rise and fall.
6. Secure the ETT tube with tape or mechanical tube holder.
7. **Confirm tube placement using end-tidal $CO_2$ detector.**
8. **End-tidal ($EtCO_2$) monitoring is mandatory following placement of an endotracheal tube.**
9. **Complete the Airway Form.**

**Certification Requirements:**
- 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 should include direct observation at least once per certification cycle

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# Assessment: Adult

**Clinical Indications:**

Any patient requesting a medical evaluation that is too large to be measured with a Broselow-Luten Resuscitation Tape.

**Procedure:**

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction
2. Establish spinal immobilization if suspicion of spinal injury
3. Initial assessment includes a general impression as well as the status of a patient's airway, breathing, and circulation.
4. Assess mental status (e.g., AVPU) and disability (e.g., GCS).
5. Control major hemorrhage and assess overall priority of patient.
6. Perform a focused history and physical based on patient's chief complaint making efforts to protect patient privacy and modesty.
7. Assess need for critical interventions. If none are anticipated, downgrade or cancel additional responding units as appropriate.
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. Document all findings and information associated with the assessment, performed procedures, and any administration of medications on the PCR.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Assessment: Pain Documentation

**Clinical Indications:**

Any patient

**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, with each set of vitals after a pharmaceutical pain management intervention, and until resolved or the last vital set for non-drug therapies.

3. Three pain scales are available: the 0 -10, the Wong -Baker "faces", and the FLACC.

    a. 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.

    b. 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.

    c. FLACC scale: this scale has been validated for measuring pain in children with mild to severe cognitive impairment and in pre-verbal children (including infants).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Assessment: Pediatric

**Clinical Indications:**

- Any child that can be measured with the Broselow-Luten Resuscitation Tape.

**Procedure:**

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction. Take reasonable steps to protect patient privacy and modesty.

2. 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

3. Establish spinal immobilization if suspicion of spinal injury

4. Establish responsiveness appropriate for age (AVPU, GCS, etc.)

5. Color code using Broselow-Luten tape

6. Assess disability (pulse, motor function, sensory function, papillary reaction)

7. Perform a focused history and physical exam. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam. Concurrently, remember that pediatric patients unable to verbalize their own complaint should be fully exposed for assessment.

8. Record vital signs (attempt blood pressure in all patients; record if unable to obtain and check capillary refill)

9. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.

10. Treat chief complaint as per protocol

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Blood Administration

**Clinical Indications:**

- Acute Blood Loss
- Trauma
- Postpartum hemorrhage
- Large Volume GI Bleed

**Procedure:**

Prepare the Patient

1. Confirm patient meets inclusion criteria for Hemorrhagic Shock Protocol
2. If possible consent the patient:
    a. Sir/Ma'am, you meet criteria for blood product administration because we believe you are having severe bleeding, the treatment includes giving you blood products through your vein per our physician-developed guideline. The benefits of blood products are to mitigate the bleeding and potentially prevent death before we get to the hospital. The risks of transfusion include irritation or infection at the needle site or in your body, fevers or skin rash, and other more rare complications with your heart or lungs. There is the risk of transmission of infections but it is extremely rare. Alternative options to blood products include IV fluids or no treatment at all; however, you are critically ill and deciding on IV fluids or no treatment could result in severe complications or your death. Our physicians believe that the benefits of blood products outweigh the risks, and we would like your verbal consent to proceed.
3. Establish large bore vascular access
    a. IV 16g or 18g preferred
    b. IO: Humeral preferred site
4. Document complete set of vitals including a temperature

Remove only one unit of blood from the cooler

1. If you later decide that a second unit of blood is needed, remove it from the cooler at that time. Do NOT remove blood from the cooler just in case you may need it.

Examine the blood

1. Check appearance of blood for presence of clots, clumps or abnormal cloudiness and integrity of seals. If suspicious do not administer blood unit
    a. If first blood unit appears suspicious, evaluate the 2nd unit of blood in the cooler for similar findings. Administer that unit if it appears normal.
    b. After the run, take the suspicious blood unit to the blood bank. Notify the EMS DC and Medical Director.
2. Confirm the following information on the unit of blood:
    a. Blood product number on blood container matches product number on tag

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b. Blood expiration date and time to current date and time

Set up and Administer blood product

1. Spike normal saline bag
2. Prime tubing with normal saline
3. Insert the blood tubing connection port on the Y tubing into the blood product
4. Connect distal end of tubing
5. Place blood product into a pressure bag and apply appropriate pressure
6. Close the normal saline connection port
7. Open blood product connection port and infuse blood product as rapidly as possible
8. Monitor for complications as outlined in transfusion reaction guideline
9. Monitor patient continuously, assessing vitals every 5 minutes

If Applicable and Indicated: Administer a second unit of blood

1. Remove the second unit of blood from the cooler
2. Examine the Blood of the new unit
3. Replace the empty blood unit with the new blood unit on the tubing already attached to the patient.

Once blood administration is complete

1. Perform complete set of vitals to include temperature
2. Perform usual transfer of care at hospital, noting the receiving team the number and type of blood product administered during your handoff
3. Dispose of blood product bag and Y tubing in biohazard receptacle
4. Complete blood product documentation and have ER physician sign the emergency release paperwork. If unable to have ER physician sign, notify officer or battalion chief who will then email the Aurora Regional EMS Office team. If transporting via helicopter, make sure to keep all necessary paperwork.
5. Follow agency Blood Return/Resupply
6. Complete blood tracking form
7. If a transfusion reaction is suspected, leave the blood tubing and blood unit with the patient at the receiving destination, even if empty, for additional testing.
8. Complete PCR and ensure these fields are completed:
    1. Blood unit ID# for each unit
    2. Expiration Date for each unit
    3. Blood Type for each unit

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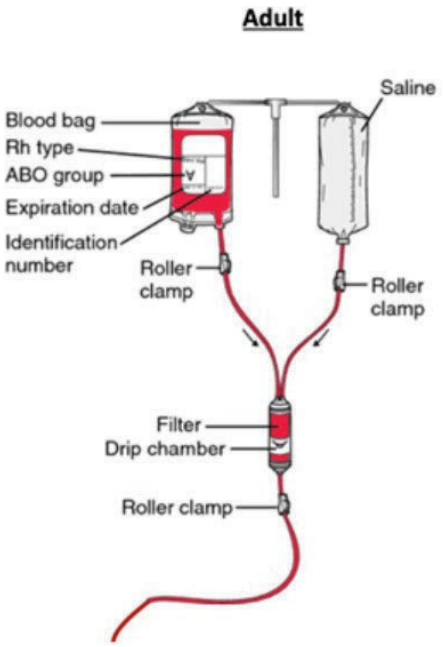
4. Blood visual inspection was completed and acceptable
5. Blood temperature indicator was checked and appropriate
6. Consent type obtained prior to administration (verbal or implied)

**References**




If the patient is taken to an AAH hospital, all paperwork associated with the unit is returned to the ACL TS that supplies the EMS team with blood products.

**If the patient is taken anywhere other than the local Advocate Aurora Hospital for treatment, return paperwork as follows:**

| | | AAH Transfusion Service (issuing location) | Non-AAH Hospital (Patient location) |
|---|---|---|---|
| **EMR Form** | White Copy | | x |
| | Yellow Copy | x | |
| **Blood Issue Form** | White Copy (with unit links) | | x |
| | Yellow Copy | x | |
| **Transfusion Reaction** | | Call the AAH Transfusion Service to notify them of the reaction | Unit and all associated tubing are kept with the patient and will be given to the hospital for further testing |

**Certification Requirements:**

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 Aurora Regional EMS System.

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# Blood Glucose Analysis

**Clinical Indications:**

• Patients with suspected hypoglycemia (diabetic emergencies, change in mental status, bizarre behavior, etc.)

**Procedure:**

1. Gather and prepare equipment.
2. Blood samples for performing glucose analysis should be obtained through a finger-stick. Venous blood samples may produce artificially high blood glucose values and should be avoided due to this and the increased risk of needlestick. However, some equipment may be calibrated for venous samples, follow manufacturer guidelines.
3. Place correct amount of blood on reagent strip or site on glucometer per the manufacturer's instructions.
4. Time the analysis as instructed by the manufacturer.
5. Document the glucometer reading and treat the patient as indicated by the analysis and protocol.
6. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.
7. Perform Quality Assurance on glucometers as recommended, if any clinically suspicious readings are noted, and/or as recommended by the manufacturer and document in the log.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Capnography/Capnometry

**Clinical Indications:**

- Capnography/Capnometry shall be used as soon as possible in conjunction with any airway management adjunct including endotracheal, cricothyrotomy, Blind Insertion Airway Devices (BIAD) or BVM.

- Capnography/Capnometry should also be used on all patients treated with CPAP, Magnesium, and/or epinephrine for respiratory distress.

**Procedure:**

1. Attach capnography/capnometry sensor to the BIAD, endotracheal tube, or oxygen delivery device, or place “nasal prong” style for patients receiving supplemental oxygen.

2. Note CO2 level and waveform changes. These will be documented on each respiratory failure, cardiac arrest, or respiratory distress patient.

3. The capnometer shall remain in place with the airway and be monitored throughout the prehospital care and transport.

4. Any loss of CO2 detection or waveform indicates an airway problem and should be documented.

5. The capnogram should be monitored as procedures are performed to verify or correct the airway problem.

6. Document the procedure and results on/with the Patient Care Report (PCR) and the Airway QA Form.

7. In all patients with a pulse, an ETCO2 >20 is anticipated.

8. In the pulseless patient, an ETCO2 waveform with a ETCO2 value>10 may be utilized to confirm the adequacy of an airway to include BVM and advanced devices.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Cardiac: External Pacing

**Clinical Indications:**

- Patients with symptomatic bradycardia (less than 60 per minute) with signs and symptoms of inadequate cerebral or cardiac perfusion such as:
    - Chest Pain
    - Hypotension
    - Pulmonary Edema
    - Altered Mental Status, Confusion, etc.
    - Ventricular Ectopy

**Procedure:**

1. Attach standard four-lead monitor.
2. Apply defibrillation/pacing pads to chest and back if able, noting that traditional placement can also be used.
    **a.** One pad to left mid chest next to sternum
    **b.** One pad to mid left posterior chest next to spine
3. Select pacing option. Use Demand pacing function only. Fixed pacing is used in rare circumstances and only if ordered by medical control.
4. Adjust heart rate to 70 BPM for an adult and 100 BPM for a child.
5. Note pacer spikes on EKG screen.
6. Slowly increase output until capture of electrical rhythm on the monitor.
7. If unable to capture while at maximum current output, stop pacing immediately.
8. If capture is observed on monitor, check for corresponding pulse and assess vital signs.
9. Consider the use of sedation or analgesia if the patient is uncomfortable.
10. Document the dysrhythmia and the response to external pacing with ECG strips in the PCR.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Cardiopulmonary Resuscitation (CPR)

**Clinical Indications:**

- Basic life support for the patient in cardiac arrest

**Procedure:**

1. Assess the patient's level of responsiveness (shake and shout)

2. If no response, open the patient's airway with the head-tilt, chin-lift and look, listen, and feel for respiratory effort. If the patient may have sustained C-spine trauma, use the modified jaw thrust while maintaining immobilization of the C-spine. For infants, positioning the head in the sniffing position is the most effective method for opening the airway.

3. If the patient is an adult, go to step 4. If no respiratory effort in a pediatric patient, give two ventilations. If air moves successfully, go to step 4. If air movement fails, proceed to the Airway Obstruction Procedure.

4. Check for pulse (carotid for adults and older children, brachial for infants) for at least 5 and no more than 10 seconds. If no pulse, begin chest compressions based on chart below:

**INFANT:**

**Location:** Over sternum, between nipples (inter-mammary line), 2 thumb encircling hands technique for 2 rescuers, or 1 handed for 1 rescuer
**Depth:** Approx. 1 1/2 inches (1/3 the anterior-posterior chest dimension)
**Rate:** 100-120 per minute

**CHILD:**

**Location:** Over sternum, just cephalad from xyphoid process, 1 or 2 hands for very small children.
**Depth:** 2 inches (1/3 the anterior-posterior chest dimension)
**Rate:** 100-120 per minute

**ADULT:**

**Location:** Over sternum, just cephalad from xyphoid process, hands interlocked fingers
**Depth:** At least 2 inches (1/3 the anterior-posterior chest dimension)
**Rate:** 100-120 per minute

5. Go to Cardiac Arrest Protocol. In this procedure and all cardiac arrest protocols, 5 cycles of compressions means 2 minutes of uninterrupted chest compressions.
6. Provide breaths as follows:

| | Adult | Infant/Child | Neonatal |
|---|---|---|---|
| No advanced airway | 30:2 | 15:2 | 3:1 |
| Advanced airway | 1 breath every 6 seconds (about 10 breaths/min) | 1 breath every 2-3 seconds (about 20-30 breaths/min) | 1 breath every 1-2 seconds (about 40-60 breaths/min) |

7. Use ETCO2 to guide your ventilations as directed in the Cardiac Arrest Protocol.

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8. Chest compressions should be provided in an uninterrupted manner. Brief interruptions for rhythm analysis, defibrillation, and mechanical CPR device placement should be kept to less than 10 seconds.

9. Chest compressions should immediately resume while charging and following defibrillation

10. Pauses that last longer than 10 second that may be a result of repositioning/relocation of patient to optimize chest-compression quality should be documented.

11. Document the time and procedure in the Patient Care Report (PCR)

**Certification Requirements:**

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 Aurora Regional EMS Office

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# Cardioversion

**Clinical Indications:**

- Unstable patient with a tachydysrhythmia (rapid atrial fibrillation, supraventricular tachycardia, ventricular tachycardia)
- Patient is not pulseless (the pulseless patient requires unsynchronized cardioversion, i.e., defibrillation)

**Procedure:**

1. Ensure the patient is attached properly to a monitor/defibrillator capable of synchronized cardioversion.
2. Have all equipment prepared for unsynchronized cardioversion/defibrillation if the patient fails synchronized cardioversion and the condition worsens.
3. Consider the use of pain or sedating medications.
4. Set energy selection to the appropriate setting.
5. Set monitor/defibrillator to synchronized cardioversion mode.
6. Make certain all personnel are clear of patient.
7. Press and hold the shock button to cardiovert. Stay clear of the patient until you are certain the energy has been delivered. NOTE: It may take the monitor/defibrillator several cardiac cycles to "synchronize", so there may be a delay between activating the cardioversion and the actual delivery of energy.
8. Note patient response and perform immediate unsynchronized cardioversion/defibrillation if the patient's rhythm has deteriorated into pulseless ventricular tachycardia/ventricular fibrillation, following the procedure for Defibrillation-Manual.
9. If the patient's condition is unchanged, repeat steps 2 to 8 above, using escalating energy settings.
10. Repeat until maximum setting or until efforts succeed. Consider discussion with the medical control if cardioversion is unsuccessful after 2 attempts.
11. Note procedure, response, and time in the patient care report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Chest Decompression

**Clinical Indications:**

- Peri-arrest 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.

**Contraindications:**

- Bilateral decompression without positive pressure ventilations is contraindicated

**Procedure:**

1. Don personal protective equipment (gloves, eye protection, etc.).

2. Administer high flow oxygen.

3. Identify and prep the site:

   a. Locate the fourth intercostal space at the mid-axillary line on the same side as the pneumothorax.
   b. If repeat or additional placement is required, may use the second intercostal space at the mid-clavicular line.
   c. Prepare the site with alcohol, providone-iodine or chlorhexidine solution.

4. Insert the catheter (12- or 14-gauge, 3.2 inch for adults) into the skin over the rib and direct it just over the top of the rib (superior border) into the interspace.

5. Advance the catheter through the parietal pleura until a “pop” is felt and air or blood exits under pressure through the catheter, then advance catheter only to chest wall.

6. Remove the needle, leaving the plastic catheter in place.

7. Secure the catheter hub to the chest wall with dressings and tape.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Childbirth

**Clinical Indications:**

- Imminent delivery with crowning

**Procedure:**

1. Delivery should be controlled so as to allow a slow, controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Consider additional resources as there will be two potential patients.
3. Support the infant's head as needed.
4. If the umbilical cord is surrounding the neck, slip it over the head. If unable to free the cord from the neck, double clamp the cord and cut between the clamps.
5. Suction the airway with a bulb syringe.
6. Grasping the head with hands over the ears, gently pull down to allow delivery of the anterior shoulder.
7. Gently pull up on the head to allow delivery of the posterior shoulder.
8. Slowly deliver the remainder of the infant.
9. Clamp the cord 2 inches from the abdomen with 2 clamps and cut the cord between the clamps.
10. Record APGAR scores at 1 and 5 minutes.
11. Follow the Newly Born Protocol for further treatment.
12. The placenta will deliver spontaneously, usually within 5 minutes of the infant. Do not force the placenta to deliver.
13. Massaging the uterus may facilitate delivery of the placenta and decrease bleeding by facilitating uterine contractions. Uncontrolled bleeding is addressed in Childbirth Protocol.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Decontamination

**Clinical indications:**

- Any patient who may have been exposed to significant hazardous materials, including chemical, biological or radiological weapons.

**Procedure:**

1. In coordination with HazMat and other Emergency Management Personnel, establish hot, warm and cold zones of operation.

2. Ensure that personnel assigned to operate within each zone have proper personal protective equipment.

3. In coordination with other public safety personnel, assure each patient from the hot zone undergoes appropriate initial decontamination. This is specific to each incident; such decontamination may include:
    a. Removal of patients from the Hot Zone
    b. Simple removal of clothing
    c. Irrigation of eyes
    d. Passage through high volume water bath (e.g. between two fire apparatus) for patients contaminated with liquids or certain solids. Patients exposed to gases, vapors and powders often will not require this step as it may unnecessarily delay treatment and/or increase dermal absorption of the agent(s).

4. Initial triage of patients should occur after step #3. Immediate life threats should be addressed prior to decontamination.

5. Assist patients with decontamination (unless contraindicated based on #3 above). This may include removal of all clothing and gentle cleansing with soap and water. All body areas should be thoroughly cleansed, although overly harsh scrubbing which could break the skin should be avoided.

6. Place triage identification on each patient. Match triage information with each patient's personal belongings which were removed during technical decontamination. Preserve these personal effects for law enforcement.

7. Monitor all patients for environmental illness.

8. Transport patients per local transport policy.

**Certification Requirements:**
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 Aurora Regional EMS Office.

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# Defibrillation: Automated

**Clinical Indications:**

- Patients in cardiac arrest (pulseless, non-breathing).
- Age < 8 years, use Pediatric Pads if available.

**Contraindication:**

- Pediatric patients who are so small that the pads cannot be placed without touching one another.

**Procedure:**

1. **If multiple rescuers available, one rescuer should provide uninterrupted chest compressions while the AED is being prepared for use.**
2. Apply defibrillator pads per manufacturer recommendations. Use alternate placement when implanted devices (pacemakers, AICDs) occupy preferred pad positions.
3. Remove any medication patches on the chest and wipe off any residue.
4. Activate AED for analysis of rhythm.
5. **Stop CPR and clear the patient** for rhythm analysis. Keep interruption in CPR as brief as possible and continue compressions while AED charging.
6. Defibrillate if appropriate by depressing the "shock" button. **Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient prior to defibrillation.** The sequence of defibrillation charges is preprogrammed for monophasic defibrillators. Biphasic defibrillators will determine the correct joules accordingly.
7. Begin CPR (chest compressions and ventilations) immediately after the delivery of the defibrillation.
8. After 2 minutes of CPR, analyze rhythm and defibrillate if indicated. Repeat this step every 2 minutes.
9. If "no shock advised" appears, perform CPR for two minutes and then reanalyze.
10. Transport and continue treatment as indicated.
11. **Keep interruption of CPR compressions as brief as possible. Adequate CPR/ is a key to successful resuscitation.**
12. **If pulse returns, please use the Post Resuscitation Protocol.**

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Defibrillation: Manual

**Clinical Indications:**

- Cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia

**Procedure:**

1. **Ensure that Chest Compressions are adequate and interrupted only when absolutely necessary.**
2. Clinically confirm the diagnosis of cardiac arrest and identify the need for defibrillation.
3. Apply hands-free therapy pads per manufacturer's instructions.
4. Set the appropriate energy level per protocol.
5. Charge the defibrillator to the selected energy level. **Continue chest compressions while the defibrillator is charging.**
6. **Hold Compressions, assertively state, "CLEAR" and visualize that no one, including yourself, is in contact with the patient.**
7. Deliver the counter shock by depressing the **shock button** for hands free operation.
8. Immediately resume chest compressions and ventilations for 2 minutes. After 2 minutes of CPR/, analyze rhythm and check for pulse only if appropriate for rhythm.
9. Repeat the procedure every two minutes as indicated by patient response and EKG rhythm.
10. Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation.
11. **If pulse returns, please use the Post Resuscitation Protocol.**

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Gastric Tube Insertion

**Clinical Indications:**

- Gastric decompression in patients with advanced airways placed or anticipated.

**Procedure:**

1. Estimate insertion length by superimposing the tube over the body from the nose to the stomach.
2. Flexing the neck, **if not contraindicated,** may help to facilitate esophageal passage.
3. Liberally lubricate the distal end of the tube and pass through the patient's nostril along the floor of the nasal passage. Do not orient the tip upward into the turbinate. This increases the difficulty of the insertion and may cause bleeding. Alternatively, the tube (12 Fr) may be passed through the gastric lumen of the BIAD airway for patients in whom this device is being utilized.
4. In the setting of an unconscious, intubated patient or a patient with facial trauma, oral insertion of the tube may be considered or preferred and may be facilitated with laryngoscopy.
5. Continue to advance the tube gently until the appropriate distance is reached.
6. Confirm placement by injecting 20 cc of air and auscultate for the swish or bubbling of the air over the stomach. Additionally, aspirate gastric contents to confirm proper placement.
7. Secure the tube.
8. Decompress the stomach of air and food either by connecting the tube to suction or manually aspirating with the large catheter tip syringe.
9. Document the procedure, time, and result (success) on/with the patient care report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Injections: Subcutaneous and Intramuscular

**Clinical Indications:**

- When medication administration is necessary, and the medication must be given via the SQ (not auto-injector) or IM route or as an alternative route in selected medications.

**Procedure:**

1. Receive and confirm medication order or perform according to standing orders.
2. Prepare equipment and medication expelling air from the syringe.
3. Explain the procedure to the patient and reconfirm patient allergies.
4. The most common site for subcutaneous injection is the arm.
    a. Injection volume should not exceed 1 cc.
5. The possible injection sites for intramuscular injections include the arm, buttock and thigh (lateral thigh is preferred).
    a. Injection volume should not exceed 2 cc for the arm.
    b. Injection volume should not exceed 5 cc in the thigh or buttock.
6. The thigh should be used for injections in pediatric patients and injection volume should not exceed 1 cc.
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**

**IM: 90-degree angle**
**Skin flattened**

9. Inject the medication.
10. Withdraw the needle quickly, activate needlestick preventions systems, and dispose of properly without recapping.
11. Apply pressure to the site.
12. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
13. Document the medication, dose, route, and time on/with the patient care report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Medication Cross Check

**Policy:**

The medication cross check procedure should be completed whenever a medication is administered to a patient. In the event a second EMS provider is not available to complete the cross check, the single provider should still conduct a verbal cross check to self- verify.

**Purpose:**

The medication cross check procedure is a closed loop communication strategy to reduce medication errors and prevent patient harm.

**Procedure:**

1. Medication Cross Check

Provider A: “I am giving:

i. Drug
ii. Dose
iii. Route
iv. Rate
v. Reason

Any contraindications?”

Provider B: confirms no contraindications, then asks “what volume or quantity?”

Provider A: States:

i. Drug concentration
ii. Volume in mL to be administered

AND

Show container

Provider B: confirms “I agree, go ahead”

**Note:**

- Never draw up more medication than you plan to administer
- Medication drawn from a vial or ampule should be clearly labeled if not administered immediately after draw up. Never administer medication from an unlabeled syringe if you cannot confirm its contents.

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# Push Dose Epinephrine

**Clinical Indications:**

- Hypotension/ Shock: if patient has persistent signs of shock not responsive to initial fluid resuscitation - adult patients only
- Only to be given until a pressor drip can be started

**Considerations:**

A. Patients over age 50 or with cardiovascular disease may suffer angina or life-threatening dysrhythmias.

**Procedure:**

Mixing the Epinephrine

1. Take a 10 ml flush syringe of 0.9% Normal Saline and waste 1ml (9 ml saline left in syringe).
2. Take a 1:10,000 syringe of epinephrine and assemble.
3. Attach the epinephrine syringe to the 3-way stopcock.
4. Attach the Normal saline flush to the 3-way stopcock.
5. Drawback 1 ml of epinephrine into the saline flush for a mixture of 100mcg/10ml.
6. **Immediately label the flush with a brightly colored label that names the medication and dose.**

See Appendix G for further instructions.

**Certification Requirements:**
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 Aurora Regional EMS Office.

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# Restraints: Physical/Chemical

**Clinical Indications:**

- Any patient who may harm himself, herself, or others may be gently restrained to prevent injury to the patient or crew. This restraint must be in a humane manner and used only as a last resort. Other means to prevent injury to the patient or crew must be attempted first. These efforts could include reality orientation, distraction techniques, or other less restrictive therapeutic means. Physical or chemical restraint should be a last resort technique.

**Procedure:**

1. Attempt less restrictive means of managing the patient.
2. Request law enforcement assistance.
3. Ensure that there are sufficient personnel available to physically restrain the patient safely.
4. Restrain the patient in a lateral or supine position. No devices such as backboards, splints, or other devices will be on top of the patient. **The patient will never be restrained in the prone position.**
5. The patient must be under constant observation by an ALS crew at all times. This includes direct visualization of the patient as well as cardiac and pulse oximetry monitoring as able.
6. The extremities that are restrained will have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible. This MUST be documented on the PCR.
7. Documentation on/with the patient care report (PCR) should include the reason for the use of restraints, the type of restraints used, and the time restraints were placed.
8. If the above actions are unsuccessful, or if the patient is resisting the restraints, consider administering medications per protocol. (Chemical restraint may be considered earlier.)
9. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel cannot remove, all law enforcement officers must accompany the patient to the hospital in the transporting EMS vehicle. Alternatively, handcuffs can be replaced with restraints if law enforcement is unable to accompany patient.
10. Never delay patient transport waiting for an accompanying law enforcement officer, or exchanging restraints. If issues arise, transport the patient and contact your department supervisor or the Medical Director.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Splinting

**Clinical Indications:**

- Immobilization of an extremity for transport, either 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 reduction of the fracture prior to placement of the splint.
2. Remove all clothing from the extremity if possible.
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.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure with Velcro, straps, or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been 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, hip fracture, or knee fracture, the following procedure may be followed for placement of a femoral traction splint:
    a. Assess neurovascular function as in #1 above.
    b. Place ankle device over the ankle.
    c. Place the proximal end of the traction splint on the posterior or lateral (depending on device) side of the affected extremity, being careful to avoid placing too much pressure on genitalia or open wounds. Make certain the splint extends proximal to the suspected fracture. If the splint will not extend in such a manner, reassess possible involvement of the pelvis.
    d. Extend the distal end of the splint at least 6 inches beyond the foot.
    e. Attach the ankle device to the traction device.
    f. Twist or pull (depending on device) until moderate resistance is met.
    g. Ensure all straps are secure.
    h. Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
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).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Stroke Screen: Cincinnati Prehospital

**Clinical Indications:**

- Suspected Stroke Patient

**Procedure:**

1. Assess and treat suspected stroke patients as per protocol.
2. The Cincinnati Stroke Screen should be completed for all suspected stroke patients.
3. Establish the ”Time Last Normal” for the patient. This will be the presumed time of the onset.
4. Perform the screen through physical exam:
    a. Look for facial droop by asking the patient to smile
    b. Assess for decreased hand grip strength on one side
    c. Have patient, while sitting upright or standing, extend both arms parallel to floor, close eyes, and turn their palms upward. Assess for unilateral drift of an arm.
5. One of these exam components must be positive to answer “yes”.
6. Evaluate blood glucose level results
7. **If the “Time Last Normal” is less than 24 hours, blood glucose is between 60 and 400, and at least one of the physical exam elements is positive, transport to the closest stroke receiving facility, alerting the receiving hospital of a possible stroke patient as soon as possible.**
8. All sections of the Cincinnati stroke scale must be completed.
9. The completed Stroke Screening procedure/form should be attached or documented in the PCR.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Urinary Catheter Maintenance

**Objective:**

- To Maintain an existing urinary catheter

**Indication:**

- Maintaining and monitoring chronic indwelling urinary catheter

**Clinical Presentation:**

- Chronic indwelling catheter in urethral, condom, or suprapubic location

**Potential Complications:**

- Trauma to urethra and/or bladder
- Urinary infection and/or sepsis
- Bodily fluid exposure

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# Venous Access: Existing Catheters

**Clinical Indications:**

- Inability to obtain adequate peripheral venous or intraosseous access.
- Access of an existing venous catheter for medication or fluid administration
- Central venous access in a patient in cardiac arrest

**Procedure:**

1. **If patient is not in cardiac arrest, consult Medical Control.**

2. If in cardiac arrest or on Medical Control orders, clean the catheter port with alcohol wipe.

3. Using sterile technique, withdraw 5-10 cc of blood and discard syringe in sharps container.

4. Using 5 cc of normal saline, access the port with sterile technique and gently attempt to flush the saline.

5. If there is no resistance, no evidence of infiltration (e.g., no subcutaneous collection of fluid), and no pain experienced by the patient, proceed to step 6. If there is resistance, evidence of infiltration, pain experienced by the patient, or any concern that the catheter may be clotted or dislodged, do not use the catheter.

6. Begin administration of medications or IV fluids slowly and observe for any signs of infiltration. If difficulties are encountered, stop the infusion and reassess.

7. Record procedure, any complications, and fluids/medications administered in the Patient Care Report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Venous Access: Extremity

**Clinical Indications:**

- Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition).

**Procedure:**

1. Saline locks may be used as an alternative to an IV tubing and IV fluid in every protocol at the discretion of the ALS professional.
2. Paramedics can use intraosseous access where threat-of-life exists as provided for in the Venous Access-Intraosseous procedure.
3. Use the largest catheter bore necessary based upon patient condition and vein size.
4. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
5. Connect IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
6. Place a tourniquet around the patient's extremity to restrict venous flow only.
7. Select a vein and an appropriate gauge catheter for the vein and the patient's condition. Avoid starting an IV in an extremity with a dialysis fistula or on the side a mastectomy was performed on.
8. Prep the skin with an antiseptic solution.
9. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the bloody flashback is visualized in the catheter.
10. Advance the catheter into the vein. **Never** reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
11. Remove the tourniquet and connect the IV tubing or saline lock.
12. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.
13. Cover the site with a sterile dressing and secure the IV and tubing.
14. Document the procedure, including catheter gauge and IV location, time and result (success) in the patient care report (PCR)

**Certification Requirements:**

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 appropriately by the Aurora Regional EMS Office.

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# Venous Access: Intraosseous

**Clinical Indications:**

- As the initial means of circulatory access in cardiac arrest
- Patients where rapid, regular IV access is unavailable

**Contraindications:**

- Fracture proximal to proposed intraosseous site.
- History of Osteogenesis Imperfecta
- Current or prior infection at proposed intraosseous site.
- Previous intraosseous insertion or joint replacement at the selected site

**Procedure:**

1. Wear personal protective equipment (gloves, eye protection, etc.)

    a. **Humeral Head**: Place the patient's palm on the umbilicus and elbow on the ground or stretcher. Use your thumb to identify humeral shaft, slide thumb towards humeral head with firm pressure. Locate tubercule by prominent bulge. Use the opposite hand to pinch inferior and anterior humerus ensuring that you are midline on the humerus.
    b. **Proximal Tibia**: Identify anteromedial aspect of the proximal tibia (bony prominence below the knee cap). The insertion location will be 1-2cm (2 finger widths) below this.
    c. **Distal Tibia**: If patient > 12 years of age, identify the anteromedial aspect of the distal tibia (2 cm proximal to the medial malleolus).
    d. **Distal Femur**: (Pediatric Patients Only): Position patient with leg fully extended at the knee and palpate for the external condyles of the distal femur. The insertion location will be 2-3 cm superior to the patella and 1-2 cm medial to the anterior midline to avoid growth plates. =

2. Prep the site.

3. Consider manual insertion for infants. Hold the intraosseous needle at a 60-to-90-degree angle, aimed away from the nearby joint and epiphyseal plate, twist the needle handle with a rotating grinding motion applying controlled downward force until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further.

4. For the EZ-IO intraosseous device, hold the intraosseous needle at a 60-to-90-degree angle, aimed away from the nearby joint and epiphyseal plate; power the driver until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further.

5. Remove the stylet and place in an approved sharps container.

6. Attach the IV line and adjust flow rate. A pressure bag may enhance flow.

7. Stabilize and secure the needle with dressings and tape.

8. Following administration of any other IO medications, flush the IO line with 10 cc of IV fluid.

9. Document the procedure, time, and result (success) on/with the patient care report (PCR).

**Certification Requirements:**

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 Aurora Regional EMS Office. Assessment should include direct observation at least once per certification cycle.

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# Wound Care-Hemostatic Agent

**Clinical Indications:**

- Serious hemorrhage that cannot be controlled by other means.

**Procedure:**

1. Apply approved non-heat-generating hemostatic agent per manufacturer's instructions.
2. Supplement with direct pressure and standard hemorrhage control techniques.
3. Apply dressing.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Wound Care: Taser® Probe Removal

**Clinical Indications:**

- Patient with uncomplicated conducted electrical weapon (Taser®) probes embedded subcutaneously in non-sensitive areas of skin.
- Taser probes are barbed metal projectiles that may embed themselves up to 13 mm into the skin.

**Contraindications:**

- Patients with conducted electrical weapon (Taser®) probe penetration in vulnerable areas of body as mentioned below should be transported for further evaluation and probe removal.
- Probes embedded in skin above level of clavicles, female breasts, or genitalia.
- Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure.

**Procedure:**

1. Ensure wires are disconnected from weapon.
2. Stabilize skin around probe using non-dominant hand.
3. Grasp probe by metal body using dominant hand
4. Remove probe in single quick motion.
5. Wipe wound with antiseptic wipe and apply dressing.

**Certification Requirements:**

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 Aurora Regional EMS Office.

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# Wound Care: Tourniquet

**Clinical Indications:**

- Life threatening extremity hemorrhage that cannot be controlled by other means
- Serious or life-threatening extremity hemorrhage and tactical considerations prevent the use of standard hemorrhage control techniques.
- Junctional tourniquet are not routinely indicated unless part of special operations or TEMS

**Contraindications:**

- Non-extremity hemorrhage
- Proximal extremity location where tourniquet application is not practical

**Procedure:**

1. Place tourniquet on the extremity high and tight.
2. Tighten per manufacturer instructions until hemorrhage stops and/or distal pulses in affected extremity disappear.
3. In the event application of one tourniquet does not stop hemorrhage, a second tourniquet placed immediately adjacent to the first tourniquet.
4. Secure tourniquet per manufacturer instructions.
5. Note time of tourniquet application and communicate this to receiving care providers.
6. Dress wounds per standard wound care protocol.
7. If delayed or prolonged transport and tourniquet application time greater than 6 hours, contact medical control.

**Certification Requirements:**

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 Aurora Regional EMS Office

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**Appendix A**

# National Guideline for the Field Triage of Injured Patients

## *RED CRITERIA*

### *High Risk for Serious Injury*

*Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system*

| Injury Patterns | Mental Status & Vital Signs |
|---|---|
| • Penetrating injuries to head, neck, torso, and proximal extremities<br>• Skull deformity, suspected skull fracture<br>• Suspected spinal injury with new motor or sensory loss<br>• Chest wall instability, deformity, or suspected flail chest<br>• Suspected pelvic fracture<br>• Suspected fracture of two or more proximal long bones<br>• Crushed, degloved, mangled, or pulseless extremity<br>• Amputation proximal to wrist or ankle<br>• Active bleeding requiring a tourniquet or wound packing with continuous pressure | **All Patients**<br>• Unable to follow commands (motor GCS < 6)<br>• RR < 10 or > 29 breaths/min<br>• Respiratory distress or need for respiratory support<br>• Room-air pulse oximetry < 90%<br><br>**Age 0–9 years**<br>• SBP < 70mm Hg + (2 x age in years)<br><br>**Age 10–64 years**<br>• SBP < 90 mmHg or<br>• HR > SBP<br><br>**Age ≥ 65 years**<br>• SBP < 110 mmHg or<br>• HR > SBP |

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## *YELLOW CRITERIA*

## *Moderate Risk for Serious Injury*

*Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)*

| Mechanism of Injury | EMS Judgment |
|---|---|
| • High-Risk Auto Crash<br>– Partial or complete ejection<br>– Significant intrusion (including roof)<br>• >12 inches occupant site OR<br>• >18 inches any site OR<br>• Need for extrication for entrapped patient<br>– Death in passenger compartment<br>– Child (age 0-9 years) unrestrained or in unsecured child safety seat<br>– Vehicle telemetry data consistent with severe injury<br>• Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)<br>• Pedestrian/bicycle rider thrown, run over, or with significant impact<br>• Fall from height > 10 feet (all ages) | **Consider risk factors, including:**<br>• Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact<br>• Anticoagulant use<br>• Suspicion of child abuse<br>• Special, high-resource healthcare needs<br>• Pregnancy > 20 weeks<br>• Burns in conjunction with trauma<br>• Children should be triaged preferentially to pediatric capable centers<br><br>**If concerned, take to a trauma center** |

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## Appendix B

# Non-transporting First Responder Agency Report Writing Guidelines

As noted in DHS 110.34(8) above, first responder agencies are required to submit a patient care report though WARDS **within 7 days** of patient contact if an advanced skill was used in caring for the patient. Advanced skills include:

1. Blind insertion airway device (BIAD) placement including i-gel
2. Chest seal placement
3. Carbon monoxide monitoring
4. End tidal CO2 monitoring
5. Gastric decompression using gastric tube with BIAD placement
6. Oxygen therapy (all types)
7. Pulse oximetry monitoring
8. Tracheobronchial suctioning
9. ECG monitor/12 lead acquisition
10. Hemorrhage control (tourniquet, wound packing, hemostatic agents)
11. Pelvic binder placement
12. Traction splinting
13. Any medication administration with exception of auto-injector
14. Any patient assisted medication given with direction from online medical control
15. Blood glucose measurement
16. Physical restraint use
17. Automated blood pressure
18. Mechanical CPR Device

It is strongly encouraged to submit an abbreviated report even if no advanced skills were used, especially in the following situations:

1. Cardiac arrest
2. Patient refusal of care
3. Patient in police custody
4. Suspected abuse (child, elder, domestic)

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## Appendix C

# Approved Medical Abbreviations

The following is a list of approved medical abbreviations. In general, the use of abbreviations should be limited to this list.

| | |
|---|---|
| A&O x 3 | - alert and oriented to person, place and time |
| A&O x 4 | - alert and oriented to person, place, time and event |
| A-Fib | - atrial fibrillation |
| AAA | - abdominal aortic aneurysm |
| ABC | - airway, breathing, circulation |
| ABD | - abdomen (abdominal) |
| ACLS | - advanced cardiac life support |
| AKA | - above the knee amputation |
| ALS | - advanced life support |
| AMA | - against medical advice |
| AMS | - altered mental status |
| AMT | - amount |
| APPROX | - approximately |
| ASA | - Aspirin |
| ASSOC | - associated |
| BG | - blood glucose |
| BILAT | - bilateral |
| BKA | - below the knee amputation |
| BLS | - basic life support |
| BM | - bowel movement |
| BP | - blood pressure |
| BS | - breath sounds |
| BVM | - bag-valve-mask |
| C-SECTION | - caesarean section |
| C-SPINE | - cervical spine |
| C/O | - complaint of (complains of) |
| CA | - cancer |
| CABG | - coronary artery bypass graft |
| CAD | - coronary artery disease |
| CATH | - catheter |
| CC | - chief complaint |
| CEPH | - cephalic |
| CHF | - congestive heart failure |
| CNS | - central nervous system |
| COPD | - chronic obstructive pulmonary disease |
| CP | - chest pain |
| CPR | - cardiopulmonary resuscitation |
| CSF | - cerebrospinal fluid |
| CT | - cat scan |
| CVA | - cerebrovascular accident (stroke) |

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# Approved Medical Abbreviations

| | |
|---|---|
| D5W | - 5% dextrose in water |
| DKA | - diabetic ketoacidosis |
| DNR | - do not resuscitate |
| DOA | - dead on arrival |
| DT | - delirium tremens |
| Dx | - diagnosis |
| ECG | - electrocardiogram |
| EEG | - electroencephalogram |
| ET | - endotracheal |
| ETOH | - ethanol (alcohol) |
| ETT | - endotracheal tube |
| EXT | - external (extension) |
| FB | - foreign body |
| FLEX | - flexion |
| Fx | - fracture |
| g | - gram(s) |
| GI | - gastrointestinal |
| GSW | - gunshot wound |
| gtts | - drops |
| GU | - gastrourinary |
| GYN | - gynecology (gynecological) |
| H/A | - headache |
| HEENT | - head, eyes, ears, nose, throat |
| HR | - heart rate (hour) |
| HTN | - hypertension |
| Hx | - history |
| ICP | - intracranial pressure |
| ICU | - intensive care unit |
| IM | - intramuscular |
| IV | - intravenous |
| JVD | - jugular vein distension |
| kg | - kilogram |
| KVO | - keep vein open |

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# Approved Medical Abbreviations

| | |
|---|---|
| L-SPINE | - lumbar spine |
| L/S-SPINE | - lumbosacral spine |
| L&D | - labor and delivery |
| LAT | - lateral |
| lb | - pound |
| LLQ | - left lower quadrant |
| LMP | - last menstrual period |
| LOC | - level of consciousness (loss of consciousness) |
| LR | - lactated ringers |
| LUQ | - left upper quadrant |
| | |
| MAST | - military anti-shock trousers |
| mcg | - microgram(s) |
| MED | - medicine |
| mg | - milligrams(s) |
| MI | - myocardial infarction (heart attack) |
| min | - minimum/minute |
| MS | - mental status |
| MS | - mental status change |
| MSO4 | - morphine |
| MVC | - motor vehicle crash |
| | |
| N/V | - nausea/vomiting |
| N/V/D | - nausea/vomiting/diarrhea |
| NAD | - no apparent distress |
| NC | - nasal cannula |
| NEB | - nebulizer |
| NKDA | - no known drug allergies |
| NRB | - non-rebreather |
| NS | - normal saline |
| NSR | - normal sinus rhythm |
| | |
| OB/GYN | - obstetrics/gynecology |
| | |
| PALP | - palpation |
| PAC | - premature atrial contraction |
| PE | - pulmonary embolus |
| PEARL | - pupils equal and reactive to light |
| PMHx | - past medical history |
| PO | - orally |
| PRB | - partial rebreather |
| PRN | - as needed |
| PT | - patient |
| PVC | - premature ventricular contraction |

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# Approved Medical Abbreviations

| | |
|---|---|
| RLQ | - right lower quadrant |
| RUQ | - right upper quadrant |
| Rx | - medicine |
| RXN | - reaction |
| | |
| S/P | - status post |
| SOB | - shortness of breath |
| SQ | - subcutaneous |
| ST | - sinus tachycardia |
| SVT | - supraventricular tachycardia |
| Sx | - symptoms |
| SZ | - seizure |
| | |
| T-SPINE | - thoracic spine |
| T | - temperature |
| TIA | - transient ischemic attack |
| TKO | - to keep open (refers to IVs – same as KVO) |
| Tx | - treatment |
| | |
| UOA | - upon our arrival |
| URI | - upper respiratory infection |
| UTI | - urinary tract infection |
| | |
| VF | - ventricular fibrillation |
| VS | - vital signs |
| VT | - ventricular tachycardia |
| | |
| WAP | - wandering atrial pacemaker |
| WNL | - withing normal limits |
| | |
| YO (YOA) | - years old (years of age) |

| | | | |
|---|---|---|---|
| M or **cJ** | - male | **i** | - upper (increased) |
| F or ♀ | - female | a | - before |
| + | - positive | p | - after |
| - | - negative | c | - with |
| ? | - questionable | s | - without |
| | | | |
| ~ | - approximately | å | - change |
| > | - greater than | L | - left |
| < | - less than | R | - right |
| = | - equal | Ļ | - lower (decreased) |
| | | 1º | - prima |
| | | 2º | - secondary |

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# Appendix D

## Aurora Grafton Blood Bank Map

**Option 1:** Weekly exchanges or restock after bringing a patient to a different hospital

1. Park in the back of the hospital by the loading docks/ mobile MRI scanner and walk up the ramp.
2. Use the black phone by the badge reader to tell security you are there for blood bank/lab to gain access to building.
3. Once inside turn left and walk past linen carts and then turn right at the doorway.
4. Walk down the hallway and the lab window will be on your right.
5. Ring the doorbell for lab and someone will come to the window.

**Option 2:** Weekly exchanges or restock after bringing a patient to a different hospital

1. Walk in ER main entrance doors, stay left and go down hallway to main hospital.
2. Go through gold doors and you will see two gold elevators, turn right down hallway just to left of the gold elevators.
3. Go through two sets of double doors down the hallway and lab will be on your left.
4. Ring the doorbell for lab and someone will come to the window.

**Option 3:** Restock after you bring a patient to Grafton or after you bring a patient to a different hospital during late hours.

1. Go through ED as if you were heading to CT, do not forget to grab EMS door pass so you can re-enter ED.
2. At the silver elevators take a right (normally a left for CT).
3. Go down the hallway and through the double doors and lab will be on your left.
4. Ring the doorbell for lab and someone will come to the window.

Please be patient with lab. For weekly exchanges, they will know you are coming. Please come around 8 am – 1 pm if possible, to avoid shift change and before first shift leaves.
For restock after dropping off a patient, they will need at least 15 minutes. If you brought a patient to a different hospital, call for a heads up that you are coming for more blood so that they can start preparing prior to your arrival.
If you brought the patient to Grafton, keep in mind that that patient may require more blood. Please delay picking up your new unit until after cleaning the Ambulance or be patient as the patient will be the blood banks priority.
****AMCG Blood Bank Direct Phone: 262.329.1776**

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# Blood Bank/Lab Window

# Aurora Grafton Blood Bank Route Map

Option 1: Highlighted in Green
Option 2: Highlighted in Pink
Option 3: Highlighted in Purple

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# Appendix E

## Aurora Sheboygan Blood Bank Map

**Directions to Blood Bank/Lab (Map Page 2)**

1. Enter the ED from the Ambulance garage taking your ED access badge with you.
2. Exit the ED through the doors in the back corner of the ED and take a left in the hallway towards the windows. This is the same hallway used when taking patients to/from inpatient units.
3. Walk down the back hallway until you reach the Windows and take a right until you find the doors for the ACL Lab (see picture below). Ring the doorbell to be let in if you need to make contact with the blood bank staff.
4. Reverse your path to return to the ED. You will need your ED access badge to access the door highlighted in the blue circle or if no badge is available you can press the call button on the video intercom to be let back into the ED.

*If you bring a patient to AMCSC who requires immediate blood/Mass transfusion in the ED please delay picking up your replacement blood until after cleaning up the Ambulance or be patient as the priority will be to get blood to ED.

** If you use blood and transport to another location/helicopter and are going to be picking up blood outside of business hours you can call ahead so they can start preparing your blood prior to arrival. **AMCSC Blood Bank Direct Phone: 920-802-1720**

**Blood Bank/Lab Doors**


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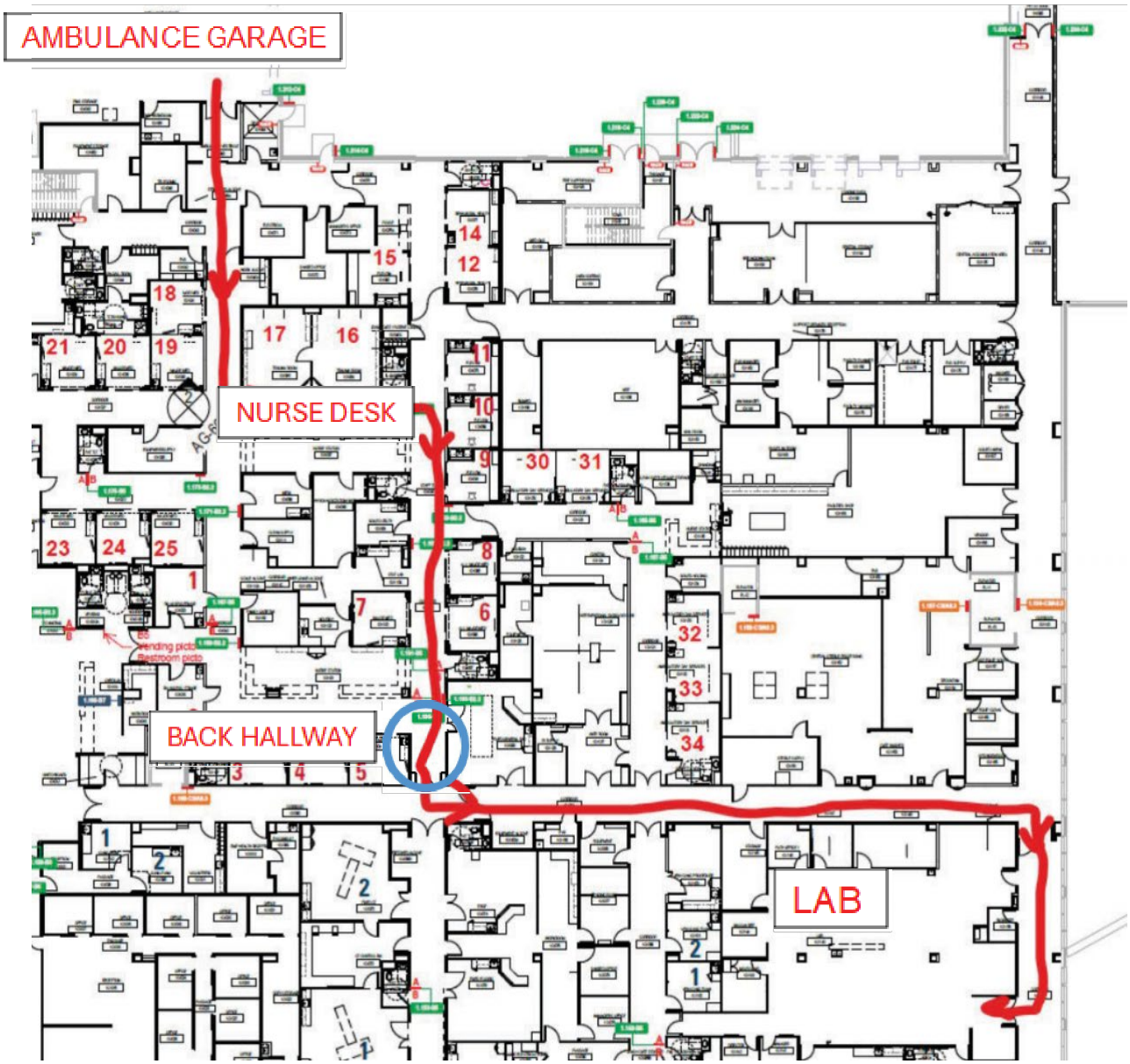


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# Appendix F

## BLOOD COOLER DEVICE ALARM ACTIVATION LOG

Storage Unit/Location:_____ Site_____

| | | Alarm Activation & Type | | | | | Alarm Resolution | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DATE | TIME | High Temp | Low Temp Temp | Battery | Other | Displayed Temp °C | TIME | Displayed Temp °C | Correction Action | Initials |
| *05/21/14* EXAMPLE | *1531* | *X* | | | | *1534* | *1540* | *5.5* | *Door ajar. Door closed and temp returned to normal* | *CC* |
| | | | | | | | | | | |
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**NOTE: If product is moved; indicate moved to location and time.**
**Drop form off at end of each month to the Blood Bank or email to Crystal Theiler at Aurora Transfusion Services via email: Crystal.Theiler@aah.org**

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# Mixing Push Dose Epi


Gather what you need: 1:10,000 Epinephrine, Flush, and 3-Way Stopcock


Take your flush and waste 1 ml (9ml saline left in syringe)

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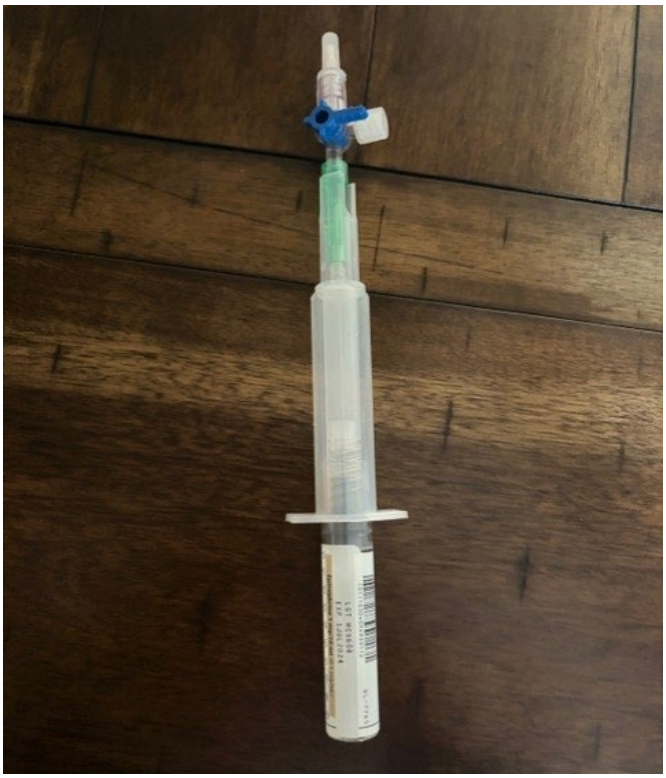
Assemble your Epinephrine per box instructions


Attach Epinephrine to stopcock and flush through stopcock

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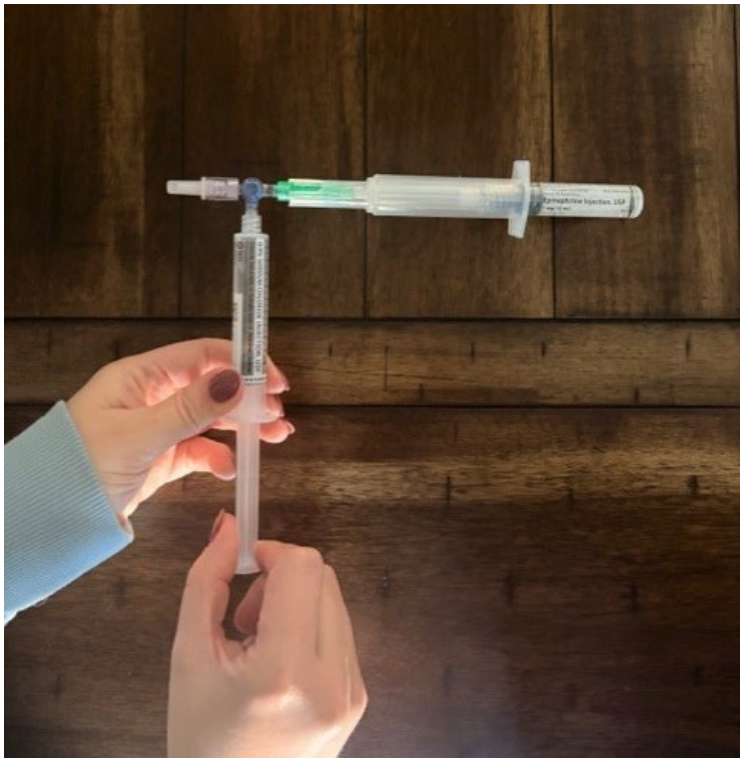
Attach flush to 3-way stopcock



Pull 1 ml of epinephrine into the flush syringe by pulling on the plunger of the flush

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Your flush syringe should have 100mcg Epinephrine/ 10ml


Remove flush from 3-way stop cock and **IMMEDIATELY LABEL** with a brightly colored labeled (see above)

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