OSF SAINT FRANCIS MEDICAL CENTER

PEORIA AREA EMS

Memorandum

To: Peoria Area EMS System Agencies & Providers

From: Peoria Area EMS System Office

Date: February 24, 2016

Re: Glucagon Administration for BLS Agencies

As discussed at the EMS Quarterly Update, effective immediately February 24, 2016; PAEMS BLS agencies will no longer be allowed to administer Glucagon Intramuscular (IM). The required route per IDPH regulation is Intranasal (IN). PAEMS System Protocols will reflect that change.

This is an Illinois Department of Public Health (IDPH) requirement.

The required dose of (IN) administration of Glucagon is 2mg, (1mg) per nare. Glucagon will be an optional medication for BLS Agencies Only. I have added the protocol updates to share with your providers.

- Altered Level Of Consciousness (ALOC) Protocol
- Suspected Stroke Protocol
- Acute Nausea and Vomiting Protocol
- Head Trauma Protocol
- Seizure Protocol

This change affects BLS Agencies only. If you have any questions or need any further clarification, please do not hesitate to contact me or the PAEMS Office.

Sincerely,

Dale Tippett, EMT-P
Peoria Area EMS Coordinator

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Altered Level of Consciousness (ALOC) Protocol

A patient with an altered level of consciousness (ALOC) may present with a variety of symptoms from minor thought disturbances & confusion to complete unresponsiveness. The causes of ALOC include cardiac emergencies, hypoxia, hypoglycemia/diabetic emergencies, epilepsy/seizures, alcohol/drug related emergencies, trauma, sepsis, stroke or any other condition which disrupts brain perfusion.

ALOC can be the presenting symptom for many disease processes. Syncope is another type of ALOC and is characterized as an acute, temporary suspension of consciousness. Near-syncope (feeling faint) is a sensation of impending loss of consciousness that may rapidly progress to unconsciousness.

A patient who has experienced syncope or ALOC of any type should receive a thorough evaluation for secondary injuries (*e.g.* fall injuries associated with the ALOC) and for possible underlying causes. Although a patient's ALOC may be resolved in the field, the patient should still be strongly encouraged to accept EMS care and ambulance transport to the hospital for further evaluation.

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.

3. **Oral Glucose**: 15g PO **if** the patient has a history of diabetes and has in possession a tube of Oral Glucose, is alert to verbal stimuli, is able to sit in an upright position, has good airway control and an intact gag reflex.

    - This applies to non-transporting BLS agencies **without** field medications also. All other BLS agencies should refer to the **BLS Care** section.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

Altered Level of Consciousness (ALOC) Protocol

BLS Care (continued)

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.

3. Perform **blood glucose level test**.

4. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

5. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Oral Glucose. If blood sugar remains < 60mg/dL, administer a 2nd dose of Oral Glucose (15g).

6. **Glucagon**: (If available) 2mg IN (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

7. **Narcan**: 2mg IN (1mg per nostril) using a mucosal atomizer device (MAD) if possible narcotic intoxication with respiratory depression (≤ 8 breaths per minute). May repeat 2mg IN if no response in 10 minutes.

8. Initiate ALS intercept if needed and transport as soon as possible.

9. Contact the receiving hospital as soon as possible.

ILS Care

ILS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.

3. Perform **blood glucose level test**.

4. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

Altered Level of Consciousness (ALOC) Protocol

ILS Care (continued)

Dextrose 50%: 25g IV if blood sugar is < 60mg/dL **or** 60-80mg/dL & patient is symptomatic.

Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

5. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BS is still < 60mg/dL.

6. **Narcan**: 2mg IV/IM if no response to Dextrose or Glucagon within 2 minutes. May repeat 2mg IV or IM if no response in ***5 minutes***.

   Narcan: 2mg IN if unable to establish IV access.

7. Obtain **12-Lead EKG** and transmit to receiving hospital if non-opiate overdose (or opiate overdose unresponsive to Narcan) or if cause of ALOC is uncertain.

8. Initiate ALS intercept if needed and transport as soon as possible.

9. Contact the receiving hospital as soon as possible or Medical Control if necessary.

ALS Care

ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.

3. Perform **blood glucose level test**.

4. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

   Dextrose 50%: 25g IV if blood sugar is < 60mg/dL **or** 60-80mg/dL & patient is symptomatic.

Altered Level of Consciousness (ALOC) Protocol

ALS Care (continued)

Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

5. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BS is < 60mg/dL.

6. **Narcan**: 2mg IV/IM if no response to Dextrose or Glucagon within 2 minutes. May repeat 2mg IV or IM if no response in ***5 minutes***.

   Narcan: 2mg IN if unable to establish IV access.

7. Obtain **12-Lead EKG** and transmit to receiving hospital if non-opiate overdose (or opiate overdose unresponsive to Narcan) or if cause of ALOC is uncertain.

8. Transport and conatact receiving hospital as soon as possible.

Critical Thinking Elements

- Look for Medic Alert tags.
- Consider possible C-spine injury and follow C-spine precautions as necessary.
- Be prepared for possible vomiting after administration of Glucagon.
- Vitals and GCS should be recorded every 5 minutes.
- After administration of Dextrose, allow 2 minutes before administration of Narcan.
- No intercept is required if the patient becomes alert/oriented after the administration of Oral Glucose or Glucagon unless the patient has a condition that warrants intercept.
- Signs/symptoms of hypoglycemia include: Weakness/shakiness, tachycardia, cold/clammy skin, headache, irritability, ALOC/bizarre behavior or unresponsive.
- No 12-Lead EKG is necessary for known etiologies such as hypoglycemia, opiate overdose responsive to Narcan or febrile illness.
- ILS / ALS: If a patient refuses transport after administration of D_{50} (& is CA+Ox3), the call may be treated as a low risk refusal as long as the following criteria are met (and documented in the PCR):
  - The cause of the patient's hypoglycemia can be easily explained (*e.g.* patient took insulin but did not eat).
  - The patient has no other complaints and no other issues are identified after a thorough evaluation (including a full assessment, vitals and repeat blood sugar).
  - EMS advises patient/family that the patient needs to consume foods containing complex carbohydrates & protein within the next 15 minutes (assist patient if needed prior to departing the scene).

Suspected Stroke Protocol

A stroke or "brain attack" is a sudden interruption in blood flow to the brain resulting in neurological deficit. It affects 750,000 Americans each year, is the 3rd leading cause of death and is the leading cause of adult disability. With new treatment options available, EMS personnel should alert Medical Control as quickly as possible whenever a potential stroke patient is identified.

The most common causes of a stroke are:

- Cerebral thrombosis (a blood clot obstructing the artery).
- Cerebral embolus (a mass or air bubble obstructing the artery).
- Cerebral hemorrhage (ruptured artery / ruptured aneurysm).

Signs & symptoms of a stroke include:

- Hemiplegia (paralysis on one side of the body)
- Hemiparesis (weakness on one side of the body)
- Decreased sensation or numbness without trauma
- Facial droop
- Unequal grips
- Dizziness, vertigo or syncope
- Aphasia or slurred speech
- ALOC or seizures
- Sudden, severe headache with no known cause
- Visual disturbances (e.g. blurred vision, double vision)
- Generalized weakness
- Frequent or unexplained falls

Risk factors that increase the likelihood of stroke are:

- Hypertension
- Atherosclerosis / coronary artery disease
- Atrial fibrillation
- Hyperlipidemia
- Diabetes
- Vasculitis
- Lupus

To facilitate accuracy in diagnosing stroke and to expedite transport, an easy-to-use neurological examination tool is recommended. Although there are several different types available, the most "user-friendly" is the *Cincinnati Prehospital Stroke Scale*.

Suspected Stroke Protocol

Cincinnati Prehospital Stroke Scale / FAST

Cincinnati Prehospital Stroke Scale

Facial Droop (*ask the patient to show their teeth or smile*):

- **Normal – Both sides of the face move equally.**
- **Abnormal – One side of the face does not move as well as the other.**

Arm Drift (*ask the patient to close their eyes and hold both arms out straight for 10 seconds*):

- **Normal – Both arms move the same or do not move at all.**
- **Abnormal – One arm does not move or one arm drifts downward compared to the other.**

Speech (*ask the patient to say, "The sky is blue in Cincinnati"*):

- **Normal – The patient says the phrase correctly with no slurring of words.**
- **Abnormal – The patient slurs words, uses the wrong words or is unable to speak.**

FAST Test

Facial Droop
Arm Drift
Speech Abnormalities
Time of Onset

Suspected Stroke Protocol

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.

3. Check and record vital signs every ***5 minutes*** until the transporting unit arrives.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 6 L/min via nasal cannula if the patient has a patent airway and SpO_2 is >95%. If SpO_2 is <95%, administer oxygen at 15 L/min via non-rebreather mask. Be prepared to support the patient's respirations with BVM if necessary and have suction readily available.

3. Perform **blood glucose level test** to rule out low blood sugar as a reason for ALOC.

4. **Glucagon**: (If available) 2mg IN (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

4. Initiate ALS intercept if needed and **transport without delay**.

5. Check and record vital signs and GCS every ***5 minutes***.

6. Contact receiving hospital as soon as possible to notify of possible stroke if ***FAST*** exam is positive (based on 1 or more elements of the exam) and communicate the **time of onset**.

Suspected Stroke Protocol

ILS Care

ILS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 6 L/min via nasal cannula if the patient has a patent airway and SpO_2 is >95%. If SpO_2 is <95%, administer oxygen at 15 L/min via non-rebreather mask. Be prepared to support the patient's respirations with BVM if necessary and have suction readily available.

3. Obtain **12-Lead EKG** and transmit to receiving hospital.

4. Perform **blood glucose level test** to rule out low blood sugar as a reason for ALOC.

5. **Glucagon**: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

6. **Midazolam (Versed)**: 2mg IV over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every ***5 minutes*** as needed to a total of 10mg.

   Midazolam (Versed): 5mg IM *if the patient is seizing and attempts at IV access have been unsuccessful*. May repeat dose one time in ***15 minutes*** if the patient is still seizing.

   Midazolam (Versed): Intranasal if unable to obtain IV access. (See intranasal dosing sheet).

7. Initiate ALS intercept if needed and **transport without delay**.

8. Check and record vital signs and GCS every 5 minutes.

9. Contact receiving hospital as soon as possible to notify of possible stroke if ***FAST*** exam is positive (based on 1 or more elements of the exam) and communicate the **time of onset**.

Suspected Stroke Protocol

ALS Care

ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 6 L/min via nasal cannula if the patient has a patent airway and SpO_2 is >95%. If SpO_2 is <95%, administer oxygen at 15 L/min via non-rebreather mask. Be prepared to support the patient's respirations with BVM (and intubate) if necessary and have suction readily available.

3. Obtain **12-Lead EKG** and transmit to receiving hospital.

4. Perform **blood glucose level test**.

5. **Glucagon**: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

6. **Midazolam (Versed)**: 2mg IV over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every ***5 minutes*** as needed to a total of 10mg.

   Midazolam (Versed): 5mg IM *if the patient is seizing and attempts at IV access have been unsuccessful*. May repeat dose one time in ***15 minutes*** if the patient is still seizing to a total of 10mg.

   Midazolam (Versed): Intranasal if unable to obtain IV access. (See Versed Intranasal Dosing Sheet).

7. Transport without delay.

8. Check and record vital signs and GCS every ***5 minutes***.

9. Contact receiving hospital as soon as possible to notify of possible stroke if ***FAST*** exam is positive (based on 1 or more elements of the exam) and communicate the **time of onset**.

Suspected Stroke Protocol

Critical Thinking Elements

- Stroke onset time (defined as the last time the person was known to be normal) is key in determining the eligibility of IV TPA. EMS personnel should ask family members or bystanders the stroke onset time if the patient is unable to provide that information.
- IV TPA must be given within **180 minutes** of the onset of ischemic stroke so do not delay transport. TIME IS BRAIN!!
- Interventional angiography can be performed up to **6 hours** after onset of symptoms.
- Maintain the head/neck in neutral alignment. Elevate the head of the cot 30 degrees if the systolic BP is > 100mmHg (*this will facilitate venous drainage and help reduce ICP without reducing cerebral perfusion pressure*).
- Bradycardia may be present in a suspected stroke patient due to increased ICP. **Do NOT give Atropine if the patient's BP is normal or elevated**. Contact Medical Control for consultation.
- Spinal immobilization should be provided if the patient sustained a fall or other trauma.
- Monitor and maintain the patient's airway. Have suction readily available.
- Communicate acute stroke/suspected stroke early in radio transmission to the receiving hospital or Medical Control (Stroke code = 333).
- Document in the PCR whether the FAST exam is negative or positive. If positive, document "FAST exam positive" along with what components make it such (*e.g.* left-sided facial droop, slurred speech, positive arm drift, etc).
- Do **NOT** administer Nitroglycerin (NTG) to a suspected stroke patient with elevated blood pressure in attempt to lower blood pressure. NTG may lower cerebral perfusion pressure (CPP) too much and actually increase ischemia to the brain tissue.

Acute Nausea & Vomiting Protocol

Acute nausea and vomiting may occur from a variety of illness including, but not limited to:

- Adverse medication effects
- Bowel obstruction
- Increased intracranial pressure
- Intraabdominal emergencies
- Myocardial infarction
- Other cardiac events such as tachydysrhythmias

An attempt at determining potential causes of isolated nausea or vomiting must be made in order to identify potential life threatening conditions.

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. Place the patient in an upright or lateral recumbent position as tolerated.

3. Monitor airway status in vomiting patients as aspiration may occur. Reposition the patient as necessary to maintain a patent airway.

4. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. ***Note:*** Oxygen by mask may trap secretions and compromise the airway if the patient is actively vomiting.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock & preparing the patient for or providing transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. Place the patient in an upright or lateral recumbent position as tolerated.

3. Monitor airway status in vomiting patients as aspiration may occur. Reposition the patient as necessary to maintain a patent airway.

Acute Nausea & Vomiting Protocol

BLS Care (continued)

4. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. ***Note:*** Oxygen by mask may trap secretions and compromise the airway if the patient is actively vomiting

5. Perform **blood glucose level test**.

6. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

7. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Oral Glucose. If blood sugar remains <60mg/dL, administer a 2nd dose of Oral Glucose (15g).

8. **Glucagon**: (If available) 2mg IN (1mg per nostril) if blood sugar is < 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

9. Initiate ALS intercept if needed and transport as soon as possible.

10. Contact the receiving hospital as soon as possible.

ILS Care

ILS Care should be focused on continuing or initiating an advanced level of care, identifying potential serious conditions and stabilizing airway and circulation where appropriate.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. Place the patient in an upright or lateral recumbent position as tolerated.

3. Monitor airway status in vomiting patients as aspiration may occur. Reposition the patient as necessary to maintain a patent airway.

4. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. ***Note:*** Oxygen by mask may trap secretions and compromise the airway if the patient is actively vomiting.

5. **Ondansetron (Zofran):** 4mg PO orally disintegrating tablet

Acute Nausea & Vomiting Protocol

ILS Care (continued)

5. **IV Fluid Therapy**: 20mL/kg fluid bolus if the patient is hypotensive to achieve a systolic BP greater than 100mmHg.

6. Perform **blood glucose level test**.

7. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

   Dextrose 50%: 25g IV if blood sugar is < 60mg/dL.

   Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

8. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BS is < 60mg/dL.

9. Initiate ALS intercept if needed and transport as soon as possible.

10. Contact the receiving hospital as soon as possible.

ALS Care

ALS Care should be directed at continuing or establishing a more advanced level of care, identifying potential serious conditions, stabilizing airway and circulation where appropriate and providing pharmacological relief from symptoms of nausea and vomiting.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. Place the patient in an upright or lateral recumbent position as tolerated.

3. Monitor airway status in vomiting patients as aspiration may occur. Reposition the patient as necessary to maintain a patent airway.

4. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. ***Note:*** Oxygen by mask may trap secretions and compromise the airway if the patient is actively vomiting.

Acute Nausea & Vomiting Protocol

ALS Care (continued)

5. **Ondansetron (Zofran):** 4mg IV over 2 minutes

   Ondansetron (Zofran): 4mg IM

   Ondansetron (Zofran): 4mg PO orally disintegrating tablet

6. **IV Fluid Therapy**: 20mL/kg fluid bolus if the patient is hypotensive to achieve a systolic BP greater than 100mmHg.

7. Perform **blood glucose level test**.

8. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

   Dextrose 50%: 25g IV if blood sugar is < 60mg/dL.

   Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

9. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BS is < 60mg/dL.

10. Initiate transport as soon as possible.

11. Contact the receiving hospital as soon as possible.

Critical Thinking Elements

- Avoid use of Zofran in patients with congenital long QT syndrome as these patients are at particular risk for Torsades de Pointes

Head Trauma Protocol

Injuries to the head may cause underlying brain tissue damage. Increased intracranial pressure from bleeding or swelling tissue is a common threat after head trauma.

Common signs and symptoms of increased intracranial pressure include:

- Confusion
- ALOC
- Dilated or unequal pupils
- Markedly increased systolic blood pressure
- Decreased pulse (bradycardia)
- Abnormal respiratory patterns

Priorities for the treatment of head injury patients include airway management, maintenance of adequate oxygenation & blood pressure as well as appropriate C-spine control & immobilization.

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. Be prepared for vomiting and have suction readily available.

3. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.

4. Control bleeding using direct pressure, pressure dressings and pressure points.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol* and *Universal Trauma Care Protocol*.

2. Be prepared for vomiting and have suction readily available.

Head Trauma Protocol

BLS Care (continued)

3. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.

4. Control bleeding using direct pressure, pressure dressings and pressure points.

5. Repeat vital signs, GCS & RTS every ***5 minutes***.

6. If patient has an altered mental status, perform **blood glucose level test**.

7. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

8. **Glucagon**: (If available) 2mg IN (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

9. Initiate ALS intercept and transport as soon as possible.

10. **Contact Medical Control** as soon as possible.

ILS Care

ILS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol* and *Universal Trauma Care Protocol.*

2. Be prepared for vomiting and have suction readily available.

3. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.

4. Control bleeding using direct pressure, pressure dressings and pressure points.

5. Repeat vital signs, GCS & RTS every ***5 minutes***.

6. **IV Fluid Therapy**: 20mL/kg fluid bolus if needed to obtain a systolic BP of 100mmHg.

Head Trauma Protocol

ILS Care (continued)

*If signs of increased ICP **are not** present and the patient has an altered mental status:*

7. Perform **blood glucose level test**.

8. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

   Dextrose 50%: 25g IV if blood sugar is < 60mg/dL.

   Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

8. **Narcan**: 2mg IV/IM if no response to Dextrose or Glucagon within 2 minutes and narcotic overdose is suspected. May repeat 2mg IV or IM if no response in ***5 minutes*** (**with Medical Control order**).

   Narcan: 2mg IN if unable to obtain IV access.

9. Initiate ALS intercept if needed and transport as soon as possible.

10. **Contact Medical Control** as soon as possible.

ALS Care

ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol* and *Universal Trauma Care Protocol.*

2. Be prepared for vomiting and have suction readily available.

3. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.

Head Trauma Protocol

ALS Care (continued)

4. Control bleeding using direct pressure, pressure dressings and pressure points.

5. Repeat vital signs, GCS & RTS every ***5 minutes***.

6. **IV Fluid Therapy**: 20mL/kg fluid bolus if needed to obtain a systolic BP of 100mmHg.

*If signs of increased ICP **are not** present and the patient has an altered mental status:*

7. Perform **blood glucose level test**.

8. **Oral Glucose**: 15g PO if the patient's blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.

   Dextrose 50%: 25g IV if blood sugar is < 60mg/dL.

   Glucagon: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

9. **Narcan**: 2mg IV/IM if no response to Dextrose or Glucagon within 2 minutes and narcotic overdose is suspected. May repeat 2mg IV or IM if no response in ***5 minutes***

   Narcan: 2mg IN if unable to obtain IV access.

10. **Contact Medical Control** as soon as possible.

Head Trauma Protocol

Critical Thinking Elements

- Head trauma patients should receive oxygen to keep SpO_2 > 95%, preferably via NRM. Patients with poor respiratory effort may require ventilation with a BVM at 8-10 breaths/min.

- *Cushing's response* refers to the ominous combination of markedly increased arterial blood pressure and resultant bradycardia indicating cerebral herniation.

- Avoid prophylactic hyperventilation of a head trauma patient as this can cause cerebral vasoconstriction. However, if s/s of increased ICP are present, then controlled hyperventilation may be needed (with Medical Control order) until s/s of increased ICP have subsided:
    - 20 breaths/min for adults
    - 25 breaths/min for children
    - 30 breaths/min for infants

- Deeply comatose patients may require advanced airway placement (GCS < 8). Refer to the King LTS-D *Airway Procedure*.

- Treat for hemorrhagic shock if the patient's systolic BP is < 100mmHg. Hypotension decreases cerebral perfusion and worsens brain injury and must be corrected.

Seizure Protocol

A seizure is a temporary, abnormal electrical activity of the brain that results in loss of consciousness, loss of organized muscle tone and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (*post-ictal state*).

Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (*e.g.* febrile seizure), eclampsia, alcohol withdraw and overdose.

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary and have suction readily available.

3. **Glucagon**: (If available) 2mg IN (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

4. Initiate ALS intercept and **transport without delay.**

Seizure Protocol

ILS Care

ILS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary and have suction readily available.

3. Perform **blood glucose level test**.

4. **Glucagon**: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

5. **Midazolam (Versed)**: 2mg IV over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every ***5 minutes*** as needed to a total of 10mg.

   Midazolam (Versed): 5mg IM *if the patient is seizing and attempts at IV access have been unsuccessful*. May repeat dose one time in ***15 minutes*** if the patient is still seizing.

   Midazolam (Versed): Intranasal if unable to obtain IV access. (See intranasal dosing sheet).

6. Initiate ALS intercept if needed and transport as soon as possible.

7. **Contact Medical Control** as soon as possible.

Seizure Protocol

ALS Care

ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.

2. **Oxygen**: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM (and intubate) if necessary and have suction readily available.

3. Perform **blood glucose level test**.

4. **Glucagon**: 1mg IM or (if available) 2mg IN if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.

5. **Midazolam (Versed)**: 2mg IV over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every ***5 minutes*** as needed to a total of 10mg.

   Midazolam (Versed): 5mg IM *if the patient is seizing and attempts at IV access have been unsuccessful*. May repeat dose one time in ***15 minutes*** if the patient is still seizing to a total of 10mg.

   Midazolam (Versed): Intranasal if unable to obtain IV access. (See Versed Intranasal Dosing Sheet).

6. Transport as soon as possible

7. Contact the receiving hospital as soon as possible