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Updated 2/2011
Airway
Airway Management

Pt needs airway management

BVM and Approved Airway Adjuncts

Adequate Tidal Volume and Airway Control, Pulse Oximetry >90%

Continue with current adjunct and reassess for Adequate Tidal Volume, Pulse Oximetry and necessity for Advanced Airway Control

Inadequate Tidal Volume, necessity for Advanced Airway Control, Pulse Oximetry <90%

Prepare for Intubation

No Gag Reflex, Intubate

Severe Facial Trauma
Crushed Trachea
Complete Airway Obstruction
Severe Airway Compromise
Consider Needle Cric

Active Gag Reflex
Prepare for (PAI) Pharmacological Assisted Intubation
Advanced Airway Protocol

Need for Definitive Airway

LMA

Endotracheal Intubation

Nasotracheal Intubation

Needle Cricothyrotomy

Gather equipment

Lubricate LMA, extend head and neck, grasp with tube facing towards patient’s feet

Press the device upwards on patients hard palate, advance avoiding the tongue

Press the mask into posterior pharynx making sure device is completely inserted

Inflate cuff Ventilate patient while auscultating lung sounds Secure tube in place

Hyperextend head and neck and hyperventilate. (Maintain head in neutral position if cervical trauma is suspected.)

Open airway, insert laryngoscope blade and visualize vocal cords. Sellick maneuver may be used if necessary. (May cause cervical injury if applied forcefully.)

Pass ET tube through visualized vocal cords.

Inflate ET tube and ventilate with BVM.

Auscultate lung fields bilaterally as well as epigastric region. Adjust ETT if needed and secure in place. Attach CO2 monitor and SPO2 monitors.

Repeat ascultation regularly, verify ETCO2 and any time patient is moved to ensure ET tube remains in place.

Inflate ET tube and ventilate with BVM.

Auscultate lung fields bilaterally as well as epigastric region. Adjust ETT if needed and secure in place. Attach CO2 and SPO2 monitors.

Repeat ascultation regularly, verify ETCO2 and any time patient is moved to ensure ET tube remains in place.

Ventilate with 100% O2 with BVM

Identify the Trachea, cricoïd cartilage and the cricoid membrane below it.

Insert a 12-14 gauge angiocath (or larger) into trachea. Angle angiocath down towards the feet.

Qualifications
Acute upper airway obstruction
Respiratory Arrest with neck injury who cannot be ventilated by EOA, Endotracheal or Nasotracheal intubation
Airway Compromise
Severe Facial Trauma

Qualifications
Respiratory Distress, Respiratory Arrest, Airway Compromise, Severe Trauma with above complications.

NOTE: Nasotracheal intubation should be avoided for facial trauma.

Revised 2/2011
Advanced Airway Protocol

Ensure patient qualifies for maneuver.

Test cuff inflation system for air leak

Apply water-soluble lubricant to the distal tip

Hold the KING at the connector with dominant hand

With non-dominant hand, hold mouth open and apply chin lift

Using a lateral approach, introduce tip into mouth

Advance the tip behind base of tongue while rotating tube back to midline so blue orientation line faces the chin of patient

Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums

Inflate the KING with the appropriate volume

Qualifications
BVM and intubation unsuccessful
Intended for Patients over 4' tall for controlled or spontaneous ventilation.

Size 3 yellow (4-5 feet) cuff volume 45-60 ml
Size 4 red (5-6 feet) cuff volume 60-80 ml
Size 5 purple (greater than 6 feet) cuff volume 70-90 ml

While bagging the PT gently withdraw the tube until ventilation becomes easy and free flowing (large tidal volume with minimal airway pressure)

Adjust cuff inflation if necessary to obtain a seal of the airway at the peak ventilatory pressure employed

Revised 2/2011
Pharmacological Assisted Intubation

**PAI:**
Will obscure the neurologic examination and physical manifestations of status epilepticus. Complete Neuro Exam before using PAI.

- **Contact Medical Control**
- **Complete checklist prior to initiating anesthesia**

Is patient suspected of having: CVA, Head Injury , or ICH?

- **Yes**
  - Lidocaine: 1.5 mg/kg given 1 minute prior to intubation.
  - Etomidate 0.3mg/kg

- **No**
  - Preoxygenate with 100% O2 and assist ventilations

- **Apply Cricoid Pressure**
- **Stop Manual Ventilations**

When Resp. are <8 and gag Reflex is absent intubate the patient immediately. (Paramedic discretion must be Utilized.)

- **Confirm tube placement:**
  - Visualization
  - Auscultation
  - End Tidal CO2
  - Pt Condition-skin color
  - Ventilate the patient with 100% O2
  - Inflate ET cuff and release cricoid pressure

- **Secure ETT**
- **Contact Medical Control**
  To provide additional sedation

---

**Checklist**
1) Complete the baseline Neurologic exam.
2) Ensure that the materials for advanced airways are immediately available.
3) Make sure suction is working properly and available.
4) Preoxygenate the patient.

**Baseline Neuro assessment**
- Glasgow Coma Score
- Alert
- Verbal
- Pain
- Unresponsiveness

Reviewed 2/2011

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Cardiac
Asystole (Cardiac Arrest)

**During CPR**
- Push hard and fast (100/min)
- Ensure full chest recoil
- Minimize interruptions in chest compressions
- One cycle of CPR: 30 compressions then 2 breaths; 5 cycles = 2 min
- Avoid hyperventilation
- Secure airway and confirm placement
- After an advanced airway is placed, rescuers no longer deliver “cycles” of CPR. Give continuous chest compressions without pauses for deaths.
- Give 8 to 10 breaths/minute
- Check rhythm every 2 minutes
- Rotate compressors every 2 minutes with rhythm checks
- Search and treat possible factors (refer to ACLS guide)

**Routine Cardiac Care**
(Follow Current AHA Guidelines)

**Confirm Asystole in 2 leads**

**Standing Order**
Advanced airway management
Initiate IV Normal Saline or LR if not already established

**Standing Order**
**Epinephrine**
IV: 1 mg IV push of 1:10,000 every 3-5 minutes
ET: 2.0-2.5 mg ETT 1:1000 every 3-5 minutes (dilute with 8-10 ml of NS)

Or

**Vasopressin**
40 units IV/IO may be given 1 time to substitute the first or second dose of Epinephrine

**MEDICAL CONTROL OPTIONS**

Special considerations:
- Hypothermia: Manage per protocol
- Drug overdoses: Manage per protocol
- **Sodium Bicarbonate**: 1 mEq/kg IV if:
  - Known pre-existing hyperkalemia
  - Known pre-existing bicarbonate-response acidosis or
  - Overdose of tricyclic antidepressant

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Standing Order
Vagal maneuvers: Valsalva and/or cough

Patient unstable?

Yes

No

Standing Order
Consider for sedation:

Etomidate 0.3mg/kg

or

Valium:
Pt weight <70 kg: 2.5 mg slow IV push
Pt weight >70 kg: 5.0 mg slow IV push

or

Versed:
2.5-5 mg slow IV push

or

Morphine Sulfate:
5 mg - 10 mg slow IV push

Synchronized Cardioversion:
100J, 200J, 300J, 360J (if A-Flutter, start @ 50J)
Recheck rhythm after each cardioversion

MEDICAL CONTROL OPTIONS

Cardizem: 20 mg, Slow IV push
(Do not give if B/P < 100 syst or S/S of shock).

Verapamil:
Initial bolus of 2.5-5 mg slow IV push
If inadequate response after 15-30 minutes, second bolus 5-10 mg slow IV push

Contraindications include:
Wolff-Parkinson-White Syndrome, 2nd or 3rd degree AV block and sick sinus syndrome

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011

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If non-transporting vehicle:
Continue CPR and await transport unit;
Upon arrival begin algorithm again

If transporting vehicle:
Continue CPR and transport

Apply AED pads and cables

Verify patient is unresponsive, apneic and pulseless
Initiate CPR, request ALS

AED available or will be immediately available

Stop CPR
Analyze rhythm status
Determine if shock is indicated

Yes
AED application
Turn on AED
Observe self test
Bare and wipe off chest to improve conduction
Connect cables to AED
Apply electrodes and confirm edges are sealed
Firmly connect cables to electrodes
Select energy level

No
Apply AED pads and cables

Defibrillation indicated?

Yes
Call “CLEAR”
Ensure no contact with the patient
When commanded - “Press to shock”
Press “Shock” button
Initial Defibrillation:
1 shock 360J (or equivalent biphasic energy)
or manufacturer setting
Subsequent defibrillation will be at 360J
Allow AED to analyze:
Automatically after 2 minute cycle of CPR

No
Continue CPR for 2 minute or 5 cycles
Reanalyze cardiac status (ECG/pulse)
If no shock is indicated, check pulse

Pulse present?

No
Go to appropriate rhythm protocol

Yes

Continue to AED page two

Reviewed 2/2011
Automatic / Semi-automatic External Defibrillator Continued

Pulse present?

No

Continue CPR for 2 minute or 5 cycles
Repeat algorithm from “Stop CPR” (Page 1)

Yes

Go to appropriate rhythm protocol

During transport: Check pulses after every 2 minutes or 5 cycles of CPR or as directed by Medical Control.

Avoid:
AED analysis and defibrillation while vehicle is in motion.
Vibration may interfere with appropriate reading, and may cause accidental electrical discharge.

NOTES:
1) If a palpable pulse is present, proceed with appropriate, available airway management techniques and continually monitor patient’s pulse not ECG
2) If at any time the patient becomes pulseless, immediately reanalyze patient to determine if defibrillation is needed
3) If the AED states, during transport, that you should check the patient, stop the vehicle and reanalyze per protocol
4) For patients with known Internal Cardiac Defibrillators (CD), attach the AED and follow standard operating procedures

If no change after 3 times:
Initiate transport, with or without ALS and notify receiving hospital

Reviewed 2/2011
Bradyarrhythmia

**Standing Order**
Prepare for Transcutaneous pacing for patients who are in extremis.
(Type II second-degree block or third-degree AV Block)
(See Med. Cont. Options for sedation)
Place patient in supine position and elevate legs
Atropine Sulfate:
IV: 0.5 mg IV push every 3-5 minutes, Max dose 3mg
ET: 1 mg ET followed with 2 ml Normal Saline every 3-5 minutes, Max dose 6 mg

**MEDICAL CONTROL OPTIONS**
Consider for sedation:
Etomidate 0.3mg/kg
Valium:
Pt weight <70 kg: 2.5 mg slow IV push
Pt weight >70 kg: 5.0 mg slow IV push
Versed:
2.5-5 mg slow IV push
Morphine Sulfate:
5 mg - 10 mg slow IV push

Fluid bolus of Normal Saline as indicated
Dopamine:
2 mcg/kg to 10 mcg/kg per minute
Epinephrine Infusion:
1 mg in 250cc NS administered at 2-10 mcg/minute
Glucagon:
1-5 mg IM, SC or IV for suspected beta blocker toxicity
Calcium Chloride 10% solution:
2-4 mg/kg slow IV push over 5 minutes for suspected calcium channel blocker toxicity

Initiate transport as soon as possible and notify Medical Control

**Signs and symptoms of symptomatic patients may include:**
- Slow heart rates (<60) with decreased LOC
- Weak, thready pulse
- Delayed capillary refill
- Hypotension; systolic BP of <100

**Routine Cardiac Care**
Current ACLS Guidelines

**Patient Symptomatic?**
Yes
No

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p. 2.5
Chest Pain / Rule Out MI

Routine Cardiac Care

Standing Order
I.V. NS KVONitroglycerin: (call to administer for <35 years of age)
0.4 mg SL tablet or spray every 5 minutes, up to 3 doses if systolic BP remains >100
Obtain 12 Lead EKG if available

Standing Order
Negative BP response:
Systolic BP drops below 100, place patient supine, elevate legs, and administer 250cc Normal Saline bolus
Reassess BP

Standing Order
Aspirin:
324 mg (4 baby aspirin) chewed

Is the patient still in pain after nitro and aspirin therapies?

Yes

Go to Pain Protocol

No

MEDICAL CONTROL OPTIONS
IV Normal Saline or LR: Titrate IV if systolic BP remains <100 after administration of Nitroglycerin or Morphine Sulfate
If patient is pain free after sublingual nitro, may apply 1” of Nitro Paste if Sys. >100
Initiate transport as soon as possible and notify Medical Control

Caution:
Administer with caution in patients with suspected inferior wall MI with possible right ventricular (RV) involvement.

Absolute contraindication:
Nitroglycerin if patient has taken Viagra or Levitra within previous 12 hours. Cialis if taken within previous 24 hours.

Relative contraindication:
Nitroglycerin if patient has taken Viagra or Levitra within previous 24 hours.

NOTE: A second IV line may be indicated for high risk patients.
**Congestive Heart Failure / Pulmonary Edema**

- **Standing Order**
  - Furosemide 40 mg IV push
  - Patient on diuretics?
  - BP >100 systolic?

- **Standing Order**
  - Nitroglycerin 0.4 mg SL tablet/spray q 5 min, up to 3 doses; Reassess after each dose
  - Patient on diuretics?

- **Standing Order**
  - Furosemide 80 mg IV push
  - BP >100 systolic?

- **Standing Order**
  - Morphine Sulfate 2 mg IV push if systolic BP >120
  - In Extremis Patients O2 saturation is still less than 90%
  - Use C-Pap if BP is stable
  - See CPAP Protocol otherwise

- **Routine Cardiac Care**

**MEDICAL CONTROL OPTIONS**

- Morphine Sulfate 2-5 mg IV
- Dopamine infusion 2-20 mcg/kg/minutes, rate to determined by Medical Control

Initiate transport as soon as possible and notify Medical Control

Review 2/2011
Pulseless Electrical Activity (Cardiac Arrest)

**During CPR**
- Push hard and fast (100/min)
- Ensure full chest recoil
- Minimize interruptions in chest compressions
- One cycle of CPR: 30 compressions then 2 breaths; 5 cycles = 2 min
- Avoid hyperventilation
- Secure airway and confirm placement
- After an advanced airway is placed, rescuers no longer deliver “cycles” of CPR. Give continuous chest compressions without pauses for breaths. Give 8 to 10 breaths/minute. Check rhythm every 2 minutes. Rotate compressors every 2 minutes with rhythm checks. Search and treat possible factors (refer to ACLS guide).

**Routine Cardiac Care**

**Standing Order**
- Epinephrine 1:10,000:
  - 1 mg IV/IO push every 3-5 minutes
- Epinephrine 1:1,000:
  - 2-2.5 mg ETT every 3-5 minutes diluted in 10cc of NS
- Vasopressin 40 units IV/IO times 1 may replace first or second dose of Epinephrine

**MEDICAL CONTROL OPTIONS**
- Additional NS or LR bolus(es) as indicated
- Sodium Bicarbonate:
  - 1 mEq/kg IV
- Pericardiocentesis
- Initiate transport as soon as possible and notify Medical Control

**Go to specific toxicology protocol**

**Standing Order**
- Atropine:
  - 1 mg IV/IO push every 3-5 minutes up to 3 mg max
  - 2.0 mg ETT every 3-5 minutes up to 6 mg max
- Perform needle chest decompression

**Standing Order**
- Administer 250 cc bolus and titrate accordingly

**Hypothermia**
- Initiate 2 large bore IV's (warm) Normal Saline

**HR<60**
- Epinephrine 1:10,000

**Pneumothorax**
- Go to specific toxicology protocol

**Overdose**
- Go to specific toxicology protocol

Reviewed 2/2011
Complete applicable diagnostics:
Physical Exam: Primary and secondary
Vital signs: 2 sets; BP (including diastolic), pulse, respirations (document times)
Establish IV: NS or LR TKO
Oxygen: Initiate at 4lpm NC and titrate to patient condition and medical history.
Pulse Oximetry: if available
Cardiac Monitor: 3 lead, 12 lead if available and applicable

Immediate action required? Yes
Correct conditions and reassess

If cardiac monitor applied:
After arrival to the ED, a strip of Lead 2 or a full strip of lead 12 (if Lead 12 capable) should be given to the ED staff when giving patient report for baseline comparison.

Assess ABC’s and life threatening conditions

Patient complaining of pain? Yes
Assess with ‘Patient Pain Scale’ and reassess after each treatment

Routine Cardiac Care

Place patient in position of comfort

Assess patient for signs and symptoms

Go to condition specific protocol

Reviewed 2/2011
Supraventricular Tachycardia (Narrow Complex)

Routine Cardiac Care
(Routine Cardiac Care (ACLS Guidelines)

Standing Order
Vagal maneuvers: Valsalva and/or cough

Hypovolemia suspected?

No

Standing Order

Adenosine:
6 mg rapid IV push over 1-3 seconds
If rhythm not corrected, 12 mg rapid IV push (over 1-3 seconds)
If rhythm not corrected, 12 mg rapid IV push (over 1-3 minutes)
Follow all Adenosine with 20 cc NS or LR bolus and elevate extremity.

Yes

Standing Order
Administer 250 cc bolus(es) and titrate accordingly

Yes

Standing Order
Synchronized Cardioversion: (per ACLS recommendations)
Recheck rhythm after each Cardioversion

Consider for sedation:
- Etomidate 0.3mg/kg
- Valium:
  - Pt weight <70 kg: 2.5 mg slow IV push
  - Pt weight >70 kg: 5.0 mg slow IV push
- Versed:
  - 2.5-5 mg slow IV push
- Morphine Sulfate:
  - 5 mg - 10 mg slow IV push

Wide Complex Tachycardia of uncertain type: contact Medical Control
If Unstable proceed with Synchronized Cardioversion

Blood pressure <100 and serious S/S?

No

Yes

MEDICAL CONTROL OPTIONS

Amiodarone 150mg IV over 10 minutes (Max dose 2.2g over 24 hours)
Verapamil:
Initial bolus of 2.5-5 mg slow IV push
If inadequate response after 15-30 minutes, second bolus 5-10 mg slow IV push
Cardizem:
20 mg. Slow IV push
Contraindications include:
- Wolff-Parkinson-White Syndrome, 2nd or 3rd degree AV block and sick sinus syndrome
Initiate transport as soon as possible and notify Medical Control

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p. 2.10
Termination of Resuscitation

Is breathing and pulse present?

Assess
Airway
Breathing
Circulation

Yes

Is breathing and pulse present?

No

Is a DNR or living will present which states patient does not want heroic efforts.

Yes

Is there clear evidence of prolonged down time or obvious mortal wounds with absent vital signs?

No

Begin BLS and ACLS procedures.

No

Continue assessment and follow appropriate protocol.

Yes

During resuscitation... does the patient have palpable pulse? show continued neurological activity? have rhythm compatible with life?

No

Contact Medical Control. A decision will be made jointly as to terminate efforts per ACLS and PALS guidelines.

Yes

Contact Medical Control. A decision will be made jointly as to terminate efforts per ACLS and PALS guidelines.


If return of spontaneous circulation refer to Post Resuscitation Hypothermia protocol

Exclusions: Hypothermia

Initiate transport as soon as possible

Note:
Do not inform or notify the family until the joint decision has been made.

Reviewed 2/2011 8 2000 SSM DePaul Health Center
Routine Cardiac Care; Begin CPR (according to new AHA Guidelines)

Standing Order: Give one shock:
Monophasic: 360J
Manual Biphasic: Device specific (typically 120 to 200J)
Note: Use 200J if unknown
AED is device specific

Standing Order: Epinephrine:
IV: 1mg 1:10,000 every 3-5 minutes
ET: 2.0-2.5mg 1:1,000 every 3-5 minutes diluted in 10cc NS
Vasopressin 40units IV (Single Dose 1 time only)

Successful Conversion

Persistent VF-VT

Standing Order:
Defibrillation protocol: Defib
Defibrillate at 360/Max joules 30-60 seconds after each dose of medication if V-Fib/Pulseless V-Tach persists

Standing Order: Amiodarone:
300 mg IV push

or Defib

Standing Order: (if Amiodarone is not available)
Lidocaine:
IV: 1.5mg/kg. Maximum dose 3mg/kg total

or Defib

Repeat:
Epinephrine: IV: 1 mg 1:10,000
ET: 2.0-2.5 1:1,000 diluted in 10cc NS
Amiodarone: IV: 150 mg IVP or LD: 0.5 – 0.75 mg/kg

Managed arrhythmias per specific protocols and transport

If return of spontaneous circulation refer to Post Resuscitation Hypothermia Protocol

Medical Control Options

Sodium Bicarbonate: 1 mEq/kg, IV push
Magnesium Sulfate: 1-2 grams IV if suspecting Torsades de Pointes; hypomagnesemic state, or severe refractory V-Fib/V-Tach

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Unstable tachycardic conditions may include: Chest pain, SOB, altered LOC, hypotension, shock, pulmonary congestion, CHF or R/O myocardial infarction.

**Ventricular Tachycardia - Stable**

**Patient condition**

- **Stable**
  - Standing Order
    - **Amiodarone:** 150 mg slow IV push over 10 min (15mg/min) (mix in 100ml D5W)
    - **Lidocaine:** 1.0-1.5 mg/kg IV. May repeat at 1/2 the original dose up to 3mg/kg total dose

- **Unstable**
  - Rhythm change?
    - Yes
      - Go to appropriate rhythm protocol
    - No
      - Go to unstable V-Tach

**MEDICAL CONTROL OPTIONS**

- **IV infusion after rhythm conversion:** (use same medication that converted rhythm)
- **Lidocaine:** 2-4 mg/min
- **Amiodarone** (Notify receiving facility of conversion so IV drip can be ready)
- **Magnesium Sulfate** 1-2 grams IV over 1-2 minutes for Torsades De Pointes

Initiate transport as soon as possible and notify Medical Control.

Reviewed 2/2011

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Patient condition stable?

Yes → Go to stable V-Tach

No →

Consider for sedation:

- **Etomidate**: 0.3mg/kg IVP
- **Valium**:
  - Pt weight <70 kg: 2.5 mg slow IV push
  - Pt weight >70 kg: 5.0 mg slow IV push
- **Versed**:
  - 2.5-5 mg slow IV push
- **Morphine Sulfate**: 5 mg - 10 mg slow IV push

Rhythm change?

Yes → Go to appropriate cardiac protocol

No →

Standing Order
Perform Synchronized Cardioversion

Medical Control Options

- **Amiodarone**: 150 mg IV over 10 minutes
- **Lidocaine**: 1-1.5 mg/kg IV, may repeat at ½ the original dose up to 3 mg/kg
- **Procaainamide**: 20-30 mg/min to a maximum dose of 17 mg/kg

(Anticipate cardioversion after each medication. If rhythm converts go to appropriate cardiac protocol)

Initiate transport as soon as possible and notify Medical Control

Unstable tachycardic conditions may include:
Chest pain, SOB, altered LOC, hypotension, shock, pulmonary congestion, CHF or R/O myocardial infarction.

Reviewed 2/2011
General
Nitrous Oxide Administration

Ensure patient does not have any contraindications.

Turn on tanks and verify pressure gauge is within the green operating area.

Unit should ‘alarm’ if gas mixture is not correct.

Explain procedure to patient. Advise legs and arms may feel heavy. Encourage patient to relax.

Instruct patient to hold mask firmly to face or mouthpiece firmly in lips and teeth and to breathe in through device slowly and deeply. Advise patient to leave device in place even during exhalation.

Listen for hissing sound as patient inhales. This indicates gas delivery.

Administer 6/L oxygen by nasal canulla after Nitronox administration.

Monitor and record vital signs, patient response, and oxygen saturation by pulse oximetry before, during and after Nitronox administration.

If the demand valve stutters, the patient is not sealing the mask/mouthpiece adequately.

Contraindication:
- Altered LOC
- GCS <15
- Undiagnosed abdominal pain
- Abdominal distention
- Bowel obstruction
- Head injury
- Chest trauma
- Pregnancy
- Hypotension
- Facial trauma
- Alcohol or depressant drug ingestion
- COPD exacerbation
- Shock
- Decompression sickness

Pediatrics:
Children less than 4 years of age will not likely comply with instructions necessary for self administration. At no time should a parent or other person assist with holding the delivery device for a child.

At no time should the patient be assisted in holding the device to the face. Nor should the patient be placed in such a position or bedding placed around the patient in a manner that would prevent the device from freely falling from the face.
Notifying Medical Control

When calling DePaul are special orders or procedures requested?

Yes

Report to Physician
ONLY (A CSN can relay message)
Please state Name, District, unit, and need to speak to a physician for orders.

Report all pertinent information which may include:
- Setting,
- Patients current condition
- Complete set of V/S and specific request

Example:
- Medicine / Procedure which protocols state “Must contact Medical Control” or any deviation from current protocols / unusual circumstances

Please speak slowly and clearly so report is not misunderstood.
If orders are received, repeat the order back to the physician.
Orders are to be given first hand, NOT through two or more people.

No

Report to RN, EMT-P ONLY
Please state Name, District, unit, and proceed with report.

Report all pertinent information which may include:
- Setting,
- Patients current condition
- Complete set of V/S (including diastolic pressure)
- Trauma Classification
- ETA

Reviewed 2/2011

p. 3.2
Notifying Medical Control for AMA’s

Did the Pt receive Prehospital Medications

Yes

Report to Medical Control
Advise of Pt condition
Treatment rendered and reason for AMA
Neurologically intact?

On trip sheet please indicate
AMA signed
Medical Control Contacted and Physician Name

Example;
D50 for Diabetic
Narcan for drug OD

No

Contact Medical Control if you have any questions or concerns about a patient

On trip sheet please indicate
AMA signed
Medical Control contacted or not contacted

EMS crews may contact medical control for consultation/direction in regards to any and all Patient encounters.

Reviewed 2/2011
Pain Protocol – Standing Order Options

Standing Order
Consider
Zofran 4mg – 4mg IVP
For nausea

Referenced from other protocol
Assess with ‘Patient Pain Scale’
and reassess after each treatment

Cardiac

Morphine Sulfate
2-4 mg slow IV
May repeat dose in 5 minutes up to 10 mg.

or

Toradol
30 mg IV/1 min (<65 y/o)
15 mg IV/1 min (≥65 y/o)
60 mg IM if no IV
30 mg IM if no IV and (<50kg or ≥65 y/o)

or

Dilaudid
1mg IV x 1

Medical

Morphine Sulfate
2-4 mg slow IV
May repeat dose in 5 minutes up to 10 mg.

or

Morphine Sulfate
0.05-0.1mg/kg slow IV
Maximum dose 2 mg

or

Dilaudid
0.015 mg/kg IV x 1

Repeat x1 as necessary

Pediatric

Morphine Sulfate
0.05-0.1mg/kg slow IV
Maximum dose 2 mg

or

Ice/Splint/Elevate
Reassess pain before proceeding to analgesics

or

Morphine Sulfate
0.1mg/kg slow IV push
Repeat x1 as necessary

or

Nitrous Oxide/Oxygen
Self administered for temporary pain relief

Trauma

Treament Precautions

Ensure patient is hemodynamically stable with stable respiratory effort. Confirm allergies prior to giving medications.

Reassess patient after each medication dose, including Patient Pain Scale reassessment.

Be prepared to intervene, if required, with supplemental oxygen, narcan and respiratory support.

MEDICAL CONTROL OPTION
Dilaudid 1mg IV
Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011

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Vascular Access Devices

**Port-a-cath**

- Does patients treatment require immediate access of port-a-cath?
  - No: Wait to access port in the ER.
  - Yes: Clean area with alcohol prep followed by betadine times 3. (Allow to dry)

- Put on sterile gloves

- Flush Huber needle with NS and place on sterile field.

- Grab wings of Huber needle and fold in half. With opposite hand locate the center of the port.

- Attach the NS filled syringe to the end of the Huber needle. Insert the Huber Needle at a 90 degree angle.

- Release the clamp and withdraw blood into the NS filled syringe assuring patency.

- If syringe fills with Blood, inject NS solution and connect the IV tubing.

- ***If IV is not running, do not force fluids. Catheter may be clotted off. Withdraw 10cc of blood and reconnect IV tubing***

**Central Venous Dialysis Catheter**

- Is peripheral site accessible?
  - no: Place patient in supine position if tolerated
  - yes: Place sterile field under catheter limbs; spray limbs with betadine

- Open sterile gloves, 10cc syringes and PRN adapter and keep in sterile field

- Put on sterile gloves

- Be certain thumb clamp is closed.

- Remove end cap from venous (blue) catheter port.

- Attach a dry 10cc Syringe. Open thumb clamp and withdraw 5-10cc of blood and discard. Close thumb clamp.

- Attach saline filled syringe and flush the line. Ensure there is no air in the syringe before flushing.

- Attach prepared and primed IV tubing securely to catheter; Drip 3-4 drops of fluid into catheter port before attaching IV tubing to fill dead space.

**A-V Graft** (for life threats only Contact medical Control first)

- Is peripheral site accessible?
  - no: Check patency of graft by: Place fingers over access to assess for palpable thrill. Auscultate over graft for audible bruit.
  - yes: Place sterile barrier under extremity where A-V access is located.

- Clean area with alcohol prep followed by betadine times 3. (Allow to dry)

- Put on sterile gloves

- Insert angiocath at a 45 degree angle.

- When flashback of blood occurs, level off IV needle to skin surface and advance catheter.

- Apply a PRN adapter to catheter and flush with 100u Heparin per ml of NS

- Secure catheter Connect IV fluids to PRN adapter.

---

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Patient needs emergent life saving IV fluids or medications despite at least 2 attempts at peripheral access.

**Indications and Contraindications**

- Adult greater than 40 kg
- Pediatric 3-39 kg

**MUST HAVE ONE OF THE FOLLOWING:**

- GCS < 8
- Hemodynamic instability with a systolic BP < 90.
- Respiratory compromise with an O2 saturation < 80% or a resp. Rate >40 or <10.

**CONTRAINdications:**

- Lower extremity fracture in which the device is to be used.
- Previous orthopedic procedures at site (i.e. Knee replacement surgery)
- Previous medical condition in the lower extremity (i.e. Peripheral vascular disease, tumor etc.)
- Infection at insertion site.
- Inability to locate landmarks.
- Excessive edema or obesity at insertion site.

**CONSIDERATIONS:**

- Flow rate will be slower than in a peripheral IV. Consider a pressure bag.
- Infusion in a conscious patient may cause severe discomfort.

---

**Locate the Tibial Tuberosity**

- Go approximately 2 cm toward inner leg (Medially)
- Go approximately 2 cm toward the Knee (Proximally)

**Insert IO**

REMEMBER BIG TOE-IO
Medical
Complete applicable diagnostics:
Physical Exam: Primary and secondary
Vital signs: 2 sets; BP (include diastolic), pulse, respirations
Establish IV if indicated: NS or LR; titrate to patient condition
Oxygen: Metered to patient condition and medical history
Pulse Oximetry: if available
Cardiac Monitor: 3 lead, 12 lead if available and applicable

Immediate action required?
Yes -> Correct conditions and reassess
No ->

Patient complaining of pain?
Yes -> Assess with ‘Patient Pain Scale’ and reassess after each treatment
No -> Place patient in position of comfort

Assess patient for signs and symptoms

Go to condition specific protocol

Routine Medical Care
Ensure Scene Safety
Assess ABC’s and life threatening conditions

If cardiac monitor applied:
After arrival to the ED, a strip of Lead 2 or a full strip of lead 12 (if Lead 12 capable) should be given to the ED staff when giving patient report

Patient Pain Scale Assessment
Assessed by asking the patient to rate the severity of their pain based on a 1-10 scale; 10 rated as the worst pain they have ever experienced and 1 rated as the least.

Reviewed 2/2011

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**Allergic Reaction / Anaphylaxis**

**Mild Distress:**
- Itching, isolated urticaria, nausea. No SOB. BP stable.

**Moderate/Severe Distress:**
- Same as Mild with diaphoresis and some SOB. BP stable.

**Anaphylactic Shock:**
- Stridor, bronchospasm, severe abdominal pain, SOB, tachycardia, shock, generalized urticaria, edema of lips, tongue or face

**Routine Medical Care**
- Titrating O2 to keep $\text{S}_\text{A}O_2 > 95\%$

**Standing Order**
- **Benadryl:** 25-50 mg slow IV or deep IM
- **Albuterol 2.5mg/3cc NS:** Nebulizer updraft treatment

**Standing Order**
- **Epinephrine 1:1,000:**
  - 0.3-0.5 mg IM; repeat x1 if necessary in 15-20min
- **Benadryl:** 25-50 mg IV or deep IM
- **Albuterol 2.5mg/3cc NS:** Nebulizer updraft treatment

**Standing Order**
- Epinephrine 0.1 mg of 1:10,000 slow IVP over 5 min. when IV access readily available.
- If IV not readily available administer Epinephrine 0.3-0.5mg Deep IM
- **Benadryl:** 25-50 mg IV if available. If no IV may administer IM
- **Albuterol 2.5mg/3cc NS:** Nebulizer updraft treatment
- IV NS Bolus 250cc – 1000cc if hypotensive (titrate to SBP >100)

**MEDICAL CONTROL OPTIONS**
- **Fluid Bolus 1 liter normal saline**
- **Epinephrine 1:1,000**
  - 0.3-0.5mg SC; repeat if indicated
- **Dopamine infusion:**
  - 2-20 mcg/kg/minute, rate determined by Medical Control
- **Solu Medrol:**
  - 125 mg slow IV push over 1-2 minutes
- **Glucagon:**
  - 1 mg IV/IM/SC if on Beta Blockers causing symptoms.

**Initiate transport as soon as possible and notify Medical Control**

Reviewed 2/2011
Altered Mental Status / Diabetic

Possible overdose or reagent exposure:
Identify any containers, pills, tablets or other items that may be associated with patient condition and transport with patient to hospital.

Routine Medical Care

Hypovolemia suspected?

Yes

Standing Order
IV Normal Saline: Titrate to patient's hemodynamic status

No

Obvious narcotic overdose?

Yes

Standing Order
Narcan: 0.4-2.0 mg IV, IM, SC, or ET; may repeat 0.4-2.0 mg if necessary

No

Able to establish IV access?

Yes

Standing Order
50% Dextrose Solution: 25 Gm IV

No

Standing Order
Glucagon: 1-2 mg IM for hypoglycemia

MEDICAL CONTROL OPTIONS

May attempt to feed patient, when conscious, if stable then recheck BS. If patient request refusal, contact Medical Control first.

Additional IV Normal Saline
250-500 cc bolus and titrate to patient's hemodynamic status

Further treatments
Dependant upon conditions for suspected substance abuse, toxic exposure, or overdose

Initiate transport as soon as possible and notify Medical Control

Check blood glucose level

<70 mg/dL

Yes

No

Standing Order
Thiamine: 100 mg IV or IM unless clearly suffering from hypoglycemia due to insulin shock

Reviewed 2/2011
EMS Policy: Suspected CVA

Suspected CVA?

Yes

Transport with head of stretcher elevated

Perform Cincinnati Prehospital Stroke Scale.
Do not delay transport. Notify Medical Control of Suspected CVA ASAP. Obtain when last seen normal and witness information

No

Check blood glucose level

<50 mg/dL

Do Not Treat unless < 50 mg/dl

Yes

Able to establish IV access?

Yes

Standing Order
50% Dextrose Solution:
25 Gm IV

No

Standing Order
Glucagon:
1-2 mg IM for hypoglycemia

MEDICAL CONTROL OPTIONS
Do Not Treat HTN unless specifically directed by Medical Control

References

Initiate transport as soon as possible and notify Medical Control

Cincinnati Prehospital Stroke Scale

Facial Droop
Normal: Both sides of face move equally
Abnormal: One side of face does not move at all

Arm Drift
Normal: Both arms move equally or not at all
Abnormal: One arm drifts compared to the other

Speech
Normal: Patient uses correct words with no slurring
Abnormal: Slurred or inappropriate words or mute

Symptoms < 3 hours

Routine Medical Care
02 @ 4L per NC to keep SAO2 > 95%
Bronchospasms / Respiratory Distress

**Standing Order**
Albuterol 2.5mg in 3ml Normal Saline
Nebulizer updraft treatment; repeat as necessary
If pulse rate >100 bpm consider Xopenex: .63 mg or 1.26 mg in 3cc of NS

**MEDICAL CONTROL OPTIONS**
- **Epinephrine** 1:1,000
  - 0.3mg IM (may be repeated q 20 minutes)
- **Epinephrine** 1:10,000
  - 0.1-0.5 mg IVP slow over 5 min.
- **Solu-Medrol**
  - 125 mg IV push
- **Brethine**
  - 0.25mg SC
- **Magnesium Sulfate** 1.2 – 2.0g IV over 20 min

Is response from treatment favorable?
- Yes
  - Routine Medical Care
    - Titrate O2 to keep SAO2 > 92%
  - Signs and symptoms indicate CHF / Pulmonary Edema / Allergic Reaction / anaphylaxis
- No
  - Go to appropriate protocol
  - Initiate transport as soon as possible and notify Medical Control
  - Consider possibility of CHF

**Mild Distress:**
Slight wheezing and/or mild cough, able to move air without difficulty

**Severe Distress:**
Poor air movement, speech dyspnea, use of accessory muscles, tachypnea, and tachycardia

Reviewed 2/2011

Go to appropriate protocol
Headache

Routine Medical Care

Does the patient have a history of:
Head Trauma
Seizures
Focal neurologic abnormalities?

Yes

Go to appropriate protocol

No

History of:
Chronic or Recurrent Headache

Yes

Standing Order:
Compazine 10 mg IV
or
Zofran 4 mg IVP

(go to Medical Pain Protocol for further pain medication options)

No

Does the patient have a history of:
Head Trauma
Seizures
Focal neurologic abnormalities?

Yes

Go to appropriate protocol

No

Is the patient in a hypertensive crisis,
Preeclampsia or eclampsia?

Yes

Standing Order:
Compazine 10 mg IV
or
Zofran 4 mg IVP

(go to Medical Pain Protocol for further pain medication options)

No

Place isolation mask on patient if possible as well as healthcare professional!

Maintain airway
Initiate IV
Observe LOC

Go to appropriate protocol

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011

p. 4.7
Hypertensive Emergencies

Routine Medical Care

- Does patient exhibit Neurologic symptoms such as CVA / Headache?
  - Yes
    - Do not attempt to reduce blood pressure until after CT completed
  - No
    - Follow appropriate protocol

Medical Control Options

- Nitroglycerin: and/or Nitro paste:
  - 0.4mg tablet or spray SL
  - 0.4mg tablet or spray SL
  - 1" to anterior chest wall
  - Repeat Nitroglycerin SL twice, at 5 minute intervals, as directed by patient’s BP
- Morphine Sulfate:
  - 2-5mg IV
- Furosemide (Lasix):
  - 0.5-1.0mg/kg IV SLOWLY for patient’s with CHF or pulmonary edema

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Hyperthermia / Heat Emergencies

Routine Medical Care

Heat Stroke

Heat Exhaustion

Heat Cramps

Alert with normal gag reflex, can swallow easily?

Yes

Administer oral rehydration electrolyte solution if available

No

Hypovolemia suspected?

Yes

Standing Order
Rapid cooling IV NS or LR, if not established, while enroute

No

Condition improved?

Yes

Standing Order
Administer 250-500 cc bolus and titrate to patient's hemodynamic status.

No

MEDICAL CONTROL OPTIONS

Additional 250-500 cc bolus(es), wide open or titrate to patient's hemodynamic status

Initiate transport as soon as possible and notify Medical Control

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Determine patient's hemodynamic status
Assess pulse and respirations at least 30-45 seconds.

Pulse Present

Is GCS less than 8

Yes

Prepare for intubation
Standing Order:
Lidocaine 1mg/kg
and
Etomidate 0.3mg/kg
OR
Versed 5 mg IVP (if needed)

Re-warm with blankets,
warm fluids (if available),
or warm packs

No

Re-warm with blankets,
warm fluids (if available)

Pulse Absent

Initiate CPR
Follow current ACLS guidelines
And treat for hypothermia.
Contact medical control for
ANY dysrhythmias.

Defibrillate:
Monophasic: 360J
Manual Biphasic: Device specific (typically 120 to 200J)
Note: Use 200J if unknown
Intubate, Ventilate with warm humid oxygen
Start IV, Administer warm normal saline

Standing Order
Amiodarone 300mg IVP (preferably)
or
Lidocaine 1 mg/kg IVP (if Amiodarone not available)

Re-warm with blankets,
warm fluids (if available)
or warm packs

MEDICAL CONTROL OPTIONS
Repeat defibrillation or antiarrhythmic as indicated.
Warmed IV Normal Saline or LR whenever possible
Space Medications at longer intervals
Initiate transport as soon as possible and notify Medical Control

Hypothermic patients must be handled gently. Jarring movements can cause cardiac arrest.

IV medications require changes in frequency of administration. Contact Medical Control for instructions.
Nausea / Vomiting

Routine Medical Care

Heart Rate >120
B/P <90

Yes

Standing Order:
Initiate IV NS 200cc Bolus

No

Standing Order:
Initiate IV NS 200cc Bolus

Signs of Hypovolemia
without history of CHF

Reevaluate B/P
Repeat Bolus if no improvement

Standing Order:
Maintain IV NS 200cc/hour

Standing Order:
Compazine 5 mg IV
or Zofran 4 mg IVP / IM
(Hold if B/P < 90 syst.)

MEDICAL CONTROL OPTIONS
D-Stick as per medical control
Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011

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Seizures

Routine Medical Care

Obvious narcotic overdose?

- No
  - Check blood glucose level
    - Less than 70mg/dL and CVA NOT suspected
      - No
        - Patient in status epilepticus?
          - No
            - Able to establish IV access?
              - Yes
                - Initiate transport as soon as possible and notify Medical Control
              - No
                - Standing Order: Glucagon 1 – 2mg
          - Yes
            - Standing Order: Ativan: 2 mg Slow IV Push or Valium: 2 – 4 mg IV Push

- Yes
  - Standing Order: Narcan: 0.4-2.0 mg IV, IM, SC or ET

Caution
Spinal Precautions must be taken for the patient “found down” without witness to the event and and altered LOC present. This is to include intoxicated/chemically impaired patients.

Reviewed 2/2011
Routine Medical Care

**Standing Order:**
IV Normal Saline or LR:
Additional bolus(es); titrate to patients hemodynamic status

**MEDICAL CONTROL OPTIONS**

*Dopamine infusion:*
2-20 mcg/kg/minute, rate determined by Medical Control

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Syncope of Unknown Etiology

- **Standing Order:**
  - Place patient supine with legs elevated
  - Titrate IV to patient's hemodynamic status

- **Routine Cardiac Care**
  - Assess for and correct any bradyarrhythmias before proceeding with fluid therapy.

- **Hypovolemia suspected?**
  - Yes: Check blood glucose level
  - No: Place patient supine with legs elevated

- **Check blood glucose level**
  - Yes: Able to establish IV access?
  - No: Less than 70mg/dL and CVA NOT suspected

- **Less than 70mg/dL and CVA NOT suspected**
  - Yes: Able to establish IV access?
  - No: Suspected narcotic overdose?

- **Suspected narcotic overdose?**
  - Yes: *Standing Order: *
    - Glucagon: 1-2mg IM for suspected hypoglycemia
  - No: *Standing Order: *
    - 50% Dextrose Solution: 25 Gm IV; administer second dose as necessary

- **Able to establish IV access?**
  - Yes: Suspected narcotic overdose?
  - No: *Standing Order: *
    - Glucagon: 1-5mg IM, SC, or IV for suspected beta blocker toxicity

**MEDICAL CONTROL OPTIONS**

- **50% Dextrose IV**
- **10% Calcium Chloride:** 2-4 mg/kg IV SLOWLY over 5 minutes for suspected calcium channel blocker toxicity
- **Sodium Bicarbonate:** 0.5-1.0 mEq/kg IV
- **Atropine:** 0.5mg IV for bradycardia to a total dose of 3 mg
- **Glucagon:** 1-5mg IM, SC, or IV for suspected beta blocker toxicity

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Routine Medical Care

Identify offending agent and route of exposure

Altered mental status/known narcotic OD?

Yes

Standing Order:
Glucagon
1-2mg IM for suspected hypoglycemia

Able to establish IV access?

Yes

Standing Order:
Narcan
0.4 - 0.8mg IM or SC
0.4 - 2.0mg IV or ET.
May repeat as necessary
Prepare to Intubate as needed

No

Able to establish IV access?

Yes

Standing Order:
Glucagon
1-2mg IM for suspected hypoglycemia

No

Less than 70mg/dL

Yes

Standing Order:
Glucagon
1-2mg IM for suspected hypoglycemia

No

Check blood glucose level

Medication:

- Activated Charcoal: 1 gram/kg PO mixed with water or sorbitol only if the patient is conscious and has not ingested Hydrocarbon substances, petroleum distillates or corrosive/caustive substances
- 10% Calcium Chloride: 2-4mg/kg IV SLOWLY over 5 minutes (calcium channel blocker toxicity)
- Sodium Bicarbonate: 0.5-1.0mEq/kg IV
- Atropine: 2.0-4.0mg IV (organophosphate poisoning management)
- Albuterol: 2.5mg/0.5ml NS (bronchospasm management)
- Lasix: 40mg IV (pulmonary edema management)
- Valium: 5-10mg slow IV or Lorazepam 1mg IV
- Glucagon: 1.0-5.0mg IV, IM or SC (beta blocker overdose)

MEDICAL CONTROL OPTIONS

If substance ingested <1 hour - Activated Charcoal: 1gram/kg PO mixed with water or sorbitol only if the patient is conscious and has not ingested Hydrocarbon substances, petroleum distillates or corrosive/caustive substances

10% Calcium Chloride: 2-4mg/kg IV SLOWLY over 5 minutes (calcium channel blocker toxicity)

Sodium Bicarbonate: 0.5-1.0mEq/kg IV

Atropine: 2.0-4.0mg IV (organophosphate poisoning management)

Albuterol: 2.5mg/0.5ml NS (bronchospasm management)

Lasix: 40mg IV (pulmonary edema management)

Valium: 5-10mg slow IV or Lorazepam 1mg IV

Glucagon: 1.0-5.0mg IV, IM or SC (beta blocker overdose)

Consider smaller doses of Narcan for patients known to be addicted to opiates

Initiate transport as soon as possible and contact Medical Control

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poison control 268-4195

p. 4.15
Obstetrical Emergencies – Normal Field Delivery

**Standing Order:**
IV NS or LR: 250-500cc fluid bolus(es); titrate to patient’s hemodynamic status

- Place patient on Left side or semi-fowler position. Preferably place patient in position of comfort if possible.
- Focused history and PE

**Position mother for delivery**
Coach mom to breathe deeply between the contractions and push with the contractions
As head crowns—control with gentle pressure support head during delivery

**Go to OB Emergencies Protocol Complications of Deliveries**

- **Imminent delivery?**
  - Yes
    - Head presenting?
      - Yes
        - Go to OB Emergencies Protocol Complications of Deliveries
      - No
        - Position mother for delivery
        - Coach mom to breathe deeply between the contractions and push with the contractions
        - As head crowns—control with gentle pressure support head during delivery
    - No
      - Gently slip it over the infant’s head — if unable to do so, clamp cord in 2 places and cut between the clamps to release the cord

- **Yes**
  - Umbilical cord around neck?
    - Yes
      - Continue to suction
      - Deliver body of infant
    - No
      - Suction mouth & nose as head emerges from birth canal. **DO NOT STIMULATE THE INFANT BEFORE YOU SUCTION THE MOUTH & NOSE.** It is CRITICAL to clear the meconium BEFORE the infant takes its first breath.

- **No**
  - Warm, dry, position, suction & stimulate neonate
  - Clamp cord, cut cord between clamps and observe for bleeding.
  - Use additional clamps as needed to control bleeding

**Routine Medical Care**

- Reassess patient
- Initiate transport as soon as possible and notify Medical Control

**Continue to OB page two for Medical Control options**

*The conditions that prompt **IMMEDIATE** transport - despite imminent delivery: Prolonged membrane rupture, breech or cord or extremity presentation, evidence of meconium and nuchal cord (cord around neck).*
Obstetrical Emergencies – Normal Field Delivery Continued

Continued from OB page one

Mecanimum present?

Yes

Go to Newborn Resuscitation Protocol

No

1 minute APGAR > 7-10

Yes

Go to Newborn Resuscitation Protocol

1 minute APGAR < 7-10

No

Record gender and time of birth

Placenta delivery is normally within 20 minutes of birth. DO NOT delay transport waiting for placenta to deliver.

Assess 5 minute APGAR And contact Medical Control

MEDICAL CONTROL OPTIONS

Terbutaline
10 mcg/min; increase by 5 mcg/min to total max dose of 25 mcg/min

Initiate transport as soon as possible and notify Medical Control
Routine Medical Care

Imminent delivery: Head is not presenting part

Shoulder Dystocia

*Place mom on her back. Hyper flex the hips to increase the pelvic outlet. Apply pressure to the suprapubic region to deliver the anterior shoulder.
*Guide infant's head downward to allow anterior shoulder to slip under symphysis pubis
*Gently rotate fetal shoulder girdle into the wider pelvic girdle - posterior shoulder usually delivers without and resistance
*Continue with delivery

Prolapsed Umbilical Cord

*Position mom in trendeleburg or knee-chest position to relieve pressure on the cord
*Instruct mom to "pant" with each contraction to prevent bearing down
*Insert 2 gloved fingers into vagina & gently elevate the presenting part to relieve pressure on the cord & restore umbilical pulse
*DO NOT attempt to reposition or push cord back into the uterus
*Apply moist sterile dressings to exposed cord
*Maintain hand position during rapid transport to hospital
*Monitor pulsations in the cord (pulsations should be present)

Uterine Inversion

*Follow standard hemorrhagic shock protocol
*Do not attempt to detach the placenta or pull on the cord
*Make 1 attempt to reposition the uterus:
-apply pressure with fingertips & palm of gloved hand & push uterine fundus upward & through the vaginal canal
-if ineffective cover all protruding tissues with moist saline dressings

Post Partum Hemorrhage

*Follow standard shock protocol

Breech

*Initiate transportation as soon as possible and notify Medical Control

MEDICAL CONTROL OPTIONS

Initiate transportation as soon as possible and notify Medical Control

Reviewed 2/2011
Position mom
Allow fetus to deliver to level of umbilicus

Gently extract legs downward after buttocks begin delivering with front presentation

After arms clear - support infant's body with palm of hand and volar surface of arm

"Visualize umbilicus - gently extract 4" - 6" loop of umbilical cord to allow for delivery without undue traction on cord
*Gently rotate fetus to align shoulder in anterior-posterior position
*Continue with gentle traction until the axilla is visible

Gently guide infant upwards: deliver posterior shoulder
Gently guide infant downwards: deliver anterior shoulder

Avoid having fetal face or abdomen toward maternal symphysis

Head usually delivers without difficulty
Avoid excessive head & spine manipulation or traction

If head does not deliver immediately:
*place gloved hand in vagina with palm towards babies' face
*using index & middle fingers, form a "V" on either side of the infant's nose
*gently push vaginal wall away from infant's face until head is delivered
(If unable to deliver head within 3 minutes - maintain infant's airway with "V" formation and rapidly transport to hospital)
Obstetrics / Predelivery Complications

Routine Medical Care

Assess ABC's
Care for bleeding
Treat shock if present

Vaginal Bleeding
- Use sanitary napkins over vaginal opening
- DO NOT pack vaginal opening
- Replace sanitary napkins as needed
- Transport patient on left side

Abruptio Placenta
Important Patient History:
- HTN, Diabetes, Renal & Hepatic Disease
- NO previous pregnancies
- Poor nutrition
- Sudden weight gain of >2 lbs/week

Placenta Previa
Important Patient History:
- > 2 kids
- Early vaginal spotting or bleeding
- Previous C-section
- Bright red vaginal bleeding during 3rd trimester
- Recent intercourse
- Soft uterus
- Absent fetal heart tones
- Painless

Hypertensive Disorders
Important Patient History:
- HTN, Diabetes, Renal & Hepatic Disease
- NO previous pregnancies
- Poor nutrition
- Sudden weight gain of >2 lbs/week

Uterine Rupture
Important Patient History:
- Previous rupture
- Abdominal trauma
- Large fetus
- Prolonged & difficult labor
- Prior C-section or uterine surgery
- Tearing or shearing sensation in abdomen
- Constant & severe abdominal pain
- Nausea
- Vaginal spotting
- Lower abdominal pain radiating to 1 or both shoulders
- Tender, bloated abdomen
- Palpable mass in abdomen
- Weak & dizzy when sitting or standing
- Decreased BP
- Increased Pulse
- Bluish discoloration around navel (if rupture occurred hours earlier)
- Urge to defecate

Ectopic Pregnancy
Important Patient History:
- Previous ectopic pregnancies
- PID
- Missed menstrual cycles
- Tubal surgery, including elective ligation
- Sudden sharp, knife-like abdominal pain - localized to 1 side
- Vaginal spotting
- Lower abdominal pain radiating to 1 or both shoulders
- Tender, bloated abdomen
- Palpable mass in abdomen
- Weak & dizzy when sitting or standing
- Increased BP
- Urge to defecate

Go to next page
Obstetrics / Predelivery Complications Continued

MEDICAL CONTROL OPTIONS

* Suspected Eclampsia:
- Magnesium Sulfate 10%: 1-4gm IV over 3 minutes
- Calcium Chloride 10%: 2-4mg/kg SLOW IV over 5 minutes

(antidote for Magnesium Sulfate)

Initiate transport as soon as possible and notify Medical Control

Standing Order:
Administer 250-500cc fluid bolus of NS or LR.
Titrate to patient’s hemodynamic status

Shock present

Yes

No

Reviewed 2/2011
OBSTETRICS / PREDELIVERY - TRAUMA

Routine Trauma Care
(Consider maternal & fetal injury)

Oxygen 15 lpm NRB
Focused History & PE

No

Altered LOC?

Yes

Assess ABC's
Correct all life-threatening conditions & reassess

Place patient on left side
(tilt backboard if immobilized)
(Consider maternal & fetal injury)

Delivery Imminent?

Yes

Go to Emergency Delivery Protocol

No

S/S Shock?

Yes

Go to Shock Protocol

No

MEDICAL CONTROL OPTIONS
Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Pediatrics
Assigning APGAR Score

APGAR 8-10
No asphyxia

Suction airway
Dry thoroughly
Maintain body temperature

Assign 5 minute APGAR score

Show baby to parents

APGAR 5-7
Mild Asphyxia

Suction airway
Dry thoroughly
Maintain body temperature

Stimulate infant
Provide blow-by oxygen

Give naloxone 0.01 mg/kg IM, if mother received narcotic

APGAR 3-4
Moderate Asphyxia

Suction airway
Dry thoroughly
Maintain body temperature

Stimulate infant
Provide blow-by oxygen

Heart Rate >100
Pink Color

Yes
Ventilate with BVM and 100% oxygen

Show baby to parents
(Admit to nursery for cardio respiratory monitoring)

No
Assign 5 minute APGAR score

Intubate and ventilate with 100% oxygen

Introduce transport as soon as possible and notify Medical Control

MEDICAL CONTROL OPTIONS

- Sodium Bicarbonate 2mg/kg IV
- Dextrose IV (if available)
- Epinephrine 1:10,000 1ml IV
- Atropine 0.02mg/kg IV
- Naloxone 0.01 mg/kg IM
  (if mother received narcotic)

Show baby to parents

Signs of improvement

Yes

No

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Reviewed 2/2011
Newborn Resuscitation

Routine Pediatric Care

* Suction mouth, then nose
* Suction hypopharynx if meconium (brown stained fluid) is present
  - Consider early endotracheal intubation and suctioning if meconium is present (only in non vigorous patients)

Suction hypopharynx if meconium is present

Dry infant, place on a dry blanket, cover head, keep warm, 30 second APGAR.

Ventilations adequate/chest rise?

Reposition head and neck, suction, initiate BVM ventilations with high flow oxygen at 40-60 breaths per minute

No

Standing Order:
Cardiac monitor: Manage dysrhythmia(s) per protocol

Yes

Administer blow-by 100% oxygen at a minimum of 5 LPM close to the face

Heart rate >80

Standing Order (PALS):
* Initiate CPR until spontaneous heart rate reaches 80 beats per minute or greater
* Manual ventilations with supplemental oxygen
* Advanced airway management
* If indicated, defibrillate initially at 2 J/kg, subsequently at 4 J/kg
* If indicated, synchronized cardioversion at 0.5-1.0 J/kg
* Initiate IV or IO enroute

Ongoing assessment of neonate
5 minute APGAR

Standing Order:
Manual ventilation, provide supplemental oxygen

Medical Control Options

Epinephrine 1:1,000 (0.1mg/kg) ET; follow with 2.0ml NS solution; repeat every 3-5 minutes
* Epinephrine 1:10,000 (0.01-0.03mg/kg) IV or IO
* Epinephrine 1:1,000 infusion 0.1-1.0ug/kg/min
* Atropine 0.02mg/kg ET, IV or IO
* 10% Dextrose 0.5g/kg IV or IO
* Normal Saline fluid challenge, 10cc/kg IV or IO
* 2% Lidocaine 1mg/kg ET, IV or IO

- Initiate transport as soon as possible and notify Medical Control

APGAR Rating
7 - 10: Active & vigorous
Routine care
4 - 6: Moderately depressed
Stimulate & oxygenate
0 - 3: Severely depressed
Oxygen, BVM, CPR

Grimace (reflex)
0-no activity
1-facial activity only
2-cries, sneeze, coughs

Activity
0-limp
1-flexion only
2-actively moving

Respirations
0-no respirations
1-slow, irregular & weak
2-good respirations

Signs & Symptoms of severely depressed:
Respirations > 60
Decreased breath sounds
Heart Rate <100 / >180
Trauma during delivery
Poor to no musculoskeletal tone
Meconium
Weak pulses
Cyanotic body
Poor peripheral perfusion
Poor to no response to stimulation

Reviewed 2/2011
Complete applicable diagnostics:
Physical Exam: Primary and secondary
Vital signs: 2 sets; BP (include diastolic), pulse, respirations
Establish IV if indicated: NS or LR; titrate to patient condition
Oxygen: Metered to patient condition and medical history
Pulse Oximetry: if available
Cardiac Monitor: 3 lead, 12 lead if available and applicable

If cardiac monitor applied:
After arrival to the ED, a strip of Lead 2 or a full strip of lead 12 (if Lead 12 capable and performed) should be given to the ED staff when giving patient report

Assess ABC’s and life threatening conditions

Immediate action required?
Yes
Correct conditions and reassess
No

Patient complaining of pain?
Yes
Assess with ‘Patient Pain Scale’ and reassess after each treatment
No

Place patient in position of comfort
Assess patient for signs and symptoms
Go to condition specific protocol

Patient Pain Scale Assessment
Assessed by asking the patient to rate the severity of their pain based on a 1-10 scale; 10 rated as the worst pain they have ever experienced and 1 rated as the least, or use age appropriate facial pain scale.
Pediatric Airway Obstruction

Routine Pediatric Care

Determine presence of upper airway obstruction (stridor)

- Foreign body
  - Adequate air exchange
    - Transport to nearest medical facility. DO NOT attempt to remove foreign body in the field
  - Inadequate air exchange
    - Follow AHA or ARC BCLS guidelines for foreign body obstructions. Maintain an open airway, remove secretions, vomitus and assist ventilations as needed

- Croup or epiglottitis
  - Maintain open airway, place child in position of comfort and avoid upper airway stimulation

- Tracheostomy tube obstruction
  - Contact Medical Control for further instructions (i.e. emergent removal of tracheostomy tube)

Standing Order:
- Advanced airway management
- Perform direct laryngoscopy if foreign body suspected
- Attempt removal of visible and readily-accessible foreign bodies with Magill forceps
- Initiate IV with NS - titrate to appropriate BP for age enroute

MEDICAL CONTROL OPTIONS
Needle cricothyroidotomy if authorized and unable to clear airway obstruction, unable to intubate as needed or unable to perform positive pressure ventilations

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011

p. 6.6
**Pediatric Anaphylaxis**

**Routine Pediatric Care**

**Standing Order:**
Initiate IV of NS or LR KVO: Titrate to appropriate BP for age

**Mild Distress:** itching, isolated urticaria, nausea, no respiratory distress

**Standing Order:**
- Epinephrine 1:1,000: 0.01mg/kg SC up to a single maximum dose of 0.3mg
- Epinephrine 1:10,000: 0.01mg/kg IV up to a single maximum dose of 0.3mg
- Diphenhydramine HCl (Benadryl) 1.0mg/kg IV or deep IM up to a single maximum dose of 50mg

**Severe Distress:** poor air entry, flaring, grunting, cyanosis, stridor, bronchospasm, severe abdominal cramps, respiratory distress, tachycardia, shock, generalized urticaria, edema of lips, tongue or face

**Medical Control Options**

- Epinephrine 1:1,000: 0.01mg/kg SC up to a single maximum dose of 0.3mg
- Epinephrine 1:10,000: 0.01mg/kg IV up to a single maximum dose of 0.3mg
- Diphenhydramine HCl (Benadryl) 1.0mg/kg IV or deep IM up to a single maximum dose of 50mg
- Albuterol Sulfate: 0.5% via nebulizer
  - Option 1: Age < 2yrs: 0.25ml diluted with 2.5ml NS
  - Option 2: Age > 2yrs: 0.5ml diluted with 2.5ml NS
- 20ml/kg fluid bolus of NS or LR

**Initiate transport as soon as possible and notify Medical Control**

Reviewed 2/2011
Symptomatic patients will have abnormally slow heart rates accompanied by decreased LOC, weak & thready pulses, delayed capillary refill or hypotension (based on appropriate BP for age).

**Routine Pediatric Care**

- Child with pulse <60 or infant with pulse <80 AND symptomatic?
  - Yes: Initiate CPR
  - No: Standing Order: Initiate IV: NS or LR at KVO

- Hypovolemia suspected?
  - Yes: Administer fluid bolus of 20ml/kg
  - No: Patient symptomatic?
    - Yes: Medical Control Options:
      - Additional fluid boluses of NS or LR - 20ml/kg
      - Pediatric transcutaneous pacing if available
      - Atropine Sulfate 0.02mg/kg IV or ET (single minimum dose 0.1mg, single maximum dose 1.0mg)
      - Epinephrine 1:1,000: 0.1mg/kg ET, followed by 2.0ml NS; repeat every 3-5 minutes
      - Epinephrine 1:1,000: 0.01-0.03mg/kg IV or IO, single maximum dose 0.5mg
      - Epinephrine 1:1,000: Infusion 0.1 mcg/kg/min
      - Naloxone HCl (Narcan): IV/IO. May repeat every 2-3 minutes as needed. If perfusion is adequate, may give SC or IM:
        - Age <3 yrs: 0.1mg/kg
        - Age >3 yrs: 2.0mg
      - NS or LR fluid challenge 10-20mg/kg IV or IO
      - Glucagon 0.1mg/kg IV, IO, IM or SC to max 1.0mg for suspected beta blocker toxicity or calcium channel blocker toxicity
      - Calcium Chloride 10% solution: 0.2mg/kg IV slowly over 5 minutes for suspected calcium channel blocker toxicity

- No: Patient symptomatic?
  - Yes: Medical Control Options:
    - * Additional fluid boluses of NS or LR - 20ml/kg
    - * Pediatric transcutaneous pacing if available
    - * Atropine Sulfate 0.02mg/kg IV or ET (single minimum dose 0.1mg, single maximum dose 1.0mg)
    - * Epinephrine 1:1,000: 0.1mg/kg ET, followed by 2.0ml NS; repeat every 3-5 minutes
    - * Epinephrine 1:1,000: Infusion 0.1 mcg/kg/min
    - * Naloxone HCl (Narcan): IV/IO. May repeat every 2-3 minutes as needed. If perfusion is adequate, may give SC or IM:
      - Age <3 yrs: 0.1mg/kg
      - Age >3 yrs: 2.0mg
    - * NS or LR fluid challenge 10-20mg/kg IV or IO
    - * Glucagon 0.1mg/kg IV, IO, IM or SC to max 1.0mg for suspected beta blocker toxicity or calcium channel blocker toxicity
    - * Calcium Chloride 10% solution: 0.2mg/kg IV slowly over 5 minutes for suspected calcium channel blocker toxicity

- No: Medical Control Options:
  - * Additional fluid boluses of NS or LR - 20ml/kg
  - * Pediatric transcutaneous pacing if available
  - * Atropine Sulfate 0.02mg/kg IV or ET (single minimum dose 0.1mg, single maximum dose 1.0mg)
  - * Epinephrine 1:1,000: 0.1mg/kg ET, followed by 2.0ml NS; repeat every 3-5 minutes
  - * Epinephrine 1:1,000: Infusion 0.1 mcg/kg/min
  - * Naloxone HCl (Narcan): IV/IO. May repeat every 2-3 minutes as needed. If perfusion is adequate, may give SC or IM:
    - Age <3 yrs: 0.1mg/kg
    - Age >3 yrs: 2.0mg
  - * NS or LR fluid challenge 10-20mg/kg IV or IO
  - * Glucagon 0.1mg/kg IV, IO, IM or SC to max 1.0mg for suspected beta blocker toxicity or calcium channel blocker toxicity
  - * Calcium Chloride 10% solution: 0.2mg/kg IV slowly over 5 minutes for suspected calcium channel blocker toxicity

Initiate transport as soon as possible and notify Medical Control.

Reviewed 2/2011
Pediatric Bronchospasm / Respiratory Distress

Routine Pediatric Care

Administer high concentration of Oxygen by non-rebreather mask

Standing Order:
Cardiac monitor: Manage dysrhythmia(s) per protocol

Condition improving with Oxygen?

Standing Order:
Albuterol Sulfate: 0.5% via nebulizer:
Option 1: 0.25ml if < 2 yrs
Option 2: 0.50ml if > 2 yrs
Repeat x1 if necessary

If pulse is greater than 120 bpm consider Xopenex: .31 mg in 3 cc of ns for children older than 6 years of age and should not be administered to children younger than 6 years of age.

Patient in severe distress?

Standing Order:
* Saline lock or IV NS or LR
* Epinephrine 1:1,000: 0.01mg/kg SC (single maximum dose 0.3mg) and contact Medical control for update patient condition.

MEDICAL CONTROL OPTIONS

*Albuterol Sulfate* 0.5% via nebulizer; repeat doseages as identified above

*Epinephrine* 1:1,000: 0.01mg/kg SC; single maximum dose 0.3 mg

*If pediatric patient’s respiratory status worsens, go to Pediatric Anaphylaxis protocol*

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Routine Pediatric Care

Standing Order:
Administer NS or LR:
Option 1: IV if vein can be visualized or palpated
Option 2: IO if vein cannot be visualized or palpated
Option 3: EJ if peripheral vein cannot be visualized or palpated and patient is > 6 yrs

Standing Order:
Asystole or PEA
Epinephrine:
* 1:10,000 IV/IO 0.01mg/kg, subsequent doses 1:10,000 0.01mg/kg repeat every 3-5 minutes
* If no IV or IO, 1:1,000 ET 0.1mg/kg followed by 2.0 cc NS, repeat every 3-5 minutes

MEDICAL CONTROL OPTIONS:
* Normal Saline fluid bolus(es) 20ml/kg
* Sodium Bicarbonate 1mEq/kg IV or IO
- All other treatment modalities based upon suspected etiology for cardiopulmonary arrest
- Initiate transport as soon as possible and notify Medical Control

Initiate transport as soon as possible and notify receiving hospital
**Pediatric Coma / Altered Mental Status**

1. **Routine Pediatric Care**
   - Hypovolemia suspected?
     - Yes: **Standing Order:** Administer 20mg/kg fluid bolus
     - No: **Unknown etiology**
   - No: **Known Diabetic**
     - **If patient fits toxidrome of pinpoint pupils and decreased respiratory drive consider potential overdose.**
       - **Standing Order:**
         - *Naloxone HCl* - IV,IM,SC or IO
           Option 1: 0.1mg/kg if age < 5yrs., to maximum dose of 2.0mg
           Option 2: 2.0 mg if age > 5yrs
     - No: **Blood Glucose <100**
       - Yes: **Standing Order:**
         - *Dextrose IV bolus*
           Option 1: 10% for neonates 0.5gm/kg
           Option 2: 25% for body weight < 50 kg -- 0.5gm/kg
           Option 3: 50% for body weight > 50 kg -- 0.5gm/kg
         - **OR** -
           *Glucagon* 0.1mg/kg IV,IO,SC or IM up to maximum of 1.0 mg
       - No:
         - **MEDICAL CONTROL OPTIONS:**
           - Additional NS or LR fluid bolus(es) at 20mg/kg as needed
           - If coma caused by specific drug overdose, MD may order:
             Option 1: **Atropine** 0.02mg/kg IV, ET, IO - minimum dose 0.1mg:
               If given ET, follow with 2 ml NS
             Option 2: **Sodium Bicarbonate** 1-2mEq/kg as slow IV infusion;
               adequate ventilatory function required prior to administration

     - Initiate transport as soon as possible and notify Medical Control
   - **Initiate transport as soon as possible and notify receiving hospital**

---

Reviewed 2/2011
Pediatric Seizures

Routine Pediatric Care

Check blood glucose level

Less than 100mg/dL?

Yes

Standing Order:
- **Dextrose** IV bolus:
  - Option 1: 5-10 mL / kg 10% for neonates 0.5gm/kg
  - Option 2: 2-4 mL / kg 25% for body weight < 50kg - 0.5gm/kg
  - Option 3: 1-2 mL / kg 50% for body weight > 50 kg - 0.5gm/kg

MEDICAL CONTROL OPTIONS:

FOR STATUS EPILEPTICUS:
- Additional IV Ativan per above protocol
- Additional IV Dextrose per above protocol
- Additional Valium per above protocol

- Normal Saline fluid challenge, if indicated, 10-20 ml/kg

Initiate transport as soon as possible and notify Medical Control

Reviewed 2/2011
Routine Pediatric Care

**Standing Order:**
Administer NS or LR
Option 1: IV KVO if vein can be visualized or palpated
Option 2: IO KVO if vein cannot be visualized or palpated and patient is < 6yrs
Option 3: EJ if peripheral vein cannot be visualized or palpated and patient is > 6yrs

**Severe Shock?**
Yes
Position patient 15 degrees Trendelenburg or head down

No

**Severe shock?**
Yes
**Hypovolemia suspected?**
Yes
**Severe Shock**

No

**Hypovolemia suspected?**
Yes
**Standing Order:**
Administer 20ml/kg NS or LR bolus, unless known history of heart disease

No

**Standing Order:**
Cardiac monitor: manage dysrhythmias per pediatric protocols

Initiate transport as soon as possible and notify receiving hospital

---

**MEDICAL CONTROL OPTIONS:**

* Additional NS or LR bolus(es) at 20ml/kg
* IO infusion of NS or LR if < 6yrs.
  Bolus(es) of 20ml/kg may be repeated as needed
  - Known Cardiogenic Shock: **Dopamine** (40mg/ml solution) 2-20 mcg/kg/min

Initiate transport as soon as possible and notify Medical Control
Pediatric Supraventricular Tachycardia (SVT)

**Routine Pediatric Care**

**Standing Order:**
Administer NS or LR
Option 1: IV KVO if vein can be visualized or palpated
Option 2: IO KVO if vein cannot be visualized or palpated and patient is < 6yrs
Option 3: EJ if peripheral vein cannot be visualized or palpated and patient is > 6yrs

**Initiate transport as soon as possible and notify receiving hospital**

**Hypovolemia suspected?**

**Yes**

**Standing Order:**
Administer 20ml/kg fluid bolus

**No**

**Initiate transport as soon as possible and notify Medical Control**

---

**MEDICAL CONTROL OPTIONS:**

- Additional NS boluses at 20ml/kg
- **Adenosine**: 0.1mg/kg RAPID IV push. If no effect, repeat Adenosine 0.2mg/kg RAPID IV push. Maximum dose must not exceed 12mg.
- **Synchronized cardioversion**: 0.5J/kg – 1J/kg for symptomatic patients, if not effective increase to 2J/kg
- Consider for sedation:
  - Option 1: **Valium**: 2.5mg SLOW IV push
  - Option 2: **Morphine Sulfate**: 2mg - 5mg SLOW IV push
- Vagal maneuvers

---

Synchronized cardioversion should be considered only for those infants whose heart rates are in excess of 220 and children whose heart rate is in excess of 180 and who demonstrate one or more of the following signs of hypoperfusion:
- Decreased LOC, weak and thready pulse, capillary refill time of more than 4 seconds or no palpable BP

Vagal maneuvers may precipitate asystole and therefore should be employed with caution in the field and only in a cardiac-monitored child with IV access

Reviewed 2/2011
Routine Pediatric Care

Ventilate at a rate appropriate for age

Standing Order:
* Advanced airway management
* Initiate 1-2 large bore IVs NS or LR
* Administer NS or LR fluid bolus(es) 20ml/kg
* Titrate infusion rate to patient's hemodynamic status depending upon age/size/weight of child

Patient in cardiopulmonary arrest AND no IV?

Yes

Standing Order:
Administer NS or LR fluid bolus of 20ml/kg
Option 1: IO
Option 2: EJ if patient >6yrs

NO

Apply splint for stabilization. If using MAST/PASG for suspected massive pelvic fracture – apply and call Medical Control for orders to inflate.

Start CPR and follow PALS Guidelines

MEDICAL CONTROL OPTIONS:
* Needle cricothyroidotomy if indicated and authorized
* Additional NS or LR fluid bolus(es) 20ml/kg or wide open
- Needle decompression of the thorax if indicated

Initiate transport as soon as possible and notify Medical Control

See Pediatric Trauma Classification
Routine Pediatric Cardiac Care; Begin CPR

**Standing Order:**
* Advanced airway management, if indicated
* Hyperventilate with 100% Oxygen
* Initiate IV/IO Normal Saline, but do not delay defibrillation

**Standing Order:**
Initial Defibrillation 2J/kg as indicated by AHA then all subsequent defibrillations @ 4J/kg Defibrillate at 4J/kg 30-60 seconds after each dose of medication if V-Fib/Pulseless V-Tach persists

**Standing Order:**
Epinephrine:
Option 1: 0.01mg/kg 1:10,000 IV/IO
Option 2: 0.1mg/kg 1:1,000 ET (every 5 minutes for current rhythm)

**Standing Order:**
Amiodarone 5 mg/kg bolus IV/IO (prefer) or Lidocaine 1 mg/kg IV/IO (if Amiodarone is not available)

**MEDICAL CONTROL OPTIONS:**
* Normal Saline fluid bolus(es) 20ml/kg
  - Sodium Bicarbonate 1mEq/kg IV/IO
  - Consider Magnesium Sulfate for polymorphic VT
* All other treatment modalities based upon suspected cause of VF/VT

Initiate transport as soon as possible and notify Medical Control

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Vascular Access Devices EZ-IO, B.I.G.

Patient needs emergent life saving IV fluids or medications despite at least 2 attempts at peripheral access.

**Indications and Contraindications**

If the Tibial Tuberosity CANNOT be palpated
the Insertion site is two finger widths below the Patella (and then) medial along the flat aspect of the Tibia

If the Tibial Tuberosity CAN be palpated
the Insertion site is one finger width below the Tuberosity (and then) medial along the flat aspect of the Tibia

Pediatric 3-39 kg
MUST HAVE ONE OF THE FOLLOWING:

- GCS < 8
- Hemodynamic instability with a systolic BP < 90.
- Respiratory compromise with an O2 saturation < 80% or a resp. Rate >40 or <10.

**CONTRAINDICATIONS:**

- Lower extremity fracture in which the device is to be used.
- Previous orthopedic procedures at site (i.e. Knee replacement surgery)
- Previous medical condition in the lower extremity (i.e. Peripheral vascular disease, tumor etc.)
- Infection at insertion site.
- Inability to locate landmarks.
- Excessive edema or obesity at insertion site.

**CONSIDERATIONS:**

- Flow rate will be slower than in a peripheral IV. Consider a pressure bag.
- Infusion in a conscious patient may cause severe discomfort.

**Remember BIG TOE-IO**

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Psychiatric
Behavioral Emergencies

Routine Care

**Associated Injuries or Overdose:**
Perform assessment

If Trauma:
Go to appropriate trauma protocol

If Medical:
Go to appropriate medical protocol

Use a calm but firm approach

Patient combative?

Yes

Attempt to talk patient down successful?

Yes

Routine Transport

No

Standing Order:
Perform D-Stick
If BS less than 70mg/dl Establish IV administer
Dextrose 50% 25 gm IV or Glucagon 1mg IM

Medical Control Options

**Physical restraints**
Place wrist or leg restraints on tight enough so that two fingers can be placed between restraint and extremity. Check capillary refill, PMS periodically.

Document observed behavior

**Chemical restraint**
- **Ativan** 2mg IV/IM
- **Haldol** 5mg IV/IM
  (May repeat haldol times one)

Initiate transport as soon as possible

Assess Glasgow Coma Score Periodically.

All organic causes for the behavior must be ruled out.
Trauma
SAINT LOUIS REGIONAL TRAUMA CLASSIFICATION CRITERIA

Class I Trauma

Transport to trauma center

- Glasgow Coma Score <14 at time of report
- Systolic BP: ADULTS <90 or clinical signs of shock
  - PEDS: 0-12m <70
  - 1-5y <80
  - 6-12y <90
- Heart Rate: ADULTS: >120 or clinical signs of shock
  - PEDS: 0-12m >160
  - 1-5y >130
  - 6-12y >115
  - >13y >100
- Respiratory Rate: ADULTS: <10 or >29 or clinical signs of shock
  - PEDS: 0-12m >60
  - 1-5y >44
  - 6-12y >30
  - >13y >22
- All penetrating injuries to head, neck, torso, groin
- Airway compromise, flail chest, pneumo/hemothorax, intubated
- Two or more long bone fractures (open or closed)
- Amputation proximal to wrist or ankle
- Open or depressed skull fracture
- Pelvic fractures
- Paralysis or signs of spinal injury
- Active or uncontrolled hemorrhage
- Burns: ADULTS >20%BSA
  - PEDS >10%BSA
- Degloving or major crush injury

Class II Trauma

Transport to trauma center

- Head injury with Loss of consciousness < 5 min
  - GCS=13-14
- Penetrating injuries to extremities proximal to elbow or knee
- All open fractures
- Auto crash speed >20 mph
  - Internal damage to vehicle
- Auto-pedestrian/auto-bicycle injury with >5 mph impact
  - MCC or ATV crash >20 mph or separation of rider
- Assault with +LOC
- Falls 5-10 feet
- Pediatric trauma score ≥ 9
- Revised trauma score ≥ 12
- Near drowning or hanging

Class III Trauma

Preferential transport to closest hospital

- MVC <20 mph or unknown slow speed
- MCC/ATV crash <20 mph
- Auto-pedestrian and auto-bicycle <5 mph impact
- Assault without LOC, GCS=15
- Penetrating injury distal to elbow or knee
- Burns <10%

Reviewed 2/2011
Routine Trauma Care

Ensure Scene Safety

**GOAL:** On scene < 20 minutes

Assess ABC's and life threatening conditions

- Immediate action required?
  - Yes: Correct conditions and reassess
  - No

- MOI for spinal injury present?
  - Yes
    - Spinal exam requires immobilization? (See spinal assessment protocol)
  - No

Complete applicable diagnostics:
- Physical Exam: Primary and secondary
- Vital signs: 2 sets; BP (including diastolic, pulse, respirations)
- Establish IV if indicated: NS or LR; 250 – 500 cc bolus(es) wide open, Titrate to patient’s hemodynamic status.
- Oxygen: Metered to patient condition and medical history
- Pulse Oximetry: if available
- Cardiac Monitor: 3 lead, 12 lead if available and applicable
- Remove all Clothing

- Patient complaining of pain?
  - Yes
    - Assess with 'Patient Pain Scale' and reassess after each treatment
  - No

- Place patient in position of comfort if possible

Information given to receiving facility includes
- Glasgow coma scale, revised trauma score, and trauma classification. (Class 1, 2, or 3)

Go to condition specific protocol

**Patient Pain Scale Assessment**
Assessed by asking the patient to rate the severity of their pain based on a 1-10 scale; 10 rated as the worst pain they have ever experienced and 1 rated as the least.
Abdominal / Pelvic Trauma

**Standing Order**
IV Normal Saline or LR:
250-500cc bolus(es) if indicated
Titrate to patient's hemodynamic status;
If intra-abdominal bleeding suspected,
then by definition this is a Class I Trauma;
notify Medical Control; and titrate systolic BP to >90

**Routine Trauma Care**

**MEDICAL CONTROL OPTIONS**
Additional Normal Saline or LR boluses): Per ATLS protocol
Titrate to patient's hemodynamic status up to 2L
Patient Trauma Status:
Information given to receiving facility includes glasgow coma scale, revised trauma score and trauma classification (Class 1, 2 or 3)
Initiate transport as soon as possible and notify Medical Control

**If patient in late pregnancy:**
Follow all procedures identified above
Place left lateral recumbant if not immobilized
Place immobilized patient on left side while on backboard
Notify appropriate facility immediately

---

If patient in late pregnancy: Apply splint for abdominal/pelvic stabilization. If using MAST/PASG apply and call Medical Control for orders to inflate.
Burns / Inhalation Injuries

Routine Trauma Care/ Stop the burning process

Assess ABC's and life threatening conditions

Immediate action required?  
Yes → Correct conditions and reassess

No

Thermal

Remove smoldering, non-adhering clothing and jewelry. Do not pull off skin or tissue.

Electrical/Lightning

Standing Order
Cardiac monitor
Manage dysrythmias

Radiation

Identify the offending agent(s) if possible.
Consider HAZMAT intervention if indicated

Chemical

Identify the offending agent(s) if possible.
Consider HAZMAT intervention if indicated

Remove patient from environment, or follow Chemical branch for solid radioactive material.

Wash with copious amounts of clean water and/or sterile NS unless contraindicated by chemical agent.

Maintain optimal body temperature

Consider potential vehicle decontamination needs

Continue to Burns page two

The following agents contraindicate washing with copious amounts of water:
- Sodium metal
- Potassium metal
- Lithium metal
- Dry lime/Lye
- Phenol

Contact Medical Control for further advice

Reviewed 2/2011

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**Burns / Inhalation Injuries Continued**

**MEDICAL CONTROL OPTIONS**

**Additional Normal Saline or LR bolus(es):**  
250-500 cc and titrate to patient’s hemodynamic status

**Trauma Status:**  
Information given to receiving facility includes Glasgow Coma Scale, revised trauma score and trauma classification (Class 1, 2 or 3)

Initiate transport as soon as possible and notify Medical Control

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**Continued from Burns page one**

- **Hypovolemia suspected?**
  - Yes: **Standing Order**  
    - Administer 250 cc bolus and titrate accordingly
  - No

- **Less than 10% BSA burns?**
  - Yes: Apply dry dressing
  - No: Apply clean burn dressing and/or burn sheets

- **Patient in severe pain?**
  - Yes: Go to Pain Protocol
  - No
Carbon Monoxide Poisoning

Assess ABC’s and life threatening conditions

Immediate action required?

Yes
Correct conditions and reassess

No

Routine Trauma Care; Oxygen at 100%

MEDICAL CONTROL OPTIONS

Destination choice: Initiate transport to closest trauma facility for resuscitation and treatment where more advanced therapies such as hyperbaric chamber capabilities will be considered.
Hypovolemia suspected?

No

Dysrythmia?

No

Suspected hypothermia?

No

Scuba diver or suspected barotrauma?

No

MEDICAL CONTROL OPTIONS

Standing Order
Administer 250 cc bolus(es) and titrate accordingly

Go to appropriate rhythm protocol

Go to appropriate cardiac protocol

Consider utilization of Hyperbaric Treatment facility

Initiate transport as soon as possible and notify Medical Control

All AMA’S
Contact Medical Control

IN GENERAL
“Every drowning victim, even one who requires only minimal resuscitation before recovery requires monitored Tx and evaluation. At a medical facility” (AHA) Attempt to transport

All Unconscious, Unresponsive Drowning Emergencies will be Classified as a Level 1 Trauma Designation.

Routine Medical Care – Consider Spinal Precautions
Advanced Airway Management as needed

Additional 250-500 cc bolus(es), wide open or titrate to patient’s hemodynamic status

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Eye Emergencies

Routine Trauma Care

Thermal Burns/Blunt Trauma

Penetrating Trauma

Secure impaled object, if applicable

Chemical Irritant

Flush eye(s) for 15 minutes with copious amounts of a controlled stream of Sterile Normal Saline, Sterile Water or tap water

Patch and protect both eyes

MEDICAL CONTROL OPTIONS

Obtain visual history, including use of contact lenses, corrective lenses (glass/plastic), safety goggles

Able to close eyelids?

Yes

No

- Moisten eye(s) with Normal Saline (exception: chemical irritants which need continuous irrigation). Eye(s) may then be irrigated and covered with moistened gauze pads

- Initiating transport as soon as possible and notify receiving hospital

Eye injuries with concomitant head injury should not be given pain medication

Indications:
Signs & symptoms of Central Retinal Artery Occlusion:
Sudden, complete and painless loss of vision in one eye

MEDICAL CONTROL OPTIONS

- Removal of contact lenses if patient is unable to do so
- Morphine Sulfate: 2mg slow IV push; repeat times 1 as necessary
- Dilaudid 1mg IV push
- If suspected central retinal artery occlusion:
  Cardiac monitor, apply vigorous pressure using heel of hand (massage) to affected eye for 3-5 seconds, then release -- (the patient may perform this procedure)

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Head Trauma

**Routine Trauma Care**
- Oxygen 15 lpm NRB

**Determine GCS**

**Able to establish IV access?**

- **Check blood glucose level**
  - **<70 mg/dL**
    - **Yes**
      - **Standing Order**
        - 50% Dextrose Solution: 25 Gm IV or
        - Glucagon: 1-2 mg IM for hypoglycemia if no IV
    - **No**
      - After intubation, ventilate normally to prevent hypoxia; do not hyperventilate

- **GCS 8 or less**
  - Prepare for intubation
    - **Standing Order**
      - Lidocaine 1.5 mg/kg IVP
      - Etomidate 20 mg IVP or (0.3mg/kg)

- **GCS 9-13**
  - Close observation for changes in GCS. May need to restrain. Contact medical control for sedation options.
  - If GCS drops below 8: prepare for intubation

- **GCS 14, 15**
  - Routine transport

**MEDICAL CONTROL OPTIONS**

- **Morphine:** 5-15mg IV for healthy adults, 2.5mg in the elderly/debilitated.
- Note: Narcotics are preferable for Sedation.
- **Patient Trauma Status:** Information given to receiving facility includes gout coma scale, revised trauma score and trauma classification (Class 1, 2, or 3)

- **Initiate transport as soon as possible and notify Medical Control**

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Correct all immediate life threatening conditions

Routine Trauma Care

MEDICAL CONTROL OPTIONS

Specific procedures as indicated:
Chest decompression, needle cricothyroidotomy, etc.

Patient Trauma Status:
Information given to receiving facility includes Glasgow Coma Scale, Revised Trauma Score and trauma classification (Class 1, 2, or 3)

Initiate transport as soon as possible and notify Medical Control

Standing Order
IV Normal Saline or LR:
1-2 initiated while enroute or during extrication;
titrated to patient’s hemodynamic status

Go to condition specific protocol
Musculoskeletal Injuries

Routine Trauma Care

Ice and splint as applicable

Standing Order
If BP <100 systolic:
IV Normal Saline or LR:
250 cc bolus(es) if indicated by hypotension;
Titrate to patient's hemodynamic status

MEDICAL CONTROL OPTIONS
Additional IV Normal Saline or LR:
Titrate to patient's hemodynamic status
Pain Protocol: Contraindicated in multisystem trauma
Patient Trauma Status:
Information given to receiving facility includes glasgow coma scale, revised trauma score and trauma classification (Class 1, 2, or 3)

Initiate transport as soon possible and notify Medical Control

Patient complaining of severe pain?

Yes

Go to Pain Protocol

No
Soft Tissue / Crush Injuries

Routine Trauma Care

Suspected severe crushing injury/compartment syndrome?

Yes

Remove all restrictive dressings

No

Splint/bandage injured areas as indicated

No

Closely monitor neurovascular status distal to injury

No

Signs and symptoms of Spinal Cord Injury?

Yes

Go to Spinal Column/Spinal Cord Protocol

No

Initiate IV NS

No

Patient complaining of severe pain?

Yes

Go to Pain Protocol

No

Normal Saline (NS) is preferred due to potentially increased potassium release from severely crushed tissue injuries.

MEDICAL CONTROL OPTIONS

Patient Trauma Status:
Information given to receiving facility includes Glasgow coma scale, revised trauma score and trauma classification (Class 1, 2, or 3)

Sodium Bicarb: if extended entrapment

Initiate transport as soon as possible and notify Medical Control

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Mechanism presents reasonable potential for injury?

No

Uncertain

Spinal pain or point tenderness?

No

Abnormal sensory response?

No

Abnormal neurologic exam?

No

Go to Spinal Column / Cord Injuries

When in doubt, fully immobilize the spine.

Go to appropriate condition specific protocol

Routine Trauma Care

Mechanism of Injury

Positive: Violent impact with forces clearly capable of damaging spinal column.

Uncertain: Unclear if forces were clearly capable of damaging spinal column.

Sensory Response

Positive: Complaint of any of the following in any extremity: Numbness, weakness, paresthesia (tingling), radicular (electrical shooting) pain

Neurologic Response

Finger abduction/adduction
Finger/hand extension
Foot
Plantar/Dorsiflexion
Upper extremity sensation
Lower extremity sensation

Patient Exam

Reliable
All of the following: Calm, cooperative, sober and alert.

Unreliable
Any of the following: Acute stress reaction (ASR), distracting injuries or pain, drug or alcohol intoxication, abnormal LOC, altered mental status, communications difficulties.

Pain/Tenderness

Complaint of pain: Do not palpate the spine.

No complaint of pain: Palpate directly over the spinous processes of the bony column.

Complete Spinal Assessment Form if patient exam is completed and patient is not placed in full spinal immobilization. Code Red Spinal Assessment Script is also Acceptable.

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Spinal Column / Cord Injuries

Routine Trauma Care

Determine presence or absence of significant neurological signs and symptoms

GCS <13

Yes

Go To Head Trauma Protocol

No

Determine presence or absence of significant neurological signs and symptoms

Patient hypotensive?

Yes

Standing Order
Ensure ventilations are adequate
Cardiac Monitor:
Manage dysrhythmia(s) per protocol
Bradydysrhythmias are commonly seen in high level spinal injuries

Standing Order
Normal Saline:
250-500 cc bolus and titrate to patient’s hemodynamic status
Caution: Persistent hypotension unresponsive to titration may reflect neurogenic (spinal) shock

No

Significant neurological signs and symptoms may include:
Motor function
Sensory function
Reflex responses
Visual inspection of spinal column
Bradycardia
Priapism
Hypotension
(possible spinal shock)
Hypertension
(possible herniation-Cushing syndrome)
Loss of sweating or shivering
Loss of bowel or bladder control

Significant signs and symptoms of spinal cord injury may include:
Partial or complete loss of sensation
Partial or complete loss of muscle function
Partial or complete loss of sympathetic tone

Signs and symptoms will present at or below the level of the suspected injury site

MEDICAL CONTROL OPTIONS

Solu-Medrol:
30 mg/kg bolus loading dose
Additional IV Normal Saline or LR:
250-500 cc bolus(es); titrate to patient’s hemodynamic status
Dopamine:
2-20 ug/kg/minute for suspected neurogenic shock without hypovolemia;
Titrate to patient’s hemodynamic status
Patient Trauma Status:
Information given to receiving facility includes glasgow coma scale, revised trauma score and trauma classification (Class 1, 2, or 3)

Initiate transport as soon as possible and notify Medical Control

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Thoracic Trauma

MEDICAL CONTROL OPTIONS

Needle Chest Decompression:
If indicated and not already performed

Patient Trauma Status
Information given to receiving facility includes glascow coma scale, revised trauma score and trauma classification (Class 1, 2, or 3)

Initiate transport as soon as possible and notify Medical Control

NOTE: Assisted positive pressure ventilation using a BVM may also be indicated and may also serve as an "internal splinting" of the flail segment due to lung expansion.

Endotracheal intubation is the preferred method of providing assisted positive pressure ventilations

Go to Pain Protocol

Patient complaining of severe pain?

Yes

Flail chest

If severe respiratory distress, assist respirations

Stabilize flail segment

Tension pneumothorax

If present, following closure of open pneumothorax, temporarily release occlusive dressing and reseal

Perform needle chest decompression, if indicated

Open pneumothorax

Immediately apply occlusive dressing sealing 3 sides

Monitor patient closely for evidence of developing tension pneumothorax

Routine Trauma Care
Traumatic Amputation

Routine Trauma Care

Tissue still attached to body (i.e., avulsion)

Clean wound surface with sterile Normal Saline.
Gently return skin to normal position if possible.
Control bleeding and bandage wound with bulky pressure dressings

Complete amputation

Clean wound surface with sterile Normal Saline
Control bleeding and bandage wound with bulky pressure dressings
Retrieve amputated tissue or part(s) if possible
Wrap amputated tissue or part(s) in sterile gauze moistened with Normal Saline
Place amputated tissue or part(s) in plastic bag
Place sealed bag into cool/cold water and immerse.
No direct contact between injured tissue or part(s) and ice should occur.

Patient complaining of severe pain?

Yes
Go to Pain Protocol

No

MEDICAL CONTROL OPTIONS
Initiate transport as soon as possible and notify Medical Control

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If there is a physician who is on-scene and they are not part of our Medical Control at SSM DePaul Health Center, you must first call Medical Control to have any orders approved before they are carried out.
**Traumatic Cardiopulmonary Arrest**

- **Routine Trauma Care**
- **Initiate CPR and ACLS**
- **Consider and correct all potential non-traumatic causes:**
  - Hypothermia, Overdose,
  - Pneumothorax or
  - Underlying medical conditions
- **Provide appropriate management for identified injuries**
- **Standing Order**
  - Manage dysrhythmias per appropriate protocol while enroute
- **MEDICAL CONTROL OPTIONS**
  - Specific procedures as indicated:
    - Chest decompression, needle cricothyroidotomy, etc.
  - **Patient Trauma Status:**
    - Information given to receiving facility includes Glasgow Coma Scale, revised trauma score and trauma classification (Class 1, 2, or 3)
  - Initiate transport as soon as possible and notify Medical Control

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