



**EMERGENCY DEPARTMENT**

**MEDICAL DIRECTIVES**

**AND**

**ADVANCED TRIAGE PROTOCOLS**

**FOR**

**DIAGNOSTIC X-RAYS**

**DIAGNOSTIC LABORATORY STUDIES**

**MEDICATION ADMINISTRATION**

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## **MEDICAL DIRECTIVES**

### **INTRODUCTION AND OVERVIEW**

Medical Directives are orders for procedures, treatments or interventions that may be performed for a range of patients who meet certain criteria and for whom specific circumstances exist. The Medical Directive identifies a specific treatment or range of treatments and the specific conditions that must exist before the directive can be implemented. Knowledge, skill and judgement must be used by the Emergency Department Registered Nurse (ED RN) to determine when patients meet the pre-established criteria and whether or not the implementation of the care protocols and interventions is appropriate.

The ED RN who implements a procedure or administers a medication on the basis of a Medical Directive is responsible for:

- ◆ Possessing the required knowledge, skill and judgement
- ◆ Knowing the risks to the client
- ◆ Knowing the predictability of the outcome
- ◆ Determining whether management of the possible outcomes is within the scope of her/his practice
- ◆ Knowing how to contact the physician responsible for care of the client

If the ED RN identifies that the patient does not meet the criteria of the Medical Directive, or if the ED RN does not have the necessary knowledge, skill or judgement to implement the Medical Directive, the physician will be notified for specific patient care orders.

The following Medical Directives have been developed for use in the Emergency Department and will be implemented after the majority of ED RNs have had the opportunity to attend an in-service education session lead by the Medical Director of Emergency Services. The process for validating competency may include demonstration of the appropriate assessments and judgement needed to determine which patients meet the criteria of the specified Medical Directive. This may be accomplished with an education, learning or testing component.

Each Advanced Medical Directive for conditions related to medication administration will be specifically outlined and accompanied by an algorithm to ensure conditions for treatment are well defined. A semi-annual review will be conducted at the discretion of the ED Management Team to review the appropriateness of the use of the Medical Directive.

# **DIAGNOSTIC X-RAYS**

**MEDICAL DIRECTIVE:      DIAGNOSTIC X-RAYS**

**POLICY:**

1. The Chief of Emergency Services will approve the education component of the Medical Directive: Diagnostic X-rays.
2. The ED RN will have completed an educational component specific to that particular medical directive to become eligible to initiate that directive.
3. The ED RN will demonstrate competence in the Medical Directive prior to initiating.
4. The ED RN will initiate x-ray studies of extremities as outlined in the Practice Guidelines
5. The ED RN will consult with a physician when there is uncertainty as to whether or not an x-ray should be initiated, or as to which specific views should be done. An x-ray will not be initiated if pregnancy is a possibility.
6. A semi-annual review will be conducted at the discretion of the ED Management Team to review the appropriateness of the initiation of diagnostic x-rays.

**PRACTICE GUIDELINES:**

1. Only the following diagnostic x-ray studies may be initiated by the ED RN:  

<b>LOWER EXTREMITY:</b>	Toes, Foot, Ankle, Tibia/Fibula and Knee
<b>UPPER EXTREMITY:</b>	Fingers, Hand, Wrist/Scaphoid and Radius/Ulna
2. Initiate x-ray studies only for those patients with isolated extremity injuries, with good general appearance and normal neurovascular status.
3. **ASSESSMENT**
  - I. Obtain and document the history from the patient including:
    - a) time, approximate force and mechanism of injury
    - b) ability to use extremity and any sensory changes following the injury
    - c) date of last menstrual period on females of child-bearing age (12-50)
    - d) tetanus status in the presence of broken skin integrity
    - e) complaints of any additional injury
  - II. Note and document any lacerations, abrasions, edema, ecchymosis and/or deformity.
  - III. Determine the range of motion (ROM), weight bearing ability and function before and after the injury.
  - IV. Assess and document the neurovascular status of the injured extremity, checking for the 6 Ps: Pulses, Pain, Pallor, Paresthesia, Paralysis and Polar (temperature).
  - V. Identify the area of tenderness by palpation, ensuring assessment of the joints above and below the area of described pain to discover any proximal or distal injuries.

#### 4. **INTERVENTIONS**

- a) Apply an ice pack and elevate the extremity for injuries less than 24 hours old.
- b) Splint and/or apply a sling for injuries with any obvious deformity.
- c) Determine the need for analgesia prior to x-ray.
- d) Obtain informed consent. The RN must be able to:
  - ◆ explain the reason(s) for the x-ray
  - ◆ explain the general risks and benefits of performing the x-ray
  - ◆ answer any questions the patient might have

#### **UPPER EXTREMITY X-RAYS**

##### a) **FINGERS**

- ◆ Fingers are universally x-rayed as complications from injuries can be significant.
- ◆ Assess flexion, abduction, extension and sensory function.
- ◆ Physician to assess first if finger is dislocated as it will likely be reduced prior to x-ray to decrease pain.
- ◆ Request x-ray of the specific injured finger and not the entire hand.

##### b) **HAND**

- ◆ The hand is universally x-rayed as complications from injuries can be significant.
- ◆ Assess flexion, abduction, extension and sensory function.
- ◆ The most common fracture is a Boxer's (neck of the 5<sup>th</sup> metacarpal).

##### c) **WRIST**

- ◆ Always consider an elbow injury, especially in children where dislocation of the radial head is common. Do not initiate x-ray for possible pulled elbow.
- ◆ > 35 years: FOOSH with wrist/proximal hand pain - consider Colles fracture.
- ◆ < 35 years: FOOSH with wrist/proximal hand pain (snuff box) - consider scaphoid fracture.

##### d) **SCAPHOID**

- ◆ Assess the anatomical snuff box for scaphoid tenderness.
- ◆ FOOSH with wrist and proximal hand pain – consider a scaphoid fracture.

##### e) **RADIUS/ULNA**

- ◆ Assess for pain in middle ½ of the forearm (above wrist / below elbow)
- ◆ Immobilize if it is unstable.
- ◆ Usual mechanism of injury is a direct blow.
- ◆ Always consider the elbow, especially in children where dislocation of the radial head is common. Do not initiate x-ray for possible pulled elbow.

## **LOWER EXTREMITY X-RAYS**

### a) **TOES**

- ◆ Usually do not need to be x-rayed but x-ray with a noted deformity, a suspected dislocation or an obvious open fracture.
- ◆ X-ray a great toe injury with pain and swelling as it may be an intra-articular fracture.

### b) **FOOT**

- ◆ See Ottawa Ankle Rules
- ◆ The history of a weight dropping on foot will support initiation of x-ray if unable to bear weight or if deformity or point tenderness is present.

### c) **ANKLE**

- ◆ See Ottawa Ankle Rules (also assess proximal fibula)

### d) **TIBIA/FIBULA**

- ◆ Always assess joint above and below the site of pain.
- ◆ Initiate x-ray with mid-leg pain or ankle pain (especially the medial malleolus).
- ◆ Assess proximal fibula and if tender, also assess ankle (as ankle and proximal fibula fractures may occur together) – see Ottawa Ankle Rules.

### e) **KNEE**

- ◆ See Ottawa Knee Rules

## **OTTAWA ANKLE RULES FOR ANKLE INJURY RADIOGRAPHY**

- a) An **ankle** x-ray series is only required if there is any pain in the malleolar zone and **any** of these findings:
1. bone tenderness at the posterior edge of the distal 6 cm or tip of the lateral malleolus
  2. bone tenderness at the posterior edge of the distal 6 cm or tip of the medial malleolus
  3. Inability to bear weight both immediately and in the ED
- b) A **foot** x-ray series is only required if there is any pain in the mid-foot zone and **any** of these findings:
1. bone tenderness at the base of the 5<sup>th</sup> metatarsal
  2. bone tenderness at the navicular
  3. inability to bear weight both immediately and in the ED

## **OTTAWA KNEE RULES FOR KNEE INJURY RADIOGRAPHY**

- A **knee** x-ray series is only required for knee injury patients with **any** of these findings:
- 1) age 55 or older
  - 2) isolated tenderness of patella (no bone tenderness of knee other than patella)
  - 3) tenderness of head of fibula
  - 4) inability to flex to 90 degrees
  - 5) inability to bear weight both immediately and in the ED for 4 steps (unable to transfer weight twice onto each lower limb regardless of limping).

# **DIAGNOSTIC LABORATORY STUDIES**

**MEDICAL DIRECTIVE:        DIAGNOSTIC LABORATORY STUDIES**

**POLICY:**

1. The Chief of Emergency Services will approve the education component of the Medical Directive: Diagnostic Laboratory Studies.
2. The ED RN will have completed an educational component specific to that particular medical directive to become eligible to initiate that directive.
3. The ED RN will demonstrate competence in the Medical Directive prior to initiating.
4. The ED RN will initiate diagnostic laboratory and studies as outlined in the Practice Guidelines.
5. The ED RN will consult with a physician when there is uncertainty as to whether or not a laboratory study should be initiated.
6. A semi-annual review will be conducted at the discretion of the ED Management Team to review the appropriateness of initiation of laboratory studies by the ED RN.

**PRACTICE GUIDELINE: URINE TESTING**

1. A urine specimen may be sent to the lab for patients with suspected urinary tract infections and for patients with low abdominal pain.
2. A urine specimen should be obtained and dipped for blood for patients with suspected renal colic, abdominal trauma, or back injuries. If the dip is positive, the specimen will be sent to the lab.
3. A urine specimen will be obtained and dipped for protein in pregnant females past the first trimester, who present with edema, headache, or elevated B/P. If the dip is positive, the specimen will be sent to the lab.
4. A urine specimen will be obtained for pregnancy testing for all sexually active women between the ages of 12 and 50, with complaints of abdominal pain, who are not already known to be pregnant.
5. Apply a PDU Bag for “toxic looking” children too young to provide a sample.

**FEVER / PAIN** – (Acetaminophen)  
**VASCULAR ACCESS** – (EMLA)  
**WHEEZING / ASTHMA / COPD** – (Salbutamol)  
**CORNEAL INJURY** – (Ophthalmologic Anaesthetic)  
**IV THERAPY** – (0.9% NaCl IV Solution)  
**HYPOGLYCEMIA** – (0.9% NaCl IV Solution, 50% Dextrose Solution)  
**CHEST PAIN** – (Nitroglycerine, ASA, 0.9% NaCl IV Therapy)

**MEDICAL DIRECTIVE:      MEDICATION ADMINISTRATION**

**POLICY:**

1. The ED RN will administer medications as outlined in the Practice Guidelines.
2. The ED RN will consult with a physician when there is uncertainty as to whether or not a medication should be administered.
3. The Chief of Emergency Services will approve the education component of the Medical Directive: Medication Administration.
4. The ED RN will have completed an educational component specific to that particular medical directive to become eligible to initiate that directive.
5. The ED RN will demonstrate competence in the Medical Directive prior to initiating.
6. A semi-annual review will be conducted at the discretion of the ED Management Team to review the appropriateness of medication administration initiated by the ED RN.

**PRACTICE GUIDELINES:**

Only the following medications/I.V. fluids may be administered by the ED RN prior to formal assessment by the physician:

<b><u>MEDICATION</u></b>	<b><u>AGE CRITERIA (3, 6, 9, 12)</u></b>
◆ Acetaminophen	3 Months
◆ EMLA Dermal Analgesic	6 Months
◆ Salbutamol	9 Years
◆ Ophthalmologic Anaesthetic	9 Years
◆ IV Solution 0.9% NaCl	9 Years
◆ Dextrose 50% IV Solution	12 Years
◆ Nitroglycerine Spray	12 Years
◆ ASA	12 Years

<b>VITAL SIGNS BY AGE (Average)</b>					
<b>Age</b>	<b>Weight (kg)</b>	<b>Heart Rate</b>	<b>Respirations</b>	<b>Systolic BP</b>	<b>Diastolic BP</b>
1 year	10	125	24 – 35	96 ± 30	66 ± 15
2 – 3 years	12 - 14	115	20 - 30	99 ± 25	64 ± 25
4 – 5 years	16 – 18	100	20 - 30	99 ± 20	65 ± 20
6 – 8 years	20 – 26	100	12 - 25	99 ± 20	65 ± 20
10 – 12 years	32 - 42	75	12 – 25	105 ± 20	65 ± 20
14 years	> 50	70	12 – 18	115 ± 20	70 ± 20
<small>Modified from Nadas A: Pediatric cardiology, Philadelphia, 1976, WB Saunders Co.; et al: Pediatrics 67:607, 1981.</small>					
Adult > 16yrs	> 60	60 – 100	5 – 20	110 ± 20	64 ± 20

## **MEDICAL DIRECTIVE FRAMEWORK**

### **CONDITION:**

- ◆ Specific client conditions which must be met before the procedure, medication or investigation can be implemented.

### **CIRCUMSTANCES:**

- ◆ Any circumstances which must exist before the procedure, medication or investigation can be implemented.

### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

- ◆ A description of the process followed to initiate the procedure, medications or investigations.

### **CONTRAINDICATIONS AND RISKS:**

- ◆ Any contraindications or risks for implementing the procedure, medication or investigation.

### **REASONS TO SEEK MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE**

- ◆ Indications for notification of the physician or for discontinuing the procedure, medication or investigation.

## **PYREXIA / PAIN**

### **MEDICAL DIRECTIVE**

#### **◆ Acetaminophen**

#### **CONDITION:**

- ◆ Fever (temperature greater than 38.5) or pain with age greater than 3 months

#### **CIRCUMSTANCES:**

- ◆ Measured oral / tympanic / axilla temperature greater than 38.5
- ◆ Signs of irritability or distress with pain or discomfort

#### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Assess vital signs including oral / tympanic / axilla temperature
2. Determine that acetaminophen has not been given in the previous 4 hours
3. Assess and document allergy status
4. Assess and document weight
5. Give acetaminophen 15 – 20 mg/kg by mouth or per rectum
6. Document findings, and the time and dose of acetaminophen given
7. Perform temperature / pain reassessment 30 minutes after medications given
8. Document reassessment findings

#### **CONTRAINDICATIONS AND RISKS:**

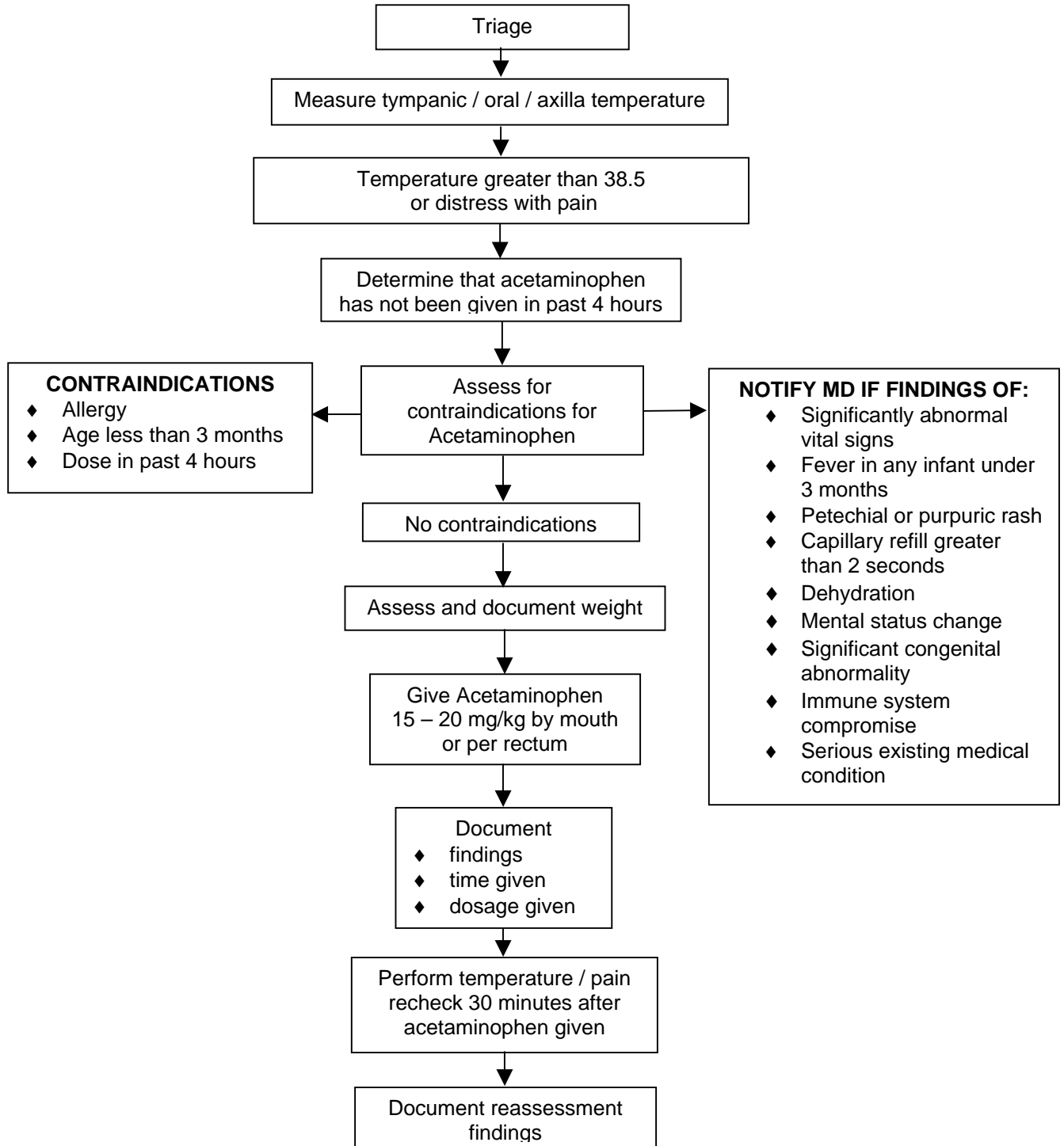
- ◆ Allergy to acetaminophen
- ◆ Age less than 3 months
- ◆ Previous dose of acetaminophen in the past 4 hours

#### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ Significantly abnormal or deteriorating capillary refill, HR, RR, BP, T and O<sub>2</sub> Sat
- ◆ Findings of fever in any infant under 3 months of age
- ◆ Findings of petechial or purpuric rash
- ◆ Findings of capillary refill greater than 2 seconds
- ◆ History and physical exam to suggest moderate to severe dehydration
- ◆ History and physical exam to suggest mental status change
- ◆ History of significant congenital abnormality, immunocompromise, or serious existing medical condition

## ADVANCED TRIAGE DECISION ALGORITHM

### PYREXIA / PAIN



## **VASCULAR ACCESS**

### **MEDICAL DIRECTIVE**

#### **◆ EMLA DERMAL ANALGESIC**

#### **CONDITION:**

- ◆ Possible need for vascular access in the pediatric patient with age greater than 6 months

#### **CIRCUMSTANCES:**

- ◆ Signs of illness where vascular access for laboratory studies or IV therapy may be required

#### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Assess and document allergy status
2. Using a tourniquet or manual BP cuff, assess the potential vascular access sites and mark the skin if necessary
3. Apply ½ of a 5 gram tube of EMLA cream to the skin at the planned vascular access sites
4. Cover the EMLA cream with an occlusive dressing (Op-site or Tegaderm) for at least one hour
5. The occlusive dressing may remain in place for up to 5 hours. No benefit will be derived from application longer than 5 hours
6. Document the time of application on tape directly on the occlusive dressing
7. Document assessment findings and the time of application and location(s) on the chart
8. If dermal analgesia is not required, remove the occlusive dressing and wipe away the remaining EMLA cream.
9. Avoid contact with tympanic membrane or eyes

#### **CONTRAINDICATIONS AND RISKS:**

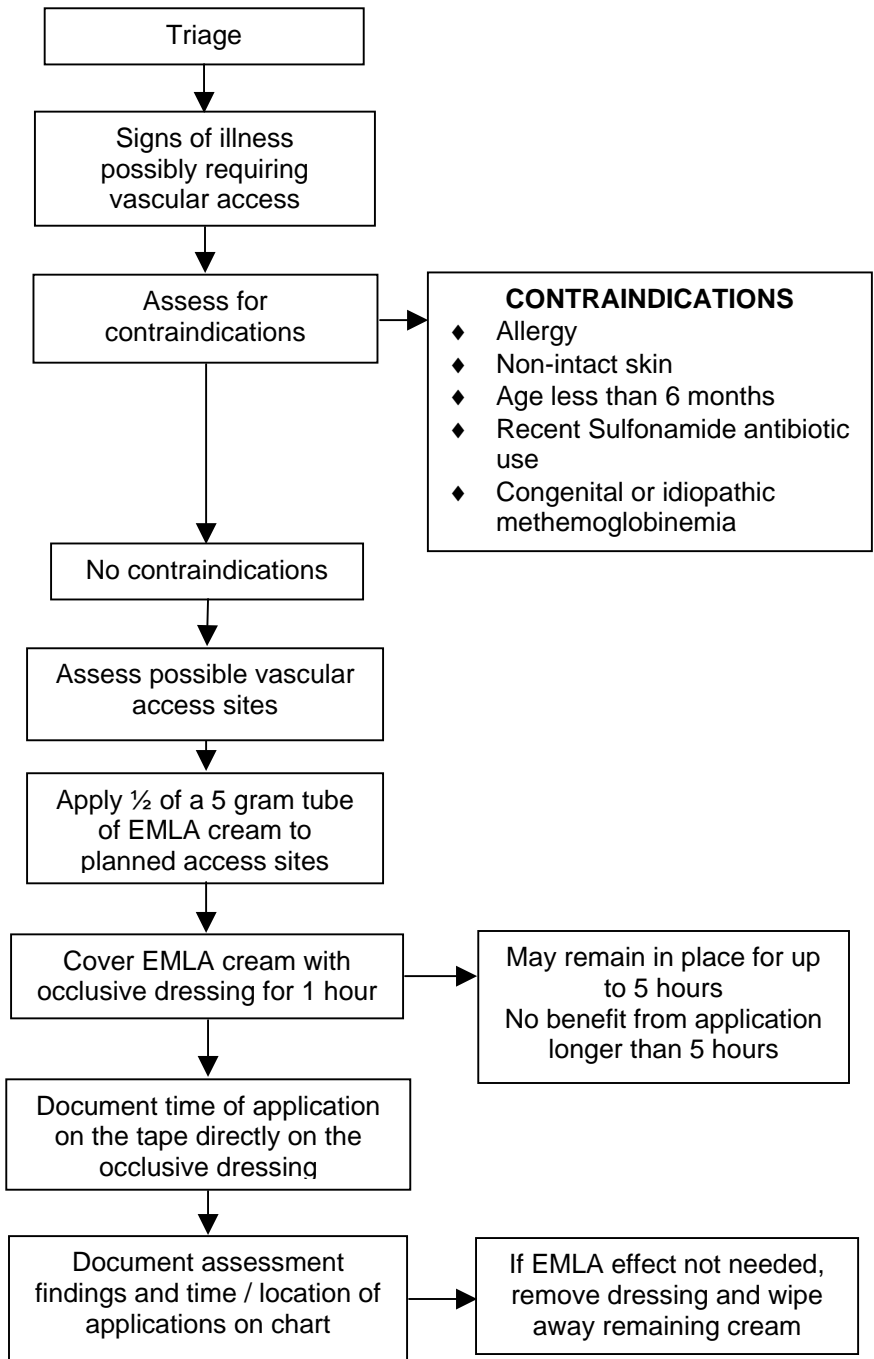
- ◆ Allergy
- ◆ Age less than 6 months
- ◆ Non-intact skin
- ◆ Recent Sulfonamide antibiotic use
- ◆ Congenital or idiopathic methemoglobinemia

#### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ On the basis of history and symptoms, do not delay vascular access while awaiting analgesia with EMLA (1 hour). Notify the physician.

## ADVANCED TRIAGE DECISION ALGORITHM

### VASCULAR ACCESS



## WHEEZING / ASTHMA / COPD

### **MEDICAL DIRECTIVE FRAMEWORK:**

#### ◆ **Sabutamol Inhalation**

#### **CONDITION:**

- ◆ Wheezing / asthma / shortness of breath with age greater than 9 years

#### **CIRCUMSTANCES:**

- ◆ Acute shortness of breath or wheezing with a possible history of:
  - ◆ Asthma
  - ◆ Emphysema/COPD
  - ◆ Chronic bronchitis

#### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Rapid triage and focused assessment for:
  - ◆ Acute shortness of breath
  - ◆ Cyanosis/Intercostal indrawing / sternal retractions
  - ◆ Inspiratory / expiratory wheezes
  - ◆ Absence of wheezes (due to severe lack of air movement)
  - ◆ Mental status changes
  - ◆ Current use of bronchodilators or inhalation medications
2. Measure vital signs (if significantly abnormal – notify physician)
3. Assess oxygen saturation (and Peak Flow Rate if possible)
4. Apply oxygen and consider the need for a cardiac monitor
5. Administer Salbutamol inhalation at a dose of 0.03 ml/kg up to 1 ml in 2 ml N.S.
6. Recheck Peak Flow Rate (if possible) after the inhalation treatment
7. Document findings, time, dose and response to medication
8. Report findings, initiation of treatment and response to physician

#### **CONTRAINDICATIONS AND RISKS:**

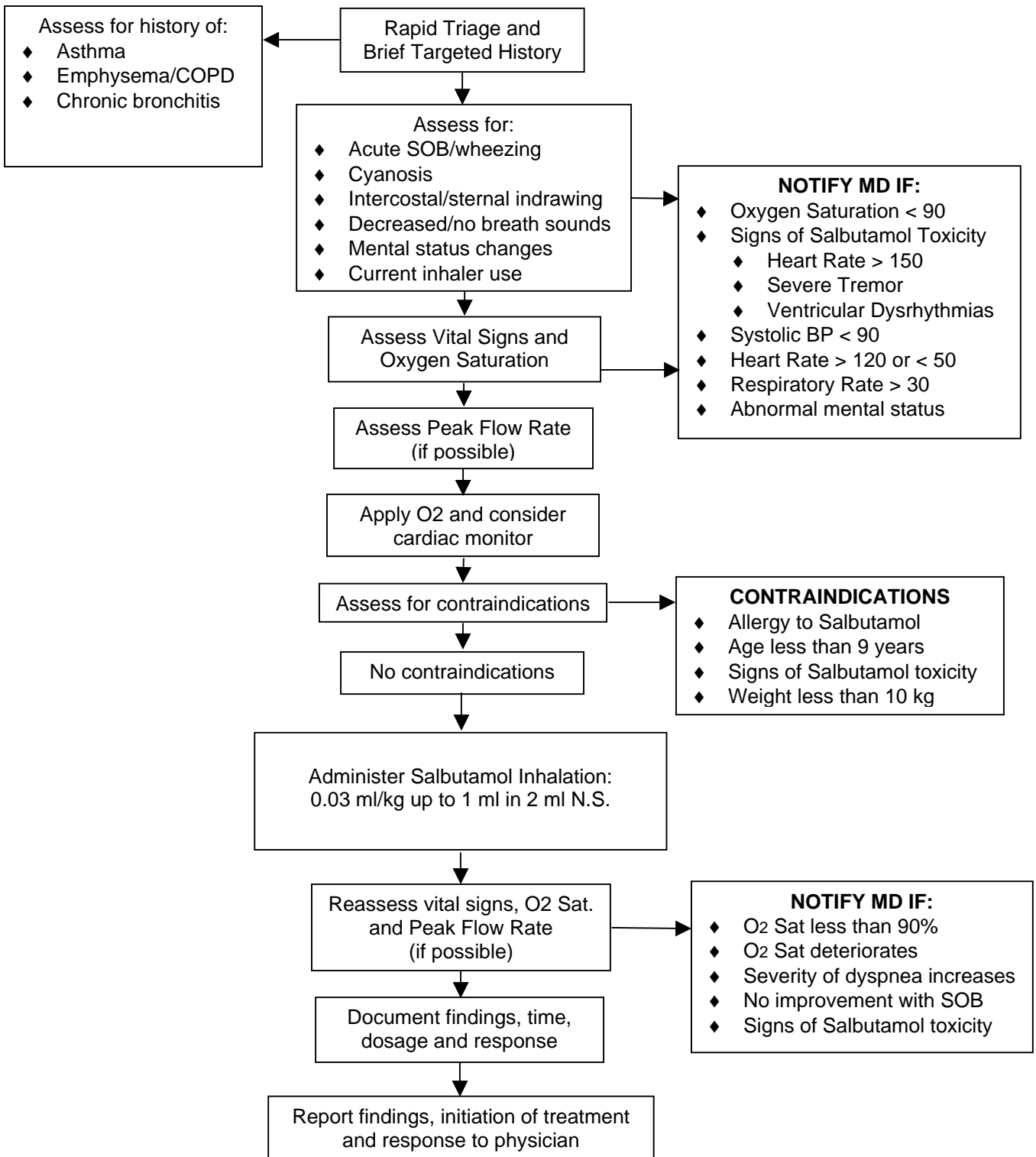
- ◆ Allergy to Salbutamol
- ◆ Age less than 9 years
- ◆ Signs of Salbutamol toxicity:
  - ◆ Heart rate greater than 150
  - ◆ Severe tremor
  - ◆ Ventricular dysrhythmias
- ◆ Weight less than 10 kg

#### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ Oxygen saturation less than 90%
- ◆ Signs of Salbutamol toxicity (see above)
- ◆ Deteriorating vital signs and / or deteriorating oxygen saturation
- ◆ Increasing severity of dyspnea
- ◆ Mental status change
- ◆ No improvement with shortness of breath

# ADVANCED TRIAGE DECISION ALGORITHM

## WHEEZING / ASTHMA / COPD



## **CORNEAL INJURY**

### **MEDICAL DIRECTIVE**

#### **◆ Ophthalmologic Anaesthetic**

#### **CONDITION:**

- ◆ Corneal injury with age greater than 9 years

#### **CIRCUMSTANCES:**

- ◆ History or indicators of corneal injury including:
  - ◆ Abrasion
  - ◆ Foreign body
  - ◆ Thermal injury
  - ◆ Ultraviolet injury

#### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Assess and document allergy status
2. Instill two drops of ophthalmologic anaesthetic into affected eye
3. If possible, check visual acuity
4. Apply a double thickness patch to the affected eye
5. Remove eye patch and repeat medication instillation as needed for pain control while awaiting further assessment
6. Document findings and time anaesthetic drops instilled
7. Report findings and treatment to the physician

#### **CONTRAINDICATIONS AND RISKS:**

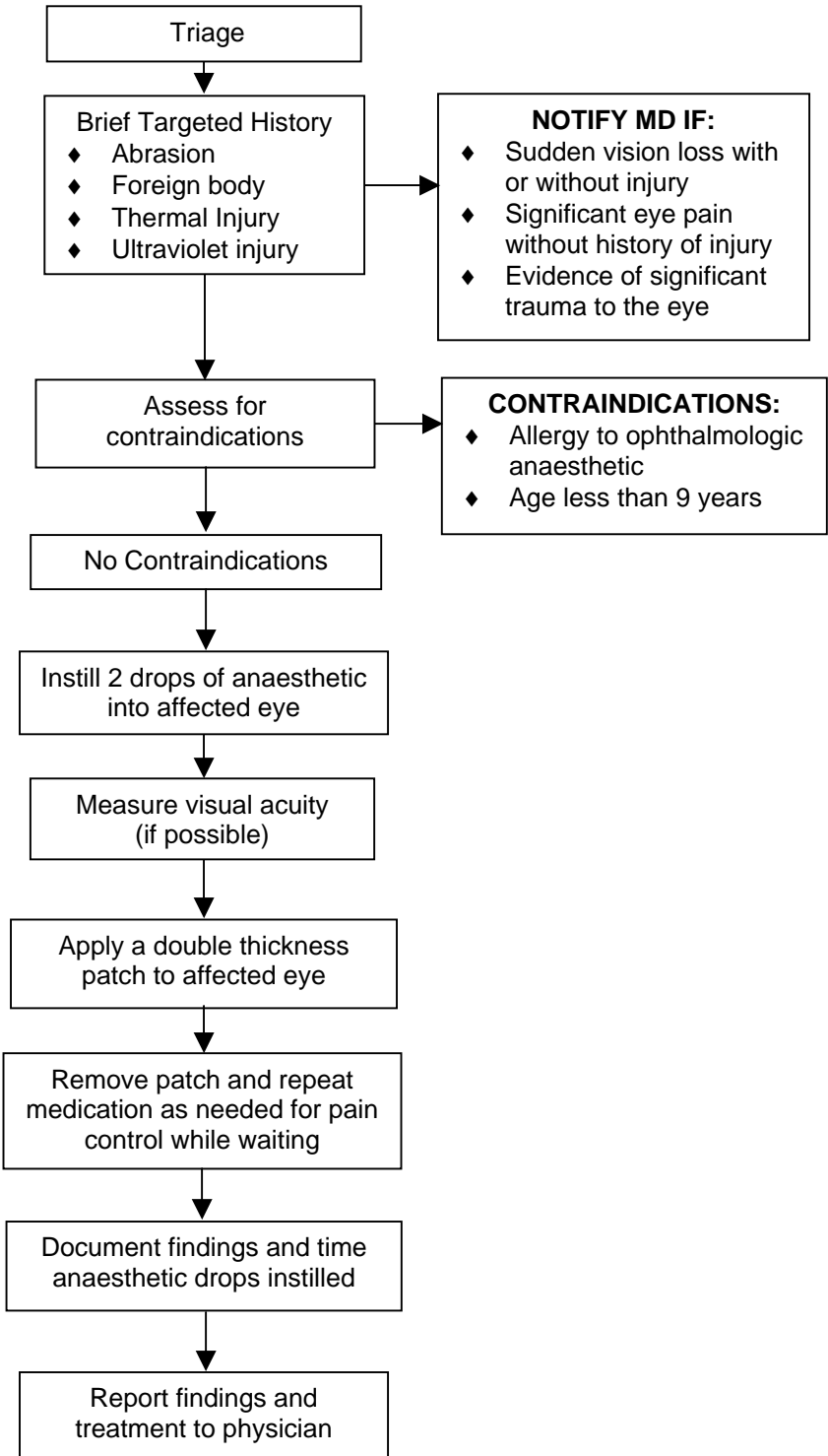
- ◆ Allergy to ophthalmologic anaesthetic
- ◆ Age less than 9 years

#### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ Report to the physician sudden vision loss, with or without history of injury
- ◆ Report to the physician significant eye pain without history of injury
- ◆ Report to the physician evidence of a significant injury such as hyphema, penetrating injury, irregular pupil or ruptured globe

## ADVANCED TRIAGE DECISION ALGORITHM

### CORNEAL INJURY



## **IV THERAPY**

### **MEDICAL DIRECTIVE**

#### **◆ IV Therapy with 0.9% NaCl**

#### **CONDITION:**

Evidence of need for IV therapy with 0.9% NaCl with age greater than 9 years

#### **CIRCUMSTANCES:**

To provide a means of administering fluid, medications, blood and blood products.

NOTE: If the infusion of blood or blood products is anticipated, attach a wide lumen extension set to the IV tubing prior to initiating IV therapy.

#### **PROCEDURES, MEDICATIONS, AND INVESTIGATIONS:**

1. Indications for IV therapy
  - ◆ Abnormal vital signs
  - ◆ Mental status changes
  - ◆ Clinical signs of dehydration
  - ◆ Symptoms of serious disease or injury where IV medications/therapy anticipated
  - ◆ Evidence of ongoing fluid loss:
    - ◆ vomiting
    - ◆ diarrhea
    - ◆ bleeding
    - ◆ third spacing
2. Initiate IV therapy with 0.9% NaCl
3. Regulate IV flow rate as required or indicated
4. Document time, size, site and rate
5. Report findings, initiation of treatment and response to physician

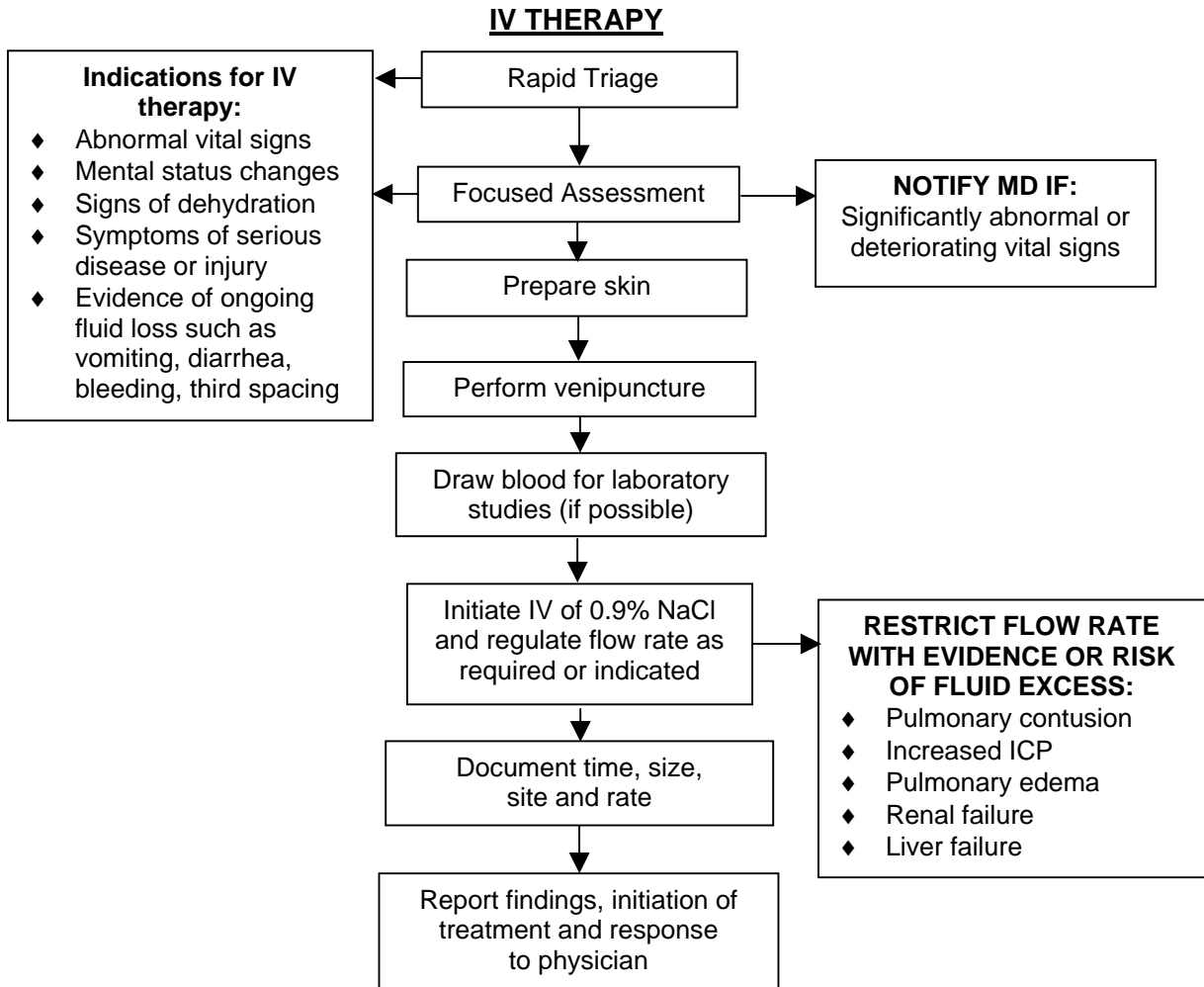
#### **CONTRAINDICATIONS AND RISKS:**

- ◆ Restrict IV fluids for those with evidence of fluid excess or risk of overload including:
  - ◆ pulmonary contusion
  - ◆ increased intracranial pressure
  - ◆ congestive heart failure/ pulmonary edema
  - ◆ renal failure
  - ◆ liver failure

#### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION**

- ◆ Significantly abnormal or deteriorating vital signs

## ADVANCED TRIAGE DECISION ALGORITHM



## **SUSPECTED HYPOGLYCEMIA**

### **MEDICAL DIRECTIVE**

- ◆ 50% Dextrose Solution
- ◆ I.V. Therapy 0.9%NaCl

### **CONDITION:**

- ◆ Suspected hypoglycemia with age greater than 12 years

### **CIRCUMSTANCES:**

- ◆ Symptomatic hypoglycemia with a measured glucose less than 3.0 mmol.l demonstrating:
  - Altered Level of Consciousness
  - Agitation
  - Confusion
  - Syncope
  - Seizures
  - Hunger/Tremulousness
  - Tachycardia
  - Headache
  - Diaphoresis

### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Assess vital signs (if critically abnormal – notify physician)
2. Perform finger prick glucometer testing
3. Record glucometer reading result
4. If glucometer reading result is less than 3.0 mmol.l, initiate IV with 0.9% NaCl
5. Give 1 ampoule of 50% Dextrose (slowly over 1 minute) for the adult
6. Children aged \_\_\_\_ give 1 to 2 ml/kg of D25W or 0.5 to1 ml/kg of D50W
7. Document findings, time and dose of Dextrose
8. Report findings and treatment to the physician
9. Observe for and document response to therapy
10. Repeat glucometer testing 10 minutes after Dextrose given

### **CONTRAINDICATIONS AND RISKS:**

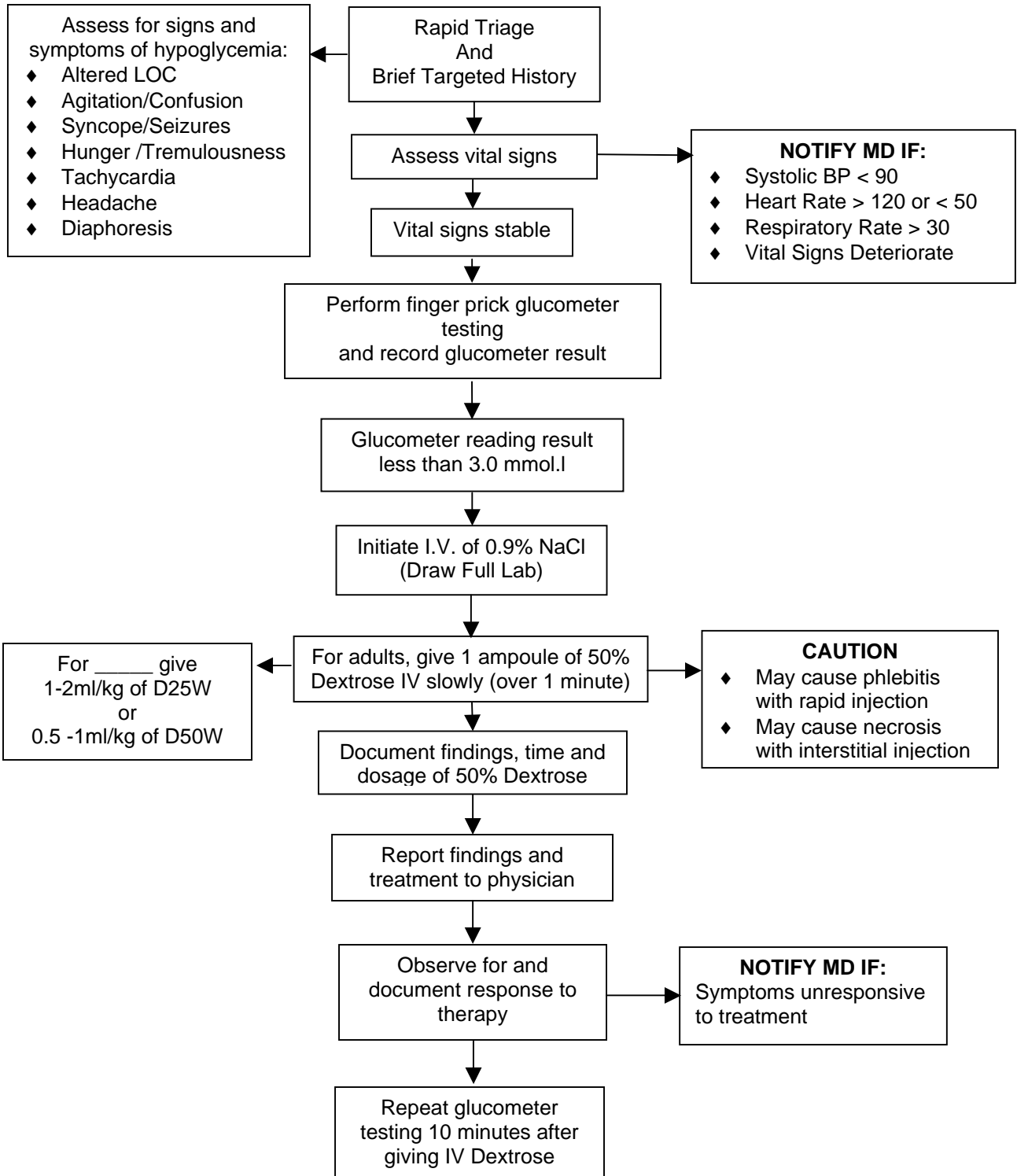
- ◆ Dextrose may cause phlebitis if given quickly, or may cause necrosis if injected into the interstitial space.
- ◆ Age less than 12 years

### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ Critically abnormal or deteriorating vital signs
- ◆ Symptoms unresponsive to treatment
- ◆ Fever greater than 38.5

# ADVANCED TRIAGE DECISION ALGORITHM

## SUSPECTED HYPOGLYCEMIA



## **CHEST PAIN**

### **MEDICAL DIRECTIVE**

- ◆ Nitroglycerine
- ◆ ASA
- ◆ I.V. Therapy 0.9%NaCl

### **CONDITION:**

- ◆ Chest pain with age greater than 12 years

### **CIRCUMSTANCES:**

- ◆ History of ischemic heart disease with typical chest pain, or complaints of chest pain, discomfort or heaviness, with symptoms consistent with cardiac ischemia.

### **PROCEDURES, MEDICATIONS AND INVESTIGATIONS:**

1. Rapid triage and immediate assessment for cardiac origin
2. Perform a 12 lead ECG (if evidence of AMI, notify physician)
3. Brief targeted history including previous cardiac problems, family history, risk factors and:
  - A Associated symptoms
  - P Provoking factors
  - Q Quality of pain
  - R Region or radiation
  - S Severity (0 – 10)
  - T Time
4. Initiate IV therapy with 0.9% NaCl (and if possible, draw Cardiac Labs)
5. Assess vital signs (if critically abnormal – notify physician)
6. Apply oxygen and cardiac monitor
7. Administer one dose of Nitroglycerine Spray sublingual and repeat as needed every 5 minutes to a maximum of 3 doses (See specific Medical Directive)
8. Administer ASA 160 mg and instruct the patient to chew and swallow (See specific Medical Directive)
9. Document the time, dose and effect of medications given
10. Report findings and treatment to the physician

### **CONTRAINDICATIONS AND RISKS (for Nitroglycerine and ASA administration):**

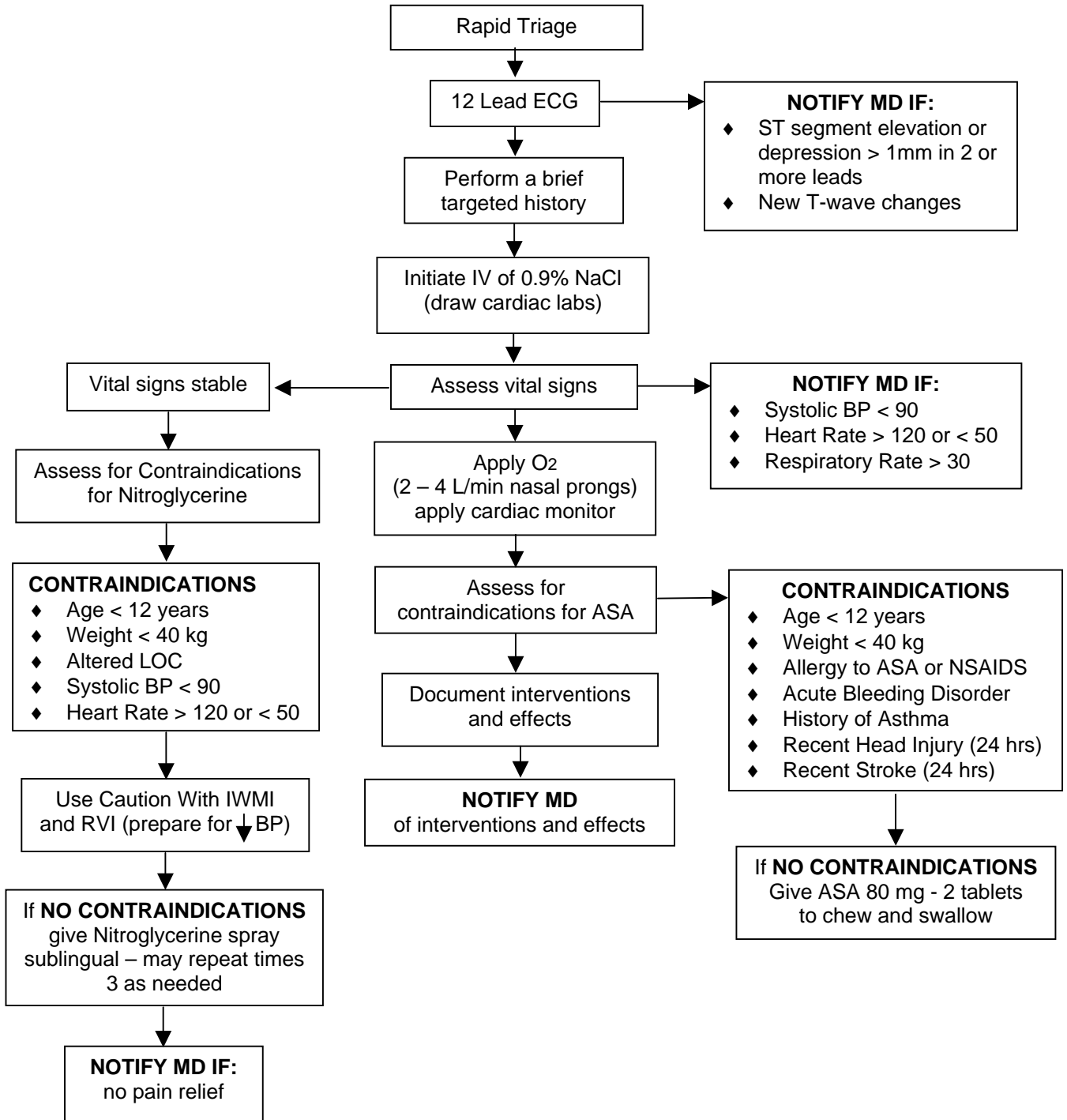
- ◆ Less than 12 years of age or weight less than 40 kg
- ◆ Altered level of consciousness
- ◆ Hypotension with systolic BP less than 100 mm Hg
- ◆ Heart rate less than 60
- ◆ Allergy to medications
- ◆ Acute bleeding disorder
- ◆ History of asthma
- ◆ Recent head injury or stroke (24 hours)

### **REASONS TO SEEK IMMEDIATE MEDICAL CONSULTATION OR DISCONTINUE PROCEDURE:**

- ◆ Critically abnormal or deteriorating vital signs
- ◆ Increased severity of pain or pain unresponsive to treatment
- ◆ Significant ECG changes or evidence of AMI

**ADVANCED TRIAGE DECISION ALGORITHM**

**CHEST PAIN**



## SPECIFIC MEDICAL DIRECTIVE FOR:

### **NITROGLYCERINE SPRAY ADMINISTRATION** (age greater than 12 years)

1. Assessment elicits history of ischemic heart disease with typical chest pain and/or features of ischemic pain.
2. Assessment elicits complaints of chest pain, discomfort or heaviness, with symptoms consistent with cardiac ischemia.

**A – Associated symptoms:** Did you or are you experiencing shortness of breath, nausea or vomiting, cold sweat, weakness or feeling faint, or palpitations?

**P – Provoking factors:** What, if anything, provokes the pain/discomfort? Is there anything that makes it worse or relieves it? What were you doing when it began?

**Q – Quality of the pain:** If I asked you to describe the pain/discomfort with one word, what would you call it?

**R – Region or radiation:** Point to the area of pain or discomfort. Does the pain travel anywhere or is the pain anywhere else? Did the pain/discomfort move from the place where it started?

**S – Severity (0 – 10):** If the number 0 is no pain, and the number 10 is the worst pain you have experienced or could ever imagine, what number is the pain now? Has it changed?

**T – Time:** What time did the pain/discomfort start? Is it constant or does it come and go? Have you ever had these symptoms before? If so, what was it related to, and how was it treated?

3. Perform a 12 lead electrocardiogram (if evidence of acute MI – notify physician)
4. Consider the need to initiate an IV of 0.9% NaCl as an adjunct to treat the possible hypotensive effects of Nitroglycerine (if possible draw Cardiac Labs).
5. Assess for known history of ischemic heart disease and or prior Nitroglycerine use.
6. Assess vital signs (if critically abnormal – notify physician).
7. Perform a brief physical examination.
8. Assessment and measurement of vitals signs shows patient is/has:
  - ◆ greater than 12 years of age
  - ◆ weight greater than 40 kg
  - ◆ alert and responsive
  - ◆ BP greater than or equal to 100 mm Hg systolic
  - ◆ Heart rate greater than or equal to 60
9. Carefully consider the use of Nitroglycerine with evidence of inferior or right ventricular infarct as extreme hypotension may result.
10. Advise the patient of possible side effects of medication (i.e. flushed or full feeling in head, headache, chest pounding).
11. Administer one dose of Nitroglycerine spray sublingual.
12. May repeat Nitroglycerine spray sublingual every 5 minutes to a maximum of 3 doses if the systolic BP remains greater than or equal to 100 mm Hg and the heart rate is greater than or equal to 60.
13. Document the time, dose and response to medication.
14. Report findings and treatment to the physician.

## SPECIFIC MEDICAL DIRECTIVE FOR:

### ASA ADMINISTRATION (age greater than 12 years)

1. Assessment elicits history of ischemic heart disease with typical chest pain and/or features of ischemic pain.
2. Assessment elicits complaints of chest pain, discomfort or heaviness, with symptoms consistent with cardiac ischemia.

**A – Associated symptoms:** Did you or are you experiencing shortness of breath, nausea or vomiting, cold sweat, weakness or feeling faint, or palpitations?

**P – Provoking factors:** What, if anything, provokes the pain/discomfort? Is there anything that makes it worse or relieves it? What were you doing when it began?

**Q – Quality of the pain:** If I asked you to describe the pain/discomfort with one word, what would you call it?

**R – Region or radiation:** Point to the area of pain or discomfort. Does the pain travel anywhere or is the pain anywhere else? Did the pain/discomfort move from the place where it started?

**S – Severity (0 – 10):** If the number 0 is no pain, and the number 10 is the worst pain you have experienced or could ever imagine, what number is the pain now? Has it changed?

**T – Time:** What time did the pain/discomfort start? Is it constant or does it come and go? Have you ever had these symptoms before? If so, what was it related to, and how was it treated?

3. Perform a 12 lead electrocardiogram (if evidence of acute MI, notify physician).
4. Assess vital signs (if critically abnormal –notify physician)
5. Perform a brief physical examination.
6. Assessment shows patient:
  - ◆ is greater than 12 years of age
  - ◆ weighs greater than 40 kg
  - ◆ does not take daily ASA
7. Assessment shows no contraindications:
  - ◆ Allergy to ASA or NSAIDS
  - ◆ Acute bleeding disorder
  - ◆ History of asthma
  - ◆ Recent head injury or stroke (24 hours)
8. Give two ASA 80 mg tablets by mouth and have the patient chew and swallow.
9. Document findings, time and dose of ASA given.
10. Report findings and treatment to the physician.

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