Milwaukee County Office of Emergency Management-EMS Division (OEM-EMS)

General Medicine
SHOCK
Practice Guideline

Patient Care Goals:
1. Initiate early fluid resuscitation and vasopressors to maintain/restore adequate perfusion to vital organs
2. Differentiate between possible underlying causes of shock in to promptly initiate additional therapy

Patient Presentation

Inclusion Criteria

Signs of poor perfusion:
- Altered mental status
- Delayed/flash capillary refill
- Hypoxia
- Decreased urine output
- Respiratory rate greater than 20 in adults, or elevated in children
- Hypotension for age
  - lowest acceptable SBP in mmHg:
    - Less than 1 yo: 60
    - 1-10 yo: (age in years x 2)+70
    - Greater than 10 yo: 90
- Tachycardia for age, out of proportion to temperature
- Weak-decreased-bounding pulse
- Cool/mottled, flushed/ruddy skin

Patient Management

Treat underlying causes

Medication

Normal Saline Bolus
- 20 mL/kg bolus IV/IO over 10 mins using pressure bag
- *Sepsis uses 30 mL/kg dosing
- Second IV/IO if shock continues

Norepinephrine infusion
- •Adult (≥40 kg) wt-based dosing
  - Start at 0.1 mcg/kg/min
  - Aggressive q 2min, increase 8 gtts
  - Max at 0.5 mcg/kg/min
- •Pediatric (<40 kg) *OLMC order*
  - (expect similar dosing ranges and aggressive titration as adults)
  - *Refer to Medication List for rate*

Prehospital Blood Products criteria
- Hemorrhagic shock due to TRAUMA
  - Adult (*any* of three criteria below)
    - SBP<70
    - SBP<90 and HR>110
    - Age>65 and SBP<100 and HR>100
  - Peds: See page 2
- EMS-witnessed trauma cardiac arrest

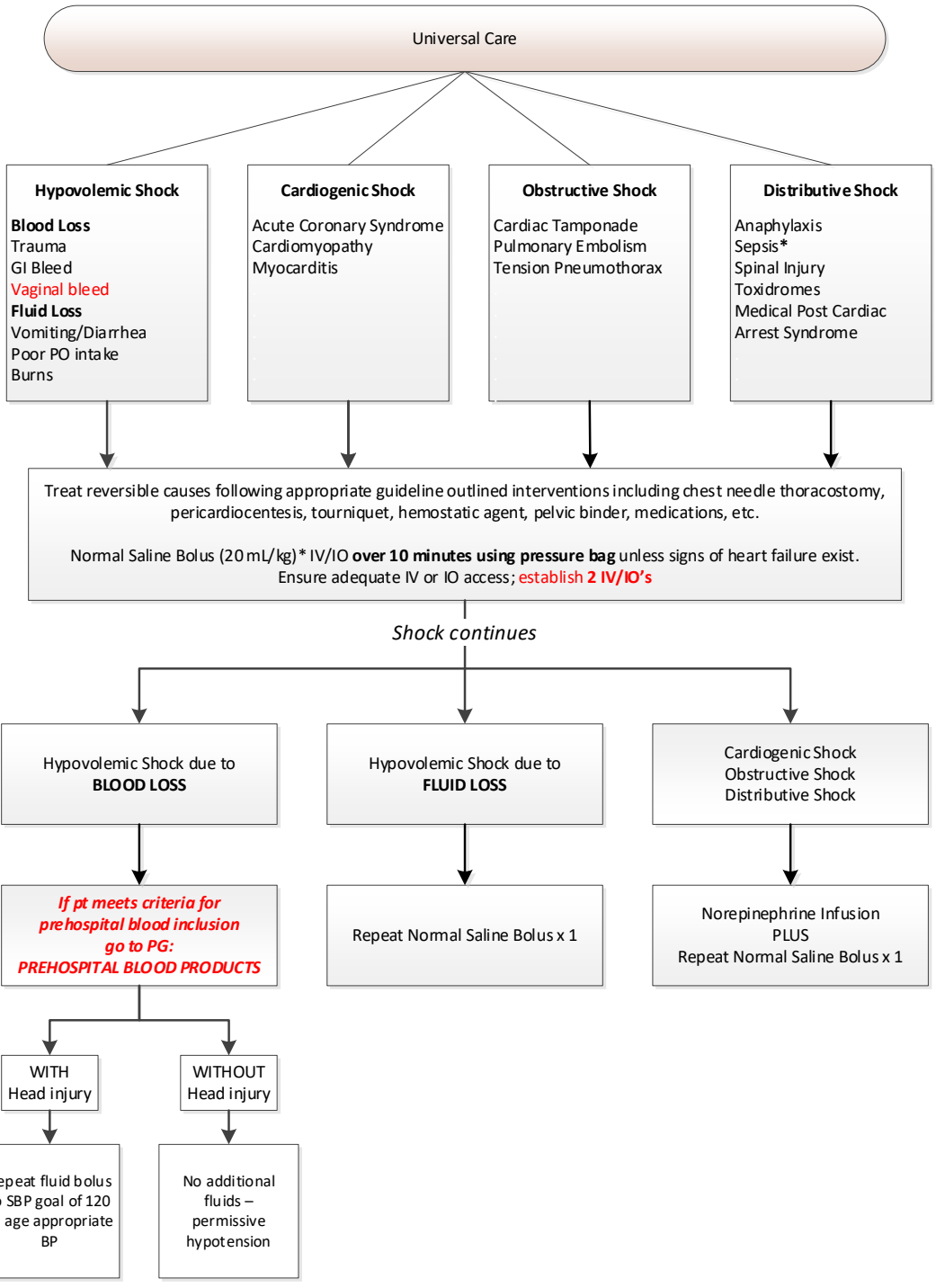
TXA (Tranexamic Acid)
- Adult: 2 grams IV/IO
- Peds: **Not** indicated for age < 18 yrs

Quality Improvement

Search for early signs of shock.
IVF volume/rate and access type
Use of a Sepsis Alert to receiving hosp

Patient Safety Considerations

Recognition of cardiogenic shock - if pt deteriorates after fluid administration or hepatomegaly develops, consider cardiogenic shock + holding further fluid administration, begin norepinephrine



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Revision 4

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WI DHS EMS Approval:

PHBI Inclusion Criteria

Adults (age 18 years or older):

SBP < 70
OR
SBP < 90 *and* HR > 110
OR
Age > 65 *and* SBP < 100 *and* HR > 100

For adults, *any* of the three listed criteria

Pediatric (Age less than 18 years):

Age	SBP	*and*	HR
< 29 days	< 70	*and*	<100 or > 180
30 days - < 1 year	< 70	*and*	< 80 or > 160
1 year	< 72	*and*	< 60 or > 130
2 years	< 74	*and*	< 60 or > 130
3 years	< 76	*and*	< 60 or > 130
4 years	< 78	*and*	< 60 or > 130
5 years	< 80	*and*	< 60 or > 130
6 years	< 82	*and*	< 60 or > 130
7 years	< 84	*and*	< 60 or > 130
8 years	< 86	*and*	< 60 or > 130
9 years	< 88	*and*	< 60 or > 130
>10 years	< 90	*and*	< 60 or > 110

Adults and Pediatric:

EMS-witnessed traumatic cardiac arrest