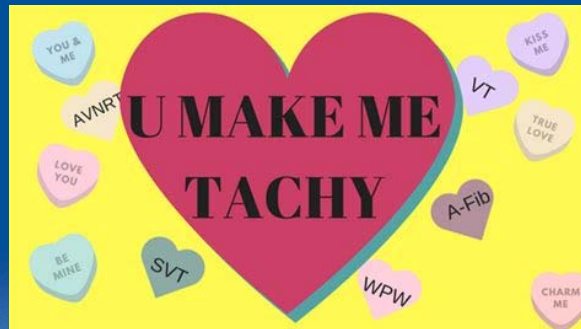


Pushing Out the Push-Does with Dirty Dancing More Efficient Training with an Epi Drip Model



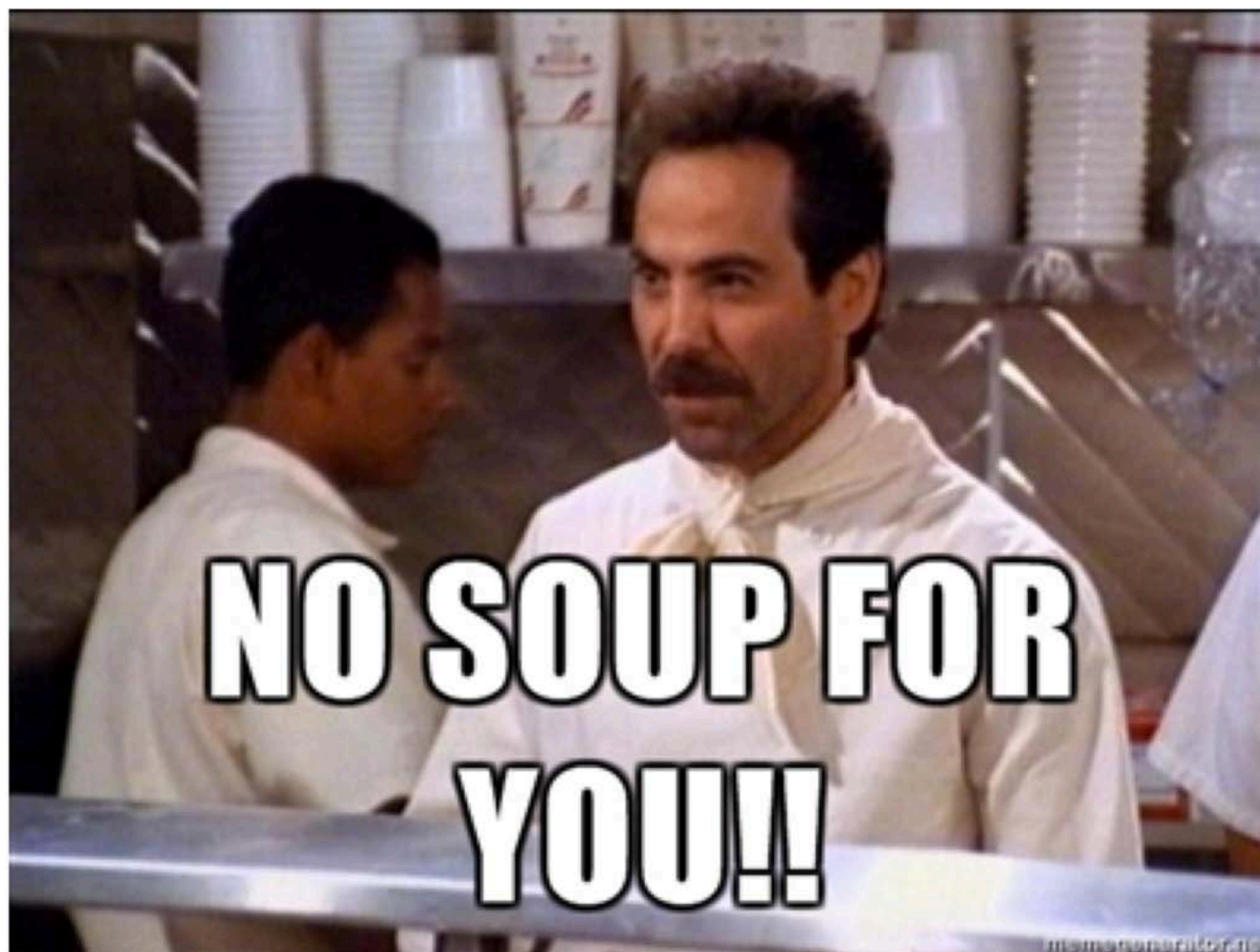
You get my heart
racing like an
epinephrine drip.

GotLines.com



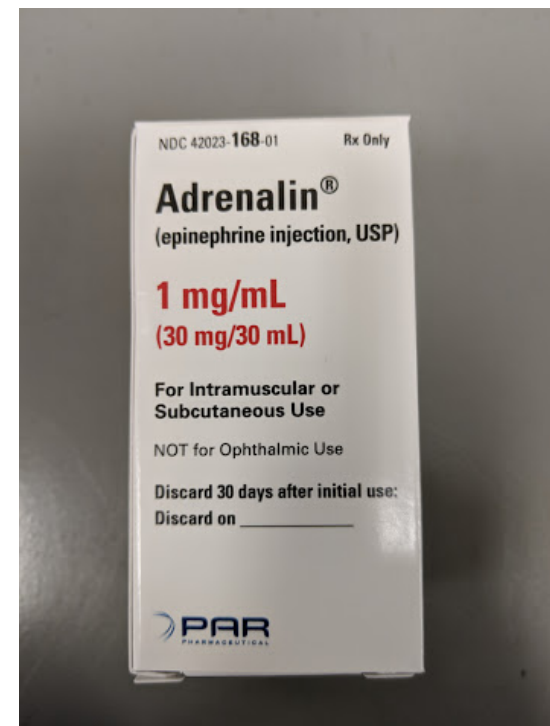
THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR
DIVISION OF FIRE

David P. Keseg, MD FACEP
Medical Director, Columbus Division of Fire
Adjunct Professor, The Ohio State University



ONE PRESSOR TO RULE THEM

ALL!



What Are the Possible Indications for Epinephrine Infusions?

- 1. Symptomatic Bradycardia**
- 2. Non- hypovolemic shock**
- 3. Post-ROSC Hemodynamic Support**
- 4. CRASHING PATIENT!**



Are Peripheral Vasopressors Safe?

Primary Outcome	Complication Rate
Major Complications*	0/55 (0%)
Minor Complications**	3/55 (5.45%)
Delayed Complications***	0/55 (0%)
* No Medical or Surgical Interventions Required	
**2 out of 3 complications were in PIVs in the hand; 3 out of 3 complications occurred with 20g catheters; 3 out of 3 complications occurred during infusions running for 11hrs, 28hrs, and 40hrs	
***ZERO delayed complications (i.e. up to 48 hours after discontinuation of pressor infusion)	

Inclusion Criteria: Circulatory Shock

Major: Tissue Necrosis and Limb Ischemia

Minor: Extravasation, Thrombophlebitis and Cellulitis

1. Medlej et al. Complications from administration of vasopressors through peripheral venous catheters: an observational study. JEM. 2018
2. <http://rebelem.com/peripheral-vasopressors-safe-dangerous/>

How Are Infusions Administered Without a Pump?

$$\text{Drip Rate} = (\text{Volume} * \text{Drop Factor}) / \text{Time}$$

Math = Bad



THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DIVISION OF FIRE

The Dirty Epi Drip

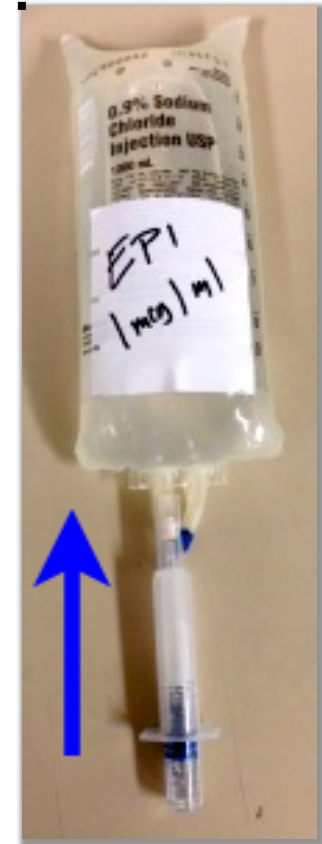
1 mg Epinephrine + 1 L Normal Saline

Rate = Wide Open to Clinical Effect

Concentration = 1 mcg/mL

18 G IV = 20 – 30 mcg/min

Titrate to Clinical Effect



Dirty Epi Drip vs. Push-Dose Epinephrine

Push-Dose Epinephrine

Requires Math – Potential Safety Concerns

Dose Recommendations = 100 mcg/5 min aka 20 mcg/min

Dirty Epi Drip

No Math -

Dosing via 18 G IV = 20 mcg/min

Columbus Fire Protocol

Indications

Bradycardia-continued Pulmonary Edema/CHF Non-Traumatic Shock
Allergic Reaction/Anaphylaxis Neurologic Trauma-continued

Adult Dose

1 mg in 1,000 ml normal saline; run wide open to clinical effect.

See: Epinephrine Infusion

Pediatric Dose



THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DIVISION OF FIRE

Columbus Fire Protocol

Epinephrine (Adrenaline)

Mix 1 mg of 1:1,000 epinephrine in 1,000 mL of normal saline; run wide open through peripheral IV to achieve clinical affect. Stop infusion if adverse reaction occur.

(See Epinephrine 1:1,000 Infusion protocol)

What Lessons Did We Learn?

1. Simplified Protocol
2. Easier Training
3. Assuage Concerns Regarding Volume Overload
4. Overall Positive

QUESTIONS??????

DKESEG@COLUMBUS.GOV

