After the Bay

The Trauma Resuscitation Continuum

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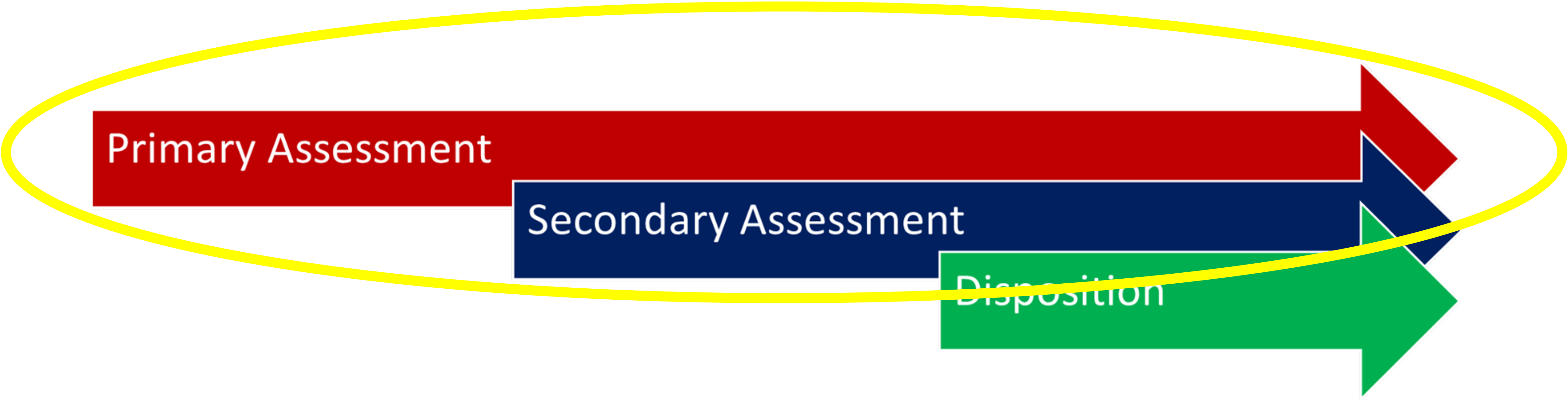
No disclosures or conflicts of interest

I don’t have all the answers, but I ask a lot questions

Trauma Trajectory



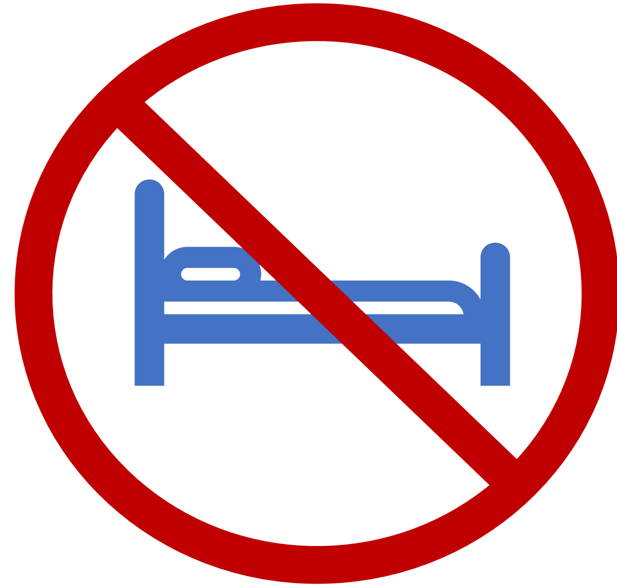
Disposition

Serial exams?

Waiting on OR?

Waiting on transfer?

Disposition



Admit

But no Bed

Case Study

35 yo female MVC
Ejected
SAH/DAI
Intubated
Femur Fx

ICU Admit
TBI Orders

Q1 Neuro ✓
Q1 VS
CPP Goal

ICP Monitor
Low Stim
Environment

Hourly UOP
Seizure Prophylaxis
Na Goals

Case Study

35 yo female MVC
Ejected
SAH/DAI
Intubated
Femur Fx

Ischemic CVA
Vented
2 days post clot retrieval
HDS

Joint Commission: the practice of holding patients in the emergency department or a temporary location for four hours or more after the decision to admit or transfer has been made.

ACEP: A patient who remains in the emergency department after admitted or placed into observation status.

DEFINITION OF BOARDING

Prolonged ED LOS awaiting a critical care bed from ED arrival

Prolonged ED LOS following decision to admit

More than 2 hours from decision to admit to leaving the ED

More than 4 hours from decision to admit to leaving the ED

More than 6 hours from decision to admit to leaving the ED

More than 6 total hours from triage to leaving the ED

Total Ventilator hours

No ICU bed available at time of admission

Upper decile of total ED LOS

Mohr et al

Nicole Trauma Llama 🐼 APRN, CNS
@TraumaSoapBoxes

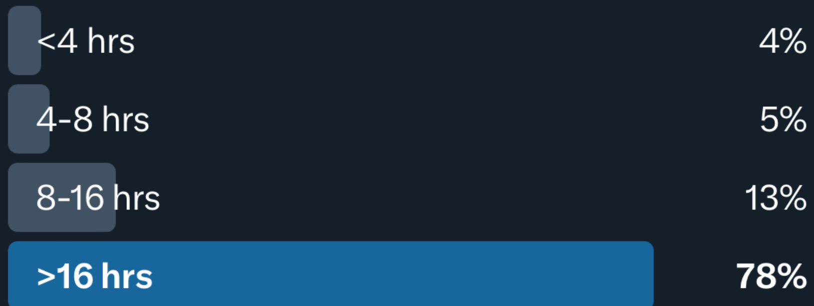
✨Poll redo✨
ER Boarding Poll

What is the longest length of stay currently in your ER for a boarded pt??

This is an admitted pt waiting for a bed in the ER

(Behavioral health hold in next poll)

If your longest current stay is >16 hours comment how long👀👀

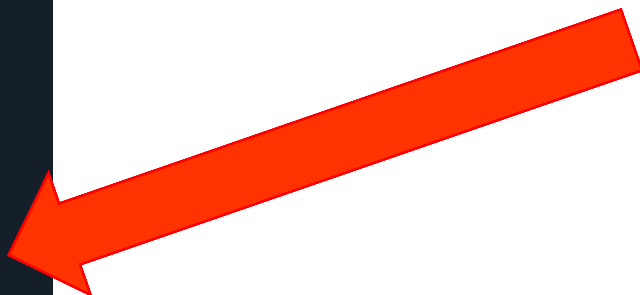


910 votes · Final results

5:05 PM · 2/28/23 · **129K** Views

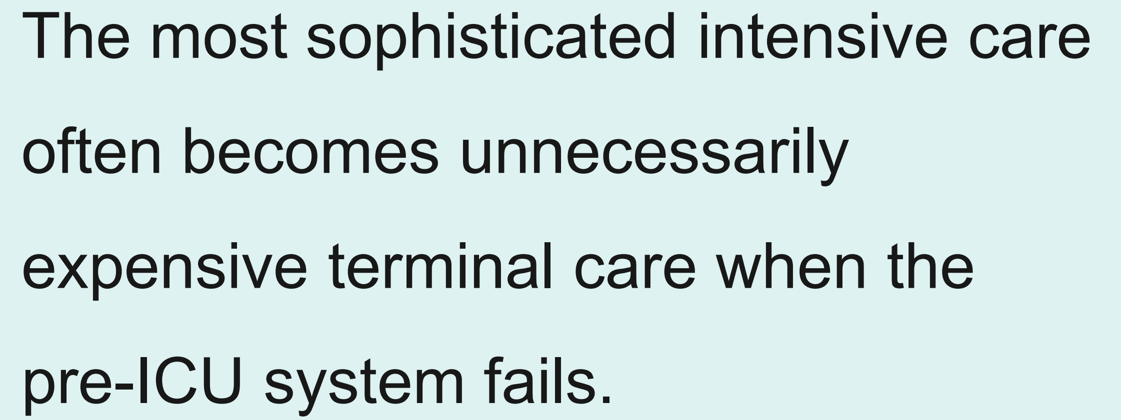
Patients are waiting days

The ER may be your largest inpatient unit



ED patient waiting on an ICU bed
Adobe Stock Images

An ICU patient in the ED
Adobe Stock Images



> The most sophisticated intensive care often becomes unnecessarily expensive terminal care when the pre-ICU system fails.
>
> Peter Safar, MD

Adobe Stock Images

Level of care should not be dependent on physical location

Adobe Stock Images

Trauma Danger Zone

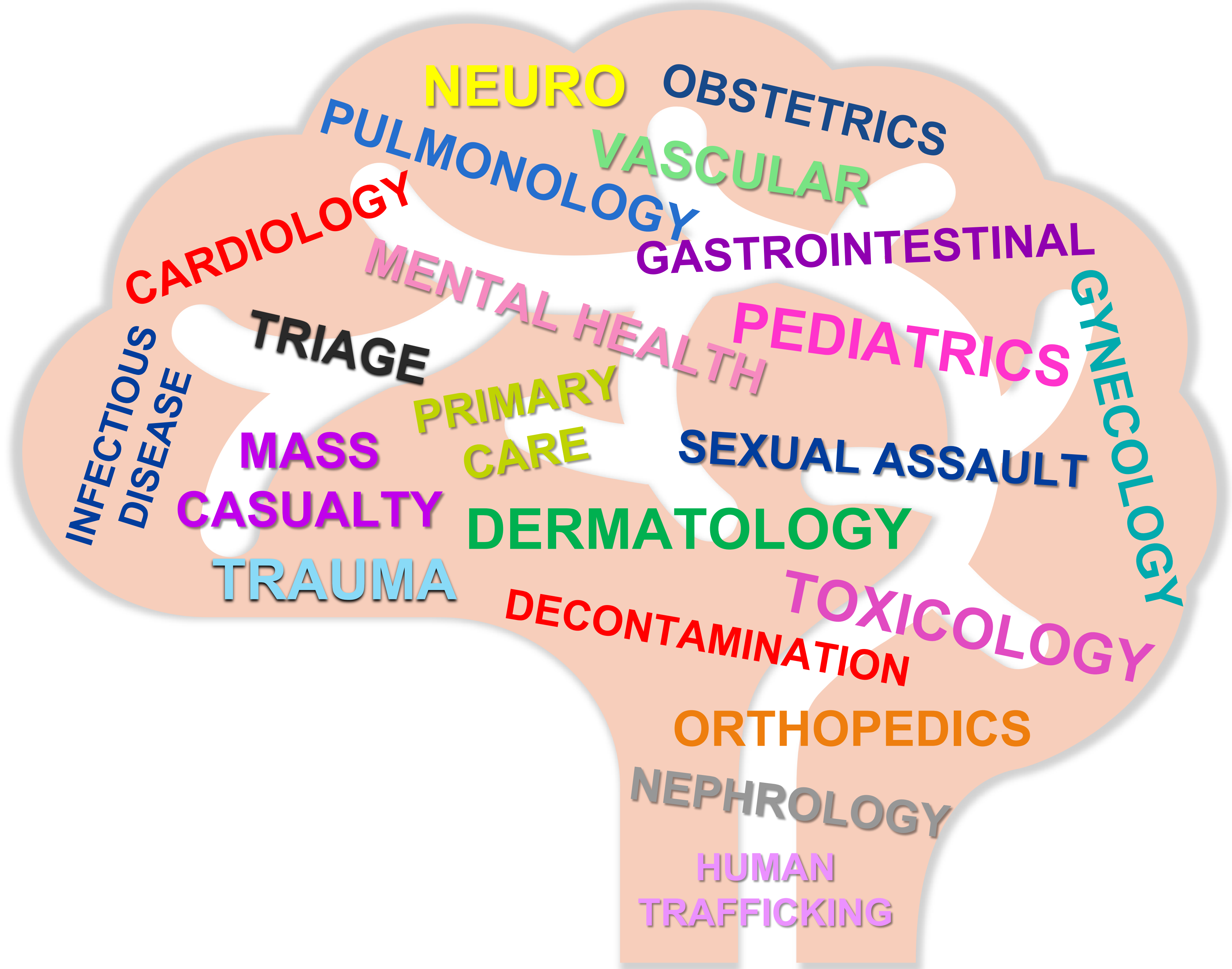
- The excitement of resuscitation calms down
- New patients come in
- Patient moves to the back of our mind
- Low awareness, high risk

Many sets of eyes dedicated on one

A few sets of eyes dedicated on many

Differences in inpatient vs ED

- Training
- Competencies
- Ratios
- Patient Max
- General Focus VS Specialty Focus
- Equipment
- Documentation
- High Risk/Low Volume
- Unit Purpose


NEURO
OBSTETRICS
PULMONOLOGY
VASCULAR
CARDIOLOGY
GASTROINTESTINAL
MENTAL HEALTH
PEDIATRICS
GYNECOLOGY
TRIAGE
INFECTIOUS DISEASE
PRIMARY CARE
MASS CASUALTY
SEXUAL ASSAULT
DERMATOLOGY
TRAUMA
TOXICOLOGY
DECONTAMINATION
ORTHOPEDICS
NEPHROLOGY
HUMAN TRAFFICKING

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GASTROINTESTINAL
TRAUMA
TOXICOLOGY
ORTHOPEDICS
NEPHROLOGY

INPATIENT STUFF

SO MANY METRICS

LENGTH of STAY

Door to Dispo

Sepsis Bundle

Door to Doc

Admit to Bed

Press Gainey

OBSTETRICS

VASCULAR

GASTROINTESTINAL

MASS

CASUALTY

SEXUAL ASSAULT

DERMATOLOGY

ORTHOPEDICS

HUMAN TRAFFICKING

Nicole Trauma Llama 🐼 APRN, CNS
@TraumaSoapBoxes

ER Nurses:
When caring for boarded ICU patients what is your nurse:patient ratio
6/

1-2 pts	14%
3-4 pts	**57%**
>5 pts	29%

88 votes · Final results

10:17 AM · 1/22/22 · Twitter for iPhone

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Case Study

35 yo female MVC
Ejected
SAH/DAI
Intubated
Femur Fx

27yo female
abdominal pain

65 yo male
Chest pain
HX CABG

Suicide Attempt
IVC

Ankle Fx

Case Study

35 yo female MVC
Ejected
SAH/DAI
Intubated
Femur Fx

Appendicitis
Ruptured Ectopic
Impending labor

STEMI
Gallbladder
Aortic aneurysm

Overdose
Intubation & Pacer

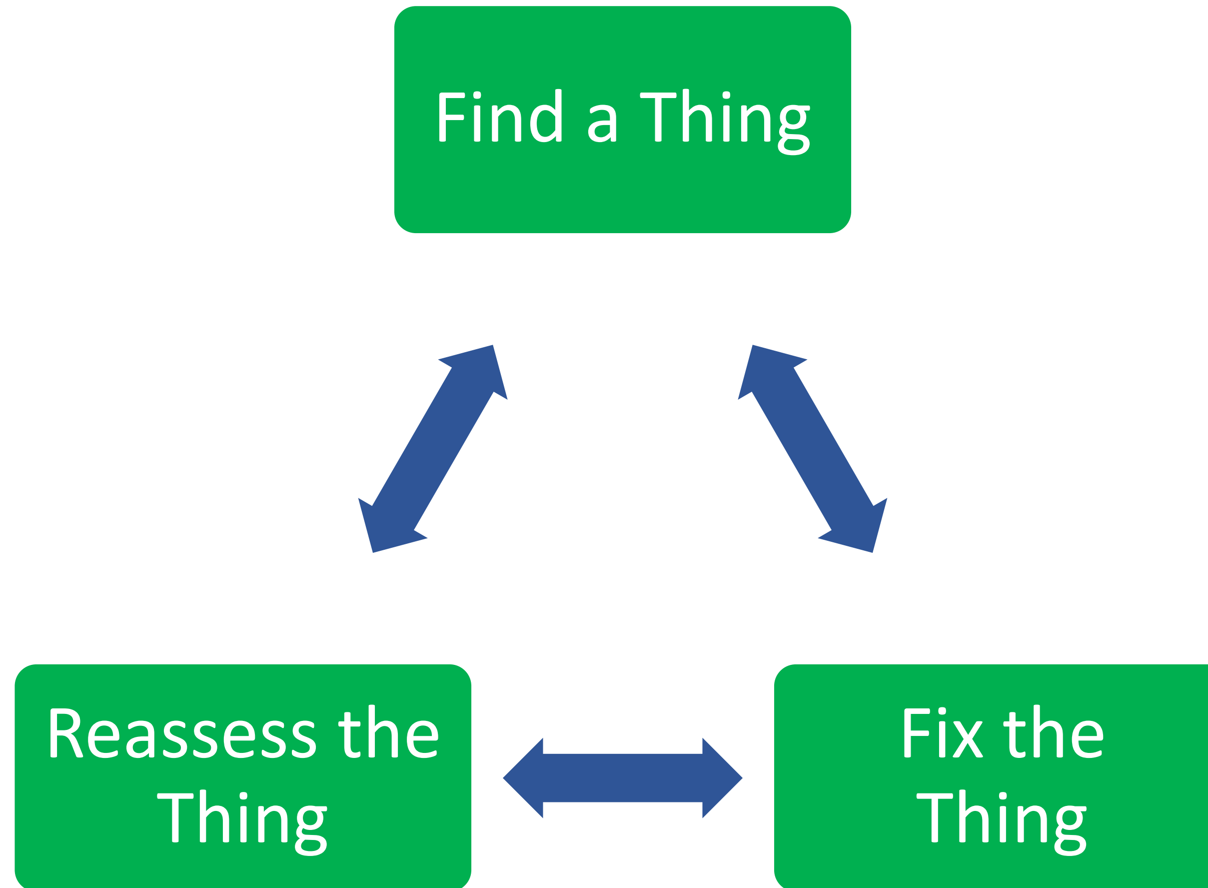
Moderate sedation
Emergent OR

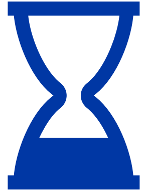
You will eventually find 100% of changes in patient condition

When you find it is the important part

The Other Trauma Triangle

(of “not death”)™

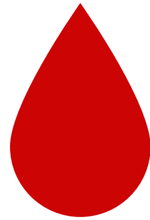




Patient status as a point in time

Patient status is a trend

What Can go Wrong

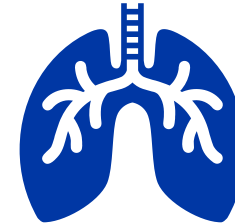


That which has bled

may bleed again

That which is a little swollen

may get quite swol



That which was patent

may cease to be patent

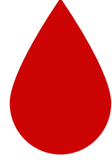
Serial assessments

Heightened sense of worry

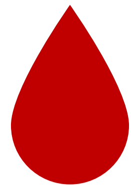
Clear communication of plan

Secondary Assessment

That which has bled

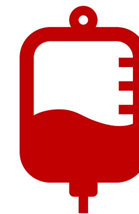


may bleed again



Find the Bleed

Fix the Bleed



Reassess the Bleed

Hemorrhagic Shock

- → Blood Pressure
- → Heart Rate
- Skin
- Pulses
- Lactate
- Base Deficit
- Urine Output

Altered by EVERYTHING

Unreliable

Blood Pressure ≠ Perfusion

Hemorrhagic Shock

- ➡ Blood Pressure
- ➡ Heart Rate
- Skin
- Pulses
- Lactate
- Base Deficit
- Urine Output

Guly et al. 2011 Resuscitation

Study examining relationship between admission vital signs & class of hemorrhage

	Mean HR	Mean BP
Class I shock	82	135
Class IV shock	95	120

Hemorrhagic Shock

Blood Pressure

Heart Rate

➡ Skin

➡ Pulses

Lactate

Base Deficit

Urine Output

Vasoconstriction

Pre-existing Disorders

Hemorrhagic Shock

- Blood Pressure
- Heart Rate
- Skin
- Pulses
- → Lactate
- → Base Deficit
- Urine Output

Invasive

Time Delay

Equipment

Non-Specific

Hemorrhagic Shock

Blood Pressure

Heart Rate

Skin

Pulses

Lactate

Base Deficit

Urine Output

Late

Invasive

Reliably Unreliable

Low $ETCO_2$ is Predictive of

Mortality

Transfusion

MTP

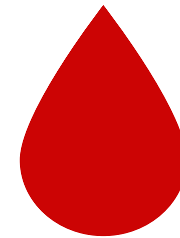
Operative Requirement

Adverse Events

Complications

Low is ≤ 26-28

That which is a little
swollen
may get quite swol



That which has bled

may bleed some more

Brain Vitals

Cerebral Perfusion Pressure

MAP-ICP=CPP

Blood Pressure = Perfusion (kinda)

Brain Vitals

GCS

Intubated

+

Sedated

=

GCS 3?

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Are your ED staff receiving the same critical care specific info and training as your ICU staff?

WHAT RESOURCES ARE AVAILABLE?

How do you preserve critical care ratios in a mixed assignment?

How do you protect critical care scenarios in the ED?

How do you anticipate rapid acuity changes?

Available critical care staff

Rapid Response/Code staff

PACU

Same level of care everywhere?

Gravity Rounds???

ED Critical Care Rounds

We need to point out the issue

We need to ask the questions

We need to push to bridge the gap

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