

Patient History

Symptoms

O

nset
Sudden / Gradual

Associated **S**ymptoms / **P**ertinent
Negatives / **S**ocial **H**istory / **L**ifestyle

P

rovocation/ Palliation
What makes it worse or better?

A

llergies
Are you allergic to any medications or foods?

Q

uality
Describe the problem?

M

edications
What medications are you taking?

R

adiation
Does it go anywhere?

P

ertinent Medical History
Medical conditions or surgeries?

S

everity
On a scale of 1 to 10, rate the problem?

L

ast
Oral intake / menstrual cycle/ seen normal / meds, ... ?

T

ime
When did it start?

E

vents
What were you doing when it started?

Vital Signs

Level of Consciousness

AVPU: Awake-Verbal-Physical-
Unresponsive
Oriented to Person, Place, Time?

Skin / **T**issues

Skin temperature, moisture and
texture
Tissue color and moisture

Pulse

Rate, Regularity (patterns), Strength

SpO₂

Respirations

Rate, Regularity (patterns), Quality

EtCO₂

Blood Pressure

Systolic/Diastolic - MAP

Breath sounds

Rales – Rhonchi – Stridor –
Wheezing – Snoring – Friction Rub

Temperature

Core or tympanic

Hear**S**ounds

Murmurs, Bruits, 3rd Sounds

Pupils

PERL: Pupils equal and reactive to
light

PEERLA: Pupils equal, equally
reactive to light with
accommodation

FSBG

Blood sugar

Glasgow **C**oma **S**core

Revised **T**rauma **S**core

Stroke **S**core

Drug Calculation Formulas

Drip Formula

for giving volume over time

$$\frac{\text{Amount to be infused} \times \text{gtts/mL}}{\text{Time in Minutes}} = \text{gtts/min}$$



Drug Formula

for giving drug by mass (g, mg, mcg)

$$\frac{\text{Known Mass}}{\text{Known Volume}} = \frac{\text{Ordered Mass}}{\text{Desired Volume}}$$



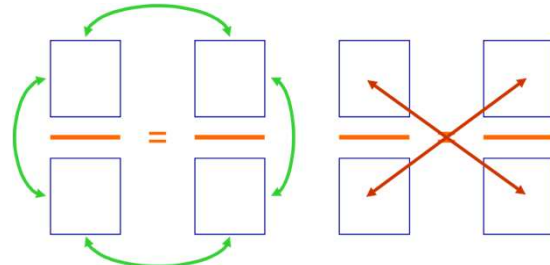
Pounds to KG

Weight in Pounds ÷ 2.2 = Weight in Kg

Pounds	kgs	Pounds	kgs
319	145	198	90
308	140	187	85
297	135	176	80
286	130	165	75
275	125	154	70
264	120	143	65
253	115	132	60
242	110	121	55
231	105	110	50
220	100	99	45
209	95	88	40

Simplifying Equations

Divide equally to get lowest common denominator.



YES

Top - Top
Bottom - Bottom
Left - Left
Right - Right

NO

Top - Bottom
Bottom - Top
Left - Right
Right - Left

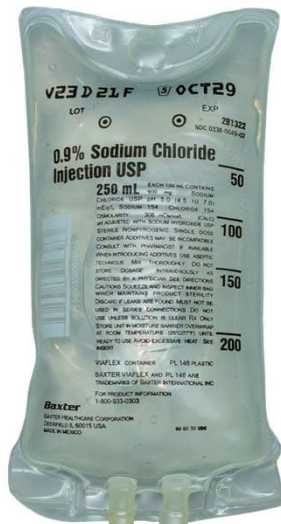
Converting Units

$$1 \text{ Kg} = 1000 \text{ g}$$

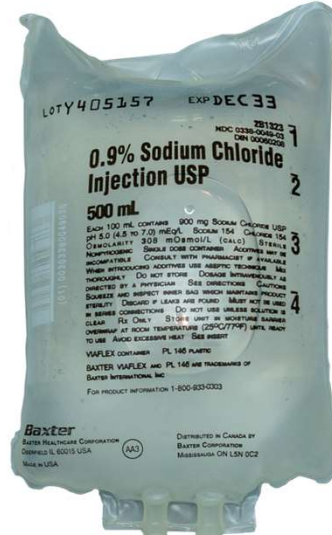
$$1 \text{ g} = 1000 \text{ mg}$$

$$1 \text{ mg} = 1000 \text{ mcg}$$

Mixing Medications for Infusion



1 unit
(vial,
ampule,
prefill)
into a
250 mL
bag



2 units
(vials,
ampules,
prefills)
into a
500 mL
bag

Standard Sets: **10 gtts/mL**

Micro drip Sets: **60 gtts/mL**

Standard Drip Concentrations

(1 unit in 250 mL : 2 units in 500 mL)

Dopamine

1600 mcg
60 gtts (1mL)

Epinephrine

4 mcg
60 gtts (1mL)

Lidocaine

4 mg
60 gtts (1mL)

Magnesium Sulfate

4 mg
60 gtts (1mL)

Norepinephrine

16 mg
60 gtts (1mL)

Procainamide

4 mg
10 gtts (1mL)

Pediatric Vital Signs

Based on PALS Guidelines, 2020

Heart Rate (beats/min)			Respiratory Rate (breaths/min)	
Age	Awake	Asleep	Age	Normal
Neonate	100 - 205	90 - 160	Infant	30 - 53
Infant	100 - 180			
Toddler	98 - 140	80 - 120	Toddler	22 - 37
Preschool	80 - 120	65 - 100	Preschool	20 - 28
School-age	75 - 118	58 - 90	School-age	18 - 25
Adolescent	60 - 100	50 - 90	Adolescent	12 - 20

Normal Blood Pressure

Age	Systolic	Diastolic	MAP
Birth (12 h, < 1000 g)	39 - 59	16 - 36	28 - 42
Birth (12 h, 3 kg)	60 - 76	31 - 45	48 - 57
Neonate (96 h)	67 - 84	35 - 53	45 - 60
Infant (1 - 12 m)	72 - 104	37 - 56	50 - 62
Toddler (1 - 2 y)	86 - 106	42 - 63	49 - 62
Preschooler (3 - 5 y)	89 - 112	46 - 72	58 - 69
School-age (6 - 9 y)	97 - 115	57 - 76	66 - 72
Preteen (10 - 12 y)	102 - 120	61 - 80	41 - 79
Adolescent (12 - 15 y)	110 - 131	64 - 83	73 - 84

Pulse Oximetry

SpO_2 is lower in the immediate newborn period. Beyond this period, normal pediatric values have not been firmly established. An SpO_2 of <92% should be cause for concern and treatment.

Glasgow Coma Scale

Eye Opening Response

Adult	Spontaneously	4	Spontaneously	Infant
	To Speech	3	To Speech	
	To Pain	2	To Pain	
	No Response	1	No Response	

Best Verbal Response

Adult	Oriented to Time, Place, and Person	5	Coos and Babbles	Infant
	Confused	4	Irritable Cries	
	Inappropriate Words	3	Cries to Pain	
	Incomprehensible			
	Sounds	2	Moans to Pain	
	No Response	1	No Response	

Best Motor Response

Adult	Obeys Commands	6	Moves Spontaneously / Purposefully	Infant
	Moves to Localized Pain	5	Withdraws to Touch	
	Flexion Withdrawal from Pain	4	Withdraws in Response to Pain	
	Abnormal Flexion (Decorticate)	3	Abnormal Flexion to Pain (Decorticate)	
	Abnormal Extension (Decerebrate)	2	Abnormal Extension to Pain (Decerebrate)	
	No Response	1	No Response	

Total Score

Best Response	15
Comatose Patient (consider airway management)	8 or less
Totally Unresponsive	3

Revised Trauma Score

Glasgow Coma Score

13 - 15	4	3.7472
9 - 12	3	2.8104
6 - 8	2	1.8736
4 - 5	1	0.9368
3	0	0

Systolic Blood Pressure

> 89	4	2.9304
76 - 89	3	2.1978
50 - 75	2	1.4652
1 - 49	1	0.7326
0	0	0

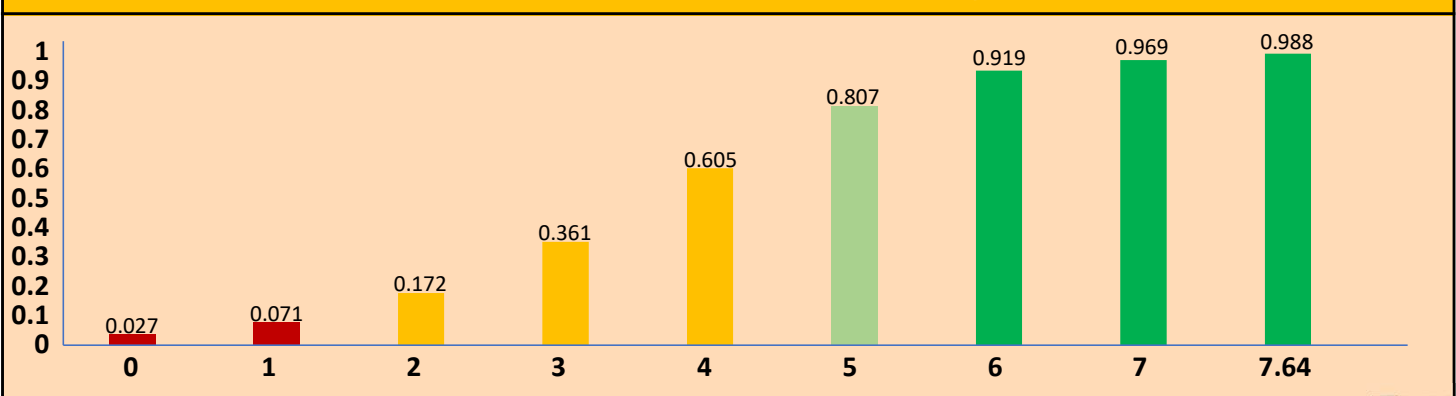
Respiratory Rate

> 89	4	1.1632
76 - 89	3	0.8724
50 - 75	2	0.5816
1 - 49	1	0.2908
0	0	0

$$RTS = 0.9368 \text{ GCS} + 0.7326 \text{ SBP} + 0.2908 \text{ RR}$$

Scores range from 7.841 to 0

Survival Predictability



Stroke Scales

NIH Stroke Scale Score

1a. Level of consciousness	0 = Alert, keenly responsive 1 = Not alert, but rousable by minor stimulation 2 = Not alert, required repeated stimulation 3 = Unresponsive or responds only with reflex
1b. Level of consciousness questions: What is the month? What is your age?	0 = Answers both questions correctly 1 = Answers one question correctly 2 = Answers neither question correctly
1c. Level of consciousness commands: Open and close your eyes. Grip and release your hand.	0 = Performs both task correctly 1 = Performs one task correctly 2 = Performs neither task correctly
2. Best gaze	0 = Normal 1 = Partial gaze palsy 2 = Force deviation
3 Visual	0 = No vision loss 1 = Partial hemianopia 2 = Complete hemianopia 3 = Bilateral hemianopia
4. Facial Palsy	0 = Normal symmetric movements 1 = Minor paralysis 2 = Partial paralysis 3 = Complete paralysis of one of both sides
5 Motor Arm 5a Left Arm 5B Right arm	0 = No drift 1 = Drift 2 = Some effort against gravity 3 = No effort against gravity; limb falls 4 = No movement
6. Motor leg 6a. Left leg 6B. Right leg	0 = No drift 1 = Drift 2 = Some effort against gravity 3 = No effort against gravity 4 = No movement
7. Limb ataxia	0 = Absent 1 = Present in one limb 2 = Present in two limbs
8. Sensory	0 = Normal; no sensory loss 1 = Mild to moderate sensory loss 2 = Severe to total sensory loss
9. Best Language	0 = No aphasia; normal 1 = Mild to moderate aphasia 2 = Severe aphasia 3 = Mute, global aphasia
10. Dysarthria	0 = Normal 1 = Mild to moderate dysarthria 2 = Severe dysarthria
11. Extinction and inattention	0 = No Abnormality 1 = Visual, tactile, auditory, spatial, or personal inattention 2 = Profound hemi-inattention or extinction
0	No stroke symptoms
1 – 4	Minor stroke
5 – 15	Moderate stroke
16 – 20	Moderate to severe stroke
21 - 42	Severe stroke

Cincinnati Stroke Scale

Facial Droop

Normal:

Both sides of face move equally

Abnormal:

One side of face does not move as well as the other

Arm Drift

Normal:

Both arms move equally or not at all

Abnormal:

One arm drifts compared to the other, or does not move at all

Speech

Normal:

Patient uses correct words with no slurring

Abnormal:

Slurring or inappropriate words, or mute

BE FAST Stroke Criteria

B alance	Sudden loss of balance?
E yes	Sudden vision problems?
F ace	One side of smile droops?
A rm	One arm drift down?
S peech	Slurred or difficult speech?
T ime	Last time seen normal?

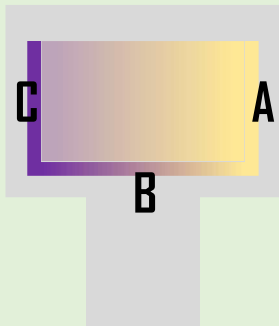
Capnography (PETCO₂)

COLORIMETRIC CAPNOGRAPH

Color based on pH

Purple PROBLEM – Yellow YES

Any acid (soda, vomit) can give false reading



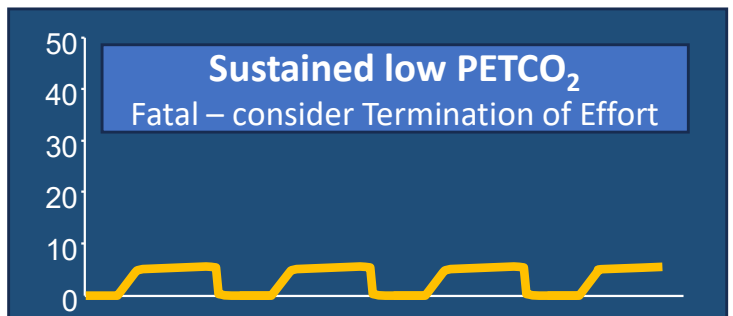
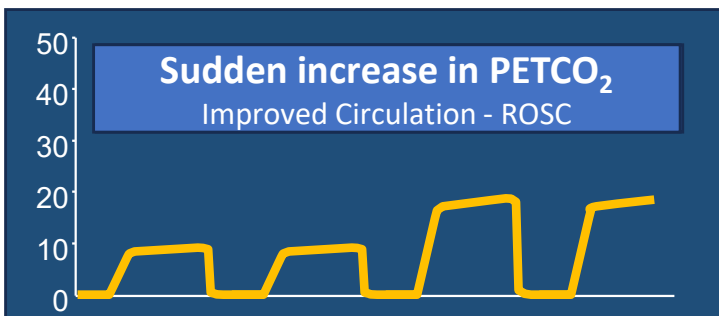
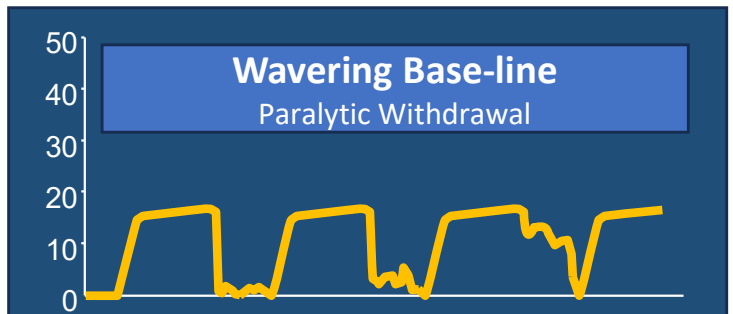
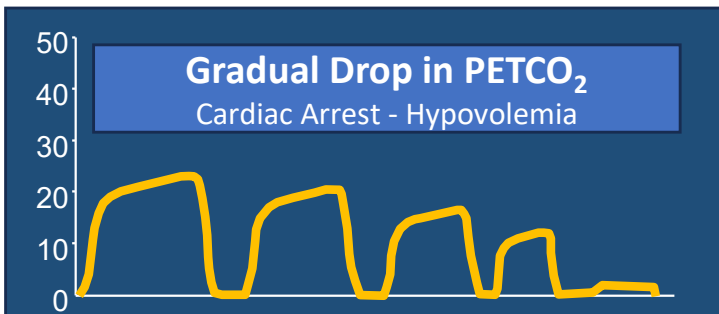
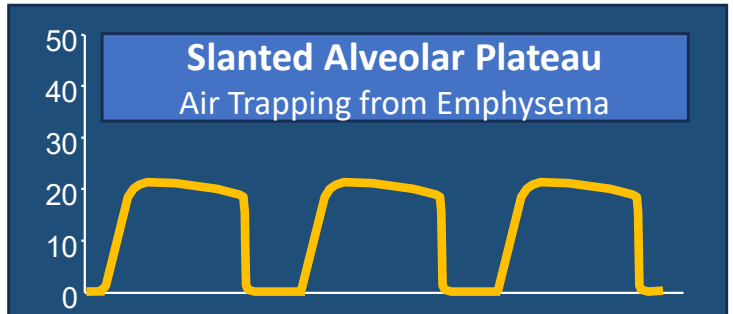
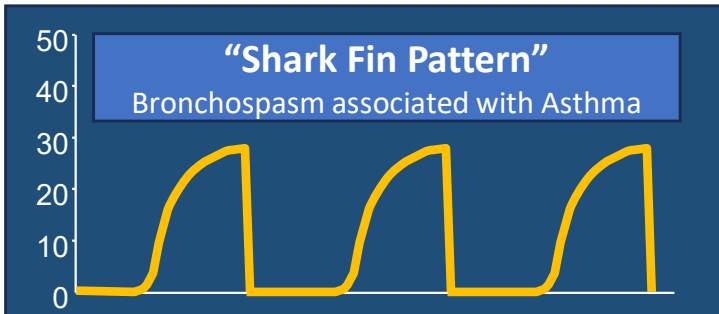
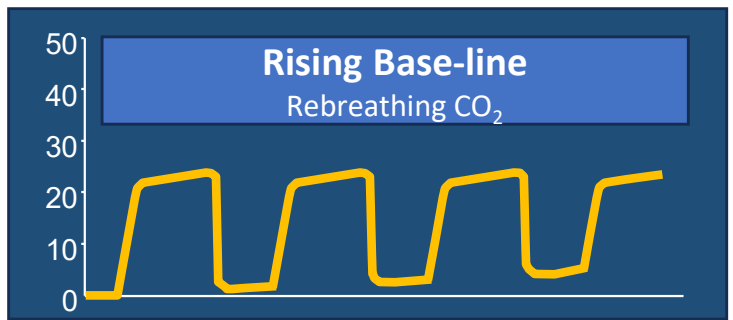
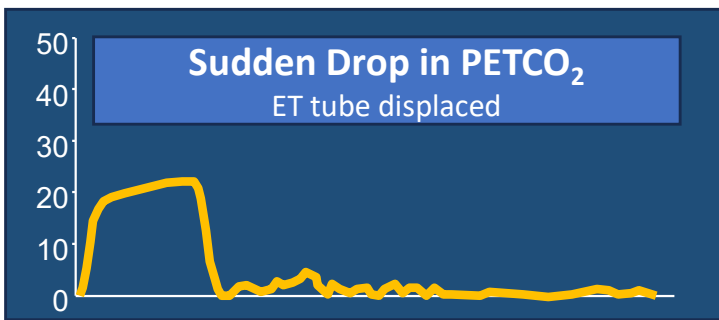
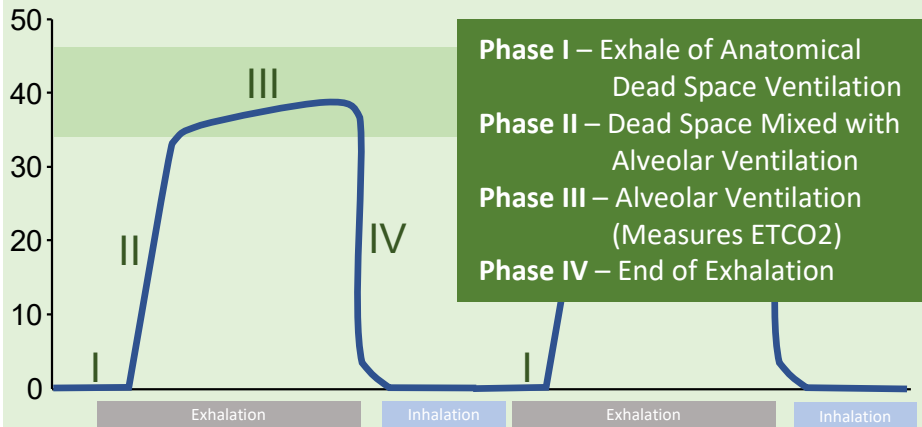
Approximate Values:

A < 4 mmHg

B 4 – 15 mmHg

C 15 – 38 mmHg

NORMAL WAVE FORM



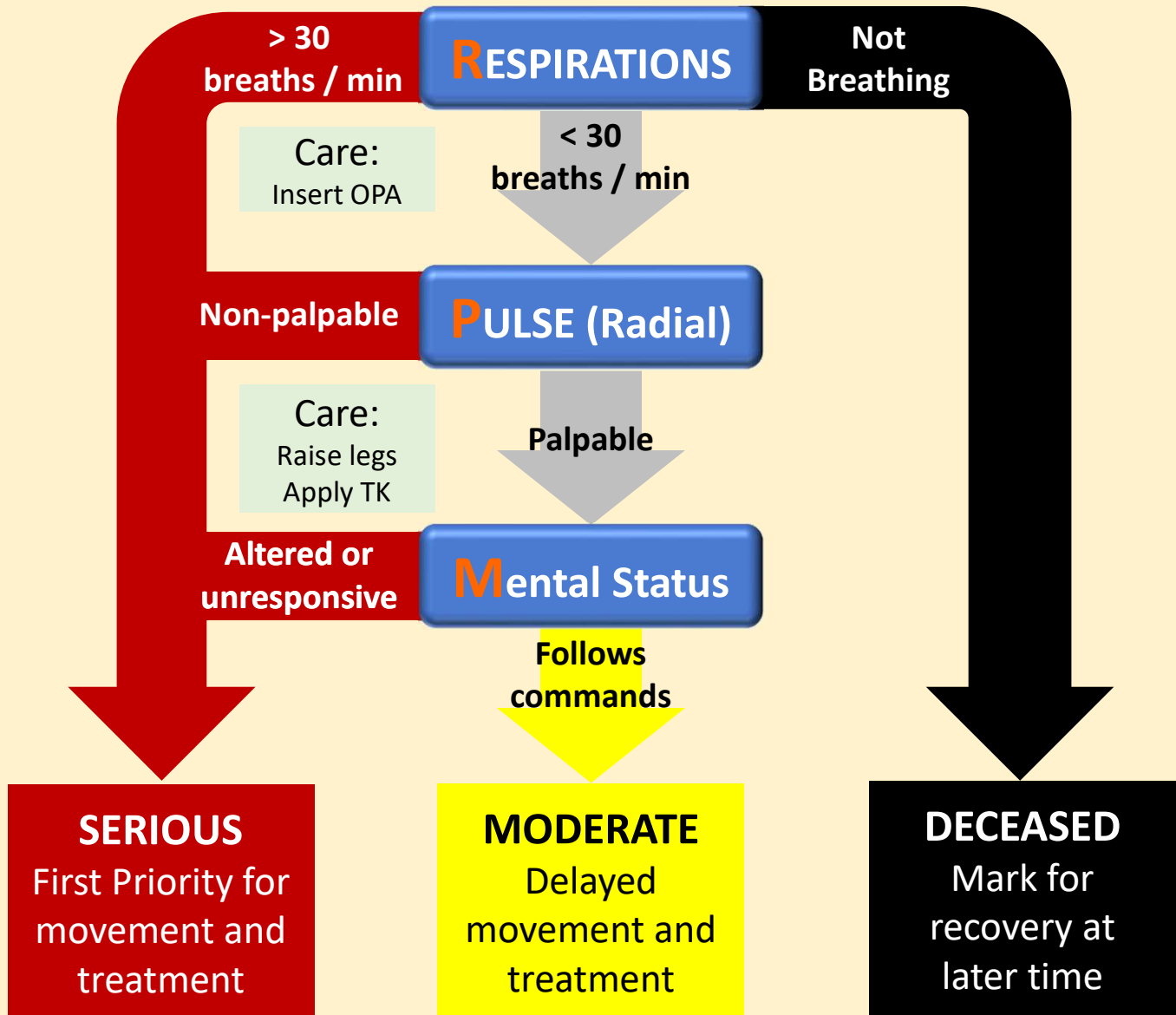
RPM Triage (START Triage)

Perform **Scene Size-up** (Windshield Survey)
Call for **Additional Resources** early

Announce:

“If you can walk, go to (describe collection point)”
When able – assign responder to do assessment.
This identifies **MINOR** patients (Triage Category – **GREEN**)

Assure open airway



Triage team performs **ONLY** Triage

SERIOUS Patients, moved to treatment as soon as possible by strike team
In Treatment area, reassess and manage patient; prepare for transport as soon as possible

Patient Assessment

Scene Size up

Hazards – assure safety
Number of Patients
Consider additional Resources

Primary Assessment

General Impression
Mental Status – Level of Consciousness
ABCs
(Immediate care provided to manage life threats)
Transport Decision

History

Identify Chief Complaint
Mechanism of Injury / Nature of Illness

S(opqrst)AMPLE History

Physical Exam

Head-to-toe survey

Focused Assessment
or
Detailed Assessment

Screens (Sepsis, Stroke, ...)

Gather Vital Signs

Pulse, Respirations, Blood Pressure (manual), Temperature
AVPU, Skin and Tissues, Pupils, Breath Sounds
Heart Sounds, SpO₂, FSBG, EtCO₂, GCS

Interventions

On going Assessment

Responses to Interventions
Repeat Physical Exam
Repeat Vital Signs (minimum of three per patient)