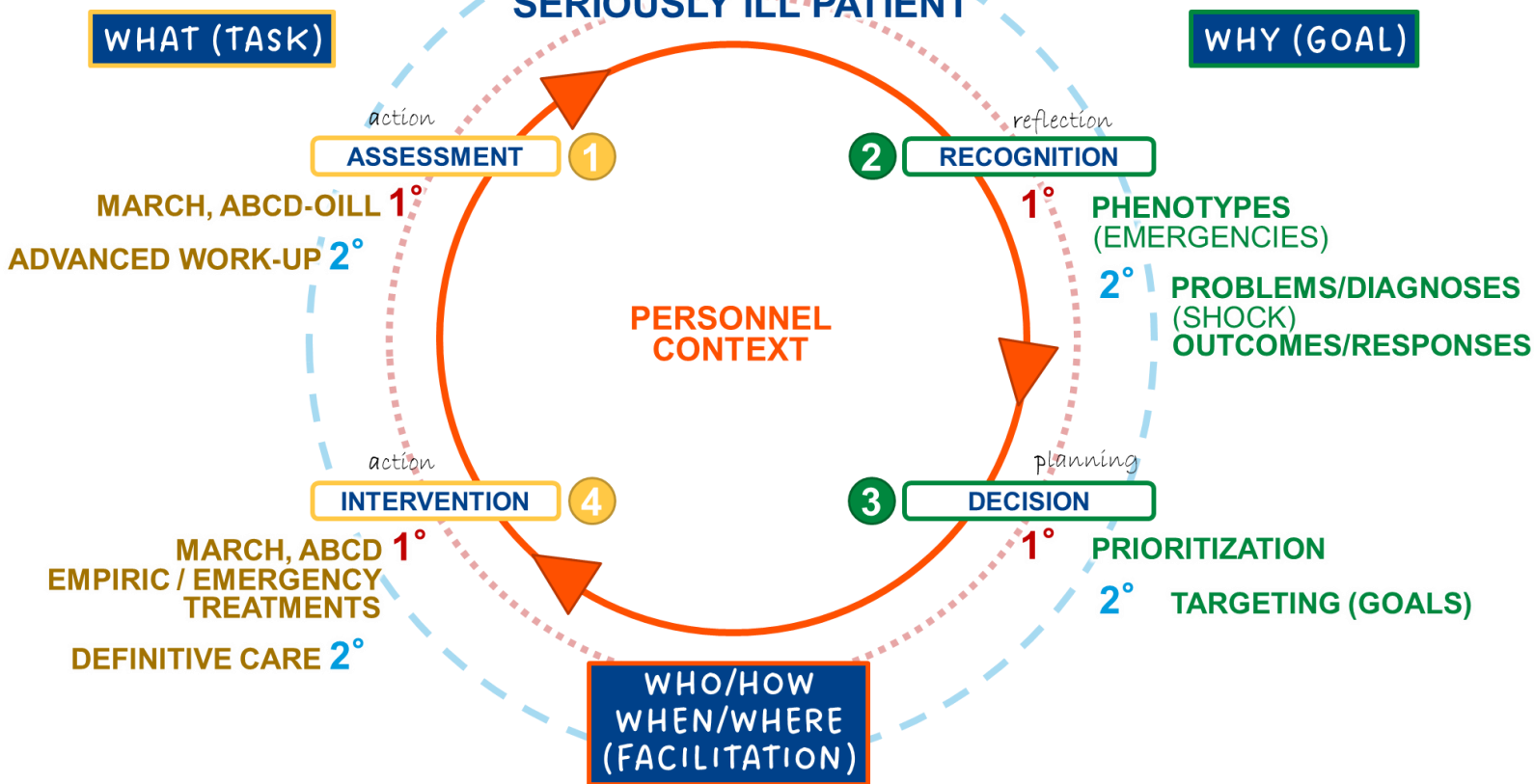


APPROACH TO THE SERIOUSLY ILL PATIENT

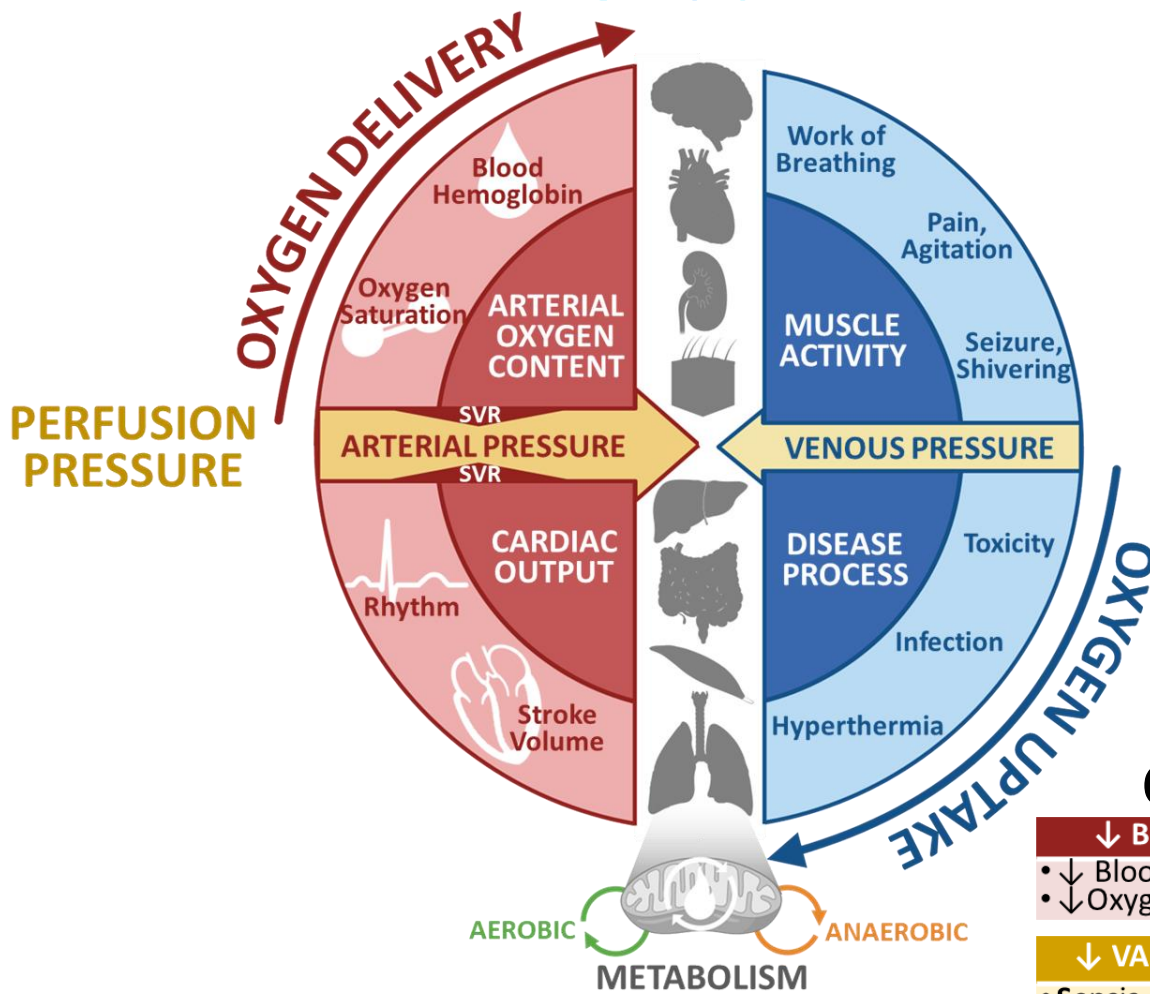


1. **ASSESSMENT:** Observed Findings (Physical Exam, Vital Signs)
2. **RECOGNITION:** Initial (Phenotype) Concerns (Instability)
3. **DECISION:** Emergency or Not?
4. **INTERVENTION:** Emergency / Empiric Treatments
5. **ASSESSMENT:** Stability? Additional Diagnostics / Work-Up?
6. **RECOGNITION:** Critical Illness Schemas: Bleeding? Shock? Respiratory Failure?
7. **DECISION:** Severity? Acuity (Level of Compensation)? Priorities? Goals?
8. **INTERVENTION:** Medications, Procedures, Disposition
9. **FACILITATION:** Urgency? Sequence? Resource/Personnel Needs? Transfer?

PHENOTYPES

- Bleeding
- Airway Compromise
- ↑ WOB / RR
- ↓ WOB / RR
- PV Asynchrony
- ↓ SpO2
- ↑ pCO2
- ↑ Airway Pressure
- ↑ Blood Pressure
- ↓ Blood Pressure
- ↑ Heart Rate
- ↓ Heart Rate
- Arrhythmia
- Altered Mentation
- Abnormal Pupils
- Neurologic Deficit
- Pain, Anxiety, Agitation
- Abnormal Movements
- Skin Changes
- ↑ Temperature
- ↓ Temperature

SHOCK



CAUSES:

↓ BLOOD O₂ CONTENT

- ↓ Blood (Hgb/Hct)
- ↓ Oxygen Saturation (SpO₂)

↓ VASCULAR TONE (SVR)

- Sepsis
- Anaphylaxis
- Liver Dysfunction
- Adrenal Insufficiency, Autonomic Dysfunction, Acidosis
- Drugs, Devices

↓ CARDIAC OUTPUT

- Arrhythmia
- Heart Failure (↓ Function)
- ↓ Volume (Bleeding, Third Spacing, Dehydration)
- Obstruction (PE, PTX, Tamp.)
- Valvular Disease
- ↓ Filling (Thick Heart)
- ↑ Afterload (SVR/BP)

↑ O₂ CONSUMPTION

- Pain, Agitation, Distress
- Exercise, Activity
- ↑ Work of Breathing
- Seizure
- ↑ Metabolism

↑ VENOUS CONGESTION

- Congestive Heart Failure
- RV Failure
- Pneumothorax
- Tamponade
- Volume Overload
- ↑ Compartment Pressures (Intracranial, Thoracic, Abdominal, Limb)

SHOCK HEMODYNAMICS

	OBST	CARD	HYP0	VASO
BP	↑↓	↑↓	↓	↓
SV	↓	↓	↓	↑↓
PP	↓	↓	↓	↑
PVI®	↑↓	↓	↑	↑↓
PPV	↑↓	↓	↑	↑↓
CVP	↑	↑	↓	↓
SVR	↑	↑	↑	↓

MARKERS OF SHOCK (HYPERPERFUSION)

- Altered Mental Status
- Arrhythmia, ST Δ's
- Elevated Troponin
- Low UOP (<0.5mL/kg)
- Elevated BUN / Cr
- Capillary Refill > 3sec
- Skin Mottling
- Liver Function Abnormalities
- O₂ Extraction > 35%
- Lactate > 2.5
- Low Bicarb Level
- Base Deficit > 4
- PaCO₂ – ETCO₂ gap > 10

BP = Blood Pressure, MAP, SV = Stroke Volume, PP = Pulse Pressure, PVI = Pleth Variability Index®, PPV = Pulse Pressure Variation, CVP = Central Venous Pressure, SVR = Systemic Vascular Resistance, RV = Right Ventricle, LV = Left Ventricle, PE = Pulmonary Embolism, PTX = Pneumothorax, OBST = Obstructive, Card = Cardiogenic, Hypo = Hypovolemic, Vaso = Vasodilatory