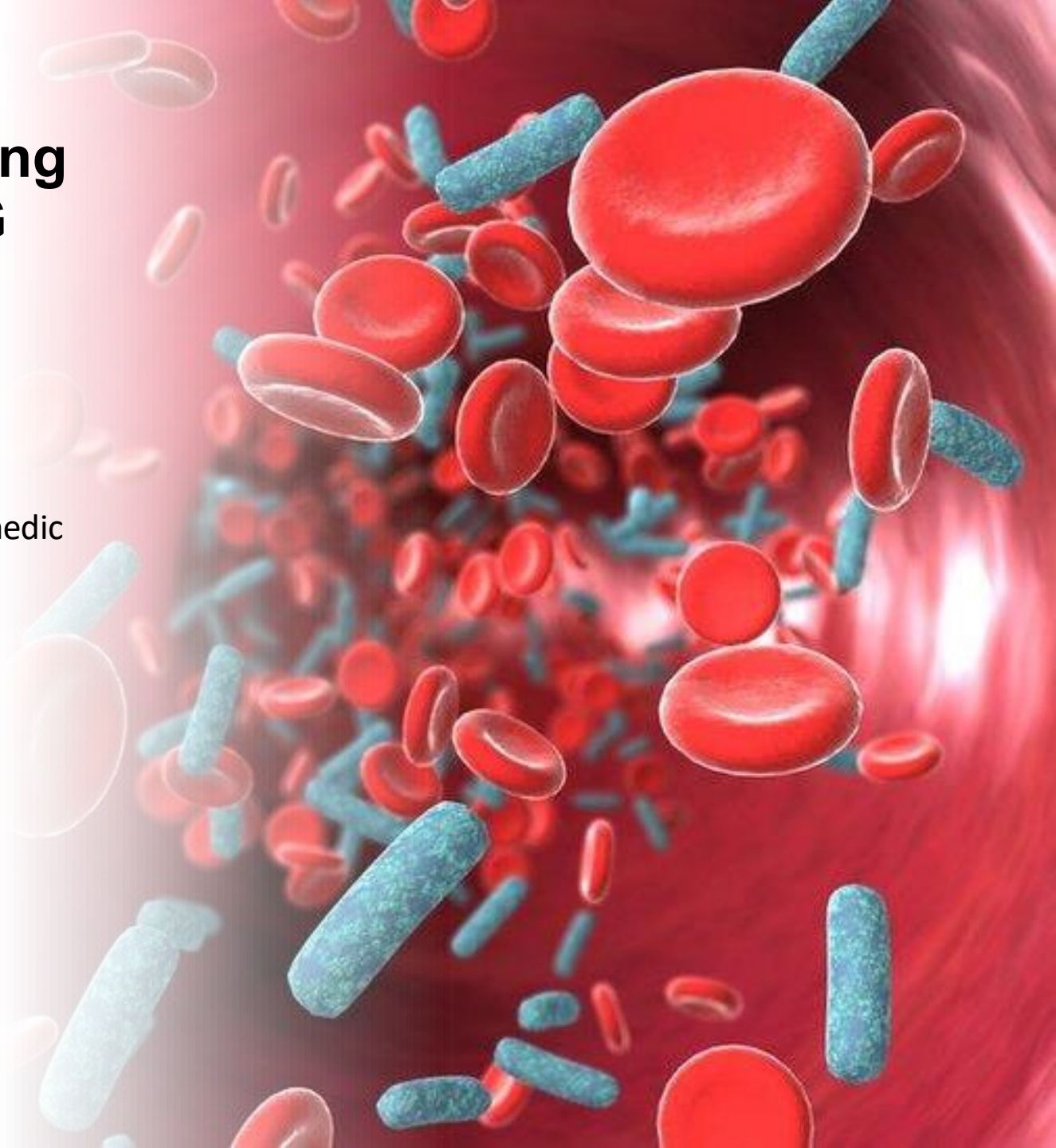
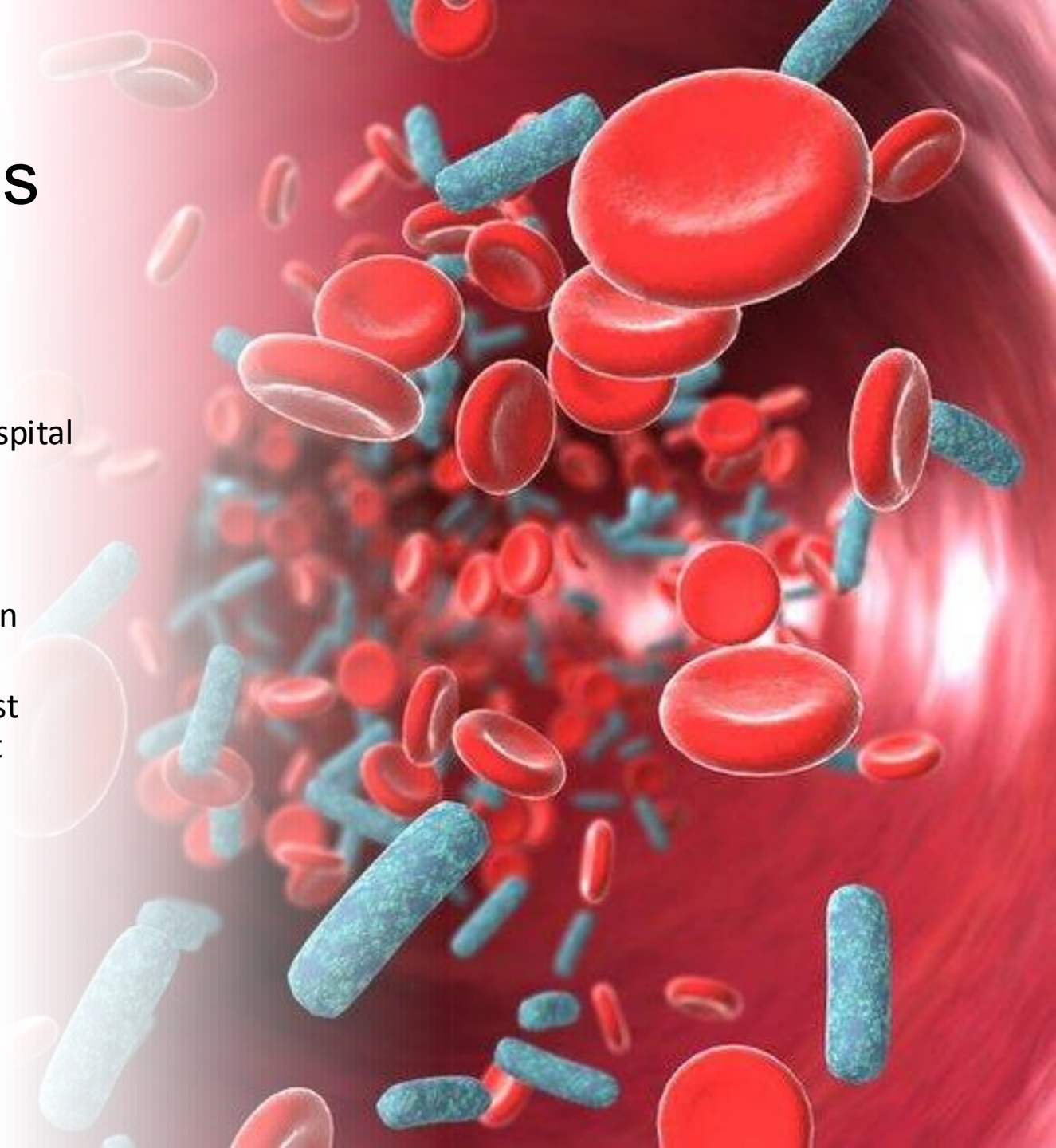
Understanding and OWNING Sepsis

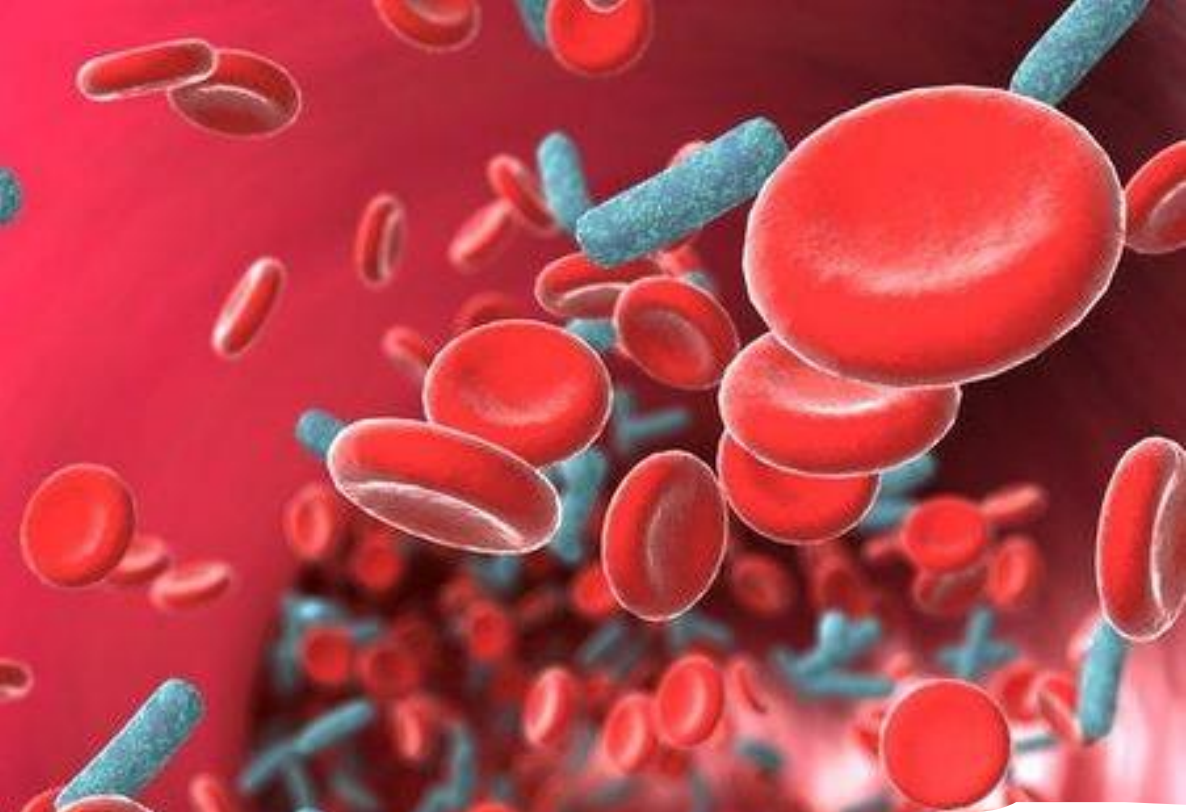
- Plains to Peaks EMS Conference
- - Scott Nyman, Paramedic
    - 4/25/2026

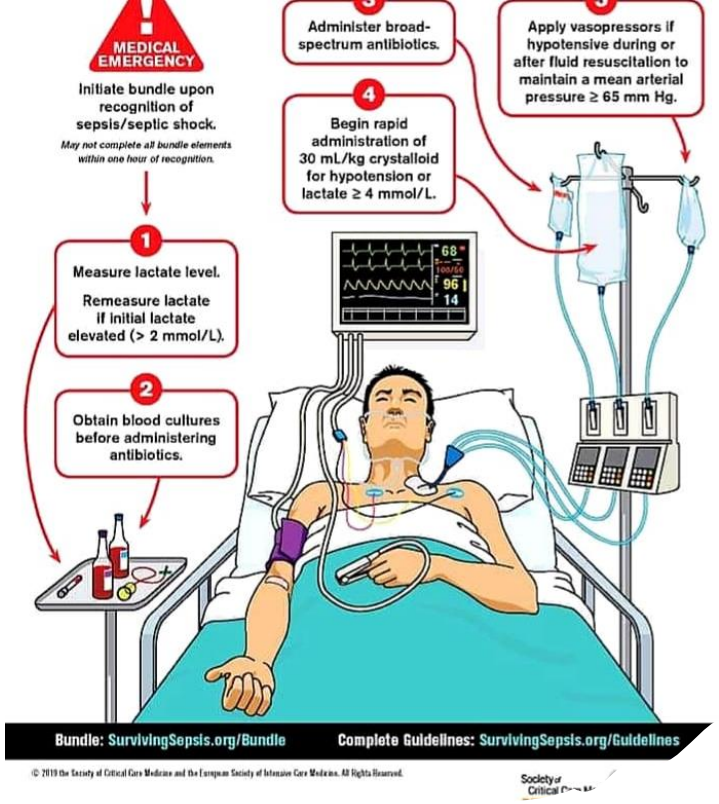


Why Sepsis Matters

- Leading cause of hospital death
  - 350,000 deaths involving Sepsis
  - Early recognition saves lives
  - EMS is often first medical contact







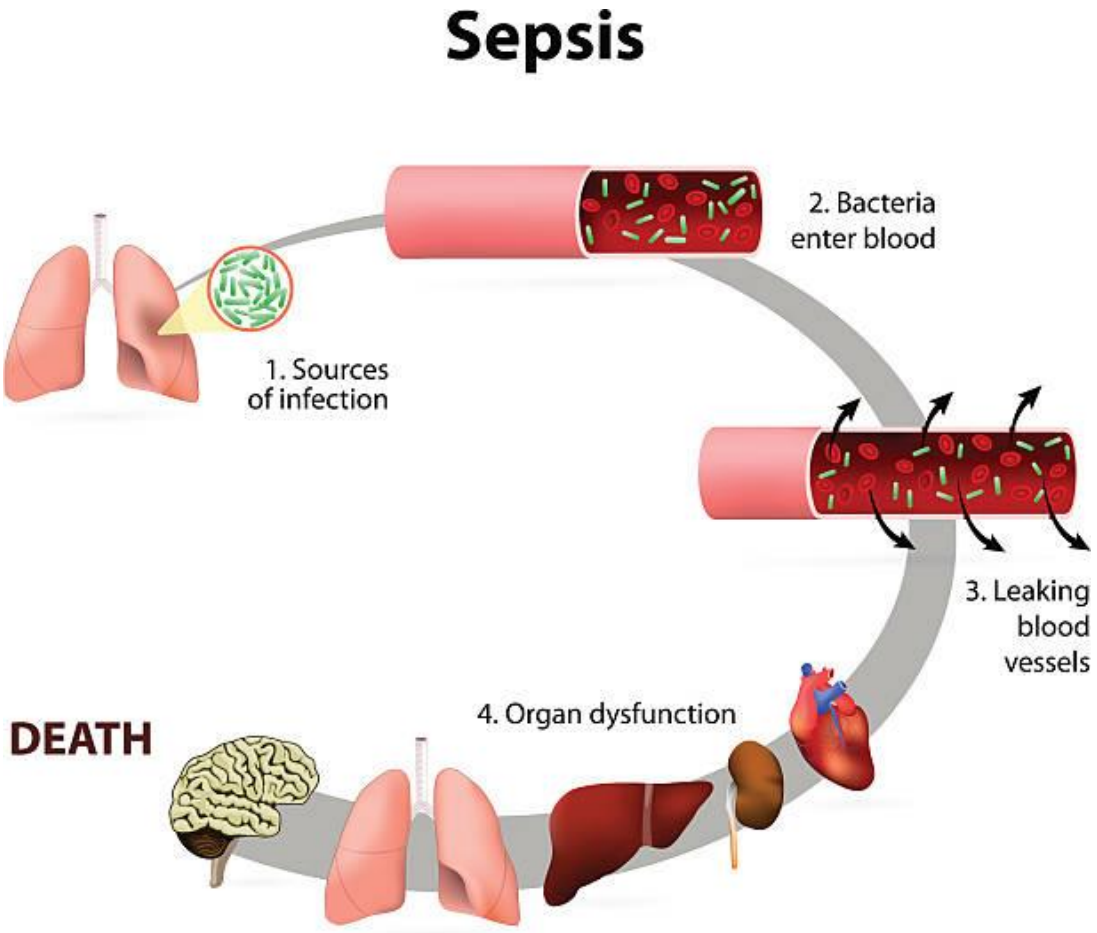
Hour 1 Bundle

Case Study

- 68-year-old male
  - Weakness x 2 days
  - BP 96/54 | HR 118 | RR 24 | Temp 101.9°F
  - What are you thinking?

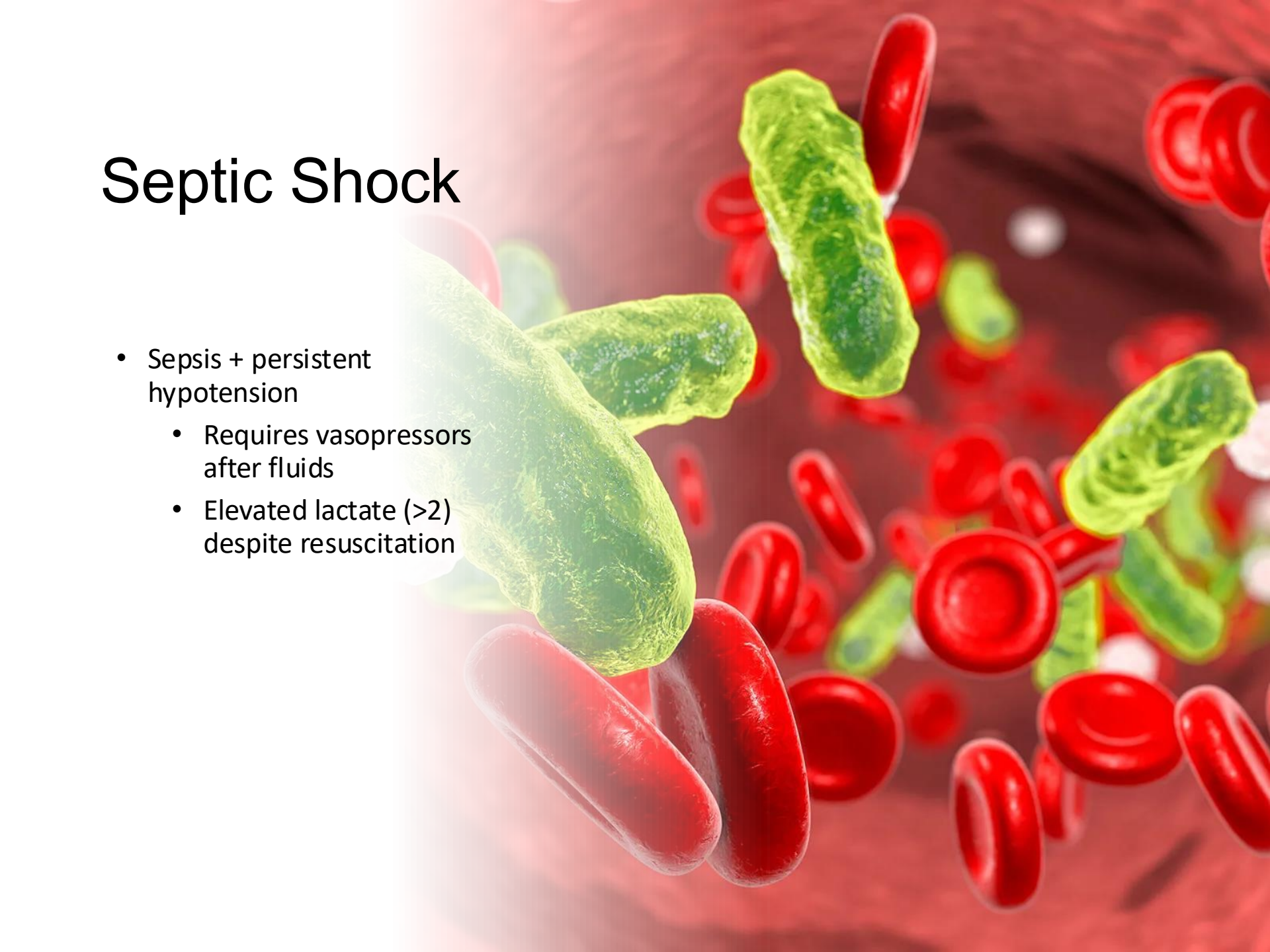
Sepsis Defined

- Life-threatening organ dysfunction
  - Caused by dysregulated host response to infection
  - Not just infection — organ failure



Septic Shock

- Sepsis + persistent hypotension
  - Requires vasopressors after fluids
  - Elevated lactate (>2) despite resuscitation



Pathophysiology Simplified

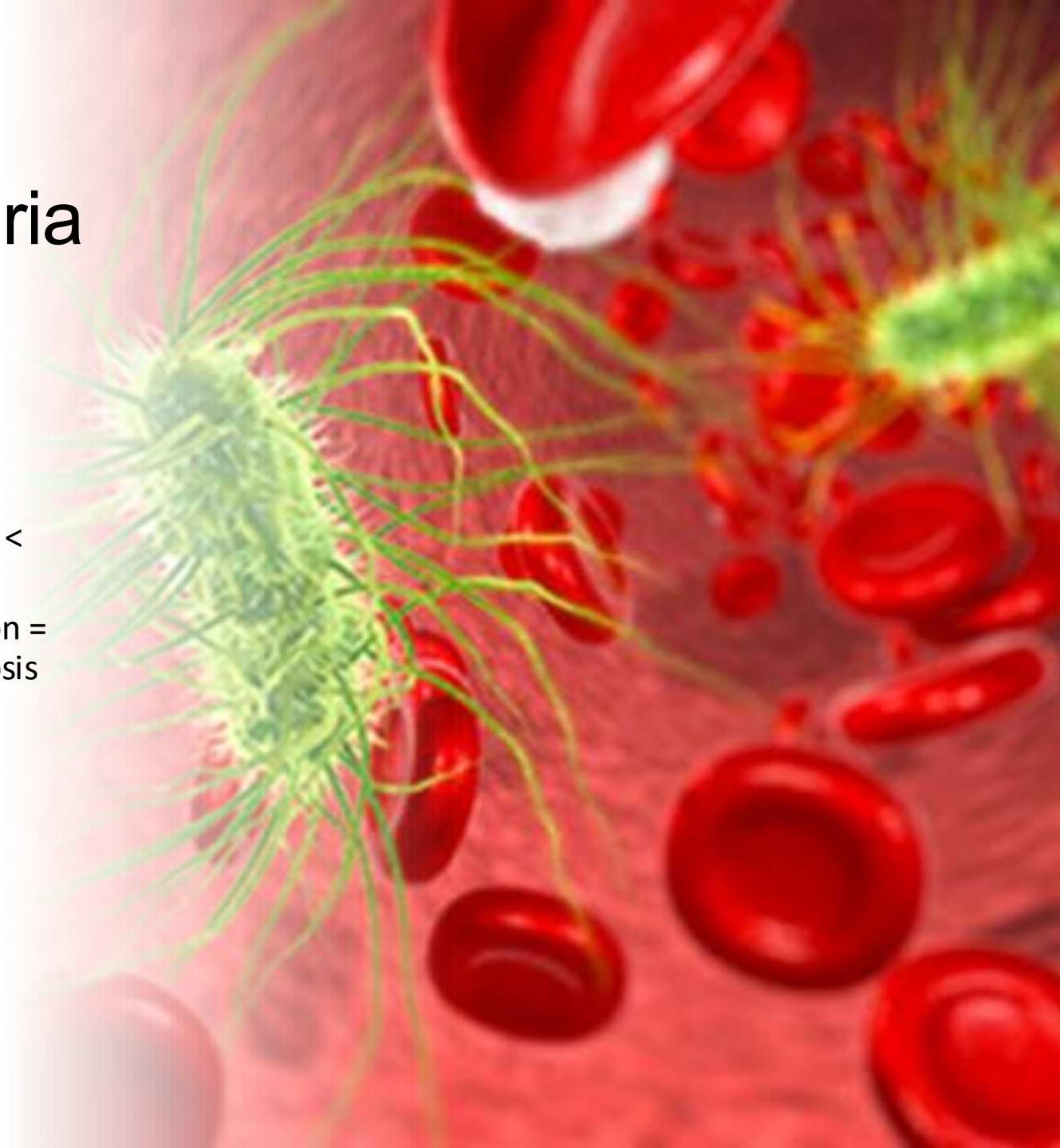
- Infection triggers immune response
  - Cytokine storm
  - Capillary leak & vasodilation
  - Cellular hypoxia & organ failure

Early Signs EMS Misses

- Tachypnea (often first sign)
  - Altered mental status
  - Mild hypotension
  - General weakness or falls

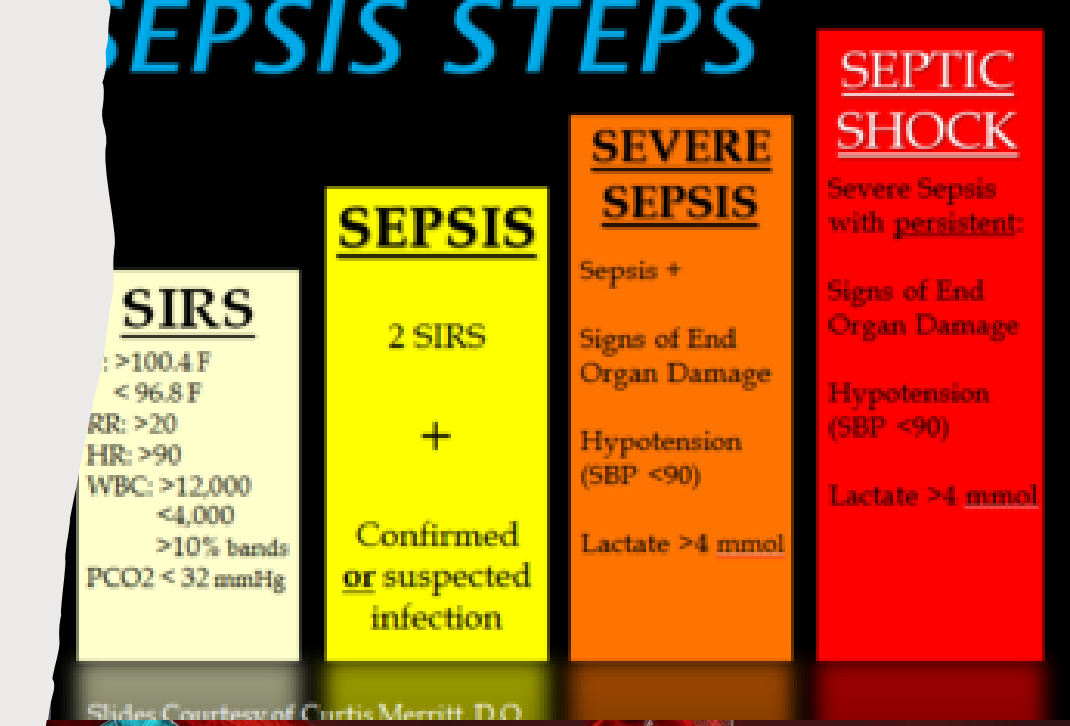
SIRS Criteria

- HR > 90
  - RR > 20
  - Temp > 38°C or < 36°C
  - 2+ with infection = concern for sepsis



Field Tool

- Does the patient have 2 of the following
  - Altered mental status
  - Respiratory rate >22
  - Systolic BP < 100 mmHg
  - ETCO2 < 25 mmHg

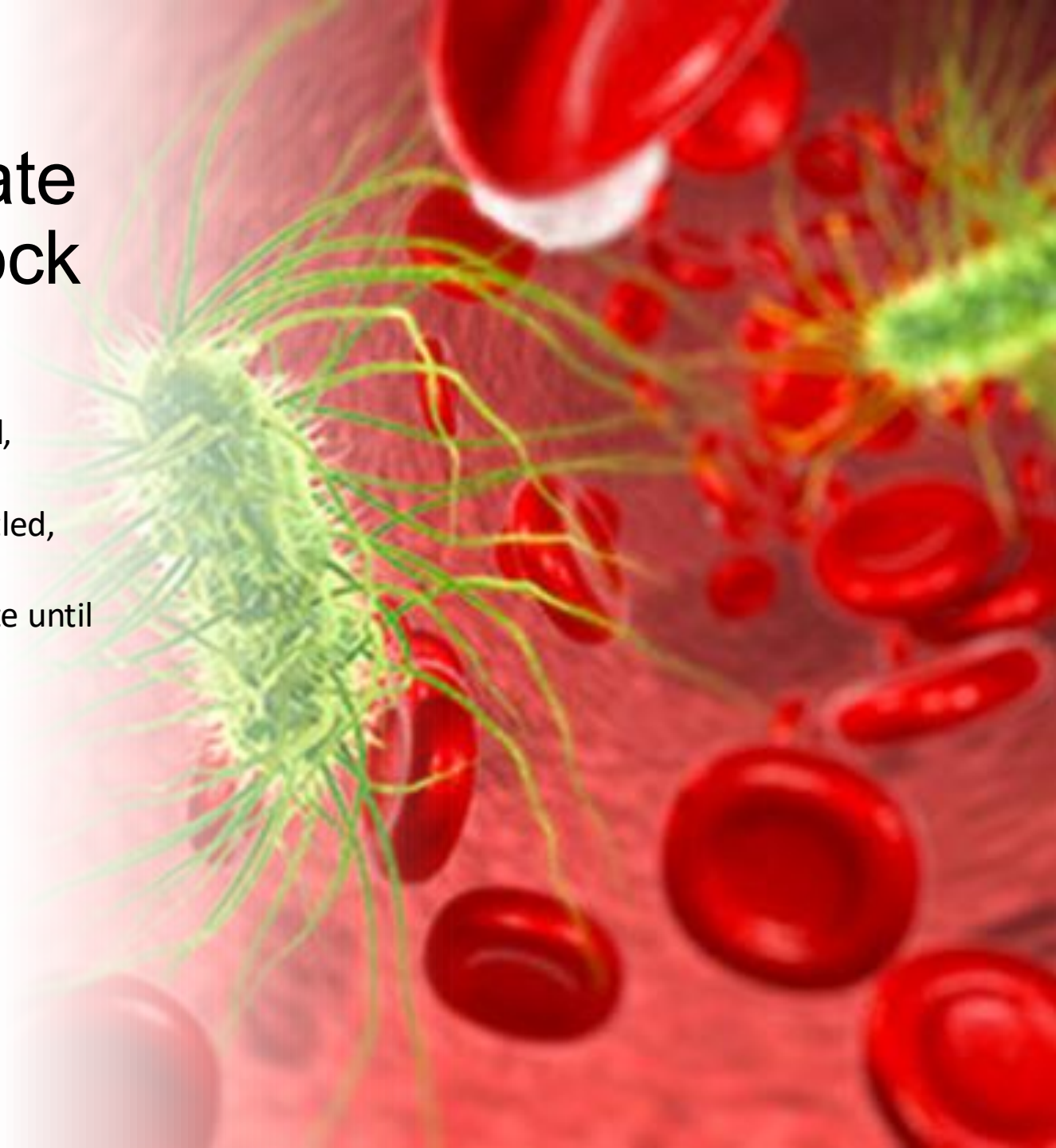


Types of Shock Review

- Hypovolemic
  - Cardiogenic
  - Obstructive
  - Distributive (Septic Shock)

Early vs Late Septic Shock

- Early: warm, flushed, bounding pulses
  - Late: cool, mottled, hypotensive
  - Kids compensate until they crash



Lactate Explained

- Marker of cellular stress
  - Indicator of poor perfusion
  - Higher lactate = higher mortality

EMS Treatment Priorities

- Airway & Oxygen
- EARLY recognition
- Early hospital notification
- Begin EARLY fluid resuscitation
- EARLY Vasopressors
- EARLY Antibiotics

Fluid Resuscitation

- 30 mL/kg crystalloid (hospital guideline)
  - Start with 1–2 liters NS or LR
  - Frequent reassessment
  - Caution in CHF patients

Pressors in EMS

- Norepinephrine (preferred if available)
  - Push-dose epinephrine as bridge
  - Fluids first unless fluid overloaded

Sepsis Alert Activation

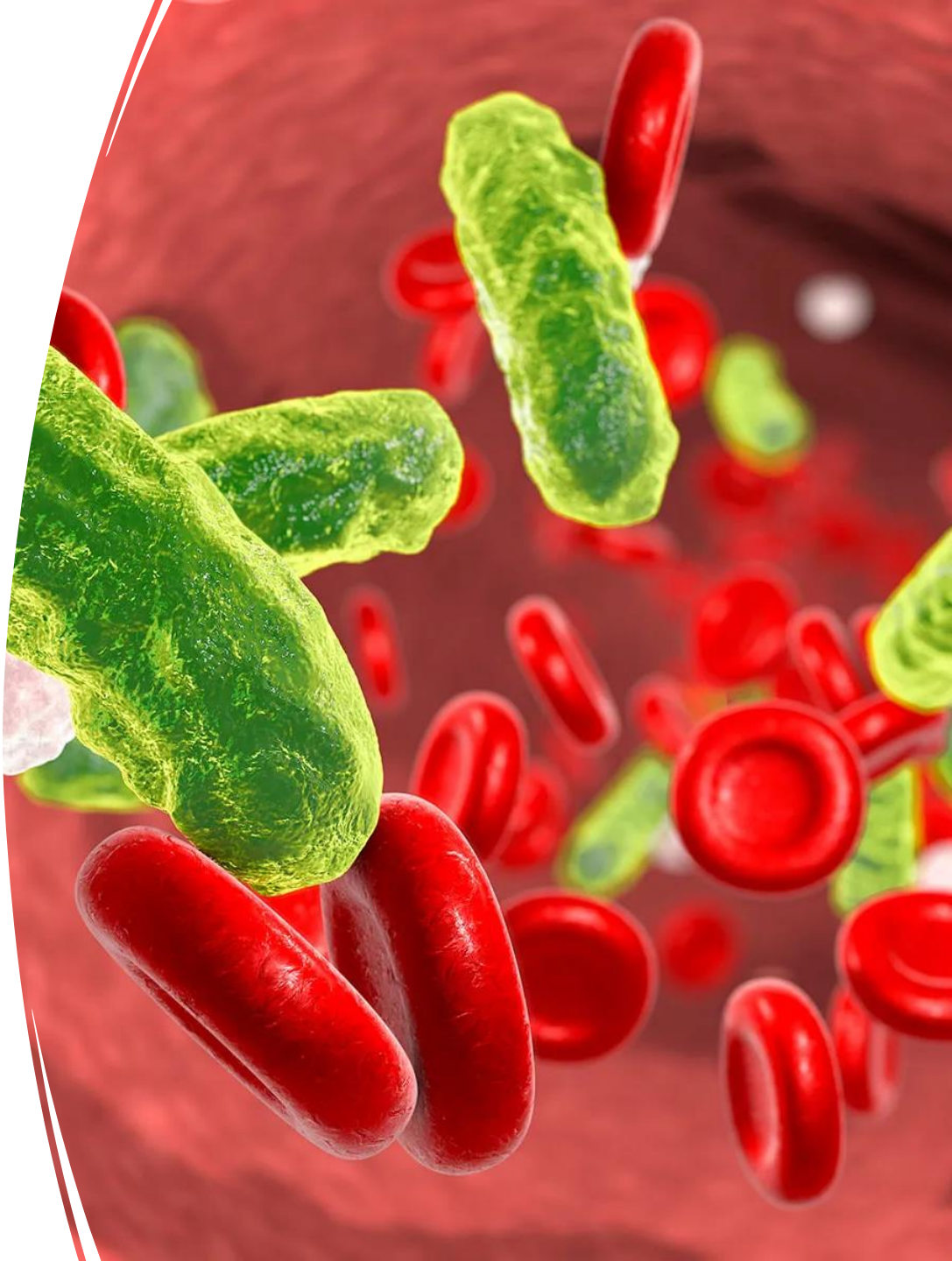
- Reduces time to antibiotics
  - Improves ICU outcomes
  - Clear radio report improves care

Special Population: Elderly

- Often no fever
  - Confusion may be only symptom
  - Common sources: UTI, pneumonia, skin

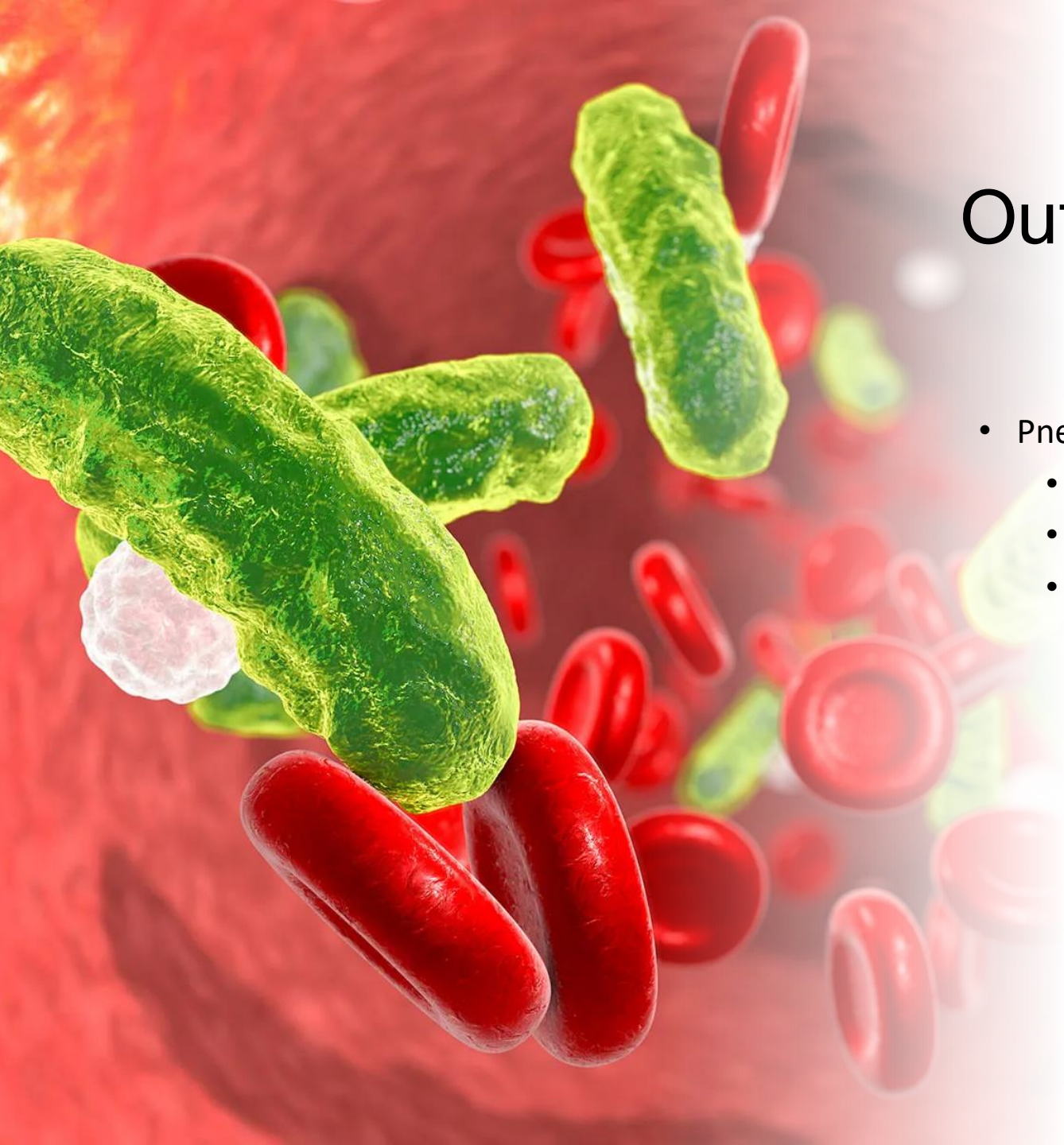
Special Population: Pediatrics

- Early tachycardia
  - Delayed cap refill
  - Hypotension is late sign



Case Study Revisited

- BP now 82/48
  - HR 124 | RR 28 | Confused
  - What is your next step?

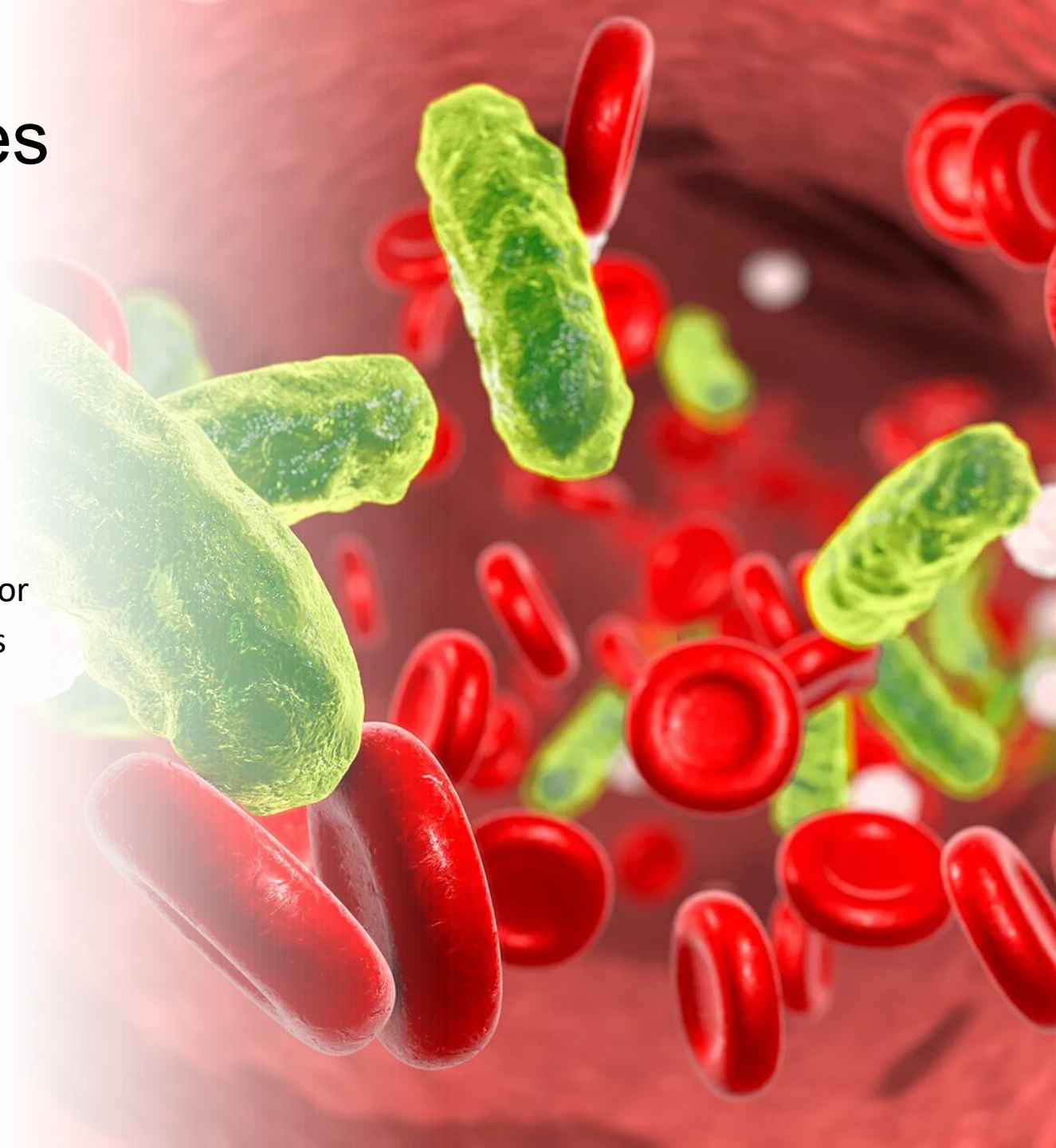


Outcome

- Pneumonia confirmed
  - Lactate 5.6
  - ICU admission
  - Early EMS fluids improved outcome

What Saves Septic Patients?

- Early recognition
  - Early fluids
  - Early Transport
  - Early Vasopressor
  - Early Antibiotics



5 Things to Change Tomorrow

- Take tachypnea seriously
  - Don't ignore weak elderly patients
  - Start fluids early
  - Reassess often
  - Call sepsis alert early

Final Thought

- Sepsis doesn't look dramatic — until it's too late.
  - EMS changes outcomes.