APPROACH TO SEPSIS

How is sepsis defined?

Sepsis = Life-threatening organ dysfunction caused by a dysregulated host response to infection
Organ dysfunction = Increase in SOFA score ≥2

- Baseline SOFA should be assumed to be 0 in previously healthy patients

What is septic shock?

↓BP requiring vasopressors AND serum lactate level >2 mmol/L despite fluid resuscitation
Hospital mortality for septic shock is > 40%

What is qSOFA?

qSOFA is a screening tool that should prompt clinicians to escalate care for patients with suspected sepsis → **qSOFA score of ≥2 is associated with poor prognosis**

qSOFA score has three components:

- Altered mental status: 1 point
- Respiratory rate ≥22: 1 point
- Systolic blood pressure ≤ 100mmHg: 1 point

Key Management Aspects

Broad-Spectrum Antibiotics:

- Should be administered as soon as sepsis is recognized → **every hour delay is associated with increased mortality**

Early Assessment and Management:

In addition to broad-spectrum antibiotics, the following care should be done ASAP:

- Send blood cultures (ideally before antibiotics are administered)
- Measure lactate → repeat if > 2mmol/L
- If patient is hypotensive or lactate is > 4mmol/L, give 30mL/kg IV crystalloids
- If MAP < 65mmHg despite fluid resuscitation, start norepinephrine
  - Norepinephrine can be given via a peripheral IV temporarily if needed
  - For patients with COVID, consider earlier initiation of vasopressors to prevent pulmonary edema

Reassessment of Fluid Therapy:

- Crystalloids are preferred → Consider Ringer's Lactate over Normal Saline
- Reassess fluid status frequently during the initial resuscitation → Many methods to do this, none is perfect
  - Provide fluid challenge (500mL-1L) and assess response
  - Physical exam: urine output, peripheral perfusion (e.g. capillary refill time ≤3 seconds)
  - Lactate clearance
  - Pulse pressure variation
  - Straight leg raise: Raise patient's legs to 45 degrees for 30-90s → Positive if ≥ 10% increase in cardiac output/stroke volume/pulse pressure or ≥5% increase in $EtCO_2$
  - POCUS IVC assessment : many limitations, especially in mechanically ventilated patients!
- Static measures such as CVP, PCWP, and change in CVP pre/post fluids should **NOT** be used to guide fluid therapy

Vasopressors:

- In general, there is a trend towards starting vasopressors early for patients who are not responding to fluids rather than trialing additional boluses
- Norepinephrine should be started as the first-line vasopressor to target MAP ≥ 65
  - Vasopressin followed by epinephrine can be added to meet this target

Steroids:

- Do **NOT** improve mortality but may result in **faster resolution of shock**
- Consider corticosteroids in selected patients with refractory shock
- The benefit of adding fludrocortisone is unclear
- Dosing: Hydrocortisone 50mg IV Q6H +/- fludrocortisone 0.05mg PO daily