Systemic Inflammatory Response Syndrome (SIRS) criteria =

- Temp > 38 or < 36
- RR > 20 or PaCO₂ < 4.3 kPa
- HR > 90
- WBC < 4 or > 12 (x10⁹ / L)

Causes include sepsis, burns, trauma, pancreatitis

Suspected Infection

- Clinical: history / examination suggestive of infection eg pneumonia, UTI, meningitis, abdominal infection, septic arthritis, cellulitis, osteomyelitis, endocarditis, line infection etc
- Investigations: WCC > 12 or < 4, CRP > 10
- CXR changes, positive urinalysis
- positive LP, positive blood culture

Indicators of Severe Sepsis /Septic Shock

- CVS: SBP < 90 or drop of > 40 from baseline or MAP < 65
- Hypotension refractory to initial fluid resuscitation
- Resp: New or increased O₂ requirement to maintain sats > 90%
- PaO₂/FiO₂ ratio < 40 or PaO₂ < 16 on 40% oxygen; RR > 30
- Renal: Creatinine > 176 or 1.5 x baseline
- UOP < 0.5 mL/kg/hr for > 2 hrs
- CNS: Acutely altered mental status
- Bloods: Lactate > 4 mmol/L, Bilirubin > 34 micromol/L, Platelets < 100, INR > 1.5 or APTT > 60 secs

Sepsis Six – within 1 hour:

1. High flow oxygen if sats < 94%
2. Cultures
3. IV antibiotics
4. IV fluids
5. Serial lactate & HB
6. Hourly UOP

Surviving Sepsis Campaign

Suspected Sepsis

- 2 or more SIRS plus suspected infection

SEPSIS:

- iv cannula, VBG, FBC, U&E, & BG, blood culture, MSU
- SEVERE SEPSIS:

- add 2nd blood culture, LFT, clotting, ABG, consider echo
- Consider swabs, CXR, amylase, CT, LP as indicated by clinical condition

Severe Sepsis / Septic Shock

- iv antibiotics (see anti-microbial policy)
- iv fluid if lactate > 2, HR > 130, RR > 25 or any mild organ dysfunction iv crystalloid 250 – 500 mL bolus & reassess
- High flow oxygen if sats < 94%
- catheterise after antibiotics (unless able to accurately monitor UOP without)
- Reassess patient and consider repeat lactate if initial elevated or patient worsens

Goals of Treatment Achieved?

- SBP > 90, MAP > 65,
- lactate < 2.5 or reduced by 20%,
- urine output > 0.5 mL/kg/hr
- Sats 94-98%
- improved organ dysfunction

Admit

- Acute specialty bed or CDU
- ITU / HDU
- Monitored bed

Indications for Ventilation: (NIV unless contraindicated)

- Resistive shock despite fluids, transfusion, vasopressors and inotropes pulmonary oedema respiratory failure falling GCS

Guide to ARDS ventilation – Call ITU bleep 087

Ventriculation:

- TV 6 mL/kg IBW
- Rate < 35 / min
- FiO₂ < 80%
- Aim sats 94 -98% (unless chronic lung disease)
- PEEP 5 mmHg
- Initial I:E ratio 1:2
- Permissive hypercapnia pH > 7.2

Preparation:

- Prepare fluid bolus 20 mL/kg
- Prepare ephedrine 3 - 9 mg bolus
- Don’t forget NGT
- Raise bed head to 45° (post intubation)

Sedation:

- Propofol & Fentanyl
- OR
- Midazolam & Fentanyl
Surviving sepsis campaign: international guidance for management of severe sepsis and septic shock, Delinger et al, Critical Care Medicine, 2008
Sepsis Toolkit, CEM & UK Sepsis Trust, September 2014
ProCESS: Protocolized Care for Early Septic Shock, University of Pittsburgh
A randomised trial of protocol based care for early septic shock, NEJM, 2014
Lactate clearance vs central venous oxygen saturation as goals of early sepsis therapy, Jones et al, JAMA, 2010