

### **Focussed cardiac ultrasound: application in shock**

- This session will focus on the basic principles of bedside echocardiography (POCUS) in patients with undifferentiated shock.
- Review of image acquisition and probe positions.
- Basic cardiac phenotypic appearances in different types of shock
- Fluid tolerance
  - The left atrium
  - Extravascular lung water semi-objective measurement (B-lines)
  - The right heart
  - The caudal vena cava

### **Acid-Base refresher objectives**

- Review the principles of the “traditional” (Boston) approach to acid base.
- Consider respiratory compensation.
- A worked example of the traditional approach with compensation.
- Discuss base excess – where it came from, what it represents and the different subtypes.
- Introduce the Anion Gap and how it better defines acidosis.
- A worked example using the Anion Gap and base excess.
- Modifiers of the Anion Gap and how we can incorporate them simply.
- A worked example of a patient with a modified high anion gap metabolic acidosis using the base excess approach.

### **Respiratory defence mechanisms**

- Review the defence mechanisms of the canine and feline respiratory system.
- Upper airway defences and comment on how these are negated with intubation.
- Reflex defences – coughing, sneezing, aspiration and apnoeic reflexes, laryngospasm and bronchospasm
- The mucociliary escalator and mucus production
- Surfactant, lung collapse and antimicrobial proteins
- Innate immunity of the respiratory system, including tissue resident macrophages.