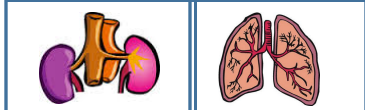


**Step 1:** Determine pH; if normal then consider mixed process.

**Step 2:** Look at table below determine if primary  $pCO_2$  (respiratory) or  $HCO_3^-$  (metabolic) problem



Alkalemia	Too much $HCO_3^-$	Too little $pCO_2$	pH >7.45
Acidemia	Too little $HCO_3^-$	Too much $pCO_2$	pH <7.35

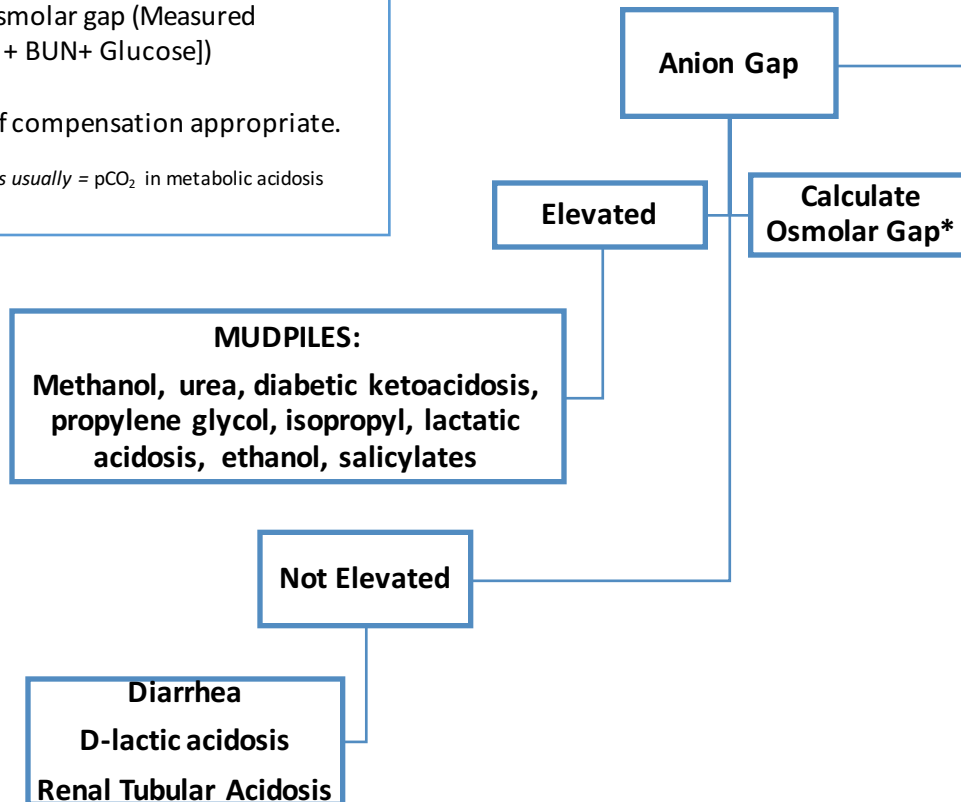
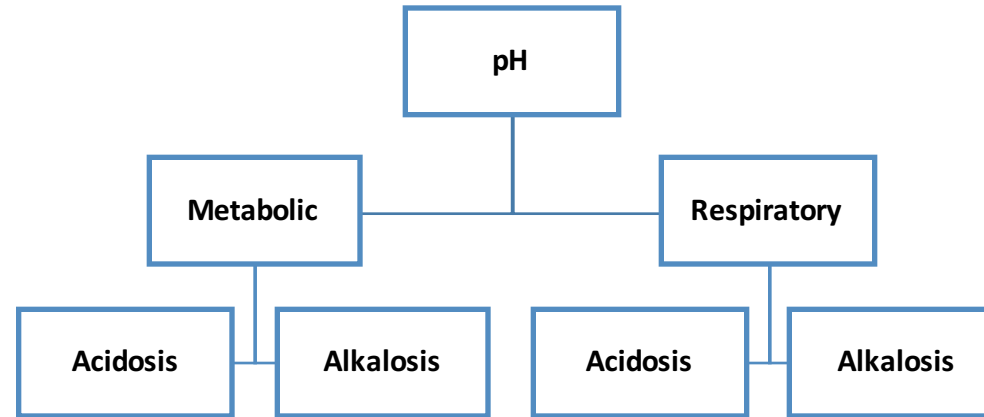
**Step 3:** Calculate anion gap ( $Na - (K + Cl)$ )

**Step 4:** Calculate osmolar gap (Measured osmolality -  $[2 \times Na + BUN + Glucose]$ )

**Step 5:** Determine if compensation appropriate.

*\*tip- last two digits of pH is usually =  $pCO_2$  in metabolic acidosis*

## APPROACH TO ACID-BASE DISTURBANCES



*\*- Make it a habit to calculate osmolar gap at the same time as your anion gap as certain high osmolar toxins (ex: methanol) can initially have a non-anion gap but as they are metabolized the gap increases!*