

# Logic Model: Waveform Capnography in Critical Care Transport

## Structure

- Technology to measure waveform capnography
- Ability to display waveform
- Ability to display end-tidal CO2 value

## Process

- Confirm tracheal position of newly placed tracheal tube.
- Monitor presence and nature of waveform morphology during transport
- Monitor value of end-tidal CO2
- Intervene prior to desaturation if waveform is lost (tracheal tube kinking, tracheal tube dislodged)
- Intervene prior to cardiac arrest in severe shock patients where end-tidal CO2 is falling as a result of poor systemic perfusion
- Optimize CPR quality using end-tidal CO2 value to ensure inadequate compressions detect return of spontaneous circulation
- Intervene prior to severe overventilation/underventilation

## Outcome

- Prevent cardiac arrest secondary to respiratory arrest for misplaced (esophageal) intubations
- Prevent cardiac arrest secondary to respiratory arrest with early detection of tracheal tube dislodgement
- Improved rates of recovery of spontaneous circulation from cardiac arrest using targeted waveform capnography and end-tidal CO2 values to improve quality of chest compressions
- Avoid consequence of overventilation (cerebral hypoperfusion) or hypoventilation (pulmonary hypertension, intracranial hypertension)