**Class and Action:** Isotonic crystalloid solution; replaces water and electrolytes

**Indications:** Hypovolemia, heat emergencies, hyperglycemia, IV medication route, diluent for IV infusions

**Contraindications:** Edema from hypernatremia, only use TKO for patients with volume overload

**Side Effects:** Volume overload

**Drug Interactions:** minimal

**Onset, Duration, and Routes:** Onset is immediate with duration not applicable. Routes of administration include IV or IO

**Adult Dose:**
- See Specific Protocols

**Pediatric Dose:**
- See Specific Protocols

**WDM EMS Protocols:**
See protocols

**Special Considerations:**
- May worsen CHF.
- Maintain high flow oxygen/adequate ventilations.