

Potential Sources of Error:

- ❖ Movement of the sensor or its cord ("check sensor" alerts or falsely triggered alarm settings)
- ❖ Exposure of sensor to outside source of bright light (optical interference)
- ❖ Use of BP cuff on same extremity (inability to sense)
- ❖ Low circulatory flow states such as cardiac arrest, hypothermia, shock (overestimation of tissue oxygenation: inability to sense)
- ❖ Black, blue or green nail polish (inability to sense)
- ❖ Finger-print dye (inability to sense)
- ❖ Carbon Monoxide toxicity (falsely elevated readings)
- ❖ Severe anemia (inability to sense; overestimation of oxygenation)
- ❖ Hemoglobin disorders such as sickle cell disease, methemoglobinemia, sulfhemoglobinemia

Documentation:

Pulse oximeter printout strips, if available, should be attached to the PCR and any treatments or conditions that may effect oxygen saturation should be noted on the strip. As with ECG tracings, the PCR number and call date should be documented on the oximeter strip.

VASCULAR ACCESS:

Intravenous access is a Standing Order for all adult patients and pediatric patients when an IV is indicated by protocol. Peripheral IV placement is the preferred choice in all patients.

External Jugular (IV) placement is indicated in patients when no other peripheral IV can be established and the patient requires fluid administration or access for IV medications. Generally external jugular IV lines are established in unconscious patients, but may be used in conscious patients with due regard for the patient's sensitivities.

Intraosseous Access (IO) is used in patients with a GCS less than 8 when a peripheral IV cannot be established and the patient requires fluid administration or access for IV medications. These patients should be in extremis and have an urgent need for vascular access such as cardiac arrest, hypovolemic shock, respiratory arrest, near drowning,

multi-system trauma or status epilepticus. The proximal tibia is the only insertion site allowed in Merced County. Contraindications for site selection includes fractures, infections, and significant orthopedic procedures (ie prosthetic limbs or joints).The paramedic should check skin adipose and muscle thickness when choosing the appropriate needle size. Aspiration of a small amount of blood should be used to confirm placement prior to flush. The paramedic should frequently monitor the insertion site for extravasations.

A base physician order is required for an IO in a patient with a GCS greater than 8. In these **rare** cases, 2% lidocaine may also be ordered by the base physician. Following the placement of an IO needle and prior to fluid administration, the paramedic should:

- Administer 1 mg/kg of 2% Lidocaine (**not to exceed 40mg total**) and infuse *slowly* (over 30 to 60 seconds). Allow 1 minute for anesthetic effect before infusing fluids.

A base physician order is required for both the placement of the IO (with a GCS greater than 8) and the administration of lidocaine; all cases will be reviewed by the EMS Agency.

Pre-existing Intravenous Access may be used if the patient has an indwelling IV catheter with an external port and a peripheral IV cannot be established. A pre-existing intravenous access should only be used in patients requiring fluid therapy or IV medications. Paramedics should consult with a Base Hospital MICN or Physician if they are unfamiliar with the type of indwelling catheter the patient has in place. Sterile technique must be followed when using a pre-existing vascular access.

FLUID ADMINISTRATION:

The standard IV fluid for all patients is normal saline.

Adult Fluid Rates, unless otherwise indicated by treatment protocols:

- ❖ For adult patients requiring medications but not fluid therapy maintain IV rate at TKO.