Sickle Cell Disease Pain Control Using PCA

- **Start PCA according to individualized management plan and adjust according to response**
- **Maintain home medications throughout hospitalization**
- **May hold short acting pain medications while pain is being controlled with IV pain medications.**
- **If individualized management plan is not available, initiate PCA according to dosing guidelines below and adjust according to response**

**PCA dosing based on amount morphine needed to obtain relief during initial titration period**
- Estimated hourly morphine requirement = total IV morphine given during titration divided by the number of hours required to titrate pain/relief/sedation (2-4 hours)

**Demand Dose**
- Patient should be able to obtain hourly morphine requirement by using ≤ 2 demand doses per hour
- Demand dose typically available to patient q 6-10 minutes (lock out period).
- May increase demand dose every 1-4 hours.
- Assess patient frequently & escalate demand doses to break pain cycle as soon as possible

**Continuous Infusion**
- Dose approximately same as one demand dose.
- Do not increase continuous infusion more than once in 12-24 hours.

**Clinician Bolus**
- Dose that has been demonstrated to produce relief
- Rarely used if demand doses are adequate

**Adjustment of Medication during Maintenance Phase**
- If pain score is high and patient states doses are effective but is not taking the demand doses, encourage patient to use doses available.
- If patient consistently using more than 2 demand doses an hour or patient does not get relief from the dose, the demand dose is probably inadequate.
- Demand dose changes should be made in 20-30% increments.

**Weaning of PCA**
- If pain control is good and patient is consistently using less than 2 demands/hr, may be ready to wean.
- Initiate wean by reducing continuous infusion.
- Introduce short-acting opioids to reduce demand dose usage.

**Typical Morphine PCA (Refer to equianalgesic dosing table for Dilaudid PCA) dosing**
- **Bolus Dose:** 0.15 mg/kg IV-omit if already receiving pain meds
- **Continuous Infusion:** 0.02-0.04 mg/kg/hr
- **Demand Dose:** 0.02-0.05 mg/kg/dose
- **Lockout:** usually 6,8,10,12, up to 30 min.
- **Clinician Bolus:** 0.05 gm/kg/dose—RARELY USED
- Four hour limit 0.4-0.8 mg/kg (Limit not Recommended when patient on continuous infusion)