Sedation-Analgesia Monitoring
Vigilance

- You are the most important patient monitor!

- A clearly identified qualified, licensed independent practitioner with privileges for sedation-analgesia must have ultimate responsibility for the patient and approve the sedation-analgesia plan prior to beginning.

- A qualified individual with privileges for sedation analgesia must continuously attend to the patient from initiation of SA until discharged from their care.
Monitoring Requirements

- Continuous monitoring of:
  - Pulse oximetry (SpO₂)
  - Respiratory adequacy and rate (RR)
  - Non-invasive blood pressure (BP) q5 minutes
  - Level of patient responsiveness (sedation I-III)

- Monitoring should include continuous ECG, especially if there are co-existing diseases

- Documentation of all parameters at no less than five minute intervals
Monitor Alarms

- Alarms must be on at all times during the procedure and until patient discharge:
  - BP at 20% above and below baseline BP
  - HR 60-100 for adults
  - SpO₂ alarms <95% SpO₂ in a normal case scenario or at patient's baseline
Consider rescue procedure if there is:

- Decreased level of consciousness (beyond level III)
- Respiratory depression: respiratory rate < 10 bpm
- SpO₂ <90% despite mask supplemental oxygen
Oxygen Supplementation

- Supplemental oxygen via mask or nasal cannula will be administered unless there is a specific contraindication (avoid using electrocautery near the oxygen delivery system!!)

- All certified locations allowed to administer SA must have a positive pressure O₂ source
The Sedation Monitoring Record will include documentation q5 mins. during the procedure and q15 min. during recovery:

- HR and rhythm
- BP
- SpO₂ with level of supplemental oxygen therapy
Sedation-Anesthesia: Causes of Errors

- Human Error 82%
  - Failure of Judgment
  - Failure of Vigilance
- System Errors 14%
- Failure to Ventilate is the MOST important
- Even experts are still plagued by this problem. 2000 to 6000 anesthesia-related deaths or permanent brain injuries/year in the US (primarily due to hypoxemia)
- 7/10 incidents due to hypoventilation
Common Limitations of SpO₂

- Dark skin, nail polish, cold, peripheral vascular disease, low cardiac output, low blood pressure (signal not able to be perceived)
- Bright lights, motion (signal not registering or reading 85%)
- Severe anemia will cause underestimate (signal lower than true)
Automated-BP:

- Measuring BP for long periods of time at frequent intervals (every 1 minute) may cause nerve damage in the arm.
ST Segment Analysis

- ST normally is isoelectric
- Depression > 1mm consider ischemia (area 1 on slide)
- Elevation: transmural ischemia or infarct

**Sedation-Analgesia Monitoring**

1. ST segment
2. PR point (isoelectric)
3. J point (end of QRS complex)
4. ST point
5. ST deviation from PR point