Consensus Items: Prevention of Wrong Level Surgery

**Pre-op**
- Use standard vertebral numbering (SDSG)
  - Exception: Use C2 (axis) for cervical level counting
- Document the operative plan, including levels, in the pre-op note
- Discuss aberrant anatomy and vertebral level selection at indications conference

**Intra-op**
- Communicate the pre-op plan, including levels, to OR staff in time-out
- Localize with opaque marker after exposure at level of the pedicle
- Obtain ideal intra-operative images
  - Region of interest in center
  - Remove extraneous metal
  - Include a known anatomical landmark (must be visible and consistent with preop imaging)
  - Orthogonal view
  - Radiopaque marker proximal to the LIV
- Consider a radiographic time-out to obtain team consensus regarding the vertebral levels
- Consider consulting another surgeon or radiologist if levels remain unclear

**Unclear of Level**
- If uncertain of levels, optimize and/or repeat intra-operative imaging with fluoroscopy or portable X-ray
- Consult another spine surgeon or radiologist if levels remain unclear

*Note: An opaque marker at the level of the skin should NOT be relied upon*