Complex Spine Checklists
How I use them in my Practice

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Disclosures

- Consultant: DepuySynthes Spine: Globus; Nuvasive; Spineguard; Zimmer Biomet, Wishbone; GS Medical
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Checklists started with the Aviation Industry

- October, 1935
- Boeing Model 299 “FlyingFortress” (B-17)
- First flight: climbed to 300 feet and crashed
- Experienced pilot; Crash due to pilot error
- Pilot failed to release locking mechanism on elevator and rudder controls b/f takeoff
- Deemed “too much airplane for one man to fly”
Model 299
Solution

- Pilots created a simple checklist
- Simple, brief, and to the point
- Addressed each phase of flight
- Checklist resulted in 1.8 million miles w/o an accident
Challenges of the complex environment in which we work

- Fallibility of human memory and attention
- Lulling oneself into skipping steps even when we remember them
- “This has never been a problem before”…until it is (ie) landing gear up!

Atul Gawande. The Checklist Manifesto
We all use them
Some more than others
Significant consequences when we skip safety steps
Can we take checklists to the next level and improve safety in spine surgery?

If you ever told an airline pilot that you were operating on their child without a detailed checklist, they would think you were nuts!
Why use checklists in spine surgery

- Promotes a culture of safety
- Enables all team members to speak up
- Reduces complexity
- Fewer mistakes
- “Operations are routine; patients are not”
Checklists in my Operating Room

SPINE CHECKLIST

1. TIME OUT
2. PRE-FLIP

1. TABLE POSITION
2. 4 PINS/4 STRAPS/4 TABLE LOCKS

3. POST-FLIP

1. EYES/BITE BLOCK/ARMS
2. BREASTS/hips/KNEES
3. FOLEY
4. ANTIBIOTICS
5. MR./MRS. HAPPY

4. PREP

1. BETADINE
2. CHLORAPREP

5. BEFORE INCISION

1. TECH CHECK INCLUDING LEVELS

6. BEFORE CLOSING

1. TORQUE
2. IRRIGATION
3. BURR
4. EPIDURAL (LABELED)
5. DBX
6. GRAFT
7. DRAIN

SURGICAL SAFETY PLAN

SIGN-IN

TIME-OUT

DEBRIEF

INMEDIATELY BEFORE PROCEDURE

1. Team Knows Each Other’s Roles
2. Patient Name/DOB
3. Procedure to be Performed
4. Consent for Procedure
5. Patient Name/DOB
6. Phlebotomy
7. Monitoring Equipment

PRIOR TO SURGEON LEAVING ROOM

1. Equipment, sponge, needle count
2. Name of procedures performed
3. Specimen labeling, including patients name
4. Packing removal plan
5. Wound classification
6. Instrument/Equipment problems
7. Key concerns for patient recovery and management

MAY BEGIN TEAM DISCUSSION REGARDING NEXT PATIENT
Electronic Checklist

- Process starts in Pre-op
- Visible confirmation for everyone in the room
- Time stamped record of compliance
- Can be included in operative record
EOS Complex Spine Checklist

- Process begins with the 1st pre-op visit
- EOS patients are medically complex
- Multiple Co-morbidities that must be addressed *BEFORE* surgery
- Many devices to deal with
- Advanced imaging
- Aftercare planning
Complex Pre-op EOS Checklist

JOHN TEST (DOS: 11042019)

- **Diagnosis**: Scoliosis SMA2 - 132426 JS
- **Intact**: 132420 JS
- **Compromised**: 132408 JS
- **Level**: 132509 JS
- **TcMep**: 132521 JS
- **SSEP**: 132522 JS
- **EMG**: 132517 JS
- **None**: 132531 JS
EOS Imaging Checklist

JOHN TEST (DOS: 11042019)

- XR - Up to date - 132819 JS
- XR - Bending traction views - 132821 JS
- XR Lateral /Bolster - 132826 JS
- CT Ordered mm/dd/yyyy, --:-- -- - 132831 JS
- CT - 3D imaging indicated - 132836 JS
- CT - 3D modeling - 132839 JS
- MRI Ordered mm/dd/yyyy, --:-- -- - 132842 JS
- MRI - Image reviewed - 132843 JS
Other Implants To Consider

- Seizures - 133102 JS
- Vagal Nerve Stimulator - 133103 JS
- Vagal Nerve Stim turn off? - 133105 JS
- Cochlear Implants - 133106 JS
- Bipolar cautery ONLY, No monopolar - 133107 JS
- Remove before surgery if monopolar needed - 133109 JS
- Baclofen pump - 133112 JS
- Baclofen tubing - 133114 JS
A systematic way to consider all comorbidities at your pre-op visit
When first presented to my hospital system, I was met with......

- Website is pretty terse
- “Proprietary software, that is stand alone”
- Replicating software into a EHR is never easy
- “If Dr. Smith is finding this useful as is, why integrate it into our EHR?”
- “If you wish to pursue this, here are the zillion administrative steps you would need to follow...etc, etc...
Moving forward….

“No” is always the first step in any negotiation..!
Checklists don’t prevent all errors...
We even use checklists at home.
Checklists help make your team be the “A Team” and surgery safer!
Thank You