The Art of the Handoff: Are You Following Best Practices?

Jeffrey B. Cooper, PhD
Professor of Anaesthesia
Harvard Medical School
Department of Anesthesia, Critical Care and Pain Medicine
Massachusetts General Hospital

No Financial Disclosures
Objectives

1. Know the different handoff types anesthesia professionals may be involved with

2. Recognize the evidence linking anesthesia handoffs to patient harm

3. Recognize some key principles in safe and effective handoffs (and commit to at least trying to use one or more new ones)
The APSF convened the first Robert S. Stoelting Conference on September 6, 2017, at the Royal Palms Hotel in Phoenix, AZ, on the important topic of Perioperative Handoffs (aka handovers). With the goals of facilitating discussion about the crucial role of care transitions in safe, high-quality patient care and reaching consensus about key topics relating to handoffs, the conference was preceded by a two-stage Delphi process to help focus the conference proceedings. All attendees were invited to participate in offering their opinions on six themes related to the common 75% consensus among the participants regarding key themes related to perioperative handovers. The expectation is that such agreement will be helpful to all stakeholders in perioperative patient safety. The organizers invited a range of experts and stakeholders to participate in the conference. Over 100 participants attended the conference, including representatives from a variety of specialties and organizations.
Handoffs defined

- *handoff*
- *handover*
- *sign-out*
- *shift change*

“The process of transferring primary authority and responsibility for providing clinical care to a patient from departing caregivers to oncoming caregivers.”

- (Based on Patterson and Wears 2010)

- *care transition*
- *bedside report*
- *turnover*
Perioperative Handoffs

Pre-operative

- FLOOR
- HOLDING ROOM
- EMERGENCY ROOM
- INTERVENT RADIOLOGY
- OPERATING ROOM
- ICU
- PACU
- ICU

Intra-operative

Post-operative

Courtesy: Amanda Lorinc, Vanderbilt
Getting your input via ARS

Use your smart phone, pad or laptop
• This URL:
  POLLEV.com/jeffreybcoop662

Or to do via text messaging
• Text 223339 just once
• To: jeffreybcoop662
**My favorite sport to follow is:**

When poll is active, respond at [PollEv.com/jeffreybcoop662](https://www.PollEv.com/jeffreybcoop662)  
Text **JEFFREYBCOOP662** to **22333** once to join

<table>
<thead>
<tr>
<th>Football</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
</tr>
<tr>
<td>Baseball</td>
</tr>
<tr>
<td>Hockey</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

I don’t follow sports
<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least once per day</td>
</tr>
<tr>
<td>A few times per week</td>
</tr>
<tr>
<td>Sometimes, but not regularly</td>
</tr>
<tr>
<td>Rarely or never</td>
</tr>
</tbody>
</table>
Critical Incidents Associated with Intraoperative Exchanges of Anesthesia Personnel

Jeffrey B. Cooper, Ph.D.,* Charlene D. Long, M.S.,† Ronald S. Newbower, Ph.D.,* James H. Philip, M.D.‡

It is a common practice for anesthetists to substitute for one another, especially for short breaks during long surgical procedures. The assets and liabilities of this practice of relief have not been examined previously. In the course of gathering 1,089 reports of preventable errors and failures associated with anesthesia management, we identified 96 which involved a relief anesthetist. This subset was examined in search of common characteristics and patterns of and near mishaps using a form of the critical incident technique.1,‡ Some of the reports involved either the temporary or permanent exchange of one anesthetist for another in a given case. These relief-associated mishaps or near mishaps were analyzed separately in order to characterize how the process of replacement may either
The Downside

- Pregnant patient; advanced labor
- epidural wet tap
- Spinal effective; delivery in 20 mins
- Left catheter (evidence re: headache prevent)
- Several handovers over several days
- Catheter never pulled until discharge
- Later admitted with suspected meningitis
During my anesthesia career, I have been involved in a handoff in which something about the handoff was associated with patient harm or near harm:

<table>
<thead>
<tr>
<th>Once</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once</td>
</tr>
<tr>
<td>Never that I can recall</td>
</tr>
</tbody>
</table>

“On average, for every 15 patients exposed to a complete anesthesia handover, 1 additional patient would be expected to experience the primary outcome.”
Ineffective handoffs can lead to:

- Wrong treatment
- Delay in diagnosis
- Severe adverse events
- Patient complaints
- Increased costs, length of stay

Joint Commission National Patient Safety Goal-2E

• Implement a standardized approach to “hand-off” communications including an opportunity to ask and respond to questions
  - Both process and content
Intraop exchanges?

Intraoperative Care Transitions Are Not Associated with Postoperative Adverse Outcomes

The upside

- TXA infused from 100mg/ml vial
- No pump library entry for this dose
- Used basic mode to set up; thought 1 mg/kg/hr but was x10
- Shift change after ~ 5 hrs
- Relief picked up dosing error

- (no patient harm)
I have been involved in a handoff in which something about the handoff was associated with preventing harm?

- Once
- More than once
- Never that I can recall
Relative to all anesthesia patient safety concerns, handoffs are:

- One of the most important
- Important, but not the highest concern
- Not as important as most risks
- Not a high risk at all

When poll is active, respond at PollEv.com/jeffreybcoop662

Text JEFFREYBCOOP662 to 22333 once to join
Why Are Good Handoffs Challenging?

- Transferring tacit knowledge
- Production Pressure
- Competing Priorities
- Different Perspectives between professions
- Lack of Evidence for what’s optimal
- Lack of Training

- WE DON’T LISTEN VERY WELL!
The of the Matter
Part 3: Solutions
Evidence for Improvement in outcomes with better handoffs

Changes in Medical Errors after Implementation of a Handoff Program

Starmer et al NEJM 2014; 371(19):1803-1811
Is A Structured Handoff Helpful?

- Meta-Analyses of the Effects of Standardized Handoff Protocols on Patient, Provider, and Organizational Outcomes.


- Protocols improve information transfer and patient outcomes

- Bias toward positive results publications
A right structure?

- Standardizing Handoff Communication Content Analysis of 27 Handoff Mnemonics
- Nasarwanji MF et al, J Nursing Care Quality
- SBAR, I-PASS popular names
- No one standard for anesthesia nor data to support what is optimal
A standardized approach should identify:

- Situation
- Who
- What
  - Diagnoses, current condition, recent changes
  - Anticipated changes - what to watch for in the next interval
- Opportunities for questions
- Who to contact; how

Cognitive Aids
RELIEF EXCHANGE PROTOCOL

When one anesthetist relieves another, the reliever should ascertain the following information before the original anesthetist exits:

A. THE SITUATION

1. Patient's diagnosis, operation, notable past history, allergies, abnormal lab values, chest film, ECG.
2. Anesthetic technique and logic.

B. COURSE THUS FAR

1. Anesthetic course, status of surgical procedure.
2. Fluids and blood products given; assess blood loss and fluid replacement.
3. Inspect IV lines, ports, A-line.
4. Present level of anesthesia: going up or down:
   When will patient need additional anesthesia?
5. Inspect drug administration apparatus for labelling of names and concentrations.
6. Current settings of gas flows, anesthetic concentration and reading of oxygen analyzer, cylinder and pipeline supplies pressures.
7. Current clinical signs and vital signs: determine before relieved anesthetist exits.

C. ANTICIPATED COURSE

1. Check for availability of blood products.
2. Review anesthetic plan, fluid and drug therapies.
3. Plan for post-operative respiratory and drug support.
4. Record time of relief exchange and reliever's name on anesthetic record.
5. Determine when the relieved anesthetist will return.

- Cooper JB. Do short breaks increase or decrease anesthetic risk? J Clin Anesth 1989;1:228-231
MGH badge cards

OR TO PACU REMINDERS
- Patient name & one-liner
- Allergies
- Past medical history
- Relevant home meds
- Preop meds
- Access
- Anesthetic type
- Airway, relaxant, reversal
- Antibiotics
- Analgesics
- Antiemetics
- Other meds?
- Intra-op problems
- I’s and O’s
- Anticipated post-op problems?
  “Do you have any questions or concerns?”
- Individual patient care varies.
  Your clinical judgement is paramount.

ICU ↔ OR HANDOFF GUIDE
- ILLNESS & PATIENT SUMMARY
  - One-liner (active issues & procedure)
  - VS & PE
  - Relevant Labs
  - Precautions (contact, positioning)
  - Code Status, HCP, Consents
- ACCESS & AIRWAY
  - Line Types, Locations, Use Restrictions
  - CVL Lumens
  - Tubes & Drains
  - Trach / ETT Details, Vent Settings
- BLOOD PRODUCTS & FLUID BALANCE
- RELEVANT MEDICATIONS
- RELEVANT ICU / OR COURSE
- ACTION LIST (e.g. meds due soon)
- SITUATION-SPECIFIC PLANNING
  e.g. What works for this pt
- RECEIVER SUMMARY/QUESTIONS
Does your organization use some form of handoff mnemonic for any handoffs?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
</table>

Start the presentation to see live content. Still no live content? Install the app or get help at PollEv.com/app.
Key features of effective handoffs:
Recommendations from the APSF Consensus Conference: selection from 51 statements

- Minimize interruptions
- Receptivity to questions
- Structured process
- Seek tacit knowledge
- Receiver summarizes
- Training for all
High Quality Handover
Practical Advice

• How to minimize disruptions
  – Get coverage
  – Have a script for what to say
  – Create acceptance in the culture
  – Your tricks?
Implementing a new Handoff process*

- Use quality improvement principles
- Involve all stakeholders in the planning early
- Engage subject matter experts
- Iterate
- Common and special elements by type of handoff
- Message often
- Provide feedback

*From APSF Consensus Conference
Being Metacognitive
DO YOUR OWN THING
More information

• https://www.apsfhandoffs.info/
• See References in your handout
• Jcooper@mgh.harvard.edu