

The Role of Physician Assistants on Limiting the Risk of Surgical Errors

HONORS THESIS DEFENSE PRESENTATION BY COURTNEY ADLER



Research Question

How does the role of a physician assistant on a surgical team lower the risk of errors and increase patient safety?

Surgical Errors

Medical errors are the 8th most common cause of death in the United States (Shuer, Doll, & McNellis, 2010)

- 100,000 unintentional deaths per year

20 million Americans experiences a surgical error per year (Wachter, 2008)

45% of adverse events are in surgery (Thomas et al., 2000)

- Half of those are preventable

Categories of Surgical Errors

Anesthesia-related

- Poor education and machine design
- Lack of policies and standardization (Watcher, 2008)

Wrong site and wrong patient

- Never events (Watcher, 2008)

Retained foreign bodies

- 1 out of every 5,500 surgeries (Cima et al., 2008)

Surgical fires

- From lasers and cauterization (Landro, 2009)

Categories of Surgical Errors Continued

Diagnostic errors

- Wrong, missed, or over diagnosis

Communication errors

- Rigid hierarchies
- Lack of teamwork

Medication errors

Surgical site infections

- most common adverse event
- increase of readmission and mortality

(Watcher, 2008)

Prevention Approaches: Anesthesia-related Errors

Anesthesia Patient Safety Foundation in 1983

New technology

- Tubing that does not allow the incorrect gasses to be hooked up

More education and training

(Watcher, 2008)

Prevention Approaches: Wrong Site and Wrong Patient

Joint Commission's Universal Protocol

- Marking the surgery site
- Time outs

World Health Organization's Surgical Safety Checklist

(Watcher, 2008)

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Before patient leaves operating room

TIME OUT

SIGN OUT

- ☐ **CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE**
 - ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM**
 - PATIENT
 - SITE
 - PROCEDURE

ANTICIPATED CRITICAL EVENTS

 - ☐ **SURGEON REVIEWS: WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?**
 - ☐ **ANAESTHESIA TEAM REVIEWS: ARE THERE ANY PATIENT-SPECIFIC CONCERNS?**
 - ☐ **NURSING TEAM REVIEWS: HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?**

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?

 - ☐ YES
 - ☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?

 - ☐ YES
 - ☐ NOT APPLICABLE

- NURSE VERBALLY CONFIRMS WITH THE TEAM:**
- ☐ **THE NAME OF THE PROCEDURE RECORDED**
 - ☐ **THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT (OR NOT APPLICABLE)**
 - ☐ **HOW THE SPECIMEN IS LABELLED (INCLUDING PATIENT NAME)**
 - ☐ **WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED**
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- ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT**

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.

Prevention Approaches: Retained Foreign Bodies

New technology

- Radio-frequency identification tags
- Barcoded sponges
- Radiopaque thread

Sponge, sharp, and instrument counts

- 4 counts
 - When the instruments are set up
 - When surgery begins and items are called for
 - Closure
 - During external suturing

Prevention Approaches: Surgical Fires

Storing ignition sources away from patients

Allowing alcohol-based solutions to dry

Keeping oxygen concentrations low

(Caplan, et al., 2008)

Prevention Approaches: Diagnostic Errors

Highly trained clinicians

- Better clinical reasoning

Computerized support

- Computerized Provider Order Entry (CPOE)
 - Identify abnormal results or potentially unsafe interactions

Diagnostic checklists

- General checklists: prompt clinicians to collect complete data
- Specific checklists: force consideration of diagnoses when faced with symptoms
- Force clinicians to slow down and consider other diagnoses

(Watcher, 2008)

Prevention Approaches: Communication Errors

Reduce authority gradients

- Admit limitations
- Time outs
- Promote input from other team members

Debriefing

- Blame-free discussion

CRM training programs

- Improve communication skills, create a cohesive environment, encourage team members to speak up when they have concerns

Situations, Background, Assessment, and Recommendations (SBAR)

- Structures communication

Prevention Approaches: Medication Errors

Patient identification

- Five Rights

Standardization of communicating orders

Use of clinical pharmacists

Medication reconciliation

- Review of medications a patient is taking
- Allows medications that may interact with drugs given in surgery to be stopped

(Watcher, 2008)

Prevention Approaches: Surgical Site Infections

Proper use of prophylactic antibiotics

Use of clippers instead of razors

Regulating the patient's body temperature

Glucose control

- Fluid and electrolyte disturbances
- Increased infection risk

Physician Assistants (PAs)

The profession was founded in the late 1960s

25% of all PAs practice in a some type of surgical specialty

In 1973, PAs began working on surgical services in hospitals

(Larson, Coerver, Wick, & Ballweg, 2011)

Physician Assistants on a Surgical Team

Conduct patient evaluations, health histories, and physicals

Report information to the surgeon

Assist in operations

Pre- and post-operative management

Patient education

Patient rounds

Discharge

Follow-up care

(James, MacGregor, Postlethwait, Hofrichter, & Aldana, 2012)

Physician Assistants in Orthopedic Practice

Surveyed a random sample of 1,200 PAs working in orthopedic surgery

Collected information on educational background, practice characteristics and activity, and level of physician supervision

87% reported practicing in surgery

59.4% participated in hospital rounds

75.5% participated in pre-operative history and physicals

85.8% ordered special imaging

89.6% wrote prescriptions

94% were involved in patient education

(Larson, Coerver, Wick, & Ballweg, 2011)

Physician Assistants Role in Patient Safety

Cohesive approach to patient care (James et al., 2012)

Improve continuity of care (Bunnell, 2016)

Promote a culture of safety

- Involved with the patient from the beginning to the end

Unique perspective of patient care (Moote et al., 2010)

- They can recognize areas where patient safety is a problem and suggest applicable ways to improve them

PA-driven VTE risk assessment improves compliance with recommended prophylaxis

PAs are in the ideal position for implementing patient safety initiatives

Lack in preoperative orders to prevent VTE

Physicians at the University of Michigan designed a risk assessment for PAs to conduct during the preoperative examination

- PA assigned the risk score and ordered the appropriate VTE prophylaxis

PAs were prescribing prophylaxis 40.6% more often than before the risk assessment

- VTEs decreased from 2.2% to 1.6%

(Moote et al., 2010)

Interviews

2 thirty minute interviews were conducted and recorded

Analyzed for patterns between them and compared to research found on the role PAs play in promoting a culture of safety

Interview questions:

- How their role was different from the surgeon
- A PAs benefit to the surgical team
- Processes to prevent errors
- The most important steps to preventing error
- What else PAs could be doing to promote safety

Themes

1. The Physician Assistants Role on the Surgical Team
2. Communication
3. The Benefit of a Physician Assistant to the Surgical Team
4. Research and Education

Theme 1: The Physician Assistants Role on the Surgical Team

Involved in the patient's care from beginning to end

Complete history and physical of patient

- Allows the PA to predict possible complications
- Medication reconciliation

Lead a safety check in surgery

- Verify the patient and procedure, check for materials and images, verify medications are stopped or present, asks for questions and concerns

Assist the surgeon in the operation

- Less magnified field of view
- Directs sutures, ties knots, provides suction

Theme 1 Continued

Post-operative Care

- At the bedside 24/7
- Hospital rounding
- Place orders
- Follow-up appointments

Being involved in so many areas of care allows them to ensure that the patient is safe before, during, and after surgery

Theme 2: Communication

Communication and a culture of safety are the most important ways to increase patient safety

Teamwork

- Closed teams promote trust and decrease competition

Communicate valuable information with other team members

Checklists are important but team communication is more valuable

- Cannot rely too much on checklists and have to be willing to modify them to keep the patient safe

Theme 3: The Benefit of a Physician Assistant to the Surgical Team

Greatest benefit: Providing continuity of care

- Unique perspective of the patient
- Can closely monitor a patient at every stage

Knowledge of the surgeon's routine

- Helps surgery go smooth
- Decrease the risk of surgical site infections

Aware of complications they need to watch for in post-operative care

Theme 4: Research and Education

The most effective thing that PAs can be doing to improve patient safety is to continue learning and conduct research

In a unique position to recognize where risk may occur

- Research can help create new policies and procedures

The field is always changing

- Stay up to date on most recent certifications and information

Research Support

The interview responses support research of the PAs role on the surgical team (Larson, Coerver, Wick, & Ballweg, 2011)

- Hospital rounding
- Patient history and physical
- Surgery assistance

Suggestions of improving patient safety through research support the VTE study and shows that PAs are in an advantageous place to recognize and implement patient safety measures (Moote et al., 2010)

- Reduce diagnostic errors and decrease surgical site infections

Research Support Continued

PAs use of communication correlates with the preventative approaches to communication errors (Watcher, 2008)

- Participate in time outs and debriefings

PAs are using in the World Health Organization's Surgical Safety Checklist and the Joint Commission's Universal Protocol to prevent wrong-site and wrong-patient errors

Their presence in pre-operative procedures allows for them to order the correct antibiotics and complete a medication reconciliation

- Reduce surgical site infections and medication errors

Gaps in Research and Limitations

Limited studies on the role PAs take to reduce surgical errors and if a PA has any impact on whether or not errors occur

Research shows the PAs involvement in best practices of prevention but does not connect it to the amount of errors occurring

Limited number of time and participants

Summary

PAs are involved in a patient's care from beginning to end

- Have a unique, in-depth knowledge of the patient to help them predict any errors or complications

They have a perspective of health care that other providers do not have, allowing them to recognize areas where patient safety can be improved

Their professional role includes many preventative approaches to improve the culture of safety

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Thank You!

Questions?