

# Improving Patient Safety Through Teamwork

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Managing Today's OR Suite  
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## Teamwork

- Team versus work group?
- Groups
  - Rely on individual members contributions and information sharing
  - Do not engage in complex real-time decision making
- Teams
  - Create a collective effort

## Teamwork

- Team interventions are more effective with tasks that require:
  - Diverse responsibility
  - High level judgment
  - Complex decision making
  - High investment in outcomes
  - High accountability for outcomes

## Teamwork

- Characteristics
  - Two or more individuals
  - Meaningful task interdependencies
  - Have a leader
  - Specialized member roles and responsibilities
  - Intensive communication

## Teamwork

- Five Rules for Great Communicating
  - Tell a story – humans process information in narrative form
  - Be brief - culture of sound bites
  - Be emotional
  - Be unique
  - Be relevant

## Teamwork

- Characteristics of highly functioning teams:
  - Thoroughness and attention to detail
  - Effective teamwork on all levels
  - Listening to all members of the clinical team
  - Listening to all caregivers, patients and families

## How does the health care team compete against medical error?

- Sports team?



## Who plays these games?

- Running
- Golf
- Swimming
- Tennis
- Gymnastics
- Solitaire
- Surgical professionals?
- Football
- Soccer
- Baseball
- Basketball
- Bridge
- Public health professionals?

## Benefits of Organized Sports

- Knowing the rules of the game
- Getting in the huddle
- Giving signals (communicating)
- Listening to the coach
- Revising the game plan
- Sitting on the bench



## Team Requirements

- Skills
  - Mutual performance monitoring
  - Flexibility
  - Supportive Behavior
  - Leadership
  - Task-related assertiveness
  - Conflict resolution
- Attitudes
  - Morale
  - Collective efficiency
  - Shared vision
  - Team cohesion
  - Interpersonal relations
  - Mutual trust
  - Collective orientation

## Surgical Team versus Errors, Death, Disability, and Complications

- “ I don’t want to make the wrong mistake” (Yogi Berra)
- “Success is 5% technology and 95% socio-cultural change.”



## Teamwork

- Environments for Teams
  - Complex, multi-component decisions
  - Information overload
  - Severe time pressures
  - Severe consequences of error
- Team of Experts versus Expert Team
- Is the OR a team?

## Evidence about Teams in Surgery (Scotland)

- Team members may not appreciate the impact of psychological factors (e.g. stress, fatigue) on technical performance
- Team members feel safety comes first – but not all feel management supports this same priority.
- Views of various members of the team vary

(Flin, Yule, McKenzie, et. al 2006)

## Nurses' Perceptions

- Nurses believe they need to listen, be clear in their speech, and polite.
- Nurses believe that there are fundamental problems with communication in the operating theatre often due to lack of role clarity.
- Nurses are dissatisfied with several aspects of communication.

● (Nestel & Kidd, 2006)

## “Eye of the Beholder”

- Nurses perceive team work as “mediocre”
- Considerable differences in perceptions of team work. Nurses hesitant to voice concerns.
- Surgeons rated other surgeons as high or very high in collaboration and communication, while nurses rated collaboration with surgeons as high or very high only 48% of the time (n = 60 hospitals, n = 2,135). (Makary, Sexton, Freischlag, et. al, 2006)

## Causes of Error

- Communication Breakdown
  - Inadequate hand-offs or personnel changes
  - Failure to establish clear lines of responsibility
  - Inadequate communication

## Teamwork

- Team Training
- Crew Resource management
  - Open up communication
  - Do not ask “who is wrong?”; ask “what is wrong?”
  - Halo effect – “bronze bust in the lobby”

## Crew Resource Management

- Speak up to first and second officers
- Changed from “cockpit” to “crew” to include mechanics, flight crew, gate agents
- Issues with “mix” and “match” crews
- Co-equal responsibility
  - Challenge something twice, then make it happen
  - If you recognize problem, you own it

## Does CRM or Crisis Resource Management Training Work?

- Extensively used in aviation – learning experiences are generally positive, but effects on outcomes in aviation are unclear.
- Probably effective in changing attitudes and this may result in changes in behavior.
- It continues to be unclear whether it will improve safety.
- Despite this – experts agree that these types of training programs should continue and evaluated.

Salas, Wilson, & Burke, (2006)

## CRM in the Operating Room

- Empowers team members and ensures that each contributes their knowledge and skills in a disciplined way
- Key methods include briefings, SOPs and checklists
- Fixed versus formed teams (clarifying roles and responsibilities)
- Best outcomes may be associated with well-prepared formed teams who use the above methods. (Healy, Barker, Madonna - 2006)

## Team Training

- Designing Operating Room for Patient and Staff Safety
  - Action Learning Project for Patient Safety Leadership Fellowship
  - Human Factors and Ergonomics
    - Team Training part of Human Factors tool kit
      - Funding - AORN
      - Faculty – SaferHealthcare, M. Leonard, A. Frankel

## Team Training

- Demonstration Project
  - St. Joseph's Hospital, Tawas City, MI
  - MSKCC
  - Memorial Hospital, Colorado Springs, CO
  - Jackson Memorial Hospital, Miami, FL
  - Mayo Clinic Hospital, Phoenix, AZ

## Team Training

- Four hour block as part of orientation of all OR staff to new environment
- Trained in “zones” – surgeons, anesthesiologists, RN, CRNA, ST
- Pre-Test – AHRQ survey
  - Opinions about safety issues, medical errors, communication and event reporting

## Team Behaviors

- Coordination
  - Verbalize Plan
  - Briefings
  - Debriefings
- Awareness
  - Visually scan environment
  - Verbalize adjustments in plan as they occur
  - Cross-monitor
- Cooperation
  - Secure additional resources
  - Verbally request team input
  - Acknowledge concerns of others
- Communication
  - Closed loop communication
  - Assertion
  - SBAR
  - Critical Language
  - Verbal Updates
  - Use Team members names
  - Communicate with patient appropriately

## MSKCC Operating Room Performance Objectives and Principles

Maximize knowledge and skill to  
achieve exceptional and innovative  
care

Care for the  
patient like this is  
the most  
important day in  
their cancer  
management

Provide an  
efficient,  
proficient,  
professional and  
safe environment  
of care



Anticipate and  
prepare for  
possibilities

We work as teams  
that value respect,  
cooperation and  
communication

## MSKCC Operating Room Performance Objectives and Principles



We work as teams  
that value respect,  
cooperation and  
communication

## Situational Awareness - An Overview

- A **shared** and accurate understanding of “what’s going on” and “what is likely to happen next”
- \* Allows us to recognize events around us, act correctly when things proceed as planned, and react appropriately when they don’t
- \* As with other Human Factors skills, SA is owned by the entire team

## Building Better Situational Awareness

- Know/share the game plan – through briefings and team management (*e.g., workload & workflow management, task coordination*)
- Anticipate next steps and possible events
- Follow known procedures
- Cross-check and verify
- Provide ongoing updates – call-outs, cross-talk, and briefs

## Wall of Knowledge

- Components
  - Video Screen
  - Live Data Screen
  - PACS Images
  - Centralized Time
  - Temperature Control

## WoK Objective

- Provide the OR team with a **Common Operational Picture** to promote:
  - A **common understanding** of the procedure and its critical aspects – Everybody understands the critical aspects associated with their role, but do they understand the ones associated with other team members' roles?

## Approach

- Provide the OR team with a **common information display** that is viewable by everyone on the team and from all locations within the OR
- Display information that is of **value to multiple team members**
- Display **information that complements** what each team member currently has at his/her disposal (e.g., in their work station)

## Case Setup

The screenshot displays the LiveData interface for OR #20. At the top, it shows patient information: Doe, John, M 8 Y, MRN: 35786786, and room temperature 73 F / 23 C. The interface is divided into several sections:

- Staff:** Nursing Information (Steven Lee, Maria M.), Anesthesiology Information, and Surgeon Information (Michael Thamb, Rebekah Laq).
- Critical Information:** Special Needs (argon beam), Allergy (Acyclovir, Penicillin), and Nursing Notes.
- Case Setup:** A tabbed interface with sub-sections for Blood Availability (Type And Screen: Completed), Pacemaker Management (Vendor, Phone, Sales, Model, Serial #), and IRB Protocol.
- Progress Log:** Shows a timestamp of 08:30 and the event 'Room Setup Start'.
- Planned Procedures:** Lists Pediatric Exc Abd/ Retrperit Tumors, Aspiration Bone Marrow, Bx Bone Marrow, and Medical Resect Tumor.

A red circle highlights the 'Case Setup' tab, and a red arrow points from it to a red banner at the bottom of the screen that reads "Key Information Needed During Case Setup".

# Briefing

LiveData OR #20 74 F / 23 C

Patient: Doe, John M 8 Y - kg / - lbs MRN: 35786786

Case Description:

Staff

**Nursing Information**  
Scrub: Steven Lee  
Circ: Maria M.

**Anesthesiology Information**  
Surgeon Information  
Pediatric  
Surg: Michael Thamb #9779  
Felt: Rebekah Laq

**Critical Information**  
Special Needs: argon beam.

**Allergy:**  
Acyclovir Penicillin

**Progress Log**  
08:30 Room Setup Start  
09:25 Patient in room

Case Setup Briefing Intraop Closing Debriefing Protocol

**Guiding Principles:** Provide an efficient, proficient, professional and safe environment for care

**Verification of correct patient**

- Patient, procedure, and site are identified
- Site is marked if applicable
- Relevant imaging studies verified and available
- New team members are introduced

**Surgeon**

- Diagnosis
- Brief history
- Complexity (EBL)
- Time estimate
- Position

**Anesthesia**

- Anesthesia type
- Blood bank req.

**Procedures:**

- Excision/Destruction Intra-Abdominal Or >>> Left
- Aspiration Bone Marrow ----- N/A
- Biopsy Bone Marrow Needle ----- N/A
- Radical Resection Tumor Soft Tissue Neck ----- Left
- Insertion Cannula For Hemodialysis Vein To Vein ----- N/A

**Surgeon**  
Circulating Nurse Scrub Person

**Patient In Room - Briefing About to Start - Waiting for Team Members**

# Briefing

LiveData OR #20 74 F / 23 C

Patient: Doe, John M 8 Y - kg / - lbs MRN: 35786786

Case Description:

Staff

**Nursing Information**  
Scrub: Steven Lee  
Circ: Maria M.

**Anesthesiology Information**  
Surgeon Information  
Pediatric  
AtenS: Maureen Wan #4133  
Res S: Flo Brooks  
Surg: Michael Thamb #9879  
Felt: Rebekah Laq

**Critical Information**  
Special Needs: argon beam.

**Allergy:**  
Acyclovir Penicillin

**Progress Log**  
08:30 Room Setup Start  
09:25 Patient in room

Case Setup Briefing Intraop Closing Debriefing Protocol

**Guiding Principles:** Provide an efficient, proficient, professional and safe environment for care

**Verification of correct patient**

- Patient, procedure, and site are identified
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**Surgeon**

- Diagnosis
- Brief history
- Complexity (EBL)
- Time estimate
- Position

**Anesthesia**

- Anesthesia type
- Blood bank req.
- Antibiotic schedule
- Pain management

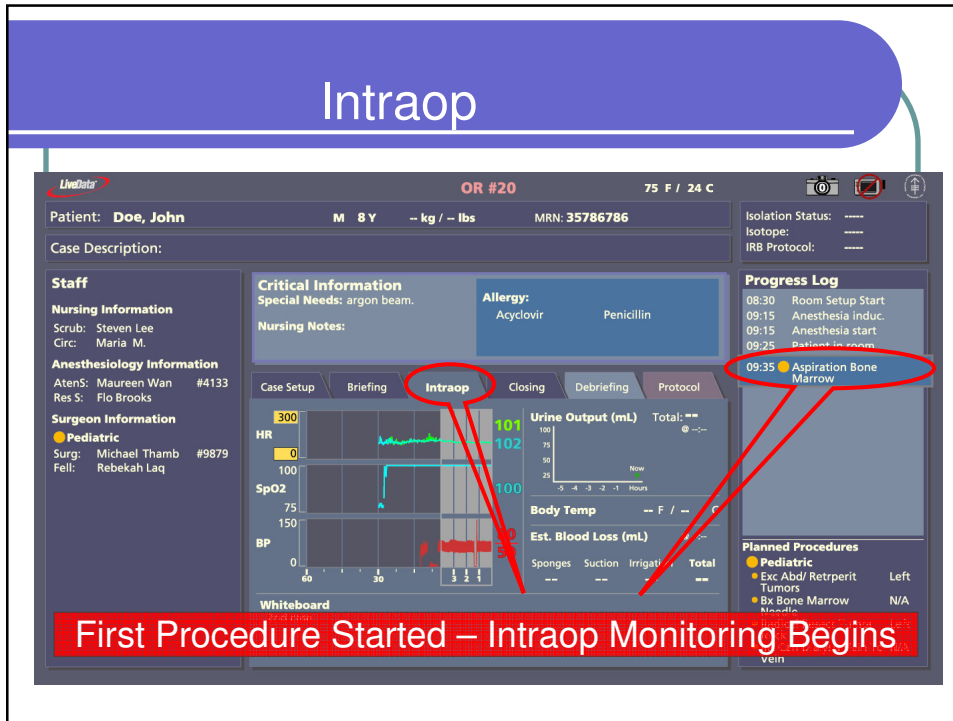
**Procedures:**

- Excision/Destruction Intra-Abdominal Or >>> Left
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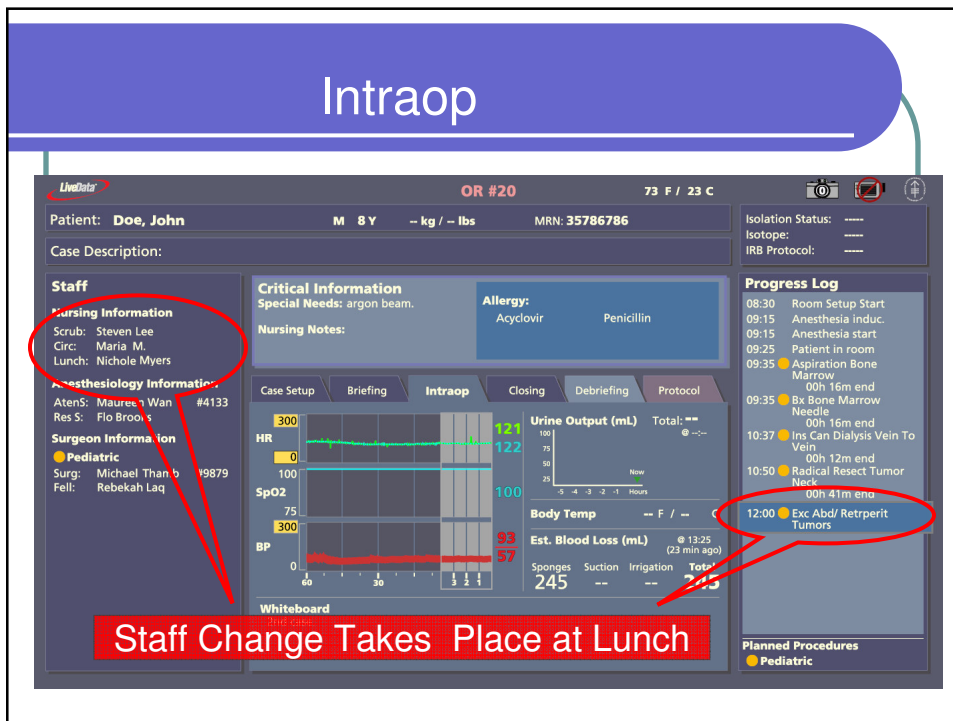
**Surgeon**  
Circulating Nurse Scrub Person

**All Team Members Present - Briefing Takes Place**

# Intraop



# Intraop



# Closing

**Patient:** Doe, John    **M 8 Y**    -- kg / -- lbs    **MRN:** 35786786

**Case Description:**

**Staff**

**Nursing Information**  
Scrub: Steven Lee  
Circ: Maria M.

**Anesthesiology Information**  
AtenS: Maureen Wan #4133  
Res S: Flo Brooks

**Surgeon Information**  
● **Pediatric**  
Surg: Michael Thamb #9879  
Fell: Rebekah Laq

**Critical Information**  
Special Needs: argon beam.

**Allergy:** Acyclovir    Penicillin

**Progress Log**  
08:30 Room Setup Start  
09:15 Anesthesia Induc.  
09:15 Anesthesia start  
09:25 Patient in room  
09:35 ● Aspiration Bone Marrow 00h 16m end  
09:35 ● Bx Bone Marrow Needle 00h 16m end  
10:37 ● Ins Can Dialysis Vein To Vein 00h 12m end  
10:50 ● Radical Resect Tumor Neck 00h 41m end  
12:00 ● Exc Abd/ Retrperit Tumors 04h 30m end  
16:06 Last Proc Close

**Planned Procedures**  
● **Pediatric**

**Summary**

Total counts	
Sponge	Yes
Needle	Yes
Instrument	Yes
Accessories	Yes

**PACU Information**  
Bed Assignment: MAIN PACU C15

**Counts Complete and PACU Bed Assignment Received**

# Debriefing

**Patient:** Doe, John    **M 8 Y**    -- kg / -- lbs    **MRN:** 35786786

**Case Description:**

**Staff**

**Nursing Information**  
Scrub: Steven Lee  
Circ: Maria M.

**Anesthesiology Information**  
AtenS: Maureen Wan #4133  
Res S: Flo Brooks

**Surgeon Information**  
● **Pediatric**  
Surg: Michael Thamb #9879  
Fell: Rebekah Laq

**Critical Information**  
Special Needs: argon beam.

**Allergy:** Acyclovir    Penicillin

**Progress Log**  
12:00 ● Exc Abd/ Retrperit Tumors 04h 30m end  
16:06 Last Proc Close

**Guiding Principle:** We work as a team that value respect, cooperation and communication

**Goal:** Decrease opportunity for error and surprises and improve communication

**Questions**

- Did we meet this goal ?
- Team members were respectful, effective and professional in communication during the case
  - Was communication clear ?
  - Were roles and responsibilities well understood ?
  - Were tasks and workload fairly distributed ?
  - Were adequate resources available ?
  - Were there any surprises or near misses ?
  - What improvements are needed in our team work ?
- Supplies, instruments, and equipment needed were available for the case
- Preference card selected for the case was appropriate and accurate
- Procedures performed are documented in Op Times

**Debriefing Begins**

# Case Complete

