

Multidisciplinary Interventional Radiology Simulation Day To Improve Team Communication and Patient Safety

Quality Storyboard: RSNA 2015

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New York-Presbyterian Hospital
Weill Cornell Interventional Radiology

Interventional Radiology 'Simulation Day'

Outline of this quality storyboard:

Why did we conduct a simulation day?

Why should your department?

How did we conduct a simulation day?

How can you?

Introduction

- Team training for individuals of differing backgrounds is key to improving communication and patient safety.
- Simulation of scenarios allows each group to understand the skills and perspectives of each group.
- Our division wanted to improve team communication and the ability to manage rare life threatening scenarios.



RSW2

Team Based Training is Paramount

Must avoid the 'silo' mentality of physicians, nurses, technologists only performing their perceived role.

Safety is more than identifying the correct patient, procedure, equipment and operator.

Slide 4

RSW2 Ronald S. Winokur, 10/26/2015

IR is different than Surgery

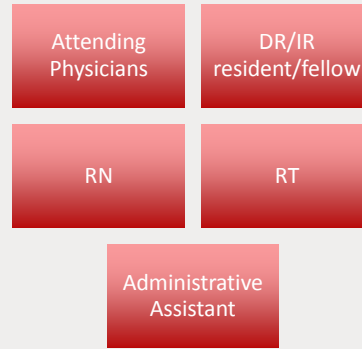
- Interventional radiology functions as a standalone short procedure unit with its own intake, procedure rooms staffed by radiologic technologists and ICU trained nurses, and a recovery room.
- Most procedures are performed in IR without the presence of an anesthesiologist.
- There is approximately a 50/50 mix of inpatient and outpatient procedures.
- Our staff consists of 12 IR attendings, 5 IR fellows, 2 rotating radiology residents, 2 nurse practitioners, 3 physicians assistants, nurses, radiologic technologists, and registrars. Our nurses rotate to cover procedure rooms and the recovery room where both intake and recovery are performed.

Key Steps to Planning

1. Determine the key players in your department.
2. Identify areas of weakness.
3. Identify the optimal location for the event.
4. Implement the program.

Step 1: Key Players

- All disciplines involved in patient care should be included in planning.
 - This allows each group to be represented in the event.
- By keeping each care group engaged in the event they will learn from their experience and improve the way they deliver clinical care to patients.



Our Simulation Day Planning Committee



Bradley Pua, MD
Attending



Ronald Winokur, MD
Attending



Theresa Salerno, FNP
Nurse Practitioner



Ellen Bridges, RN
Clinical Nurse



Jessica Waltz
Admin Coordinator



Noy Bassik, MD PhD
Resident



Maya Hartman, MD
Resident



Jimmy Ng, RT
Technologist



Richard Marshall
MD, Fellow



Jamie Stern
Rsrch Coordinator

Step 2: Identify Weakness

THIS IS THE MOST IMPORTANT COMPONENT!

Have you observed communication breakdown among team members that has affected patient care?

Are there gaps in the knowledge of your team to optimally manage your patients?

Are there identifiable infrastructure barriers? Do you have optimal personnel?

Are there physical barriers to implementation of optimal patient care?

Do you have enough space or appropriate allocation of materials throughout the space?

Goals of Interventional Radiology Simulation

Knowledge

Clinical Management

Technical performance

Skills

Workflow improvement

Communication

Team communication

Silo Mentality



The Cornell Experience

The focus of our simulation was based on failures of communication.

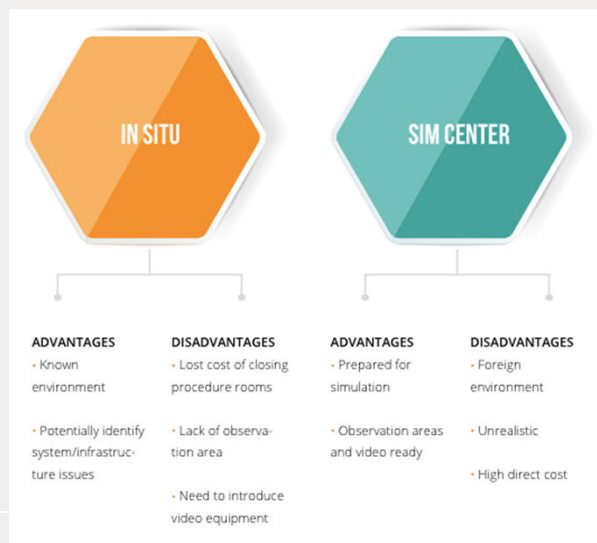
Sidedness

Interdisciplinary communication/awareness

High stress situations (i.e. Code)

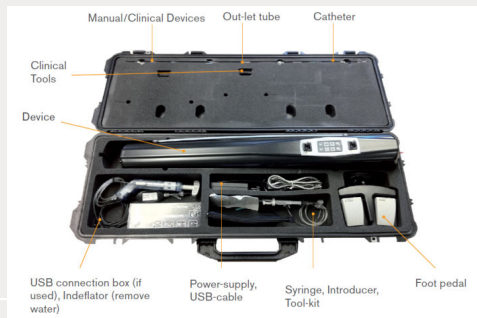


Step 3: Location



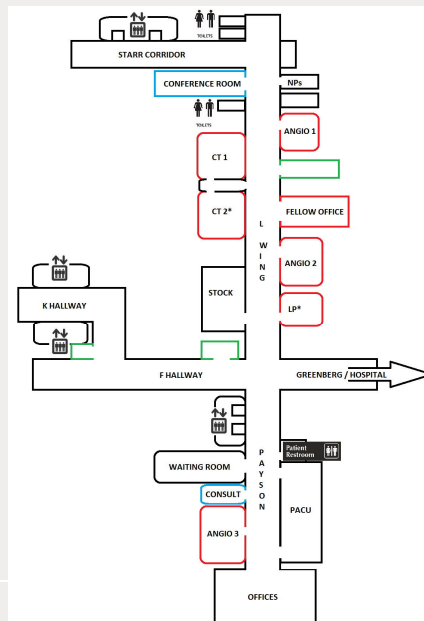
IR has Unique Needs, Situations and Equipment

- Angiography systems and additional in room equipment have a large physical presence in the procedure room.
- Radiation safety during emergencies can frequently be forgotten.



Unique NYC issues

- Adapt the simulation to your department and goals and weaknesses.
- We have a long hallway making communication from one procedure room to the recovery room challenging.
- This is an issue in day to day work, so we used it in simulation.
- Urban Real Estate Realities:
Smaller rooms
Suboptimal layout



Step 4: Program Implementation

- Regularly scheduled Simulation Day Committee planning meetings.
- Each representative must be engaged in planning to make sure their group is engaged in the event.
- Components to plan and coordinate:
 - **Structure of the day**
 - **Assign individuals to simulation or “work”**
 - **Design cases and create supporting documentation**
 - **Trial simulation**
 - **Determine debrief questions**

Simulation Day Workflow

- Educate the participants with an introductory lecture.
- Educate participants on limitations of simulation and equipment.
- Divide into groups for simulation or clinical work.

Planning Team Members:

- Moderate or observe
- Record Data
- Lead Debrief Sessions



Assign all participants their roles

TIME	SIMULATION ROOM 1	SIMULATION ROOM 2	WORK
9:00–10:10	Group Aa – Scenario	Group Ba – Scenario	Group Ca – Angio 1
	Group Ab – Observation	Group Bb – Observation	Group Cb – CT
10:20–11:30	Group Ca – Scenario	Group Aa – Scenario	Group Ba – Angio 1
	Group Cb – Observation	Group Ab – Observation	Group Bb – CT
11:40–12:50	Group Ba – Scenario	Group Ca – Scenario	Group Aa – Angio 1
	Group Bb – Observation	Group Cb – Observation	Group Ab – CT

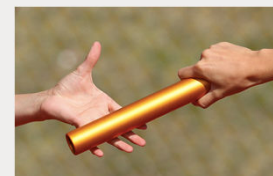
How to design cases?

Choose realistic representations of your cases, workload and experiences based on local need:

- Involve all team members
- Unplanned excursions that mimic real life events
- Poor handoffs
- Unexpected patient reactions
- Changes in medical status

Script as much as possible:

- Extensive attention to realism and detail
- Including necessary equipment and imaging

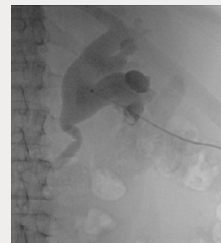
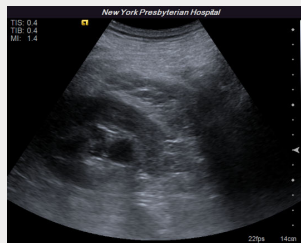


A realistic simulation in progress



Well-developed cases: Case #1

Percutaneous nephrostomy (ED patient)



Designed with:

Poor handoff from the ED

Wrong side on handoff, where/how would this be caught?

Abrupt change in clinical status, open ended

Evaluate the team's differential diagnosis and response

Create realistic documents: requisitions

NYP Weill Cornell Medical Center
Interventional Procedures

Name: DOE, JANE
MRN: 123456
DOB: 06/19/1959 SEX: F AGE: 45Y
Accession #: 4058229
Visit #: 101104108
Attending Provider: TROST, DAVID WALTER, MD
Ordering Provider: SCHERR, DOUGLAS, MD

Routine
Patient Location: G0-084021-A
Loc: G0ENBERG, 5-WEST
Date Requested: 05/01/2014
Call Back Number: 0541081505
Reserver: G041081505

Exam: ANRMPRO - ANGIO INTERVENTIONAL PROCEDURE
Comments: FCN PLACEMENT
Signs/Symptoms:
History: BLANK PBN
ICD9: 586 - RENAL FAILURE UNSPECIFIED

4058229*
Prev Exam: (2-NYP-WC) G0ENBERG - OR ROOM PROCEDURE Date Time: 05/01/2012 163
Prev Exam: (2-NYP-WC) ANRMPRO - ANGIO INTERVENTIONAL PROCEDURE Date Time: 05/01/2012 174

Patient verification immediately prior to procedure:
[] Correct patient [] Correct Side/Site [] Correct Procedure

Technologist Name(print):
Technologist Signature:
Second Verification Name(print):
Second Verification Signature:

NYP Weill Cornell Medical Center
Interventional Procedures

Name: DOE, JOHN
MRN: 2457099
DOB: 05/19/1945 SEX: M AGE: 69Y
Accession #: 4058229
Visit #: 101104108
Attending Provider: TROST, DAVID WALTER, MD
Ordering Provider: STULMAN, JAMES, MD

Routine
Patient Location: ORAD
Loc: ORAD
Date Requested: 05/01/2014
Call Back Number:
Reserver: G041081505

Exam: ANRMPRO - ANGIO INTERVENTIONAL PROCEDURE
Comments: PANGIOGRAM
Signs/Symptoms:
History: BIPHASE LEG PBN
ICD9: 440.21 ARTERIOCLEROSIS OF NERVE

4058229*
Prev Exam: (2-NYP-WC) G0ENBERG - OR ROOM PROCEDURE Date Time: 05/01/2012 163
Prev Exam: (2-NYP-WC) ANRMPRO - ANGIO INTERVENTIONAL PROCEDURE Date Time: 05/01/2012 174

Patient verification immediately prior to procedure:
[] Correct patient [] Correct Side/Site [] Correct Procedure

Technologist Name(print):
Technologist Signature:
Second Verification Name(print):
Second Verification Signature:

60 year old male with history of HTN/DM/ESRD with RLE claudication and high grade stenosis on MRA. Plan for RLE angiogram, possible angioplasty and possible stenting.

Unrevealed history:

- Right iliac stenosis
- Vitals: Temp 97.6oF, BP 148/88 HR 87bpm, RR 20 Pulse Ox 99% RA
- Labs: WBC 9.3, Hgb 13.6, Hct 40.8, Plt 250 Na 145 K 5.8, Cl 105, CO2 22, BUN 6, Cr 1.0 Glucose 69, PT 12.5, INR 1.1, aPTT 34.4
- Allergies – NKDA
- ABI Right 0.6, ABI Left 0.9

Following iliac artery angioplasty, the iliac artery **ruptures** resulting in the patient becoming hypotensive and tachycardic

1. IVF resuscitation
2. Crash cart accessibility
3. Airway protection
4. Clear obstacles for resuscitation

CODE

Debrief is where the learning occurs

This should be lead by moderators.
This is as or more important than the cases themselves.

Ground rules for a debriefing:

- A supportive environment where each individual can feel valued, respected and free to learn *without fear* of judgment.
- Each participant should share experiences in a frank, open and honest manner.
- Respect the vulnerability of others when making comments.
- Honor confidentiality.
- Speak for oneself and not for others.



Sample debriefing questions

How do you feel the scenario went?

What changes would you make based on this experience?

Are there areas which could be improved?

Did you feel that the perceived organizational hierarchy prevented you from voicing your concerns?

Did you feel your prior experience adequately prepared you for this?

Did each team member treat one another with respect?

Can you identify specific weaknesses?

Is there anything we can do as a division with regard to updating/creating protocols, improvements to our work environment that could help avoid this situation in the future?

Did this experience increase awareness of gaps in your own knowledge?

Barriers to Implementation

TIME

Planning a simulation event for multiple disciplines requires dedicated time from all parties to participate in planning meetings.

DEPARTMENTAL BUY-IN

Administrative approval is necessary to close a department or reduce clinical volume.

PARTICIPANT BUY-IN

The participants need to believe that this is simulated reality in order for the event to be successful.



Observe Case performance - metrics

Nephrostomy:

Wrong side Identification
Hypotension differential
Antibiotic Choices

Iliac stent:

Equipment Selected
Code procedure
Radiation Safety

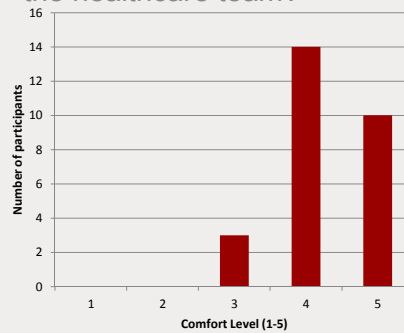


Evaluation Methods and Results

Likert Scale pre/post survey:
42 participants
11 questions
Well Received

Debriefing sessions:
VERY well received
Mapped to the ACGME
Six Core Competencies

How comfortable are you in voicing your concerns within the healthcare team?



Average comfort level pre 3.7

Average comfort level post 4.3

Adding ancillary activities

Once the day is set aside for a division wide activity, additional activities can be included:

- Vendor demonstrations
- New product in-service
- Medical student / Resident training

In our simulation day, time for nurses and technologists to practice with items such as filters and balloons was particularly well received.



Simulation Day Improvements

Learn from each iteration, Improve your department.

We identified issues with emergency situations.

Improved team support during 'all hands on deck' situations creating a local RRT system.

