

MOCK ROOT CAUSE ANALYSIS INSTRUCTOR'S GUIDE

The concept for this module was originally presented at the 2015 Council of Emergency Medicine Residency Directors Academic Assembly, and its materials and content provided by:

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Its authors have given their permission for use in the Medicolegal Toolkit.

BACKGROUND:

The ACGME milestone for patient safety includes having residents participate in morbidity and mortality conferences or root cause analysis (RCA). Given the emotionally charged and sometimes legally complicated environment of a real RCA, it is sometimes difficult and intimidating for residents to participate.

PURPOSE & GOALS:

To better introduce the concept of RCA, we have created a 4-hour long “Mock RCA” exercise around a fictional case in which all levels of learners are able to participate.

EDUCATIONAL OBJECTIVES:

- Simulate departmental reviews that precede an RCA
- Simulate an RCA itself
- Meet level 4 criteria on the “Patient Safety 1” ACGME EM milestone

RESOURCE FILES:

1. **Understanding Error** Didactic (filename: [understanding.error.pptx](#))
 - This didactic provides an introduction of the potential sources of medical error
 - Estimated time: 60 minutes
2. **Quality Review** Didactic (filename: [quality.review.pptx](#))
 - This didactic provides an introduction of the process for conducting quality review, including fact finding, timeline construction, evidence review, error, harm and standard of care determinations
 - Estimated time: 30 minutes
3. **Patient Safety Event Report** Form (filename: [patient.safety.event.report.pdf](#))
 - This is a mock event report “submitted” by a cardiology fellow about an ED patient who was in a hallway bed despite having a 3rd degree AV block and who decompensated, requiring a crash pacemaker placement which was complicated by a pneumothorax
 - The form is intended for distribution to the small groups, which will use its contents as the foundation for a QA review
4. **Supporting Medical Record Documents**

(filenames: nursing.notes.pdf
provider.notes.pdf
CXR.1.pdf
CXR.2.pdf
EKG.initial.pdf
EKG.repeat.1.pdf
EKG.repeat.2.pdf
lab.results.pdf
rads.results.pdf)

- These documents are replicas of the medical record for the case reported in the patient safety event report. They include nursing notes, physician notes, EKG, lab results, and radiology results.
 - The documents are intended for distribution to the small groups, which will use them to construct a timeline, and incorporate them into their determinations related to error, harm and standard of care
6. **Stakeholder Scripts** (filename: scripts.pdf)
- This “script” provides the point of view of each of the healthcare team members who were involved in the original case
 - This document is intended for review by the resident/faculty “actors” who will play the part of the nurses, tech, resident and attending physician involved in the case in preparation for interviews by the small groups performing the QA review
5. **Quality Assurance Review Form and “5 Whys” template**
(filenames: QA.review.form.pdf
5.whys.pdf)
- These forms provide a template for describing the event timeline, identifying the causes, relevant policies, harm and standard of care determinations, and developing a departmental improvement plan
 - The documents are intended for distribution to the small groups, which will use them to summarize the findings of their QA review
7. **Reference for QA Review** (filename: QA.review.reference.pdf)
- This form provides a reference for how to approach each step of the QA process, including constructing a timeline, interviewing participants, identifying contributing factors, identifying root causes, making harm and standard of care determinations, identifying risk reduction strategies and measuring effectiveness
 - The document is intended for distribution to the small groups, which will use it to guide their QA review
8. **RCA Agenda** (filename: rca.agenda.pdf)
- This form provides the meeting agenda for the mock RCA
 - The document is intended for distribution to the mock RCA participants
9. **Summary Handout** (filename: rca.summary.handout.pdf)
- This document provides a summary of the teaching points for the module

TOTAL MODULE DURATION: 4 hours

REQUIRED RESOURCES:

- Computer with capability of running PowerPoint
- Five faculty/residents to represent stakeholders in case for interview by small groups
- Faculty lead with experience with patient safety concepts/RCA

DESCRIPTION OF MODULE:

Intended Audience

- Emergency medicine residents at any level of seniority.

Pre-Reading

- AHRQ Patient Safety Primer/Systems Approach:
<https://psnet.ahrq.gov/primers/primer/21/systems-approach>
- AHRQ Patient Safety Primer/RCA:
<https://psnet.ahrq.gov/primers/primer/10/Root-Cause-Analysis>
- CMS Guidance for Performing RCA:
<https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/guidanceforrca.pdf>
- How to Use the Fishbone Tool for Root Cause Analysis:
<https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf>

Recommended Implementation/Timeline

- Pre-module
 - Prior to the day of the “Mock RCA”, the pre-reading should be provided to the learners to familiarize themselves with the content. This will allow more time for focusing on more advanced QPS concepts and the efficient conduction of small group assignments.
- During the module
 - Goals and objectives of the module are introduced by the faculty lead. (5 minutes)
 - **Understanding Error** didactic presented by a senior resident or faculty member. (1 hour)
 - **Quality Review** didactic presented by senior resident or faculty member. (30 minutes)
 - Participants divided into groups, with each group assigned to represent one of 3 stakeholders (5 minutes):
 - ED physicians
 - ED nursing and ERTs
 - Cardiology

- **Patient Safety Report** is distributed to each group, with a brief description of its contents by the faculty lead. (5 minutes)
- **Supporting Medical Record Documents, Quality Assurance Review Form, 5 Whys** template and **Reference for QA Reviews** are distributed to each group, with a brief description of the contents and purpose of each document by the faculty lead. (5 minutes)
- Participants given opportunity to ask questions prior to beginning the quality review. (10 minutes)
- Each group performs a quality analysis (focusing on their discipline only) by reviewing the medical record, interviewing stakeholders involved in the case, identifying causes, making a provisional standard of care and harm determination, and proposing an improvement plan for their departments (45 minutes)
 - Healthcare team members are represented by pre-determined residents/faculty who are given “**Stakeholder Scripts**” with which to adhere
- Each group nominates a representative to participate in the mock RCA (5 minutes)
- Mock RCA participants seated at a table at the front of the classroom, with remainder of learners in “gallery” observing the meeting
 - Participants:
 - One EM faculty member with QPS/RCA experience representing the hospital to serve as moderator
 - Two EM faculty representing legal/risk management and patient services to serve as participants
 - Three EM resident nominees representing ED physicians, ED nursing/ERT’s and cardiology to serve as participants
- **RCA Agenda** is distributed to mock RCA participants, and moderator follows the agenda in leading the exercise (1 hour)
- Debrief discussion held at the conclusion of the day (10 minutes)

INSTRUCTOR SUMMARY OF CASE:

Case:

This case involves a patient who presents to the ED with a complaint of generalized fatigue/feeling weak.

- Triage vital signs are normal
- Subsequent triage EKG shows complete heart block
- Tech who performed the EKG thought the machine was malfunctioning so did not bring the copy for the attending to sign, however it was automatically uploaded into the medical record (with slight normal delay)
- Tech repeats the EKG short time later which shows normal sinus rhythm and brings it to the attending to sign

- Patient is placed in a hallway bed off monitor where her initial assessment by both the PGY-2 resident and the attending takes place
- Patient subsequently becomes dizzy and care team is called to bedside. She is put on a monitor and found to be in complete heart block.
- PGY-2 places an IJ introducer for trans-venous pacing but has little experience with this approach, is not directly supervised by the attending and causes a pneumothorax, which is diagnosed upon review of the x-ray by the attending
- Patient reverts to normal sinus rhythm during introducer placement
- Chest tube is placed in ED with successful re-expansion of lung
- Cardiology consultant reviews medical record and finds initial EKG with complete heart block
- Patient is taken to CCU for definitive management

Timeline:

15:55: triage

16:00: triage EKG (not signed)

16:15: nursing assessment

16:30: resident assessment:

16:45: resident note

17:00: repeat EKG

17:15: attending assessment

17:40: labs result

17:45: decompensated in hallway

17:50: repeat EKG with CHB

CVL placed: no procedure note to determine time

18:25: repeat EKG with paced rhythm

18:30: CXR taken

18:40: CXR prelim read

18:55: CXR final rad

Chest tube placed: no procedure note to determine time

19:15: CXR taken

19:40: CXR prelim read

20:03: CXR final read

20:04: Disposition note entered

20:30: Cardiology note entered

Errors Identified and Standard of Care Determination:

The case should be discussed during the mock RCA as if it occurred within the hospital that the exercise is taking place. Errors identified and SOC determination should therefore be agreed upon by the mock RCA participants, and will vary somewhat from institution to institution, depending on local policy and standards.

Harm Determination:

HARM – Temporary Harm/Additional Treatment

CONCLUSIONS:

Patient safety is an important sub-competency of system based practice, and is one of the 23 Emergency Medicine milestones. Participation in process improvement plans, and root cause analyses are two components required for residents to reach Level 4. This module offers both didactic instruction and the opportunity for residents to participate in both a simulated quality review and a mock root cause analysis. In so doing, they will obtain both experience and perspective with regard to characterization of human and systems errors, making standard of care and harm determinations, and identifying strategies for reducing future risk.

REFERENCES:

Farmer B, Fant A, Lock B. Mock Root Cause Analysis: A Residency Curriculum for Quality and Patient Safety. Didactic Presentation at the Council of Emergency Medicine Residency Directors Annual Academic Assembly. Phoenix, AZ. April 2015

Farmer B, Fant A, Lock B. The Mock RCA: A Novel, Interactive Way to Teach Patient Safety Concepts. Council of Emergency Medicine Residency Directors Annual Academic Assembly. Phoenix, AZ. April 2015