Competence in Code Leadership

A Practical Approach to Standardizing Faculty Observation, Evaluation

Code Leadership Project Group

Pacific Northwest Consortium for Outcomes in Resident Education (PNW-CORE)

May 1, 2013

Disclosures

Roger Bush, MD   **Ken Steinberg, MD**
Clinical Associate Professor, UW **Professor of Medicine**
Program Director   **Program Director**
Billings Clinic   **University of Washington**

Alex Niven, MD   **Mike Westley, MD**
Clinical Associate Professor, UW **FACP, FCCP**
Program Director   **Pulmonary / Critical Care**
Madigan Army Medical Center   **Virginia Mason Medical Center**

Project Background

Alexander S. Niven, MD

PNW CORE

- **Consortium of Pacific Northwest Internal Medicine resident educators**
  - Washington, Oregon, Idaho, Montana
- **Annual meeting, monthly conference calls since 2008**
  - Supported by the ABIM
    - Focus group for milestones implementation
    - Regional networking, collaboration
    - Faculty development

Project Background

- **Develop outpatient, inpatient evaluation tools**
  - **Agenda setting in the clinic**
  - **Code leadership**
- **Rationale for code leadership project**
  - **Code management required procedure for ABIM certification**
  - **Code leadership is a complex task**
    - **Difficult to observe**
    - **Involves multiple clinical competencies**
    - **Opportunity for training using simulation**

Code Leadership Evaluation Tool

- **Developed checklist of essential tasks**
  - **Revised using validated crisis resource management tools**
    - **Ottawa CRM, Mayo High Performance Teamwork Scale**
- **Selected essential steps representing minimum threshold for competence (bold)**
- **Identified relevant Curricular Milestones**

Project Challenges

- **Use of evaluation tool in clinical, educational environment proved challenging**
  - Attending presence, code team response varied among institutions
  - Variation in mock codes, simulation resources
- **Refocus project objectives**
  - Validate evaluation tool using standardized videos (superior, competent, unacceptable)
 - Module for faculty development, companion learner materials

Validation of Evaluation Tool
### PNW CORE, April 2012

- **Hypothesis: A standardized checklist improves faculty evaluation of code leadership behaviors**
  - identify minimum threshold of competence
  - Differentiate superior performance
- **Methods: 3 standardized videos (JeffPlayers)**
  - Group 1   Score code leader performance

    Annotate observed, key behaviors
  - Group 2   Code leadership evaluation tool

    Minimum competence achieved?
    Observed milestones
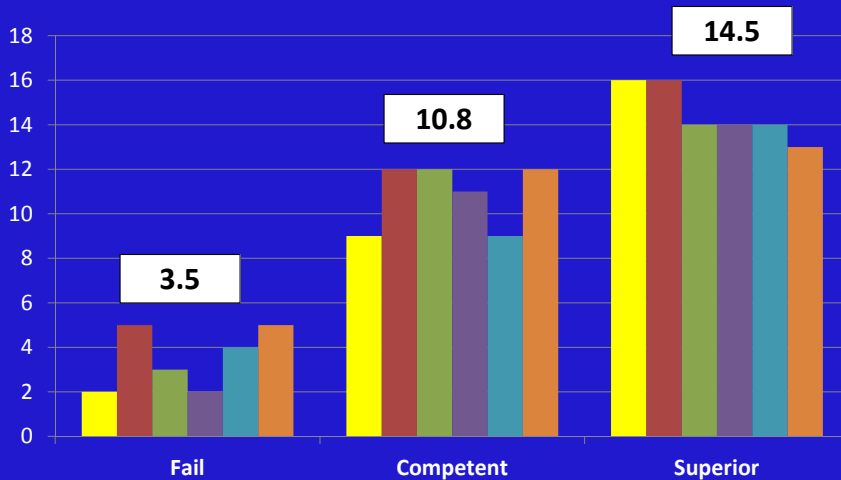
Evaluation Consistency

Group 1

Group 2

- Superior
- Competent
- Fail

- Competent
- Fail
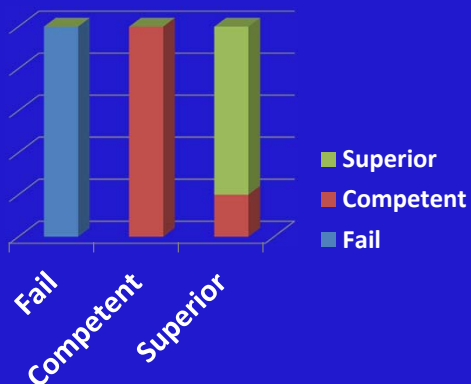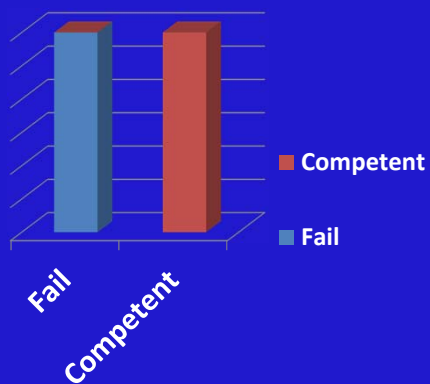
Evaluation Consistency
Group 2 Checklist Scores

3.5

10.8

14.5

Evaluation Consistency
APDIM Spring 2013 Responses
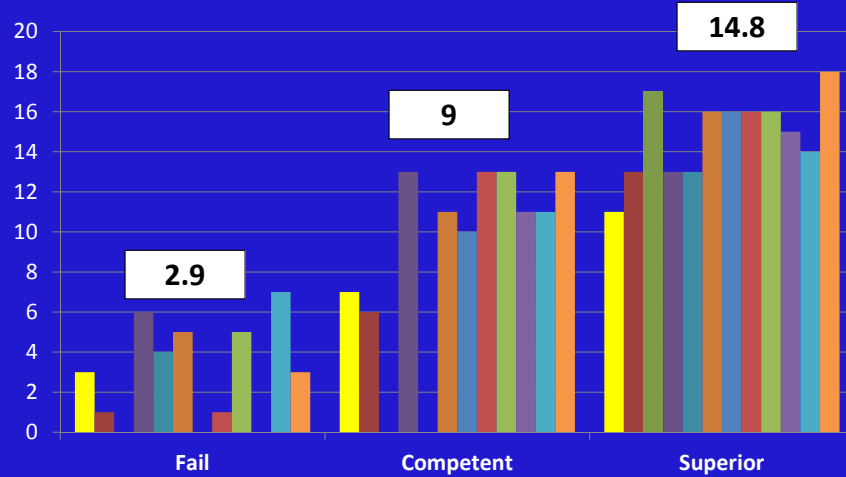
Faculty Development Exercise

Michael Westley, MD
Ken Steinberg, MD

Exercise

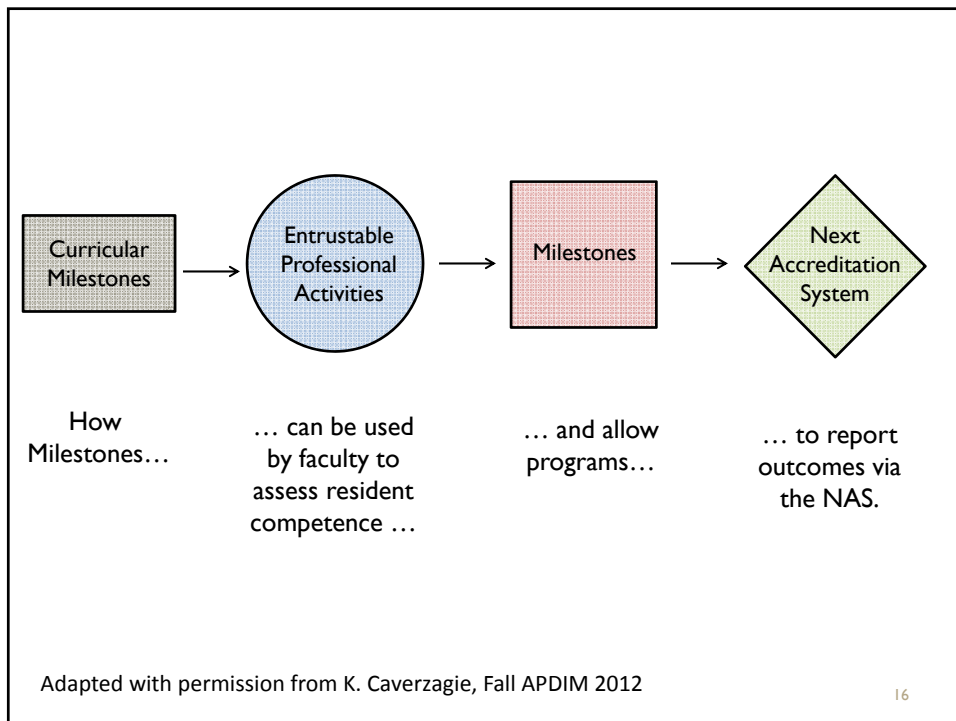- **View 3 standardized videos**
  - Score performance using evaluation tool
  - Annotate observed, key behaviors
- **Divide into 4 groups**
  - Debrief
  - Discuss applications for faculty development
- **Module, tools posted on APDIM web site**

Questions

- **How did videos, evaluation tool help your observation, assessment of the code leader?**

- **Application to faculty development activities**

Lessons for NAS

Roger Bush, MD

Curricular Milestones	→	Entrustable Professional Activities	→	Milestones	→	Next Accreditation System
How Milestones…		… can be used by faculty to assess resident competence …		… and allow programs…		… to report outcomes via the NAS.

Adapted with permission from K. Caverzagie, Fall APDIM 2012

16

"Windows to Competence"
Caverzagie and Iobst
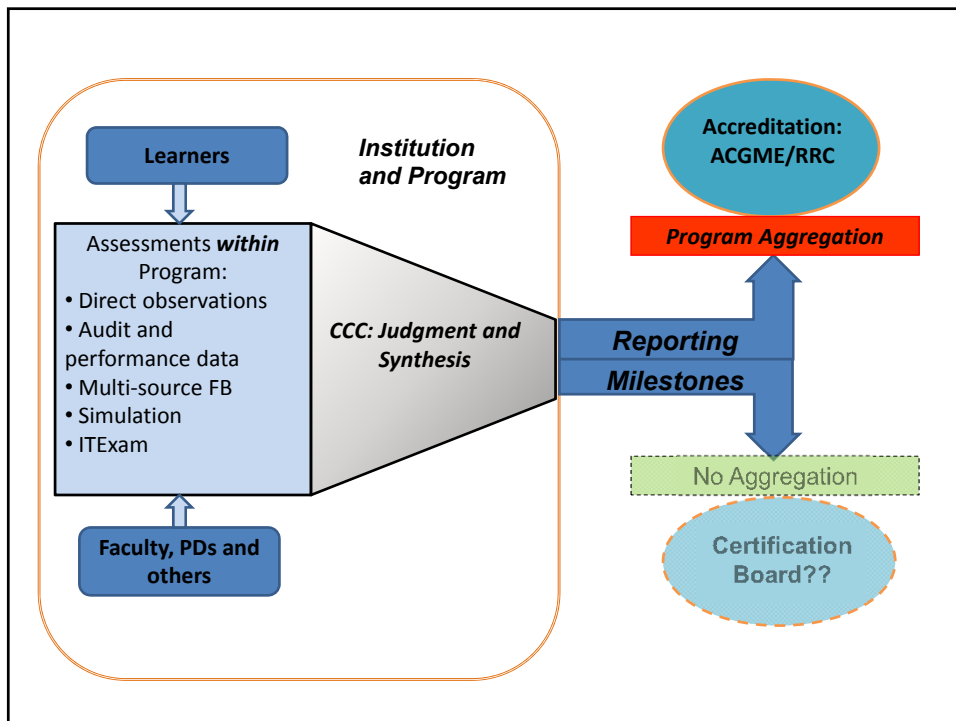
How Do I Develop an Assessment?

Step 1 – Describe the activity

What tasks are required for you to entrust this activity to a resident? (minimum threshold of competence)

Step 2 – Identify appropriate Curricular Milestones

Select from 142 milestones that will help with assessment, map to reporting milestones

http://www.im.org/AcademicAffairs/milestones/Pages/BuildingAssessmentsforanEPAinThreeSteps.aspx

Step 3 – Identify specific assessment methods, tools

Implementation, Future Directions

- **Faculty participation essential to success**
  - **Curriculum development**
  - **Standardization of observation**
- **Simulation can powerful for high risk, difficult to observe events, procedures**
  - **Resource intensive?**
- **Mapping observations to reporting milestones remains challenging**

Panel Discussion

Roger Bush, MD
Program Director
Billings Clinic

Ken Steinberg, MD
Program Director
University of Washington

Alex Niven, MD
Program Director
Madigan Army Medical Center

Mike Westley, MD
Pulmonary / Critical Care
Virginia Mason Medical Center

Virginia Mason Code 4 Process Internal Medicine Faculty Responsibility

Michael E. Westley MD, FACP, FCCP

Introduction

- Patients deserve error free care
- Standardization is necessary to improve reliability
- Human error rates approach 25 percent in high risk situations
- Faculty are key to highly reliable care

Agenda

- Review this PowerPoint and contents of the Code 4 Co-leader binder
- Contact Mike Westley, Ian Smith or Mike Ingraham if you have questions particularly about your role
- Attend at least one drill. Mentor/coach residents in leader positions
- Participate in drill debrief
- Use this process during real codes. "Doing your own thing" during a Code confuses the team
- Provide feedback to improve the Code 4 team process

Code 4 RPIW July 2004

Attendings:

- Previously no defined role for attendings
- Codes require cognitive skill and experience
- Attendings will have ultimate authority
- Attendings expected to take Co-Leader role by default
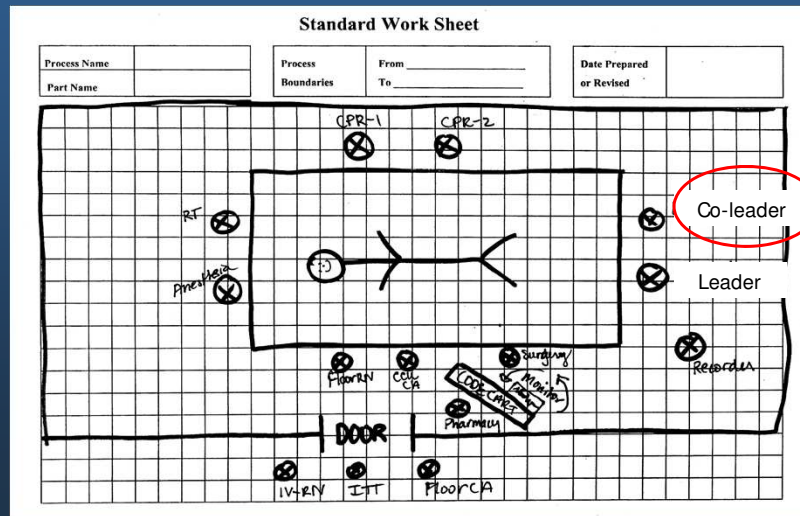
Nominal Human Error Rates

Activity	Human error probability
Error of commission (misreading a label)	0.003
Error of omission without reminders	0.01
Error of omission when items imbedded in a procedure	0.003
Simple math error with self-checking	0.03
Monitor or inspector fails to detect error	0.1
Personnel on different shifts fail to check hardware unless required by checklist	0.1
General error in high stress when dangerous activities occurring rapidly	0.25

Salvendy G. Handbook of human factors & ergonomics 1997.

Redesign Principles

- Standardize Roles and Responsibilities
- Provide adequate supervision (Medicine and Anesthesia faculty attend ALL codes and drills)
- Organize supplies and medication in "kits"
- Drill, Drill, Drill (simulation)
- Redesign continually based on drills and real codes (Kaizen)

Where should I stand?

Standard Work Sheet

| Process Name | | Process Boundaries | From _____ | Date Prepared or Revised | |
| Part Name | | | To _____ | | |

(Hand-drawn floor plan on grid showing positions: CPR-1, CPR-2, RT, Pne...heist, Co-leader (circled in red), Leader, FloorRN, CCU CA, CODE CART, Pharmacy, Surgery, Monitor, Recorder, DOOR, IV+RN, ITT, FloorCA)

CO-LEADER (Faculty)

1. Respond to Code 4 location
2. Identify role verbally to all members upon arrival
3. Pick up Blue binder provide guidance to leader
4. Assume Leader role only when necessary to ensure patient safety

---
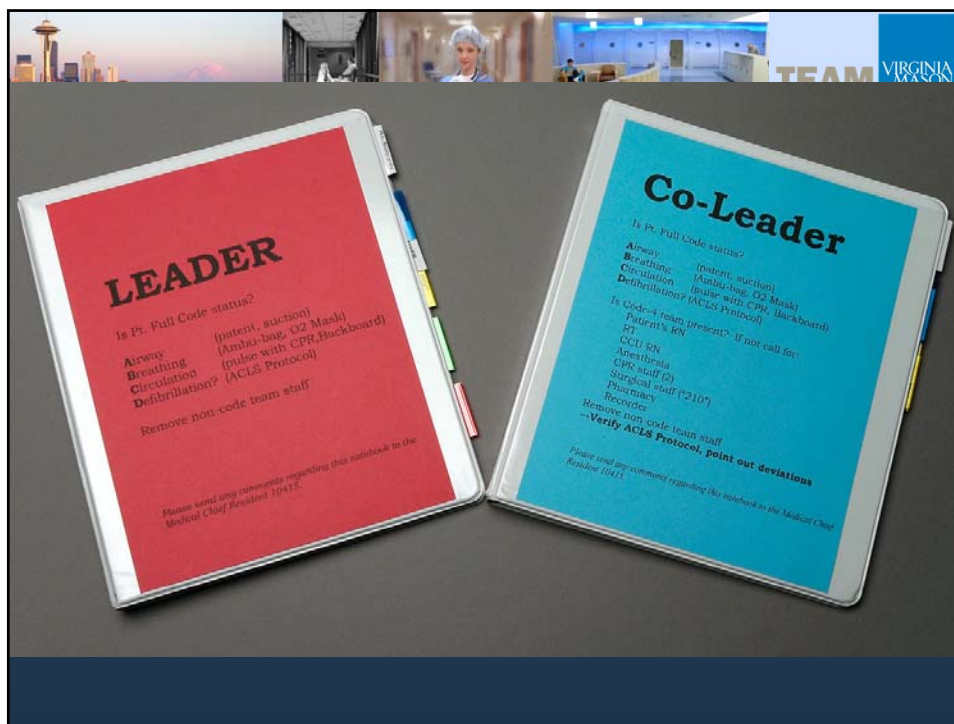
<div align="center">CO-LEADER Checklist</div>

Checklist (remove checklist from binder and actively use it)

Is patient full code?
Assure adequate airway
Assure adequate breathing
Verify adequate circulation

Announce rhythm
Follow appropriate ACLS guidelines
Verify Code 4 Team members present
Verify Recorder present and recording
Clear room of non-essential persons

Clarify diagnosis-page necessary consultants

Code 4 Co-leader Checklist

1) Is patient full code?	☐
2) Assure adequate airway	☐
3) Assure adequate breathing	☐
4) Verify adequate circulation • 100 chest compressions per minute • Backboard in place • Assess pulse adequacy with CPR	☐
5) Announce rhythm • VF/VT (pulseless) • PEA • Tachycardia • Bradycardia	☐
6) Follow appropriate ACLS guidelines • **Shock immediately if shockable rhythm**	☐
7) Verify all Code 4 Team members present • Anesthesia • Respiratory Therapy • CCU RN • CPR Staff – Minimum 2 • Pharmacy • Recorder • Surgery 210	☐
8) Verify Recorder present and recording	☐
9) Clear room of non-essential persons	☐
10) Clarify diagnosis – page necessary consultant	☐

Name of Co-Leader _____
(please print)

Signature of Co-Leader_____

Date _____

Important Steps as Co-leader

1. Assess/verify if patient pulseless and apneic, assure adequate CPR and immediately shock if shockable rhythm

2. Move to foot of bed taking Co-leader manual and assume Co-leader position

3. Use the Co-leader check list to assure nothing missed

4. Coach/mentor resident Leader. Only assume full control if necessary for patient safety. If you assume control, announce to team, move to leader position and take the red Leader binder.

5. Use binder contents to assure no aspects of care are missed

Important Steps/Key Points

1. **Assess if patient pulseless and apneic, does not have DNR band, assure adequate CPR and immediately shock if shockable rhythm**

   - Personally assess or delegate and verify results
   - CPR 100 chest compression/minute, 8-10 breaths
     - Cycle 30 compression, 2 respirations if bag mask ventilation
     - 100 chest compressions per minute without interruption if advanced airway
     - Avoid unnecessary interruptions
   - Apply defibrillator pads and obtain adequate rhythm **CCU RN first task** (if not completed by someone else)
   - Shock immediately (150 joules) if VF or pulseless VT

Important Steps/Key Points

2. **As other team members arrive move to foot of the bed taking Co-leader manual and assume Co-leader position**

   - Both your position in the room and holding the Co-leader manual are "visual controls" telling other team members you are the Co-leader
   - Standing at the foot of the bed is often the best vantage point to view all actions and avoid task fixation

3. **Use the Co-leader check list to assure nothing missed**

   - Actively using the checklist prevents predictable omission errors (may reach 25 percent) in high stress situations and models behavior expected of the leader

Important Steps/Key Points

4. **Coach/mentor housestaff Leader. Only assume full control if necessary for patient safety.**

    - While patient safety comes first, housestaff learning remains very important. Your coaching, mentoring and feedback after the code are essential to their professional development

    - If you must assume control, do so firmly and explicitly. Announce that you are now the leader, move to the leader position and take the red binder. Your explicit action models important leader behavior for the housestaff and entire team.

Important Steps/Key Points

5. **Use binder contents to assure no aspects of care are missed**

    - Actively use enclosed checklist

    - Recall that **EVA** (epi, vasopressin, amiodarone) is our standard VF/pulseless VT drug regimen

    - STAT labs (blood gas, K+, hemoglobin, lactate, glucose) require arterial or venous blood drawn in a heparinized blood gas syringe. Results return in 5 minutes.

    - Secondary labs (venous blood) take much longer

    - Explicit directions to obtain 0 negative blood or other stat blood products in binder

LEADER M.D.

1. Respond to Code 4 location
2. Identify role verbally to all members upon arrival
3. Pick up red binder labeled "Leader"
4. Follow checklist for the leader
5. Use Co-Leader as a resource for information and recommendations
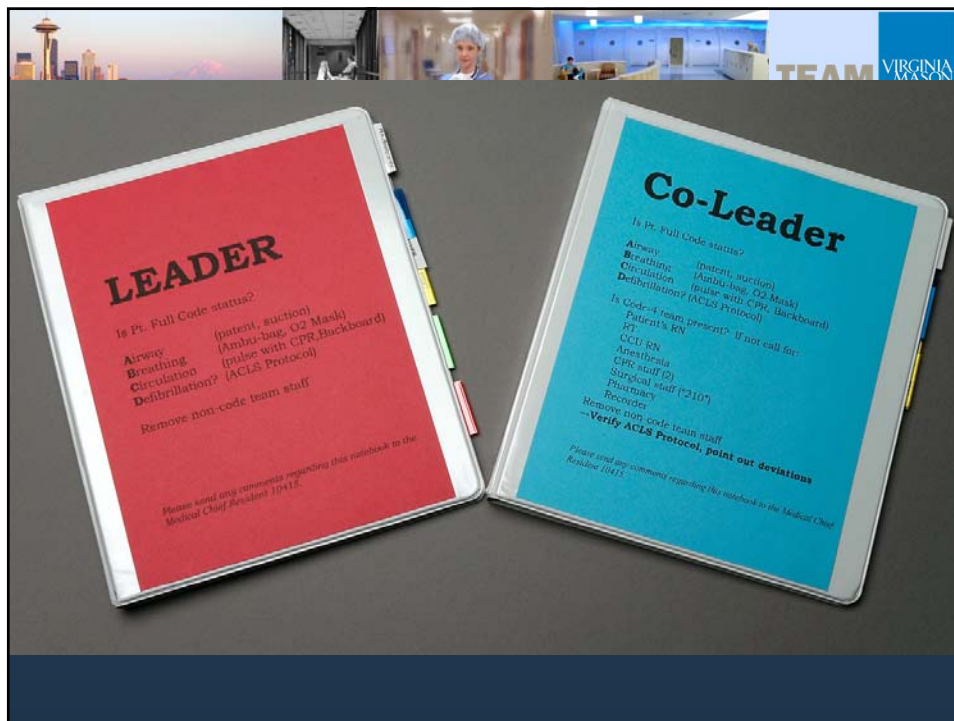
Drills are important
What have we learned?

Team Performance

- Responders act professionally during drill
- Despite all having up-to-date CPR/ACLS training, performance never perfect
- Communication including closed loop (read back, repeat back) always needs focus
- Performance much more about "TEAM" interaction than individual cognitive/content knowledge

What have we learned from simulation?

- Process/System issues
  - Leaders couldn't read/follow algorithms
  - Medications delayed, errors in formulation (amiodarone)
  - Cart supply organization needed improvement
    - Can't read bag labels
    - Can't find chest tube drainage catheters
    - Supplies missing
  - Surgical role evolving (obtain STAT labs)
  - It was not clear how to order STAT O negative blood

  The following slides show examples of changes

Bigger and better drawer labels

Clearer kit labels

Redesigned algorithms

Pharmacist "EVA" medications tray
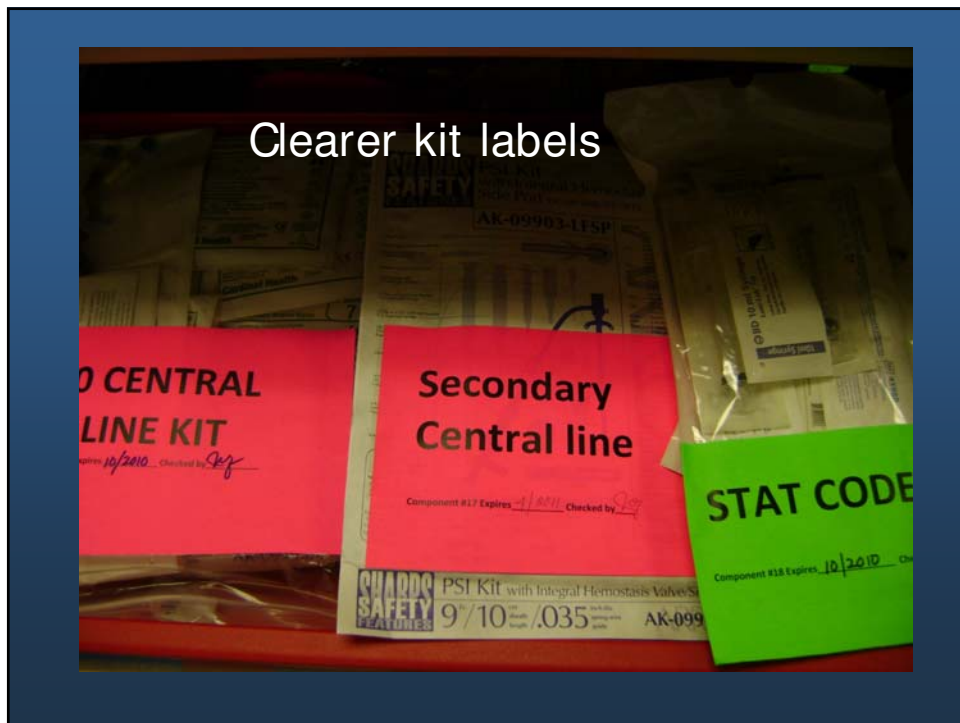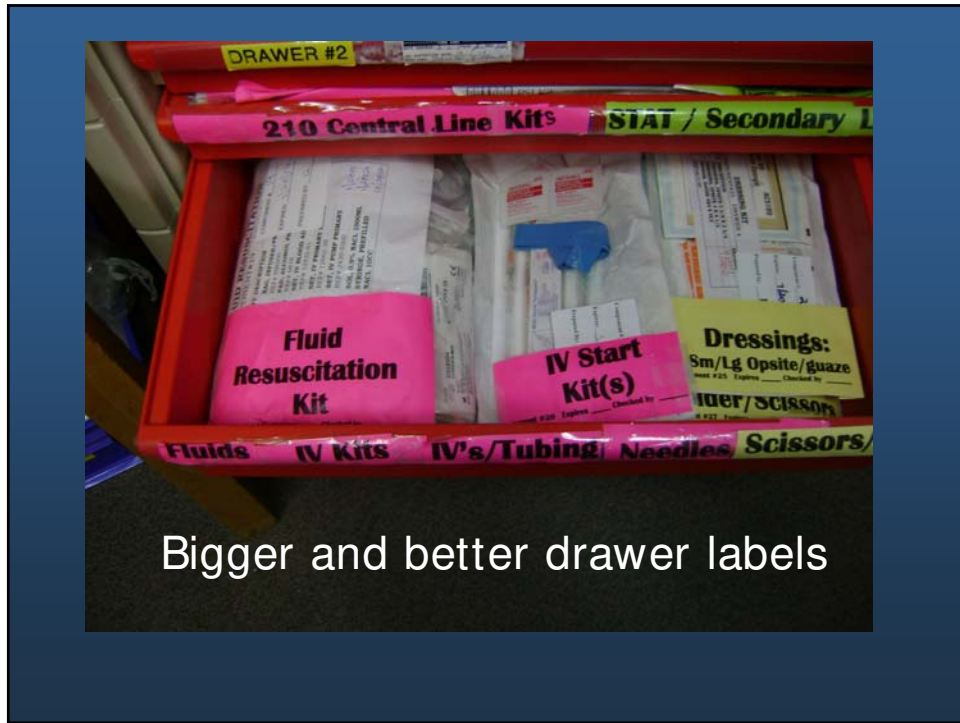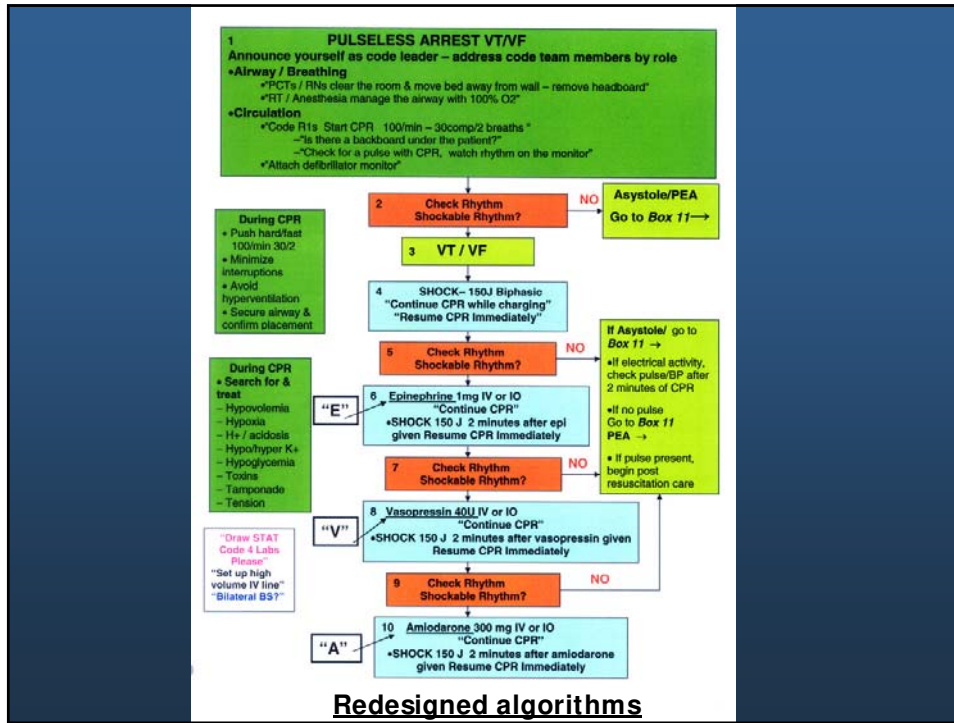
Emergency Blood

Dial **"BLOOD"** **25663**

Script for caller requesting emergency blood

State:_____

"This is an emergency"

"We need two units of stock 0 negative RBC's NOW"

"Patient Name_____ MRN _____"

"Deliver STAT to room_____".

House staff "tips" pocket card

Code 4 First Steps/ Must do

Identify yourself and role
Determine if event is a pulseless arrest
Check pulse
Check breathing
Look for Purple "DNR" arm band
Begin CPR
30 compressions/2 respirations in absence of advanced airway
Discourage CPR interruptions
Ask "is there a pulse with CPR"
Assess rhythm, "is rhythm shockable?"
Shock as soon as possible if indicated
Move to leader position and continue with Code 4 process as designed

You may use it too!

Code response for family, visitors or staff in distress

- If the person is in cardiac arrest begin standard team response on site while planning to move to the ED within 10 minutes, continuing CPR enroute if indicated

- For persons not in cardiac arrest or deemed not in immediate threat of an arrest, transport to the ED without delay.

    "Scoop and Run"

Code response for family, visitors or staff when imminent arrest unlikely

- Plan transport to the ED immediately.

- If the person has fallen consider stabilizing C-spine for transport. ED responders are responsible for directing the C-spine stabilization process.

- **Remember** "scoop and run": transport immediately. Do not delay for history, VS, IV or other interventions unless absolutely necessary

Role of Simulation

- Pre-clinical training
    - Basic clinical, procedural skills
    - Advanced procedural skills
    - Introduction to Team Skills
    - Remediation
- Clinical training
    - Simulation of rare occurrences
    - Procedure preparation

Nasca T. The Role of Simulation in the Transition to Deliberative Practice. ACGME 2012, adapted with permission

Faculty Role in Assessment

- **Actively participate in curriculum development**
- **Develop specific skills in direct observation**
  - **Reliable, valid between faculty**
- **Rater training – "shared mental model"**
  - **Agreement on essential elements of activity, competence**
  - **Standardize rating criteria**
  - **Increase frequency of observations**

Iobst WF et al. Medical Teach 2010; 32: 651-6
Holmboe ES. Direct observation by faculty. In Holmboe ES and Hawkins RS, eds. Practical Guide to the Evaluation of Clinical Competence. Philadelphia – Mosby-Elsevier pp 119-129

Competence in Code Leadership

Curriculum Module for Resident Training and Standardization of Faculty Observation, Evaluation

Acknowledgements

The Pacific Northwest Consortium for Outcomes in Resident Education (PNW-CORE) is a collaborative group of resident educators from internal medicine programs in the states of Washington, Oregon, Idaho and Montana. The group was convened by Roger Bush, MD and has met annually since 2008 with generous assistance and organizational support from the American Board of Internal Medicine (ABIM). In addition to providing an opportunity for program leadership and core faculty to participate in shared program and faculty development activities, these PNW-CORE meetings have provided our educators with an opportunity to develop curriculum content and evaluation tools that incorporate the ABIM curricular milestones into daily residency training.

This curriculum module is the result of 3 years of collaborative effort between members of the PNW-CORE, ABIM, and Thomas Jefferson University Clinical Skills and Simulation Center JeffPlayers, with special thanks to the individuals listed below:

PNW-CORE Code Leadership Work Group

Alexander Niven, MD (Co-Leader, Madigan Army Medical Center, Tacoma, WA)
Michael Westley, MD (Co-Leader, Virginia Mason Hospital, Seattle WA)

Stephanie Anderson, MD (Legacy Hospital, Portland OR)
Paula Carvalho, MD (Veterans Administration, Boise OR)
Andrea Cedfeldt, MD (Oregon Health Sciences University, Portland OR)
John Frlan, MD (University of Washington, Spokane WA)
Jeremy Graham, MD (University of Washington, Spokane WA)
Alan Hunter, MD (Oregon Health Sciences University, Portland OR)
Mo Hagman (Veterans Administration, Boise OR)
Scott Marsal, MD (Providence Hospital, Portland OR)
Imran Mohamedy, DO (St. Vincent's Hospital, Portland OR)
Jason Sapp, MD (Madigan Army Medical Center, Tacoma WA)
Ken Steinberg, MD (University of Washington, Seattle WA)

American Board of Internal Medicine

William Iobst, MD
Eric Holmboe, MD
Kelly Caverzagie, MD
Sarah Hood

Thomas Jefferson University Clinical Skills and Simulation Center JeffPlayers

Dale Berg, MD
Robert Hargraves

Background

The Chain of Safety

Patients deserve safe, reliable, evidence-based care. Teams deliver this care. Doctors usually lead the care teams. Internal Medicine residencies train many of these doctors. We rely on residency faculty members to expertly observe, assess, coach, and evaluate doctors-in-training, yet the safety chain is broken because we fall far short.

Faculty development in direct observation and competency assessment leads to meaningful improvement in rating behaviors and faculty comfort[1]. This workshop is intended to mend the faculty assessment link.

Faculty competency assessment: The broken link

Well-known barriers exist to this chain of direct observation, feedback, assessment, and evaluation. Students and residents are rarely observed directly by faculty interacting with patients[2-5]. Faculty often disagree in their competency assessments, limiting the validity and reliability of "wild-type" observer assessments[5].

This workshop will introduce a milestone-based assessment tool for the entrustable professional activity (EPA) of Code Leadership, and provide performance dimension training in its use. Three levels of competence will be portrayed by video, and participants will practice using the assessment tool we developed. The three-step system for building an EPA assessment will be described and reviewed[6].

A New Era for Evaluation and Accreditation

Graduate Medical Education in the United States enters a new era on July 1, 2013. After that date, each program must produce evidence of professional development for residents, in the form of milestone assessments. These assessment instruments will enable timely feedback and coaching (bidirectional for learner and supervisor), and informed evaluation (for site/rotation coordinators, clinical competence committees, and program directors).

Taken in aggregate, these milestone assessments carry high stakes. For residents, they are to be the basis of in-program promotion and end-of-program competency documentation. They will also be the basis of accreditation for training programs.

Competency Assessment in the Flow of Care

Assessments can be collected from simulation exercises, standardized patients (SPs), or in the flow of clinical care from direct observation of entrustable professional activities (EPAs). Observing entrustable professional activities (EPAs) offers several advantages:

- Direct supervision (for patient safety) and direct observation (for learner assessment) are necessarily simultaneous. We can't safely entrust residents to complete professional activities until we have confidently assessed they can perform safely and independently

- Structured, criterion-based EPA assessment tools simplify the supervisor's twin tasks of learning and patient care. The supervisor's attention will be concentrated on discrete, high frequency events, and a well-designed instrument will frame the assessment and expectations

Simulation and SP assessments can be reproducible and valid by Cronbach's Alpha scores, but are expensive and both time and faculty intensive. Thoughtful incorporation of simulation-based curriculum and evaluation may include a focus on important clinical events that are high risk, uncommon, or difficult to directly observe in the daily clinical environment. Code management and leadership behaviors provide an excellent example of a skill that may best be addressed and evaluated in a simulated clinical setting within the residency program to ensure trainee competence – an ABIM requirement for board eligibility.

Managing Complexity

Caring for a patient in pulseless, apneic arrest is both complicated and complex. Biomedical complication is made manageable by ACLS algorithmic rules[7]. ACLS outcomes are contingent primarily on effective CPR, and early electrocardioversion of shockable rhythms. Successful resuscitation is therefore dependent on highly reliable performance of the ACLS team. In this context, team leadership and expert crew resource management are central to complex clinical context of cardiopulmonary arrest.

1. **Holmboe ES, Fiebach NF, Galaty L, Huot S.** The effectiveness of a focused educational intervention on resident evaluations from faculty: a randomized controlled trial. J Gen Intern Med. 2001;16:427-34.
2. **Noel GL, Herbers JE Jr, Caplow MP, Cooper GS, Pangaro LN, Harvey J.** How well do internal medicine faculty members evaluate the clinical skills of residents? Ann Intern Med. 1992;117:757-65.
3. **Szenas P.** The role of faculty observation in assessing students' clinical skills. Contemporary Issues in Medical Education. 1997;1:1-2
4. **Thompson WG, Lipkin M Jr, Gilbert DA, Guzzo RA, Roberson L.** Evaluating evaluation: assessment of the American Board of Internal Medicine Resident Evaluation Form. J Gen Intern Med. 1990;5:214-7.
5. **Haber RJ, Avins AL.** Do ratings on the American Board of Internal Medicine Resident Evaluation Form detect differences in clinical competence? J Gen Intern Med. 1994;9:140-5.
6. Caverzagie K, et al. Building Assessments for an EPA in Three Steps http://www.im.org/AcademicAffairs/milestones/Pages/BuildingAssessmentsforanEPAinThreeSteps.aspx Accessed April 17, 2013
7. Advanced Cardiac Life Support (ACLS) Course Materials http://www.heart.org/HEARTORG/CPRAndECC/HealthcareTraining/AdvancedCardiovascularLifeSupportACLS/Advanced-Cardiovascular-Life-Support-ACLS_UCM_001280_SubHomePage.jsp Accessed April 17, 2013

Module Rationale and Development

The ABIM requires all candidates to demonstrate competence and the safe performance of advanced cardiac life support during residency training for certification. Although assessment of medical knowledge and its application to patient care can be readily assessed through the American Heart Association ACLS certification, appropriate and necessary communication and crisis resource management skills are less commonly addressed and evaluated in internal medicine residency training.

The Pacific Northwest Consortium for Outcomes in Resident Education (PNW-CORE), with support and collaboration from the ABIM, developed this curriculum, evaluation tool and series of video based vignettes to standardize resident education and faculty observation and evaluation of code leadership behaviors essential for competence. The group selected the topic of code leadership because of its importance in ABIM certification, and because of the complexity associated with training and evaluating residents in this area. A needs assessment survey initiated by the Code Leadership Work Group and completed by 58 Pacific Northwest internal medicine educators demonstrated that although the majority of programs provide regular code management training for their residents, the format and evaluation of these sessions were highly variable. Although internal medicine residents almost universally served as code leaders during regular clinical activities, faculty presence and learner feedback after codes were also highly variable.

The PNW-CORE Code Leadership Work Group decided to develop a curriculum module to address this educational gap, including learner resources, a milestone-based evaluation tool and materials to standardize faculty observation and evaluation. The resident training module includes simulation-based education to help program directors meet the simulation training requirement created by the 2009 revision of the RRC program guidelines. The evaluation tool was developed through multiple iterative revisions using common, validated crew resource management tools, expert opinion and extensive discussion both within and outside of the work group, and practical pilot experience at select institutions with the ready availability of mock code / simulation training. A series of scripted video "trigger" tapes demonstrating superior, competent, and inadequate code leadership behaviors and performance have also been developed to serve as a resource for faculty development activities to help standardize observation and evaluation in this area. These materials have been updated after the release of the current updated ACLS guidelines, including new "trigger" videos for superior and inadequate code leadership performance.

This module provides resident educators with a practical approach to develop evaluation tools that integrate curricular milestones and to establish a minimum threshold for competent performance. It also provides participants with the opportunity to test one faculty development approach to help standardize evaluation and feedback - an essential issue in graduate medical education at a time that emphasizes direct observation to address and evaluate specific resident learning needs within specific Entrustable Professional Activities - and facilitate integration of these evaluations into narrative reporting for the Next Accreditation System.

Resident Training Module

Code Leadership Curriculum

Educational Purpose

Adult learning is facilitated through experience. The development of high fidelity patient simulators over the past several decades has provided a new opportunity to provide effective and expedient experience based education and performance benchmarks in medical training. Residents can benefit from educational activities that utilize simulation by experiencing and learning from common, rare, and high risk scenarios that they will encounter in daily practice, in addition to developing and demonstrating psychomotor skills for common internal medicine procedures without jeopardizing patient safety. Simulation training also affords residents the opportunity to train in code management with faculty observation and feedback that may be challenging in certain clinical settings, and to and develop more effective working relationships and teamwork with peers and medical staff.

Teaching Methods

This curriculum provides two training models currently used at Madigan Army Medical Center and Virginia Mason Hospital. It is important to note that these materials can be readily adapted to other educational settings using standard mannequins commonly employed in BLS and ACLS when high-fidelity simulation resources are not available.

Code management training at Madigan is performed in a 1.5-2 hour dedicated experience in a high fidelity simulation area available in close proximity to the ICU. This training occurs monthly as part of the recurring conference series offered to all residents participating in the institution's ICU rotation. This educational experience compliments and reinforces the simulation and lecture based ACLS certification program that all residents are required to complete at the beginning of internship, followed by recertification or additional ACLS instructor training. The institution also offers regular, random mock code training throughout the institution.

Virginia Mason has almost a decade of experience with a comprehensive code management training program that includes ACLS certification, formal integration of the hospital's code process, resident roles, and crash cart familiarization and training in the resident core curriculum, and weekly simulation-based code drills throughout all three years of training with designated residents and faculty responding to these simulated code events.

In both programs, residents develop practical experience on code management, leadership and interdisciplinary teamwork. The focus of this code management training includes a review of core ACLS skills, effective role assignment in code situations and fundamental crisis resource management principles. This training is facilitated by critical care faculty with experience in simulation training, critical care nurses, respiratory therapists, and other "coaches" (see below). Participants discuss code scenarios using standard group debriefing techniques. Didactic materials have also been prepared to assist with discussion and highlight key learning points.

Code Management Training at Virginia Mason Medical Center

Internal Medicine Residents receive the following code training

1. ACLS required prior to beginning the program
2. Brief introduction during intern orientation
3. Chief Resident Noon conference early in the academic year reviewing details of Virginia Mason's code process and resident roles.
4. Chief Resident led two hour session with 3-4 residents with hands on review of
   a. Code cart and its contents
   b. Defibrillator management including cardioversion and transcutaneous pacing
   c. Resident scenario management with immediate team feedback
5. Weekly full team code drills throughout three years of training with the designated code residents responding along with designated faculty

Code Drill Frequency and Design

1. Weekly- alternating Tuesday/Thursday at 2PM
2. Location- Any available patient room or designated special care area such as Cath Lab, Interventional Radiology, OR, ER, ETC
3. Entire team responds
4. Scenario managed as if a true code including opening and using cart contents, administering medications, drawing blood, etc.
5. Structure Debrief led by senior faculty
6. Internal Medicine Resident specific feedback provided off line. Performance may be such to demonstrate competence that cannot be assessed in real life because Virginia Mason as so few pulseless arrests to assess this competency.

Simulation Details

1. Education staff identify room and text page relevant faculty day of drill
2. Adequate fidelity (not high fidelity) simulator adequate as all drills are patient in full arrest
   a. Head (suitable for advanced airway) torso, groin
   b. Arrhythmia generator
   c. IV access previously established
3. Full code cart
4. Miscellaneous room set up
   a. May add chairs, carts etc. to prompt team to manage space
   b. Metronome taped to wall to prompt CPR providers for proper CPR timing
   c. Poster with standard team member positions taped to wall referenced during debrief

Time Commitment

1. Staff education: two hours from set up to clean up and on to next task
2. Code team : 40 minutes
3. Training faculty 60 minutes

Faculty coaches
1. MD drill leader
2. ICU nurse leader coaches CCU RN and primary RN
3. Other "coaches"
   a. Pharmacy
   b. Nurse educator may coach residents performing CPR which despite training is rarely done correctly

Debrief
1. Led by MD drill leader
2. Begin with primary RN, review the scenario and early phase of resuscitation
3. All members queried asking "What went well, what could you have improved" with feedback from other team members and coaches
4. All coaches identify aspects of strong team performance and opportunities for improvement
5. Metrics
   a. Time CPR interrupted once initiated

Features of Virginia Mason's Code Team process
1. Hospitalist or intensivist as well as anesthesia attendings respond along with housestaff to ALL Code calls 24/7 most often to coach/mentor but are present to take over care when residents are unable to safely direct care. For example, anesthesia attending will assume responsibility to insert an advance airway when the resident is unable.   Faculty who are present are in an ideal position to assess resident competence in real life situation.
2. Standard room set up including positioning code cart and all team members
3. Binders with algorithms, checklist and key information for leader (house-staff) and co-leader (faculty). Red for leader, white for co-leader. Binder color is visual control for who is the code leader
4. Standard initial medication sequence for VF and pulseless VT kitted to facilitate prompt compounding, reduce delays in administration and dosing errors.

Code Drill Learning (more than 300 drills since 2004)
1. Pulseless arrests are a high stress situation for all clinicians. As predicted by human factors research we observe error rates that may approach 25 percent
2. Because of repeated errors we redesigned many aspects of the process including but not limited to standardizing the initial medication sequence and kitting it for pharmacy, modifying the binder algorithms to include things like how to obtain emergency blood, using a checklist to assure key items addressed (Is this patient full code, is the backboard in place), and modifying coder cart contents and labels to make it more likely that a casual user can find key contents.

Educational Content

Topic Mix

1. ACLS Code Management Algorithms
   a. Pulseless ventricular tachycardia / ventricular fibrillation
   b. Pulseless electrical activity / asystole
   c. Unstable tachyarrhythmias

2. Superior Code Leadership Behaviors
   a. Announce them self as the code leader: "I am the code leader."
   b. Ensures code team roles are assigned
   c. Confirms codes status of the patient
   d. Requests appropriate additional medical history
   e. Positions him/herself appropriately to see the monitor and communicate with the team based on standards set by the institution.
   f. Chooses and applies correct algorithms
      i. Requests delivery of first shock in a timely manner when appropriate
      ii. Assures safety of team during shock
      iii. Verifies timely and effective chest compressions
      iv. Verifies appropriate placement of airway device and adequacy of ventilation
      v. Maintains fidelity to ACLS algorithms
      vi. Stops code at appropriate point
   g. Crew Resource Management:
      i. Leadership skills
         1. Remains calm and in control
         2. Makes firm decisions without delay
      ii. Problem solving skills
         1. Recognizes and announces the appropriate rhythm
         2. Considers alternative diagnoses
      iii. Situational awareness
         1. Avoids fixation errors
         2. Constantly reassesses and evaluates situation
      iv. Resource utilization skills
         1. Recognizes and manages the limitations of each team member
         2. Solicits input from team
         3. Excuses un-necessary people from the code
      v. Communication skills
         1. Communicates respectfully
         2. Explicitly requests closed loop communication when not occurring
         3. Manages noise
   h. Ensure timely communication with primary physician and family after code
   i. Ensures appropriate and timely resident documentation of the code that accurately reflects the incident and outcome

Patient Characteristics
Not applicable. Multiple high fidelity integrated human simulators are available for simulation scenarios, in addition to low fidelity simulated patients and task trainers that can be used in either a simulated or actual clinical environment.

Types of Clinical Encounters
All encounters are case based simulation scenarios for a group of residents of varying PGY levels focused either on clinical or teamwork management skills (using a high fidelity integrated human simulator or low fidelity mannequin).

Educational Resources

1. ACLS algorithms
2. Didactic resources (see below)
3. Simulation resources and equipment (detailed above)
4. Standardized clinical scenarios
5. Evaluation tool

Simulation Scenario – Faculty Reference Sheet

Inside Team Members:

Code Team Leader (1 Provider+/- staff assistant) – Identifies himself/herself, assesses situation, follows ACLS algorithm, effectively/efficiently communicates assessments and orders to team.

Airway (1-2 providers), BVM, Monitors lung rise/fall, watchs for JVD, communicates to team leader

Chest Compressor (1); when not compressing, monitors pulse during compressions.

Defibrillator Pads/Monitoring (1): ECG Leads, Pulse Oximiter, NIBP Cuff; Becomes an extra Chest Compressor, monitors pulse during compressions

Nurse(s) (1-2 providers), ensures PIV access and begins 1L bolus, then administers drugs/fluids per team leader.

Recorder (1)

Code Cart (1) runs all aspects of code cart, takes orders from team leader only

IV access/Central Line/Arterial Line (1-2 providers at groins)

Pharmacy (1)

Outside Team Members:

Runner

Crowd Control – Should be senior staff (nursing or physician) who stands at the entry point to the code; assists with ensuring all communication goes through team leader; ensures there are 6 providers + 0-4 assistants around the patients bed and no more than 13 team members in the room + 0-2 observers. If necessary reassigns team member responsibilities and monitors communications.

Initial Code Events:

Code called

Individual responders assume positions.

Team Leader Identifies himself/herself, positions himself/herself at the foot of the bed, & verbalizes the following assessment

Airway/Breathing adequate

Assesses Pulse & Circulation – present/absent, initiates CPR

Assess Rhythm – Establishes algorithm

Assesses Access & Monitoring capabilities, requests most recent labs, rads, and history be obtained.

Closed Loop Communication:

Code leader gives order/asks a question → clear, efficient response given → code team leader acknowledges response for benefit of recorder → recorded states "got it."

2010 ACLS Guidelines – Pulseless VT/VF

Start CPR (100/min, 2 in, allow for full chest recoil)
BVM 100% O2, 6-8 breaths per minute (low TV)
Monitor quality of CPR with pulse checks, capnography
|
Shock 200 J
|
2 min CPR
Confirm IV access
|
Pulse check
Shock 200 J
|
Epi 1 mg IV
2 min CPR
|
Pulse check
Shock 200 J
|
Amiodarone 300 mg IV
2 min CPR

Monitor for return of spontaneous circulation with capnography
(>40 suggestive)

Simulation Scenario
Pulseless Ventricular Tachycardia / Fibrillation

Scenario:

65 year old male admitted this morning for management of an acute coronary syndrome. He presented to the Emergency Department with 2 hours of chest pain which woke him from sleep, and initial ECG demonstrated inferior and lateral ST segment changes. His chest pain resolved after treatment with oxygen, 2 sublingual nitroglycerin tablets, morphine 2 mg IV, aspirin, oral metoprolol, atorvastatin, and enoxaparin. He ruled in for a non-ST elevation MI following admission (troponin rose from 0.03 to 4.3 mg/dl), and integrelin was started for stuttering chest pain overnight. Cardiac catheterization is planned for later today.

Past Medical / Surgical History: Adult onset diabetes, hypertension, hyperlipidemia, gout, right inguinal hernia repair

Outpatient Medications: Atenolol 50 mg daily, lisinopril 20 mg daily, ECASA 81 mg daily, simvastatin 40 mg daily, metformin 1000mg bid

Allergies: NKDA

Family History: Father died of MI at 52

Social History: Active tobacco abuse 1 PPD, occasional alcohol consumption only. Married, has 2 daughters and 1 son.

Physical Exam (on presentation): Normal

Labs:

ED @ 0635:	ICU @0857:
CBC 12>13/39<256	CBC 12>13/39<256
Chem: 140/4.3/108/24/12/0.8<145	Chem: 138/3.5/107/23/10/0.8<145 mag 1.8, Phos 4.2
A1C 7.2	
TI 0.03	TI 4.3
BNP 50	Lactate 0.5

2010 ACLS Guidelines – Pulseless Electrical Activity

Start CPR (100/min, 2 in, allow for full chest recoil)
BVM 100% O2, 6-8 breaths per minute (low TV)
Monitor quality of CPR with pulse checks, capnography
|
Give epinephrine 1 mg or vasopressin 40 units IV
|
2 min CPR

Requests history, labs; Considers / treats Hs & Ts

H+/Acidosis	**Thrombosis (Pulmonary** or cardiac**)**
Hypoxia	Trauma
Hypovolemia	Toxins (Beta, Ca blockers, dig)
Hyper/hypokalemia	Tamponade
Hypothermia	Tension pneumothorax

|
Pulse Check
|
Epi 1 mg IV
2 min CPR
|
Pulse check

Monitor for return of spontaneous circulation with capnography
(>40 suggestive)

Simulation Scenario
Pulseless Electrical Activity

Scenario:

72 year old male admitted for a COPD exacerbation after he presented to the Emergency Department earlier tonight progressive shortness of breath and an increasingly productive cough over the past week. In the Emergency Department he was treated with intravenous solumedrol, albuterol, ipratropium, levofloxacin, and placed on non-invasive positive pressure ventilation. With this treatment the patient demonstrated progressively decreasing work of breathing and improving mental status until approximately 30 minutes ago, when he became acutely dyspneic and began to complain of nausea and chest pain. ECG demonstrated sinus tachycardia and the patient was treated symptomatically for his nausea, then abruptly became unresponsive.

Past Medical / Surgical History: Severe COPD, hypertension, CAD s/p PCI 2005

Outpatient Medications: Fluticasone / salmeterol 500 / 50 mg bid, tiotropium 18 micrograms daily, albuterol prn, hydrochlorthiazide 25 mg daily, ECASA, metoprolol XL 25 mg daily.

Allergies: NKDA

Family History: Noncontributory

Social History: 60 pack year smoking history, stopped 10 years ago. Occasional alcohol consumption, lives with daughter.

Physical Exam (on presentation): Prolonged expiratory phase with diffuse wheezing on lung exam, regular tachycardic rhythm, 1+ bilateral lower extremity symmetric edema.

Labs

ED @ 0015:

CBC 12>12.5/35<195

Chem: 136/3.5/101/28/20/0.9<98

TI 0.03

BNP 50

Blood, sputum cultures drawn

UA normal

Lactate 0.4

D Dimer 2.5

Competency Based Goals and Objectives

PATIENT CARE & PROCEDURES

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Residents are expected to demonstrate the ability to manage patients:

    a) in a variety of health care settings to include the inpatient ward, critical care units, emergency setting and the ambulatory setting.
    b) across the spectrum of clinical disorders seen in the practice of internal medicine in both inpatient and ambulatory settings.
    c) by demonstrating competence in the performance of procedures mandated by the ABIM.

Simulation based training experiences provide residents with a risk free opportunity to develop experience in the diagnosis and management of emergent conditions in critically ill patients using safe, scientifically based, effective, efficient, timely, and cost effective practices.

<u>**Associated Curricular Milestones**</u>

- ☐ Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem.
- ☐ Appropriately perform invasive procedures and provide post-procedure management for common procedures.
- ☐ Recognize situations with a need for urgent or emergent medical care, including life-threatening conditions.

MEDICAL KNOWLEDGE

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care.

Residents are expected to demonstrate a level of expertise in the knowledge of those areas appropriate for an internal medicine specialist, specifically:

    a) knowledge of the core content and a broad spectrum of clinical disorders seen in the practice of internal medicine.

Residents are expected to demonstrate sufficient knowledge and facility with current ACLS algorithms to correctly identify and apply them in a simulated code event.

☐ Demonstrate sufficient knowledge to diagnose and treat undifferentiated and emergent conditions.

PRACTICE-BASED LEARNING AND IMPROVEMENT

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

Residents are expected to develop skills and habits to be able to systematically analyze practice and implement changes with the goal of practice improvement. Debriefing and analysis following a code affords an excellent opportunity to further these efforts, and reinforces the importance of consistent situational awareness during the code event.

Associated Curricular Milestones

☐ Maintains awareness of the situation in the moment, and responds to meet situational needs.

INTERPERSONAL AND COMMUNICATION SKILLS

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Residents are expected to:

a) communicate effectively with physicians, patients, and other health care professionals.
b) work effectively as a member or leader of a health care team.

Communication and teamwork skills are essential to effective crisis resource management during complex, emergency situations like code management. Outstanding interpersonal and communications skills are an essential component of code leadership behavior and successful coordination of the code management team.

Associated Curricular Milestones

☐ Effectively communicates plan of care to all members of the health care team.

PROFESSIONALISM

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Residents are expected to demonstrate:

a) compassion, integrity, and respect for others.
b) responsiveness to patient needs that supersedes self interest.
c) accountability to patients, society, and the profession.

Maintaining appropriate professional bearing can significantly improve the effectiveness of a code leader in coordinating the activities of the code team in a clinical situation that is commonly stressful and marked by significant emotion.

Associated Curricular Milestones

☐ Ensure prompt completion of clinical, administrative, and curricular tasks.
☐ Recognize the scope of his/her abilities and ask for supervision and assistance appropriately.

SYSTEMS-BASED PRACTICE

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Residents are expected to:

a) work effectively in various health care delivery settings and systems relevant to their clinical specialty.
b) work in interprofessional teams to enhance patient safety and improve patient care quality.

Understanding and leveraging the skills of the members of the code team and institutional system in place to respond to emergencies is an essential part of serving as a successful code leader.

Associated Curricular Milestones

☐ Work effectively as a member within the interprofessional team to ensure safe patient care.
☐ Identify, reflect on, and learn from critical incidents such as near misses and preventable medical errors.

Supervision:

1. Each simulation session can be conducted by 1-2 physicians in addition to a variety of Simulation Center staff. Formative assessments are completed on all learners at the end of each assessment using the standardized assessment tool included below.

Method for Program Evaluation:

Residents complete a yearly evaluation on the simulation curriculum experience as part of their annual program evaluation. The success of this educational experience will be judged by appropriate resident progression to competence over the course of the residency program. Changes in the program will result from either new learner needs (based on regular scheduled program review and needs assessment) or failure of residents to attain competence of the program's specific objectives.

CODE LEADER BEHAVIORS EVALUATION FORM

Resident _____ Year: ☐R1 ☐R2 ☐R3 Date of evaluation_____

The following behaviors were observed during this evaluation of code leader behaviors:

(Bolded statements are required to meet minimal competency)

Initiation of Code

- ☐ Announce his/her self as the code leader stating "I am the code leader."
- ☐ **Confirms code status of the patient**
- ☐ **Ensures code team roles are assigned**
- ☐ Positions him/herself appropriately to see the monitor and communicate with the team
- ☐ Requests additional medical history

Management of Code

- ☐ **Chooses and follows correct ACLS algorithm**
- ☐ **Communicates ACLS algorithm steps clearly to team members**
- ☐ Remains calm in the leader role
- ☐ Makes firm decisions without delay
- ☐ **Maintains situational awareness by continuously reassessing situation**
- ☐ Avoids fixation errors
- ☐ Recognizes and manages the limitations of each team member
- ☐ Solicits input from team
- ☐ Communicates respectfully
- ☐ Explicitly requests closed loop communication when not occurring

Completing Code Duties

Observed   N/A

- ☐   **Stops code at appropriate point**
- ☐   Ensure timely communication with primary physician and family after code
- ☐   Ensures timely and appropriate documentation
- ☐   Recognizes and reports system issues that adversely impacted team performance

Attestation of competency: The resident has shown at least minimum competency in code leader behavior.   ☐ YES   ☐ NO

Additional Comments: _____

_____

_____

Evaluator: _____ Years in Academic Practice: _____ Program: _____

Please check any of the following behaviors that you feel this observation can be used to gauge:

Patient Care
- ☐ Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem.
- ☐ Appropriately perform invasive procedures and provide post-procedure management for common procedures.
- ☐ Recognize situations with a need for urgent or emergent medical care, including life-threatening conditions.

Medical Knowledge
- ☐ Demonstrate sufficient knowledge to diagnose and treat undifferentiated and emergent conditions.

PBLI
- ☐ Maintains awareness of the situation in the moment, and responds to meet situational needs.

Interpersonal and Communication Skills
- ☐ Effectively communicates plan of care to all members of the health care team.

Professionalism
- ☐ Ensure prompt completion of clinical, administrative, and curricular tasks.
- ☐ Recognize the scope of his/her abilities and ask for supervision and assistance appropriately.

System Based Practice
- ☐ Work effectively as a member within the interprofessional team to ensure safe patient care.
- ☐ Identify, reflect on, and learn from critical incidents such as near misses and preventable medical errors.

I was provided instructions in how to fill out the evaluation: ☐ YES ☐ NO
I was able to use this form for formative feedback to the resident: ☐ YES ☐ NO

(please comment if answer is no): _____
_____
_____

Time spent on evaluation: _____ minutes   Time spent on feedback to resident: _____ minutes

Additional comments _____

_____

_____

Faculty Development Module

Introduction

The purpose of this faculty development module is to provide residency programs with a practical example of a method of standardizing faculty observation and evaluation around the important task of code leadership. Direct observation is an essential part of faculty interaction with and evaluation of resident performance, and standardizing these observations and assessments is key to demonstrating minimal competence in this area providing valuable feedback to assist the Clinical Competency Committee with milestones reporting and performance progress within the program.

The PNW-CORE group has developed a series of standardized videos demonstrating unsatisfactory, competent, and superior code leadership performance to assist with faculty development activities to create a "shared mental model" of evaluation within the core faculty and/or broader faculty audience. To demonstrate the power of these standardized video "trigger tools", the format that we have employed in the past has included the following agenda:

1) **Introduction**
2) **Independent assessment of standardized videos**

Sample instructions to group participants at the start of the faculty development session:

Code management is an important skill for the general internist to master, and demonstration of competence and safe performance of advanced cardiac life support by means of evaluations performed during residency training is required by the ABIM for all board candidates.

As codes are infrequent and opportunities for faculty to observe residents in this role even less common, providing faculty with the opportunity to reflect on and discuss the behaviors associated with acceptable code management is important to facilitate consistent resident evaluation and feedback in either the simulated or clinical patient care environment.

This faculty development session includes three videos of standardized code management scenarios, in which you are asked to evaluate the performance of the resident functioning as the code leader. These videos were completed prior to the implementation of the 2012 ACLS guidelines, and therefore are structured using a prior ACLS algorithm. As code leader behaviors are a major contributing factor to competent code management, we would like to ask you to focus and base your evaluation on the performance and behaviors of the resident leading the code in these scenarios provided the general algorithm selection and execution is acceptable.

Distribute the following evaluation sheets and then play the videos in random order (we chose to use the following order – competent, unsatisfactory, superior). The original videos are

provided in separate WMV files. The revised videos can be found on You Tube at the following links:

Superior Version

http://www.youtube.com/watch?v=lcplOgufOZY

Unsatisfactory Version

http://www.youtube.com/watch?v=8Iiv5eNRBUk

Evaluation Sheet – Independent Assessment

Video 1

Instructions

Please list the code leader behaviors below that you observe during the video and circle a score of fail, competent, or superior based on your assessment of the learner's performance.

Next, please annotate with a "*" the key code leadership behaviors that caused you to arrive at this evaluation.

SUPERIOR   PASS   FAIL

Feedback on specific code leadership behaviors observed:

I scored you this way because...

-
-
-
-
-
-
-
-
-
-

Evaluation Sheet – Independent Assessment

Video 2

Instructions

Please list the code leader behaviors below that you observe during the video and circle a score of fail, competent, or superior based on your assessment of the learner's performance.

Next, please annotate with a "*" the key code leadership behaviors that caused you to arrive at this evaluation.

           SUPERIOR   **PASS**   **FAIL**

Feedback on specific code leadership behaviors observed:

I scored you this way because...

-

-

-

-

-

-

-

-

-

-

-

Evaluation Sheet – Independent Assessment

Video 3

Instructions

Please list the code leader behaviors below that you observe during the video and circle a score of fail, competent, or superior based on your assessment of the learner's performance.

Next, please annotate with a "*" the key code leadership behaviors that caused you to arrive at this evaluation.

SUPERIOR   **PASS**   **FAIL**

Feedback on specific code leadership behaviors observed:

I scored you this way because...

-

-

-

-

-

-

-

-

-

-

-

3) Standardizing faculty assessment using a validated evaluation tool

Now read the following instructions and distribute the subsequent evaluation sheets, followed by the same videos. In practice environments where faculty are commonly working together and already have similar practice and evaluation habits, faculty leaders may choose to bypass step 2 and start with these instructions and evaluation tool to use during the first video viewing.

The following evaluation form has been designed to assist you in identifying key behaviors associated with code leadership and to associate these behaviors with objectives identified in the Curricular Milestones. Please use the front page of this evaluation, with the title "Code Leader Behaviors Evaluation Form", to assist you with your observations during the following videos, checking the box to the left of each behavior you consistently observe. The objectives in bold have been selected by a small group of educators as key behaviors that are necessary to demonstrate minimal competence.

At the bottom of this page, please also annotate whether you feel that the resident in charge has demonstrated at least minimum competency in code leader behavior.

If there are additional behaviors that you observe and feel are important to the resident's evaluation that are not included on the check list provided, please annotate these in the additional comments at the bottom of the page.

On the second page of the evaluation, please check the box to the left of each behaviors that you feel this video-based observation and evaluation tool can be used to gauge.

CODE LEADER BEHAVIORS EVALUATION FORM

Resident _____ Year: ☐R1 ☐R2 ☐R3 Date of evaluation_____

The following behaviors were observed during this evaluation of code leader behaviors:

(Bolded statements are required to meet minimal competency)

Initiation of Code

- ☐ Announce his/her self as the code leader stating "I am the code leader."
- ☐ **Confirms code status of the patient**
- ☐ **Ensures code team roles are assigned**
- ☐ Positions him/herself appropriately to see the monitor and communicate with the team
- ☐ Requests additional medical history

Management of Code

- ☐ **Chooses and follows correct ACLS algorithm**
- ☐ **Communicates ACLS algorithm steps clearly to team members**
- ☐ Remains calm in the leader role
- ☐ Makes firm decisions without delay
- ☐ **Maintains situational awareness by continuously reassessing situation**
- ☐ Avoids fixation errors
- ☐ Recognizes and manages the limitations of each team member
- ☐ Solicits input from team
- ☐ Communicates respectfully
- ☐ Explicitly requests closed loop communication when not occurring

Completing Code Duties

Observed   N/A

- ☐   **Stops code at appropriate point**
- ☐   Ensure timely communication with primary physician and family after code
- ☐   Ensures timely and appropriate documentation
- ☐   Recognizes and reports system issues that adversely impacted team performance

Attestation of competency: The resident has shown at least minimum competency in code leader behavior.   ☐ YES   ☐ NO

Additional Comments: _____

_____

_____

Evaluator: _____ Years in Academic Practice: _____ Program: _____

Please check any of the following behaviors that you feel this observation can be used to gauge:

Patient Care
- ☐ Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem.
- ☐ Appropriately perform invasive procedures and provide post-procedure management for common procedures.
- ☐ Recognize situations with a need for urgent or emergent medical care, including life-threatening conditions.

Medical Knowledge
- ☐ Demonstrate sufficient knowledge to diagnose and treat undifferentiated and emergent conditions.

PBLI
- ☐ Maintains awareness of the situation in the moment, and responds to meet situational needs.

Interpersonal and Communication Skills
- ☐ Effectively communicates plan of care to all members of the health care team.

Professionalism
- ☐ Ensure prompt completion of clinical, administrative, and curricular tasks.
- ☐ Recognize the scope of his/her abilities and ask for supervision and assistance appropriately.

System Based Practice
- ☐ Work effectively as a member within the interprofessional team to ensure safe patient care.
- ☐ Identify, reflect on, and learn from critical incidents such as near misses and preventable medical errors.

I was provided instructions in how to fill out the evaluation: ☐ YES   ☐ NO
I was able to use this form for formative feedback to the resident: ☐ YES   ☐ NO

(please comment if answer is no): _____
_____
_____

Time spent on evaluation: _____ minutes   Time spent on feedback to resident: _____ minutes

Additional comments _____

_____

_____

4) Faculty Discussion and Feedback

Although our group has met with good initial success in standardizing faculty observation using the evaluation tool above, each residency program, clinical practice environment and faculty group provide a unique set of circumstances that must be taken into account during the faculty development experience. Common issues that may be addressed in this segment of the session include:

     a. Effectiveness of this faculty development exercise, and role of standardized faculty assessment in the residency evaluation process.
     b. Use and implementation of this curriculum module.
     c. PGY level of the resident population targeted for this exercise.
     d. Other potential high volume, high yield opportunities for standardized faculty assessment.