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44 Resuscitation Leadership: An Introductory Curriculum for the 4th Year Medical Student

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Learning Objectives: This curriculum aims to increase student comfort in the resuscitation environment by arming them with the following key skills: (1) organize a resuscitation team; (2) demonstrate effective closed-loop communication; (3) debrief effectively to promote improvement in individual and team performance.

Abstract:

Introduction: Many medical students do not have the opportunity to build resuscitative leadership skills until residency. Informal polling of 4th year medical students rotating through the Emergency Medicine (EM) clerkship at our institution found that students felt unprepared to participate in medical and trauma resuscitation scenarios. This curriculum was designed to improve awareness and basic skills in resuscitation environments so that students feel confident and comfortable participating and contributing in medical and trauma code scenarios.

Objectives: At the conclusion of the course, students will be able to: (1) organize a resuscitation team and delegate roles; (2) practice standard of care; (3) demonstrate effective closed-loop communication; (4) debrief to evaluate team performance and individual leadership effectiveness.

Design: The course consists of three sessions: an introductory simulation day with two team-based resuscitation simulations, one medical and one trauma code. The second is a two-part lecture series and the third is a simulation day with two rigorous high-fidelity scenarios during which team performance is assessed. Each of these sessions is preceded by an asynchronous learning assignment and each simulation case is debriefed formally. At the conclusion of the course, extensive video debriefing and discussion occurs as well. Pre- and post-course surveys are completed by students to assess perceived readiness and knowledge gained in resuscitation environments.

Impact: Course effectiveness was studied over 2.5 years of implementation. Students without and with prior training reported an increase in perceived readiness by 29% and 35% respectively. Furthermore, reported knowledge gained from the curriculum in managing resuscitations improved significantly. We believe that this curriculum can enhance the learning and leadership skills of students and prospective emergency medicine residents across the nation.



Figure.

Table 1. Curriculum overview: Content outline and instructional objectives.

	Session 1: Introductory Simulation Case	Session 2: Bootcamp	Session 3: Practical Application
Prerequisite Assignment	<p>Pre-course survey Handouts:</p> <ol style="list-style-type: none"> 1. AAMC Survey Results https://www.aamc.org/download/259760/data 2. Jones F, Passos-Neto CE, Braguiroli OFM. Simulation in Medical Education: Brief history and methodology. PPCR 2015, Jul-Aug;1(2):56-63 3. Cardiac Arrest Algorithm Handout (AHA 2015) 	<p>CDEM Curriculum Topics https://cdemcurriculum.com/m3-curriculum-revisions/</p> <ol style="list-style-type: none"> 1. Stabilization of the Acutely Ill Patient 2. Approach to Trauma 3. Basic and Advanced Life Support Techniques <ul style="list-style-type: none"> - Airway - Breathing - Circulation: Electricity - Cardiac Arrest 	<p>Flipped EM Classroom</p> <ol style="list-style-type: none"> 1. Cardiac Arrest* https://flippedemclassroom.wordpress.com/2012/12/14/acs-cardiac-arrest/ 2. ACLS- Airway https://flippedemclassroom.wordpress.com/2012/12/14/acs-airway/ 3. Trauma https://flippedemclassroom.wordpress.com/2014/04/14/approach-to-trauma-by-stella-viu/ <p>*Note: based on 2010 guidelines</p>
Objectives	<ol style="list-style-type: none"> 1. Recall the order of operations required to manage a patient in Ventricular fibrillation per ACLS guidelines 2. Demonstrate closed loop communication 3. Delegate roles that optimize teamwork in a code scenario 4. Analyze the strengths and weaknesses of team performance in a simulated medical code 	<ol style="list-style-type: none"> 1. Describe the basic steps required in resuscitation of the cardiac arrest patient 2. Distinguish between the varying dysrhythmias and required treatment algorithms in the cardiac arrest patient 3. List the steps of the primary and secondary survey performed in management of the trauma patient 4. Propose critical interventions to positive findings identified in the trauma primary survey 	<ol style="list-style-type: none"> 1. Demonstrate effective teamwork and closed-loop communication 2. Evaluate, through self-reflection, the performance of one's own team in medical and trauma resuscitation scenarios 3. Arrange a medical or trauma team and delegate tasks appropriately to ensure effective resuscitation 4. Manage a cardiac arrest patient effectively after ROSC by determining post-resuscitation care and disposition
Classroom Methods	<p>Informal Presentation Intro to SIM (15 min)</p> <p>Team-Based SIM Session High fidelity SIM case: ACS with cardiac arrest (15 min per group)</p> <p>Group Debrief (15 min)</p>	<p>Formal Presentations</p> <ol style="list-style-type: none"> 1. ACLS Bootcamp (50 min) 2. ATLS Bootcamp (50 min) <p>Group Discussion 10 min following each presentation topic</p>	<p>Team Based SIM Cases</p> <ol style="list-style-type: none"> 1. ACLS Case w/ Debrief (30 min) 2. ATLS Case w/ Debrief (30 min) <p>Group Discussion</p> <ul style="list-style-type: none"> - Review/critique videos of SIM cases - Discuss nuances of resuscitation (60 min total)
Additional Resources	<p>ER Cast Podcast</p> <ol style="list-style-type: none"> 1. How to Run a Code http://blog.ercast.org/run-code/ 2. How to Master CPR http://blog.ercast.org/how-you-should-do-cpr 	<p><i>Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8th edition.</i></p> <ul style="list-style-type: none"> - Ch 11- Sudden Cardiac Death - Ch 22- CPR - Ch 28- Non-invasive Airway Mgmt <p><i>Rosen's Emergency Medicine Concepts and Clinical Practice, 7th Ed.</i></p> <ul style="list-style-type: none"> - Ch 77- Dysrhythmias 	<p>Life In The Fast Lane</p> <ol style="list-style-type: none"> 1. Cardiac Arrest https://lifesthefastlane.com/?s=cardiac-arrest 2. Trauma https://lifesthefastlane.com/?s=trauma

Description of learners: M4 medical students on their core or elective emergency medicine rotation; duration 28 days. Learners will have varying intended specialties.