

## **UC Irvine**

### **Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health**

#### **Title**

Low-Cost Orthopedic Fracture Reduction Model

#### **Permalink**

<https://escholarship.org/uc/item/1kv7w6zj>

#### **Journal**

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 21(4.1)

#### **ISSN**

1936-900X

#### **Author**

Pittman, Mark

#### **Publication Date**

2020

#### **Copyright Information**

Copyright 2020 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

**Learning Objective:** Understand behavioral differences in the pediatric population based on age and developmental disorders. Integrate developmental medicine into longitudinal case-based curriculum of pediatric emergency medicine. Learn and practice communication and hands-on skills with patients and families

**Curricular design:** The new pediatric core curriculum for the EM residents integrates the medical knowledge and skills to not only treat the typical pediatric patients, but also how to properly care for behaviorally-complex pediatric patients with similar complaints. Each small group session runs through themed pediatrics cases in a pediatric patient, after which facilitators discuss how management of these cases through the lens of developmental medicine. Residents have the opportunity to splint toddlers and school-aged children during a splinting lab after discussing pediatric orthopedic cases with PEM fellows and faculty. During a trauma simulation day, one case focuses on interacting with a scared child and frantic parents, working through the complexity of the social interactions, gaining consent, and creating a therapeutic alliance with caregivers and child.

**Impact:** Developmental medicine plays a much larger role in the pediatric population. Interacting with children suffering with autism, ADHD, and developmental delays is an imperative skill. This integrated curriculum has provided a unique, well-rounded pediatric education that covers the basic pediatric knowledge needed to become competent EM physicians and the skills to succeed with complex pediatric patients.



Image 2.

## 25 Low-Cost Orthopedic Fracture Reduction Model

*Pittman M/ Prisma Health - Upstate Emergency Medicine Residency / University of South Carolina SOM Greenville*

**Introduction/Background:** Emergency physicians commonly reduce fractures, yet many emergency medicine (EM) residency graduates do not feel comfortable with this procedure. The competing needs of multiple residencies within an institution and the desire to mitigate complications can lead to decreased hands-on experience. EM residency graduates have reported much of their comfort with fracture reduction was obtained post-graduation. A low-cost model for fracture reduction may increase confidence and ability.

**Education Objectives:** This model was developed to provide a realistic apparatus to practice the reduction of displaced fractures, allowing learners to gain a skillset before its application to patients. Practitioners may also maintain proficiency if clinical practice does not provide a high volume of suitable patients. This model could be used to assess the skills and milestones of training. The objective of this model is to provide a realistic hands-on apparatus to practice the reduction of displaced fractures.

**Design:** The current prototype consists of polyvinyl chloride (PVC) pipes (bones), elastic cords (approximating muscles, tendons, and overall resistance), foam (soft tissue), simulated skin, bolts, and a pre-fabricated hand. Pipes are sized and cut to



Image 1.

approximate the bones of interest with a fracture created at the desired point. Elastic cords run externally along the PVC pipe, with a separate cord running in the middle of the fractured pipe to prevent longitudinal collapse of the displaced segments due to the external cords. In order to force individuals to recreate the fracture and longitudinally separate the segments before relocation, a smaller segment of PVC pipe with an irregular cut end is fitted into the fracture site.

**Impact/Effectiveness:** This model was piloted in EM resident simulation. After use, residents reported improved confidence in their ability to reduce fractures, particularly liking the ability to uncover the fracture and directly visualize the motion needed for successful reduction.



Image 1



Image 2

## 26 Modifying the Ottawa Clinic Assessment Tool for Emergency Medicine Resident Assessment

Wolfe J, Stull M / Case Western Reserve University School of Medicine; University Hospitals-Cleveland Medical Center

**Introduction:** Faculty assessment is a major driver of resident growth and development. Ensuring assessment tools consistently create clear, specific, and constructive feedback for residents provides greater value to this critical aspect of residency training.

**Learning Objective:** To create an assessment tool that would 1) increase response rates by faculty, 2) omit redundancies and employ a rating scale discouraging

rating residents in a vertical line (“all 5’s”), 3) discriminate between class years, and 4) contribute to resident growth and development in its pilot period.

**Curricular Design:** The Ottawa Clinic Assessment Tool (OCAT) is a workplace-based assessment tool originally developed for assessment of surgical trainees and has been further validated in internal medicine resident clinics. The tool has been found to improve quality of feedback, encourage formative criticism, and required no more than 5 minutes to complete, leading to a higher frequency of feedback. We adapted the OCAT for use in the EM environment (i.e EM-OCAT). This tool uses an entrustment scale with the rater assessing each domain on a scale from “I had to do” to “I did not need to be there.” We propose this as a more intuitive structure for assessment in replacement of the often confusing Leikert scale, where respondents choose an option on a scale from “strongly agree” to “strongly disagree”. The EM-OCAT assessment form consists of this rating scale employed across core residency training domains including history and physical exam, case presentation, differential diagnosis, management plan, patient/family communication, documentation, leadership, time management, situational awareness, and industriousness, in addition to space for directed free text comments.

**Impact/Effectiveness:** The EM-OCAT has been piloted in a single residency program as a replacement for shift evaluation tools. Thus far, faculty feedback has been uniformly positive in terms of its adaptability and ease of use. Residents have cited the EM-OCAT as a driver of improved quality and quantity of growth-oriented feedback received in the clinical environment. Future steps include developing further validity evidence for the tool’s effectiveness in the EM setting.

### EMERGENCY MEDICINE OTTAWA CLINICAL ASSESSMENT TOOL

Please use the scale below to rate each item, irrespective of the resident’s training level:

I had to do it 1 I had to talk them through 2 I had to direct them from time to time 3 I needed to be available just in case 4 I did not need to be there 5

	1	2	3	4	5
<b>History &amp; Physical Exam:</b> Efficiently and reliably gathers clinical data through the history and physical exam.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Case Presentation:</b> Provides patient presentations to attendings and consultants through synthesis of history and physical; facilitates safe and effective hand-offs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Differential Diagnosis:</b> Considers a wide differential in all patient presentations and effectively prioritizes life threats.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Management Plan:</b> Develops and follows through with appropriate patient management plans (i.e. imaging, lab work, and treatment options).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Patient/Family Communication:</b> Provides effective, sensitive and respectful communication with language appropriate to patient understanding; establishes rapport and trust.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Documentation:</b> Completes documentation in a timely manner; documents appropriately for patient acuity level and includes thorough medical decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Leadership:</b> Effectively leads the team in a goal-oriented and collaborative manner (i.e. interprofessional communication and collaboration, running resuscitations, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Time Management:</b> Manage tasks, handles interruptions, and modifies time spent with individual patients appropriately.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Situational Awareness:</b> Appropriately triages new patient arrivals, effectively prioritizes tasks; anticipates and mitigates issues with patients, families, and consultants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Industriousness:</b> Recognizes the need to support colleagues by contributing to patient care when and where needed and attempts to optimize patient throughput.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Image 1.