

## 41 Mental Practice as an Adjunct to Improving Pediatric Resuscitation Skills

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**Background:** The number of pediatric resuscitations that trainees experience is limited, and simulation is used to augment Emergency Medicine resident experience with managing critically ill pediatric patients. Mental practice (MP), the rehearsal of cognitive or technical skills without physical performance of that skill, has been used as an adjunct to improve procedural and crisis resource management skills. However, this technique has received mixed reviews.

**Educational Objectives:** To explore the concept of MP as a tool to train residents to better manage pediatric patients with respiratory failure.

**Curricular Design:** MP was incorporated into one of our regularly scheduled interdisciplinary simulation workshops. Participants were divided into teams completing a 40 minute MP session followed by a 40 minute simulation. During the MP session, the faculty coach described the technique of MP. Residents were assigned to roles, and then given a brief EMS report - child with altered mental status and impending respiratory failure. Residents were instructed to use online resources, the faculty preceptor, and their colleagues in visualizing a step by step plan to fulfill their roles. For example, the airway person detailed specifics such as: proper bag-valve mask technique, rate of ventilation, troubleshooting poor chest rise, rapid sequence intubation technique, and other airway issues that might arise. The team leader was asked to focus on team coordination, situational awareness, and communication among team members.

Teams then completed a pediatric simulation of the same case followed by a group debrief.

**Impact/Effectiveness:** Compared to a prior simulation of a child with respiratory failure, there was no apparent improvement in demonstrated skills. Team members, concentrating on individual roles appeared to communicate less and have difficulty coordinating tasks. Team performance may have improved with use of specific check lists during the MP session and more robust team leadership training. MP itself may be a complex skill that takes practice. It is imperative that we find ways to better educate our residents to manage less common but critically important patient presentations.

## 42 Milestones in Simulation: Mapping Critical Actions in Simulation to the Milestones in Emergency Medicine

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**Background:** The Accreditation Council for Graduate Medical Education (ACGME) mandates that all accredited residency programs assess the development of their resident physicians along a framework provided by the Milestone Project. Individual residency programs task their clinical competency committees (CCCs) to monitor and record trainees' progress along these predefined milestones. Suggested sources for this information involve many aspects of the residency program and should include simulation performance. Resident performance in simulation can be applied to the milestone levels.

**Educational Objectives:** We sought to create an assessment tool that directly ties resident actions in simulation to specific milestone levels.

**Curricular Design:** At the beginning of case development, our faculty considers how a proposed simulation case can measure performance along select milestones. Our cases run for approximately 15 minutes allowing us to observe actions related to 4-6 milestones. Critical actions that should be performed during the case are then used as anchors for milestone levels. These anchors are then written into a pre-generated template. As a result, we create an assessment form paired to the proposed simulation case (see images). At our institution, we upload the form into New Innovations, an online residency management suite. Case writing proceeds routinely with the scenario appropriately triggering the critical actions (milestone anchors). Each time we run the simulation case, we select one resident to lead the resuscitation team. We assign one faculty member to observe that resident during the case and to complete the assessment form in real-time. The forms are archived and later reviewed by members of our CCC.

**Impact/Effectiveness:** We expose individual residents to approximately 36 cases paired with these assessment forms over a four-year residency. Our CCC examines the results of these assessments and incorporates that data into our residents' semi-annual reviews. As per the intent of the Milestone Project, our CCC considers milestone performance in simulation to be one of many data points that contribute to the overall assessment of each resident. By incorporating this tool in simulation and in CCC meetings, we can use the framework of the Milestone Project to more precisely provide meaningful assessment of our residents.