Shoulder Dystocia and Neonatal Resuscitation: An Integrated Obstetrics and Pediatrics Training Intervention for Medical Students

Aimee Alphonso BS, Shefali Pathy MD, MPH, Christy Bruno DO, Beth Emerson MD, Crina Bocoras MD, Janice Crabtree, Lindsay Johnston MD, MEd, Vrunda Desai MD, Marc Auerbach MD, MSc

Background

Longitudinal clinical clerkships are emerging as a new model for medical education. High-fidelity simulation can be used to complement modern clinical training by providing a safe space for learners to consolidate clinical knowledge and practice decision-making skills, teamwork and communication. We developed an interdisciplinary simulation-based training intervention to link clinical content between pediatrics and obstetrics at a major academic medical center.

Objectives

At the end of the training intervention, the successful student will be able to demonstrate the following:

- **Case**
  - 54 third year medical students who completed the integrated Women & Children’s clerkship, including obstetrics and pediatrics
  - 5 Faculty facilitators: 3 from OB and 2 from neonatal intensive care
  - A 38-year-old female at 39 weeks gestation presents with onset of labor complicated by shoulder dystocia. After the appropriate maneuvers, a depressed neonate is delivered and requires resuscitation.

Materials & Methods

**Participants**
- Obstetrics team (2-3 students)
- Pediatrics team (2-3 students)
- Neonatal Resuscitation case
- Shoulder Dystocia case

**Simulation**
- Pre-Brief
  - All students and faculty facilitators
- Interdisciplinary Hand-off
- Neonatal Resuscitation Case Pediatrists team (2-3 students)
- Shoulder Dystocia Case Obstetrics team (2-3 students)
- Debriefing
  - All students and faculty facilitators

**Results**

**Student Feedback**

<table>
<thead>
<tr>
<th>Themes of Success</th>
<th>Themes for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe space for learning</td>
<td>Time for additional practice</td>
</tr>
<tr>
<td>Communication</td>
<td>&quot;After a practice in a safe environment like this where faculty are involved, it would be nice to do a follow up mock code so that we can continue to build our confidence in these scenarios and carry our tasks in an efficient and rapid manner.&quot;</td>
</tr>
</tbody>
</table>

**Post-Intervention Survey Results**

- **Shoulder Dystocia Case**
  - Overall Rating: Excellent 41%, Good 18%
  - Strongly Agree: 35%
  - Agree: 9%
  - Strongly Disagree: 9%
  - Disagree: 61%
  - Fair: 6%
  - Poor: 6%

- **Neonatal Resuscitation Case**
  - Overall Rating: Excellent 36%, Good 9%
  - Strongly Agree: 33%
  - Agree: 62%
  - Strongly Disagree: 9%
  - Disagree: 9%
  - Fair: 6%
  - Poor: 6%

**Conclusions**

- The integrated obstetrics and pediatrics scenario is feasible to run and clinically accurate.
- Two distinct areas of medicine in the third year curriculum were logically incorporated into one cohesive simulation-based training intervention that students found positive, valuable, and appropriately designed.
- Future iterations of the simulation curriculum may include additional time for students to participate in both clinical scenarios and placement earlier in the integrated clerkship course.

**Acknowledgements**

We would like to thank Drs. Scott Casper, Frane Galerneau, and Jessica Illuzzi in the Department of Obstetrics, Gynecology and Reproductive Science and Drs. Eve Colson and David Hersh in the Department of Pediatrics for their contributions in the development of this activity and with the simulation intervention.