**Online Supplement 1: Simulation Scenarios**

**Case 1** (Consent)

Scenario Description:

17-year-old Terry needs a forearm reduction, but still needs to be consented for the Bier block (BB) procedure. Please have one of the MD’s enter the room to obtain consent.

Patient Type: Standardized patient, scripted

Objectives:

* To reinforce the need to obtain informed consent
* To review the risks and benefits of BBs
* Review reasons why BBs are superior to procedural sedation
* Reinforce age-appropriate language while obtaining consent

**Case 2** (The Anxious Patient)

Scenario Description:

16-year-old Billy was very keen on having a BB for the pain management of his upcoming forearm fracture reduction, but now is becoming extremely anxious. Manage and discuss.

Patient Type: Standardized patient, scripted

Objectives:

* Review distraction techniques for anxiety related to BB’s
* Review medical management options for anxiety related to BB’s
* To use age-appropriate techniques, language and explanation

**Case 3** (Equipment Failure/Human Error, Seizure)

Scenario Description:

8-year-old Devon fell while playing soccer and sustained a distal ulnar/radius fracture requiring reduction; while infusing lidocaine a premature cuff deflation occurs after the medical student presses deflate by accident. Bolus of local anesthetic is absorbed systemically. You are called in to help assist your colleagues.

Patient Type: Low-fidelity mannequin, massage pad to mimic seizures

Objectives:

* Reinforce crisis resource management (CRM) principles:
  + Identifies team members and their roles
  + Closed loop communication
  + Transfer of leadership if required/wanted
  + Clear and concise instructions
  + Calls for help
  + Summarizes case as progresses and explains plans
  + Remains calm and in control
* Reinforce first-line management of BB related local anesthetic toxicity
* Identifies and treats seizure

**Case 4** (Medication Error/Equipment Failure, Cardiac Arrest)

Scenario Description:

You are called to the cast room after a technical problem has caused a premature cuff deflation 3 minutes after a mistaken injection of local anesthetic into 10-year-old Sam who was about to have his distal Radius/Ulna reduced.

Patient Type: High-fidelity mannequin

Objectives:

* Reinforce CRM principles:
  + Identifies team members and their roles
  + Closed loop communication
  + Transfer of leadership if required/wanted
  + Clear and concise instructions
  + Calls for help
  + Summarizes case as progresses and explains plans
  + Remains calm and in control
* Reinforce first-line management of BB related local anesthetic toxicity
* Identifies and treats cardiovascular collapse
* Identifies and treats local anesthetic toxicity highlighting the consideration of lipid emulsion therapy