Appendix 1 to Bradley NL, Innes K, Dakin C, et al. Multidisciplinary in-situ simulation to evaluate a rare but high-risk process at a level 1 trauma centre: the "Mega-Sim" approach. Can J Surg 2018.

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## Trauma in pregnancy Mega-Sim

Structure of the Day

- Pre-briefing lecture (60 minutes)
    - Crisis Resource Management and Team Dynamics
- Simulation Part 1 (30-40 minutes)
- Debriefing Part 1 (50-60 minutes)
- [Lunch]
- Simulation Part 2 (20-30 minutes)
- Debriefing Part 2 (50-60 minute)
- Final evaluation and Summary

## *Simulation Part 1*

- ***Participants:*** *2* Paramedics, Trauma Team (Fellow and Resident), ED Physician, 3 ED Registered Nurses (RNs), ED Respiratory Therapist (RT), ED Social Worker (SW)
- ***Location: ED Trauma bay + telephone to OR desk***

### *Section 1*

### Stage 1: Paramedic pick-up and handover in ED

Paramedics assess the trauma patient and transfer her to VGH trauma bay. Pre-

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hospital Trauma Team activation and preparation unfold naturally. Handover to the ED/trauma team occurs.

## *Section2*

### Stage 1: ED assessment and initial stabilization

The ED/Trauma team should assess the patient as per Advanced Trauma Life Support (ATLS) while initiating monitoring/investigations. Confederate clinical staff support clinical decision making. The patient's physiology responds predictably to resuscitation.

### Stage 2: Arrival of Husband

A confederate husband arrives in an agitated state. He can be managed with appropriate communication and delegation to the SW.

### Stage 3: Decompensation of Mother

The patient becomes unstable with physiology reflecting placental abruption. The Trauma team is compelled to arrange for stat C-section (C/S) and activation of appropriate support teams, including on-site Code Pink and off-site obstetrics and neonatology.

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*Section 3*

- **Participants:** Trauma Team (Fellow and Resident), 2 Anesthesiologists, 1 ED RN, 2 OR RNs

**Stage 1: OR Setup and Handover to OR Team**

The OR teams must prepare for immediate transfer from the ER and operative delivery with possible trauma laparotomy. Clinical support from appropriate surgical staff should be accessed. Information and leadership transfer is required.

*Simulation Part 2:*

*Section 1:*

- **Participants:** Trauma Team (Fellow and Resident), 2 Anesthesiologists, 2 OR RNs, 1 RT, 2 Code Blue RNs, ICU Fellow, MFM via telephone
- *Location: OR*

**Stage 1: OR management of uterine abruption**

Expedited set up for C/S is required. The need for a general anesthetic must be recognized. Appropriate safety systems and checks should be demonstrated.

**Stage 2: Delivery of fetus**

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An emergent C/S should be performed by the trauma team with Obstetrics support by telephone. The infant is delivered without respiratory effort.

### Stage 3: Uterine Atony

Uterine atony persists after delivery. Appropriate drugs and consultant support should be utilized.

## *Section 2:*

### Stage 1: Post delivery Code Pink

Code Pink activation is necessary to obtain appropriate equipment, drugs, and critical care support. The Code team should follow Neonatal Resuscitation Algorithm 2015 as per the American Heart Association. The infant fails to improve and CPR is required. Confederate clinical staff support clinical decision making. The scenario ends with appropriate disposition of successfully resuscitated mother and infant.