**High-fidelity scenario (manikin Noelle, Gaumard)**

**Briefing:**

Initial state:   
A 28-year-old woman gives birth for the first time at 40 weeks of amenorrhea after a single, low-risk pregnancy. She has no previous medical history.  
The patient is admitted to the birth room right after her waters broke. The cervix shows a ​​2 cm dilation. Epidural analgesia is installed without difficulty.  
Cervix dilatation is slow (<1 cm / h) requiring the use of increasing doses of oxytocin.

Evolution:   
After 12 hours of work, the fetal heart rate is abnormal but the scalp pH is reassuring (7.28). The patient is more painful, requiring multiple reinjections of local anesthetics in the epidural.  
After 2 hours of complete dilation, instrumental forceps extraction from is initiated because of inefficient expulsive efforts. The exhausted patient and fetal heart rate abnormalities become alarming.  
A 4200 g baby boy is born with an Apgar score of 8 and 10 and normal cord blood gases.  
Within 10 minutes, while the midwife is giving first aid to the newborn, the nurse is worried because the patient is not feeling well and is slightly uncomfortable.

Information obtained after interrogation  
"My head is spinning, I'm tired. "  
"I do not feel well, call my husband. "  
"Quick, help me, do something. "

**Evolution of the scenario:**

o 1 - 5 minutes after the observation of bleeding: directed or artificial delivery and uterine revision (for the moment the anesthetist is not called because the analgesia is sufficient) and revision of cervix and vagina under valve, continuous uterine massage and perfusion of oxytocin as soon as delivery is complete. Continuous blood pressure monitoring.

o 5 minutes: at the end of the process the patient continues to bleed, the collection bag indicates a blood loss of 600 cc, the tension drops to 90/60 mmHg, the heart rate rises to 130 / min. If no prior uterine revision has been performed or when in doubt, suggestion delivered by the facilitator: new uterine revision, uterine massage, call the anesthesiologist, lab (blood bank prevented), setting up a urinary catheter, note on the observation sheet of all these elements, their time of occurrence and the time of corrective actions.  
   
o 5 - 8 minutes: the called anesthesiologist is not available immediately but asks for placement of a second venous catheter: filling fluids, oxygen therapy, saturometry, Hemocue and basic biological assessment (NFS, platelets, complete hemostasis including fibrinogen ...) requested in emergency (laboratory warned), control of packed red blood cells availability. From now on, monitor the diuresis.  
o 12 minutes: there is limited bleeding with a uterine globe that relaxes as soon as it is no longer stimulated, the hemocue is 8.7g / dl, blood losses are estimated at 750 cc.  
o Decision to put under sulprostone. Call from the laboratory to activate the delivery of the Red blood cells and consider the prescription of Plasma.

o 15 minutes: the uterine globe is well toned. There is no longer active bleeding.

**Participants and confederates:**

Midwife: participant of the study  
Nurse: confederate (in the simulation room at the beginning)  
obstetrician: confederate (could be called by phone)  
anesthetist: not available, reachable by phone

**Programming:**

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| **Base** | Initial state: BP 100/80, HR 120/min |
| **1** | 5th minutes: BP 90/60, HR 130/min, SaO2 95% Persistent bleeding |
| **2** | 10th minutes: BP 80/60, HR 135 min despite fluid loading and Ephedrine 6 mg |
| **3** | 15th minutes : BP 95/65, HR 105/min. Stop bleeding |

**Preparation of the simulation room:**

Birth room including:

* medical file and summary and follow-up sheet
* high fidelity manikin (woman and fetus)
* scope
* forceps
* IV line, Fluids
* Oxytocin, sulprostone
* Artificial blood, plasma
* collection bag
* gloves
* Uterine revision box
* Phone
* Oxygen
* Urinary catheter
* Hemocue

Physical preparation of the simulator

* Patient on the delivery table
* Gynecological position
* Continuous blood loss, venous bleeding