



Global Health
Sciences

Designing and Implementing an In-situ Emergency Obstetric and Neonatal Care (EmONC) Simulation and Team-training Curriculum for Midwife Mentors to Drive Quality Improvement in Bihar, India

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Introduction and Background

It is estimated that the maternal mortality ratio (MMR) in Bihar, India is 208 per 100,000 live births.

To address this high rate, PRONTO International and UCSF have partnered with CARE India to integrate simulation and team training into a mobile nurse-midwifery mentoring program. The intervention is being implemented in 320 primary health clinics and 56 district hospitals in Bihar between 2015 and 2017. The simulation-based curriculum was designed for nurse midwife mentors to promote quality improvement in dealing with maternal and neonatal emergencies.

Objectives

The overall goal is to catalyze sustainable improvements in basic and comprehensive emergency obstetric and neonatal care (BEmONC and CEmONC) that health workers provide by:

1. Integrating highly realistic simulation and team training into the existing training strategy developed and implemented by CARE India to reinforce best practices among doctors and nurses.
2. Developing a comprehensive modular curriculum package.
3. Promoting quality improvement in dealing with maternal and neonatal emergencies.

Methodology

Developing a Simulation Based Quality Improvement Program

Throughout all program components, PRONTO International emphasizes kind, dignified, and culturally respectful care of women, babies and care providers.

CURRICULUM DEVELOPMENT

1 PRONTO International develops **unique curricular components** tailored to meet the individual needs, priorities and context of each location we work. This takes form in a carefully crafted process to optimize results outlined below.

2 **Needs assessment:** PRONTO conducts a needs assessment in collaboration with program partners to systematically determine the gaps between the current condition and desired outcome. We then create a customized, objective focused training curriculum aligned to local priorities to help achieve these goals.

3 **Building a Curriculum:** All PRONTO trainings are built on four foundational building blocks.

1. Simulation based training and debriefing scenarios
2. Teamwork and communication activities
3. Knowledge reviews and skill stations
4. Catalyzing system change

4 **Empower teams:** The curricular components are designed to increase skills and knowledge, build confidence, empower functional teams and identify barriers and challenges based on weaknesses discovered through simulation in facility systems, clinical practice, and teamwork.

TRANSFER OF SKILLS & COMPETENCIES

1 Our training curriculum is based on **adult learning and simulation theory**. All of the clinical elements of the program use the latest evidence and international clinical guidelines. When we implement training in a new country we work closely with our in-country team to adapt the training to meet the cultural and clinical need of the setting.

2 **Train:** PRONTO trains teams by effectively using highly realistic simulation and video guided debriefing to promote practice change.

3 **Build:** Teams that communicate effectively and are mutually supportive have a decreased potential for error, resulting in better performance and increased patient safety. Team training concepts are derived from the TeamSTEPPS curriculum and have been translated and modified to fit into the cultural setting of the training.

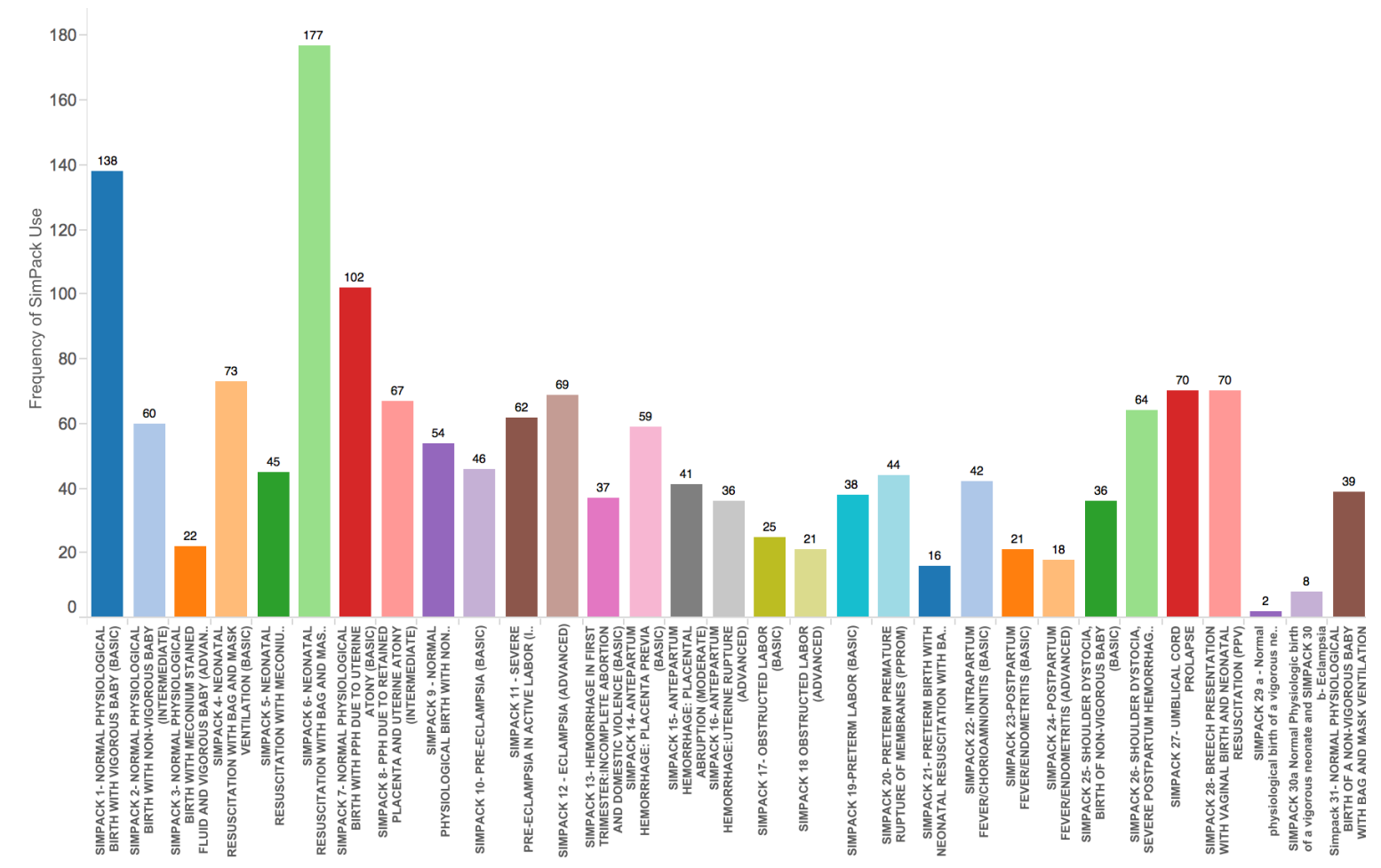
4 **Empower:** Empower teams to identify and respond to system gaps in their settings.

Results

The new mentoring curriculum is comprised of 31 EmONC simulation scenario guides or “SimPacks”, 17 lesson plans, 13 skills activities and 15 teamwork activities tailored to the Bihar context.

- Midwife mentors can select components of the curriculum package over nine-weeks of training at each facility, tailoring activities to local specific needs.
- The midwife mentor led curriculum emphasizes highly-realistic simulation using the PartoPants™ birth simulator, facilitated video-guided debriefing and team training exercises. Mentor training includes sessions in adult-learning theory, simulation facilitation with in-situ simulation and video-guided debriefing, and facilitating teamwork activities.
- To date, 115 mentors have been trained to use simulation and team training in Primary Healthcare Centers in Bihar, India.

Figure 1: Frequency of SimPack Use During Round 1 Mentoring



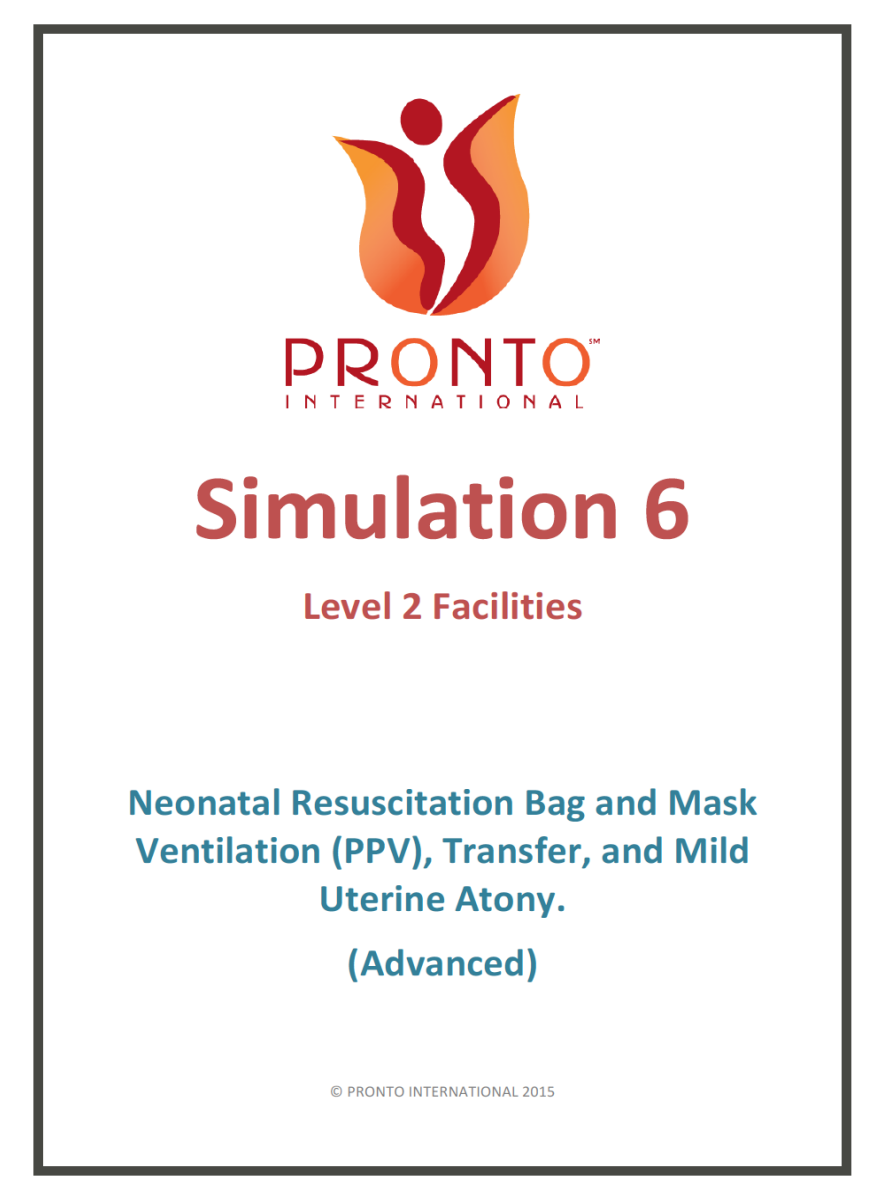
Simulation in Primary Health Center, India



Simulation in Primary Health Center, India

- Round 1 spanned January-September 2015. All daily mentoring activities were collected through the Facility Information System (FIS) providing data on frequency and duration (time spent in hours) on each curriculum component by mentor. During this time period, 40 nurse midwife mentors worked in teams of two assigned to four facilities each (total of 80 facilities). Each mentor pair spent a total of 9 weeks (one week per month) at each of their four assigned facilities over the 9-month time period.
- Overall, Round 1 Nurse Mentors ran a total of 1,602 simulations using PRONTO International SimPacks (31) at 80 facilities. Figure 1 shows that SimPack 6 was the most commonly used SimPack (n=177) and SimPack 29 was used the least (n=2).

31 SimPacks™



Learning Competencies for Simulation 1

Cognitive:

1. Identify the symptoms of foetal distress
2. Identify the difference between a vigorous and a non-vigorous baby.
3. List the steps of neonatal resuscitation
4. Identify the components of post-resuscitation care.
5. Define Active Management of the Third Stage of Labour (AMTSL).
6. Describe the steps of AMTSL.
7. Identify the management for mild uterine atony (Oxytocin, uterine r catheter).

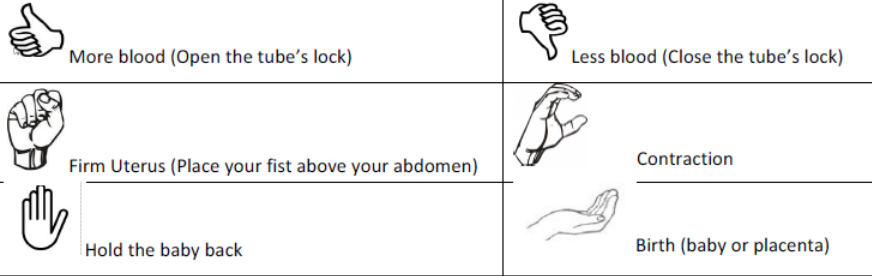
Technical:

1. Demonstrate the steps of neonatal resuscitation.
2. Demonstrate AMTSL. If no AMTSL is done, demonstrate initial manual uterine atony - Oxytocin, uterine massage, and empty bladder).
3. Orders medication correctly.
4. Demonstrate appropriate timing and rhythm of Positive pressure ventilation.
5. Demonstrate appropriate assessment of the newborn breathing after.
6. Demonstrate neonatal referral to a higher-level facility.

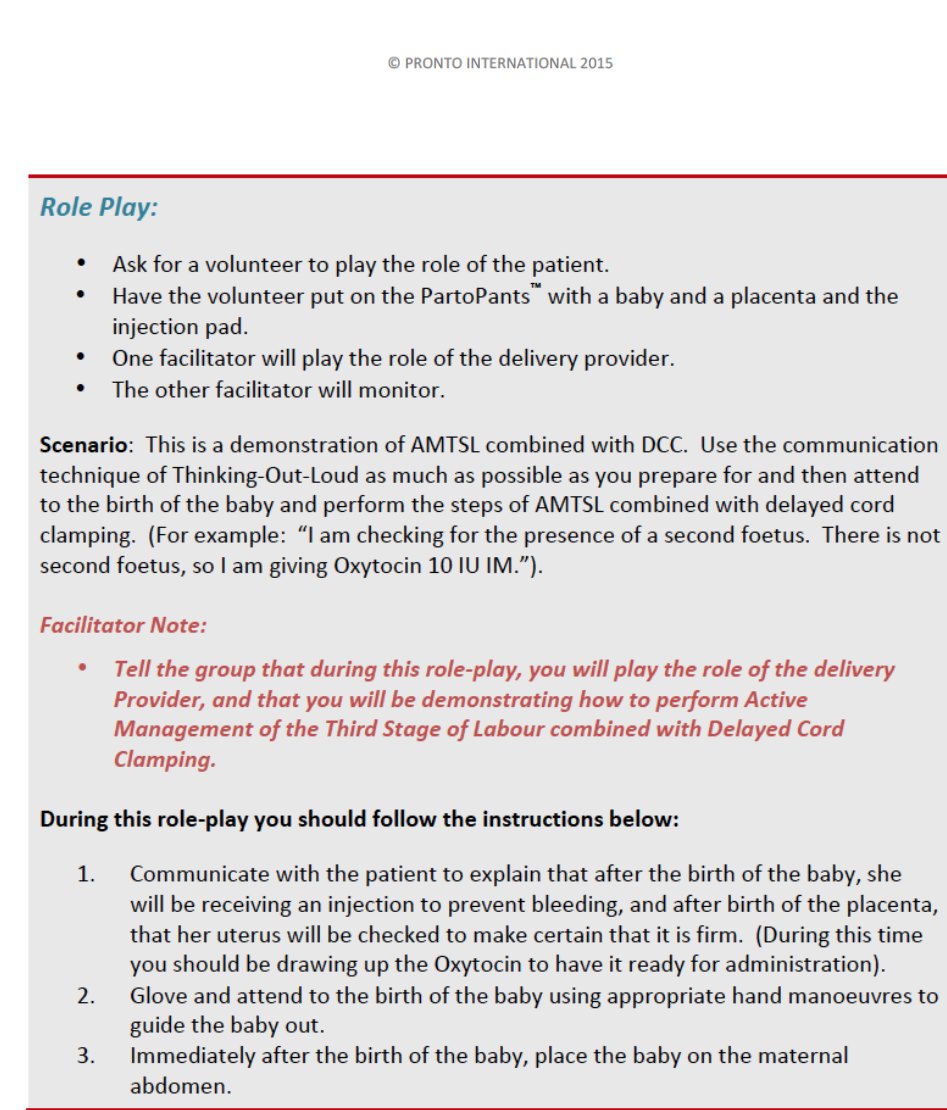
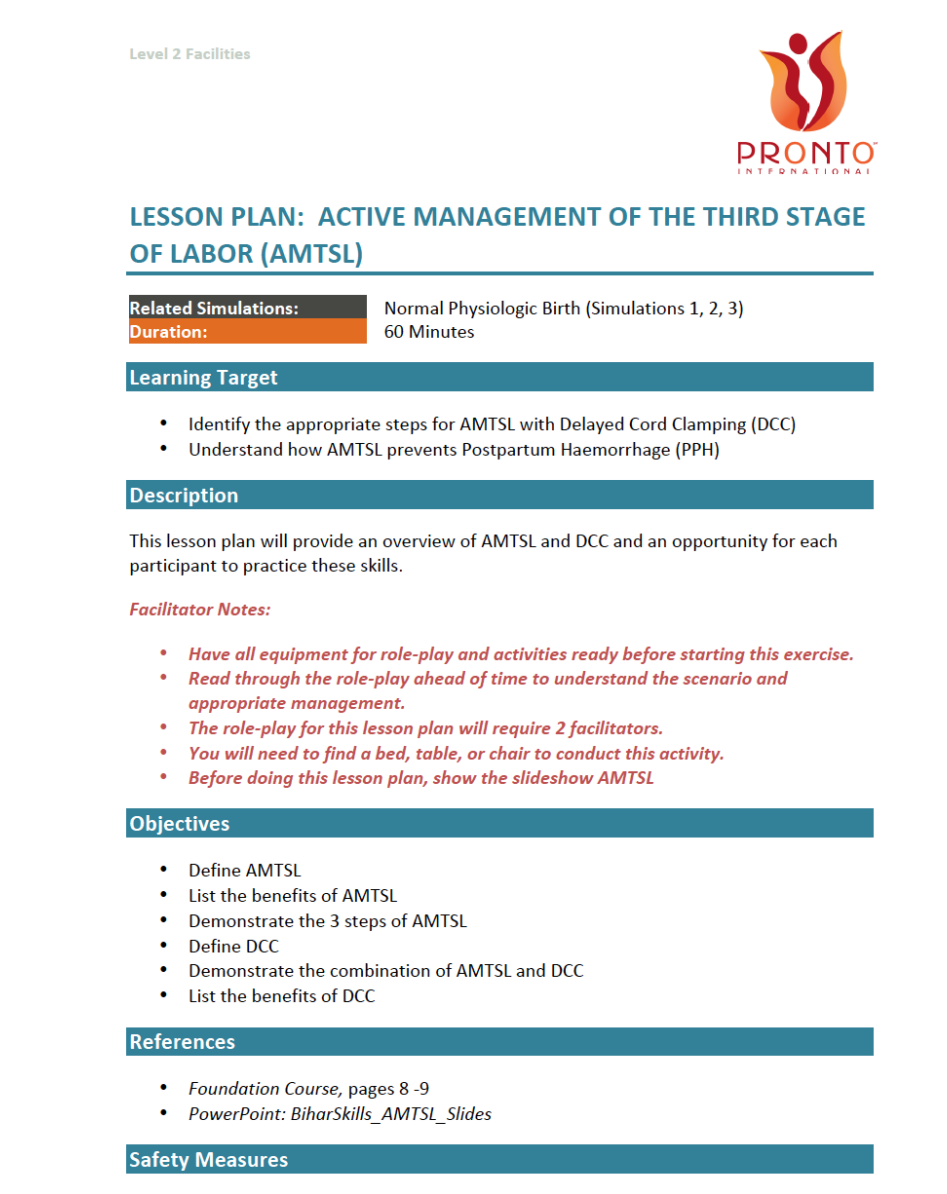
Behavioural:

1. Ask for help early enough.
2. Communication with the patient.
3. Communication with the team (if simulation > 1 participant).

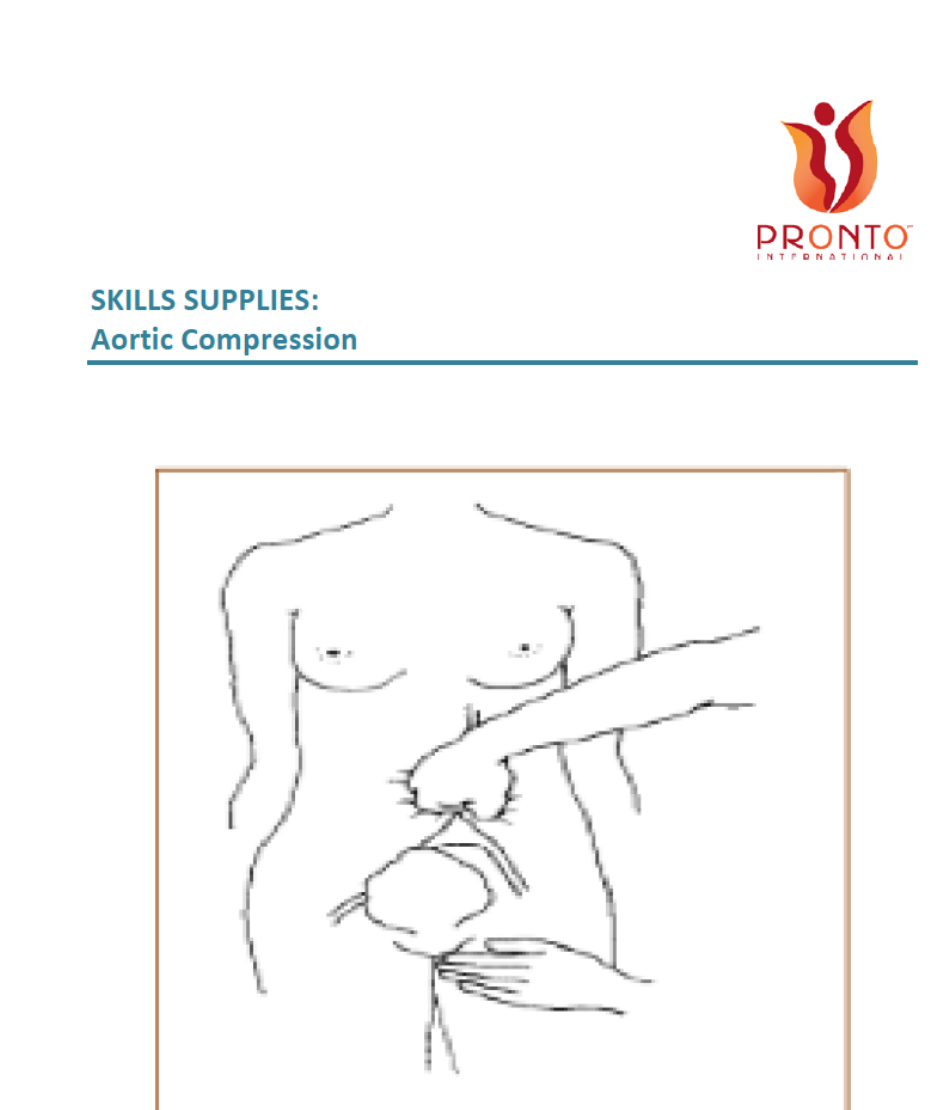
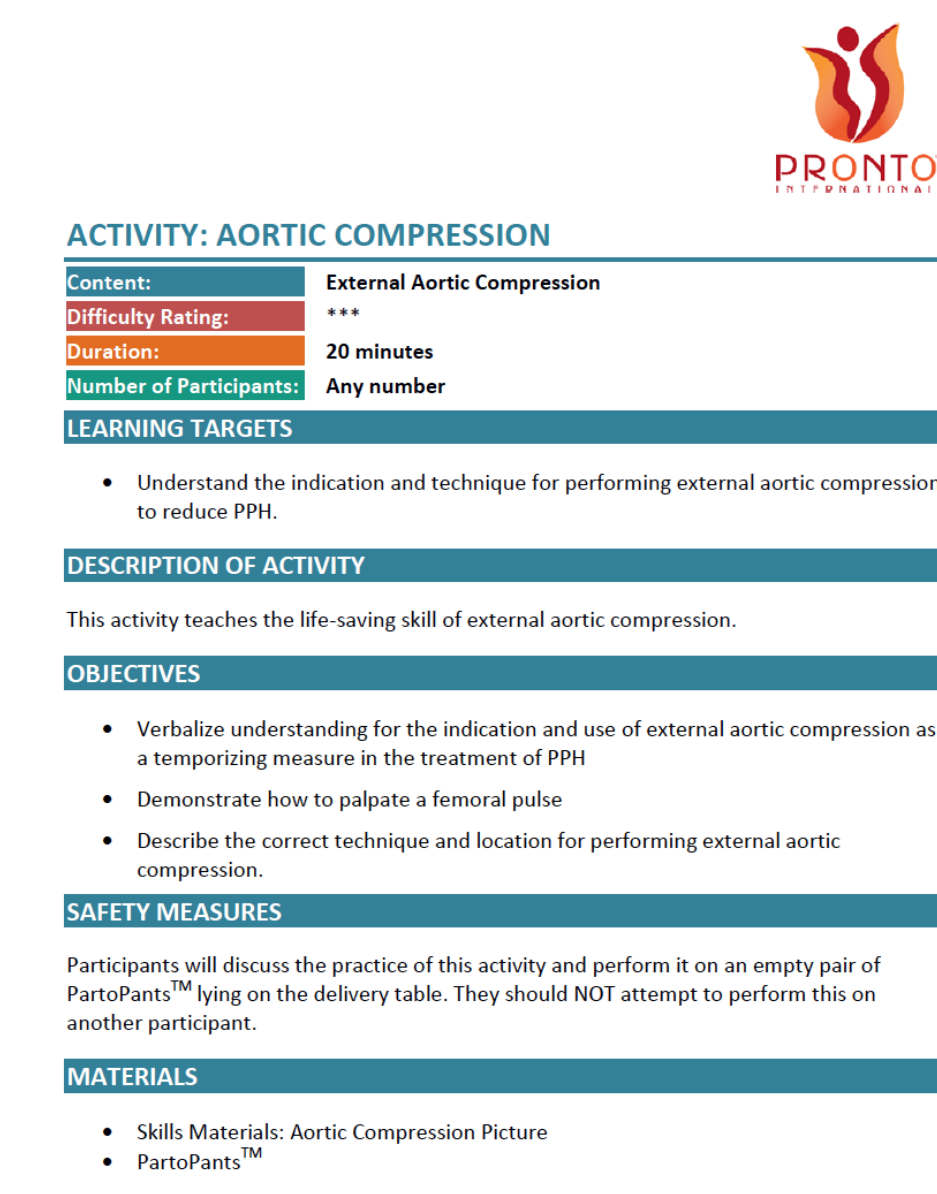
Important Signs:



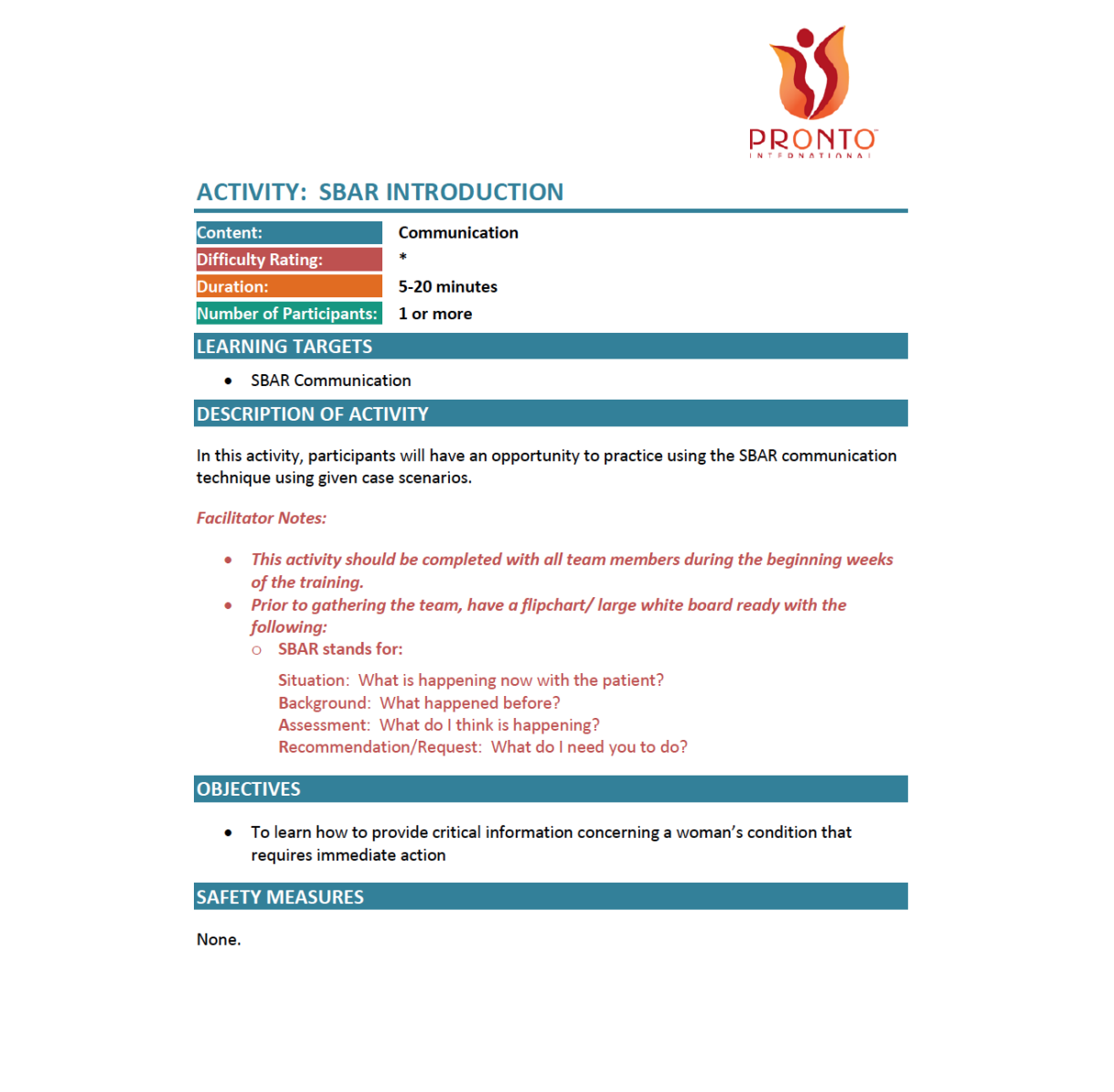
17 Lesson Plans



13 Skills Activities



27 Teamwork Activities



Conclusions

A comprehensive EmONC mentoring simulation and team-training curriculum was created and tailored for use in Bihar, India. As a result, Nurse Mentors have successfully integrated highly realistic simulation and team training into the CARE India mentoring program to reinforce best practices among doctors and nurses in Bihar.

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For more information about PRONTO International, please visit our website at www.prontointernational.org
or, contact Jessica Dyer at jessica@prontointernational.org