Module 1

Teamworking (human factors)

Key learning objectives

- Understand the importance of good teamworking.
- Understand that effective communication is vital in emergency situations.
- Understand the importance of stating the problem early at the outset of the communication.
- Appreciate the different roles and responsibilities of members comprising a multi-professional team.
- Understand the importance of shared decision making within the team.
- Recognize the value of situational awareness – the ability to "stand back and take a broader view" in an emergency.

Introduction

Severe maternal morbidity in North America continues to occur and, in fact, has increased in the United States since the late 1990s. Obstetric emergencies are unpredictable and sudden. Successful management requires a rapid and coordinated response by an often ad hoc multi-professional team. The need to provide training for clinicians in team coordination and communication has been repeatedly identified as a safety priority.

Although maternal deaths are the traditional indicator of maternal health outcomes, they are but the "tip of the iceberg." For every death, there are many women who have significant complications of pregnancy, labor, and delivery. Moreover, the most severe complications, such as acute renal

failure, cardiac events, thromboembolism, and hemorrhage have increased dramatically in recent years.[1] Compared to prior years, the US pregnancy-related mortality ratio increased 2006 to 2010 as did the contribution of cardiovascular conditions and infection. More than 3,300 women died during that five-year period in association with pregnancy, placing the United States 60th in the world ranking for maternal deaths. The increasing contribution of chronic diseases to pregnancy-related mortality suggests a change in risk profile of the pregnant population.[2]

Some of the most granular information on adverse obstetric outcomes comes from other industrialized countries where organized review programs have operated for decades. Arguably the most comprehensive reviews are conducted in Great Britain. The most recent Centre for Maternal and Child Enquiries (CMACE) review noted 70% of direct maternal deaths were potentially preventable with better care;[3] a lack of multi-professional team working and communication failures were once again identified as contributory factors.[4,5] Prior Confidential Enquiries into Maternal Deaths identified poor communication and poor teamworking as major contributors to fetal and neonatal mortality.[6,7] And, in December 2014, MBRRACE concluded that in 52% of deaths, improvements in care may have made a difference. They make specific reference to failures in communication and teamwork.[8] Based on these and other reviews, numerous professional organizations and government panels have recommended obstetric emergencies training include teamworking.

Though much of the available literature is derived from UK studies, there is no reason to think that North America is any different. The 2004 Joint Commission Sentinel Alert Issue #30 reported on the root cause analysis of 71 sentinel events (61 deaths, 10 with severe morbidities). They identified problems with communication in 72% of cases, the safety culture in 55%, staff competency in 47%, and orientation and training in 40%.[9] They recommended all obstetrical healthcare organizations conduct:

- team training in perinatal areas to teach staff to work together and communicate more effectively
- clinical drills to help staff prepare for high-risk events
- debriefings to evaluate team performance.

In the UK, the Clinical Negligence Scheme for Trusts (CNST) Maternity Clinical Risk Management Standards (national negligence insurance) mandated there be a systematic process in maternity units ensuring multi-professional drill training for all relevant obstetric staff.[10]

Definitions

Teamwork is the combined, effective action of a group working towards a common goal. It requires that individuals with differing roles communicate effectively and work together in a coordinated fashion to achieve a successful outcome.

Teamwork training

Conventional healthcare training has typically focused on specific, technically skilled tasks. Yet, with the increasingly multi-professional nature of healthcare, a continued focus on individual knowledge, technical skills, and attitude may be inadequate.[11] Multi-professional team training for obstetric emergencies is associated with improved performance,[12] improved safety attitudes,[13] and improved perinatal outcomes.[14,15,16]

Teamwork training recognizes that people make fewer errors when they work in effective teams. Each member of the team better understands their responsibilities when processes are planned and standardized, with team members "looking out" for one another and correcting errors before they cause an accident.[17] This cannot occur when every team member has "their own way" of proceeding no matter how sound it may be.

There is also evidence that, even when training is conducted in multi-professional teams, some teams possess characteristics that make them more efficient than others, and they are better able to achieve good outcomes by performing key actions in a timely manner. These characteristics are not explained by differences in knowledge or skill,[8] emphasizing the need to include other aspects of teamworking to achieve optimal training outcomes.

Improvements in outcomes

As already mentioned, current evidence supports training for obstetric emergencies in multi-professional teams, the strongest evidence being the improved obstetric and perinatal outcomes after clinical training with integrated teamwork training.[18] However, not all training is equal, and some training programs have actually increased rates of poor perinatal outcomes rather than improving them.[19] Further, teamwork training conducted remotely from the daily practice site has not proven effective in obstetrics.[20,21]

The key features of training programs associated with improvements in perinatal outcome are:[14,17]

- training is conducted in-house
- 100% of healthcare staff that work in an obstetric unit train regularly
- all staff train together in teams consisting of the same professionals who normally work together and incorporate teamwork principles into clinical training scenarios
- system changes are introduced, reflecting feedback provided by staff after participating in the training.

In-house training appears the most efficient and cost-effective means of training all staff in an institution. In-house training also allows the team to identify unique local issues that can be used as a driver for system change.[10,14,22] Moreover, there is evidence that local training is the most effective way of improving outcomes.[23]

Finally, it appears the most efficient obstetric teams recognize and state verbally the emergency earlier, and have incorporated this critical task using closed-loop communication (task clearly and loudly delegated, accepted, executed, and completion acknowledged). For example, such teams administer magnesium sulfate within 10 minutes after an eclamptic seizure, have significantly fewer exits from the labor room, and use structured communication.[24] It is vital that such communication skills are integrated into clinical training.

Communication

Communication is the transfer of information and the sharing of meaning. Often, the purpose of communication is to clarify or acknowledge the receipt of the information. Since communication is frequently impaired under stress, it is important to learn techniques that increase awareness and help overcome this limitation.

There are five requirements for effective communication and efficient team performance:[25,26]

1. **FORMULATED**
   Give a clear message. It should be succinct and not rambling. SBAR (Situation, Background, Assessment, and Recommendation/response) is a useful acronym for formulating messages and handing over information[20] and is used almost naturally by the most effective obstetric teams.[9,20] For example:

   > Nurse Gulliver reports: "Jane Doe is septic (S). She is 33 weeks gestation with preterm, premature rupture of membranes

> (PPROM) a week ago (B). She is in pain, hypotensive, and tachycardic. Her score is 3 on the modified obstetric early warning score (MOEWS) chart (A). I need help now. Please contact. . .. .(R).”

The use of MOEWS will be addressed in several subsequent modules. Figure 1.1 is an example of a maternal SBAR form that may be used when handing over information.

2. ADDRESSED TO SPECIFIC INDIVIDUALS (DELEGATED)

Use names of staff and make eye contact. Assign appropriate tasks to an identified person.

> “Liz and Susan (labor nurses), please get Mrs. Jones into the McRoberts’ position.”

> “Diane (labor nursing assistant), please record the times and actions as they are called out. Thanks.”

3. DELIVERED

Messages are sent clearly, concisely, and calmly. When the emergency team arrives in your room, say:

> “Susan Smith is having a postpartum hemorrhage. She has lost about a liter of blood. Her placenta delivered spontaneously and appeared complete. There was no episiotomy and her perineum is intact. She has a liter of normal saline with 40 units of oxytocin running wide open but her uterus still feels soft.”

rather than:

> “Oh wow, Susan has just had a really big baby. She has oxytocin running but she is bleeding, really bleeding. Can someone please help me?”

4. ACKNOWLEDGED

Adequate volume used and repeated back:

> “Do you want to give methergine intramuscularly now?”

SBAR report to clinician about a clinical obstetric situation

S — Situation

I am calling about (woman's name): _____ **Ward:** _____ **Hosp No:** _____

The problem I am calling about is: _____

I have just made an assessment:

The vital signs are: Blood pressure ____ /____ Pulse ____ Respirations_____ SPO_2 _____% Temperature_____°C

I am concerned about:

Blood pressure because it is:
- systolic over 160
- diastolic over 100
- systolic less than 90

Pulse because it is:
- over 120
- less than 40

Respirations because they are:
- less than 10
- over 30
- The woman is having oxygen at _____1/min

Maternal temperature because it is: _____°C

Maternal serum lactate because it is: _____mmol/1

Urine output because it is:
- less than 100mls over the last 4 hours
- significantly proteinuric (+++)

Hemorrhage:
- Antepartum
- Postpartum

Fetal wellbeing:
- Pathological EFM

FSS Result: pH _____
Time sample taken: _____ hrs

Modified Obstetric Early Warning Chart Score: ☐ ☐

B — Background (tick relevant section)

The woman is:

Primiparous Multiparous Grand multiparous
Gestation: _____ wks Singleton Multiple
Previous Cesarean section or uterine surgery

Fetal wellbeing

Abdominal palpation:
Fundal height: _____cms Presentation: _____ FH rate:_____bpm
EFM: Normal Suspicious Pathological

Antenatal

A/N problem (details): _____

Labor

Spontaneous onset Induced
IUGR Pre eclampsia Reduced fetal movements Diabetes APH
Oxytocin

Most recent vaginal examination: Time _____hrs
Cervical dilatation: _____cms Station of presenting part: _____ Position: _____
Membranes intact Meconium stained Fresh red loss
Third stage complete Retained placenta

Postnatal

Delivery date: _____ Delivery time:_____hrs
Type of delivery: _____ Perineal trauma:_____
Blood loss: _____mls Oxytocin infusion
Fundus: High Atonic Uterus tender Abdominal/perineal wound oozing

Treatment given / in progress: _____

A — Assessment

I think the problem is: _____

I am not sure what the problem is but the woman is deteriorating and we need to do something

R — Recommendation

Request:

Please come to see the woman immediately
I think delivering needs to be expedited
I think the woman needs to be transferred to delivery suite
I would like advice please

Reported to: _____ **Response:** _____

Person completing form (name): _____Date: _____ Time: _____

SBAR Clinical Obstetric reporting sheet. Please photocopy form and file original in woman's notes and copy with Risk Incident form

Figure 1.1 Example SBAR handover sheet

5. ACTED UPON
Meaning acknowledged and action performed:

"OK. Methergine given IM at 15:30."

The use of non-verbal communication, including making eye contact with the targeted individual, helps prevent ambiguity and promotes a shared knowledge of intention. Improper terminology, slang, inaudible communication, excess chatter, and incomplete reports should be avoided.

Leadership: roles and responsibilities

Team leadership involves providing structure, direction, and support for other team members. The team leader is typically the most senior obstetrician present,[22] but may be a midwife, labor nurse, or an anesthesiologist – whoever knows the team members' roles and responsibilities and has adequate experience to anticipate the possible end to an emergency.[22] If there is any ambiguity, it is essential a team leader be nominated, declared verbally, and accepted by the rest of the team as soon as possible.[22]

Team leaders vary in their level of expertise for any particular emergency and also in their readiness to lead. While being the team leader requires a certain level of competence, it is unlikely they possess all the abilities of every team member present. Therefore the team leader's principal role is to coordinate the activities of the specialists within the team by communicating clearly and simply, delegating tasks appropriately, and planning ahead.[22] In addition, a good team leader respects the expertise of each team member, is willing to listen, and is open to criticism and constructive feedback.[22]

Other members of the team should have their individual roles identified and agreed to as early as possible. The leader should allocate critical tasks to specific team members, including a designated person to talk to the patient and her family.[22,27] Team members should be mutually supportive, communicate clearly, and give regular updates. They should avoid becoming fixated on minutiae or running around aimlessly.[20]

Situational awareness: the bigger picture

Situational awareness is how we notice, understand, and think ahead in a fast-paced, constantly changing situation. It is that "gut instinct" or "sixth sense" that makes a nurse, midwife, obstetrician, or anesthesiologist an expert. A situationally aware person recognizes and understands important cues,

anticipates problems, and shares them with the team so that shared decision-making and goals are achieved.

Three levels of situational awareness are suggested.[28]

1. Notice

Be aware of the patient's status, the team members' status, and the available resources; anticipate possible errors by noticing cues and sharing decision-making:

> "The head nurse and a young obstetrician on call are reviewing the labor board, the floor is full and two of the women are ill: one is undelivered with severe pre-eclampsia and low urine output, and the other has had a 1,000 ml postpartum hemorrhage and an examination under anesthesia is planned. It is essential that both the nursing and obstetric leads for the shift are aware of the serious problems that may result. Only then can they anticipate and plan how to manage the cases and also consider which team members may be required to assist with the problems."

There is no such thing as a practitioner with a "white" cloud or a "black" cloud. Rather, there are only practitioners who are situationally aware and plan proactively, and those that are situationally unaware, reactive, and enter an emergency two steps behind.

2. Understand

Share information with the team, consider what the cues and clues may mean, be aware of common mistakes, re-evaluate/stand back at regular intervals, and seek to engage other team members in decisions.

> "After reviewing each of the cases, the head nurse and the young obstetrician identify several complicated problems that need decisions and action. They discuss whether to call the anesthesiologist to assist with the management of these potentially complicated patients. Before they can make this decision, they both go to each room for a thorough review, requesting an update from each of the nurses providing care. They then ask the opinion of the on-call anesthesiologist to gain further information that may influence the actions to be taken."

3. Think ahead

Anticipate, plan, and prioritize:

> "Having sought additional information and the opinions of other team members, the head nurse and the obstetrician are now able to identify potential problems, prioritize the cases, and form an action plan. Their ability to do so is based not only upon the information provided by the other team members but also on their own knowledge and previous experience. In this instance, they agree their first action should be to call a more senior obstetrician for management advice."

Situational awareness allows individuals to be "ahead of the game." Experienced clinicians usually have good situational awareness; they often pick up subtle cues, understand their significance, and use them to anticipate and pre-empt problems even if they cannot express them to a third party.[22] A recent MBRRACE report concluded after reviewing maternal deaths from hemorrhage that the main human factor was a lack of situational awareness, particularly in recognizing the severity of the problem in a timely fashion.[29]

Recognizing cues for loss of situational awareness

In extreme situations, people may "freeze," when their capacity to reason is so severely impaired by the stress of the workload that they are no longer able to function interactively with the rest of the team.

Characteristic signs of "freeze" include:

- poor communication
- inability to plan ahead
- tunnel vision
- fixation on irrelevant issues (such as less than ideal equipment) or displacement activities (such as unnecessary disputes with colleagues).

Even the presumed leader or good team players can completely "freeze up."

Maintaining/regaining situational awareness

One way of maintaining situational awareness is to adopt the philosophy of the "non-participant" leader: try not to become engaged in the

practical tasks that can be performed by others. This allows the leader to take a step back and maintain a broader view of the unfolding emergency. In practice, this approach may be difficult as the team leader is often the team member with the particular "hands on" skills required for the problem.

Avoid panic. The following strategies can be tried to regain control of a situation:

- take a "helicopter view": stand back to get the bigger picture[22]
- declare an emergency early: you will engage everyone's attention and boost the available human resources. Early declaration is associated with improved clinical team performance and efficiency,[20] and can also improve the patient's perception of her care[23]
- communicate clearly and simply, starting with the critical tasks for each emergency[23]
- plan ahead: for example, prepare for a perimortem cesarean section in cases of maternal collapse
- delegate the critical tasks appropriately.[20]

Teamworking under pressure

Pressure situations create a sense of urgency – everything must be done immediately, increasing the tendency to rush. Rushing tasks under pressure increases the potential for errors. A good team leader tries to manage the emergency at a steady but efficient pace.

What makes a good team member?

- Good communicator
- Good understanding and acceptance of own limitations
- Awareness of environment and limitations of others
- Assertive
- Non-confrontational but willing to challenge if necessary
- Receptive to the suggestions of all other team members
- Thinks clearly