



CRM Symposium

Bringing the Concept into Practice:

Simulation as a Tool to Simulate, Stimulate
and Assimilate

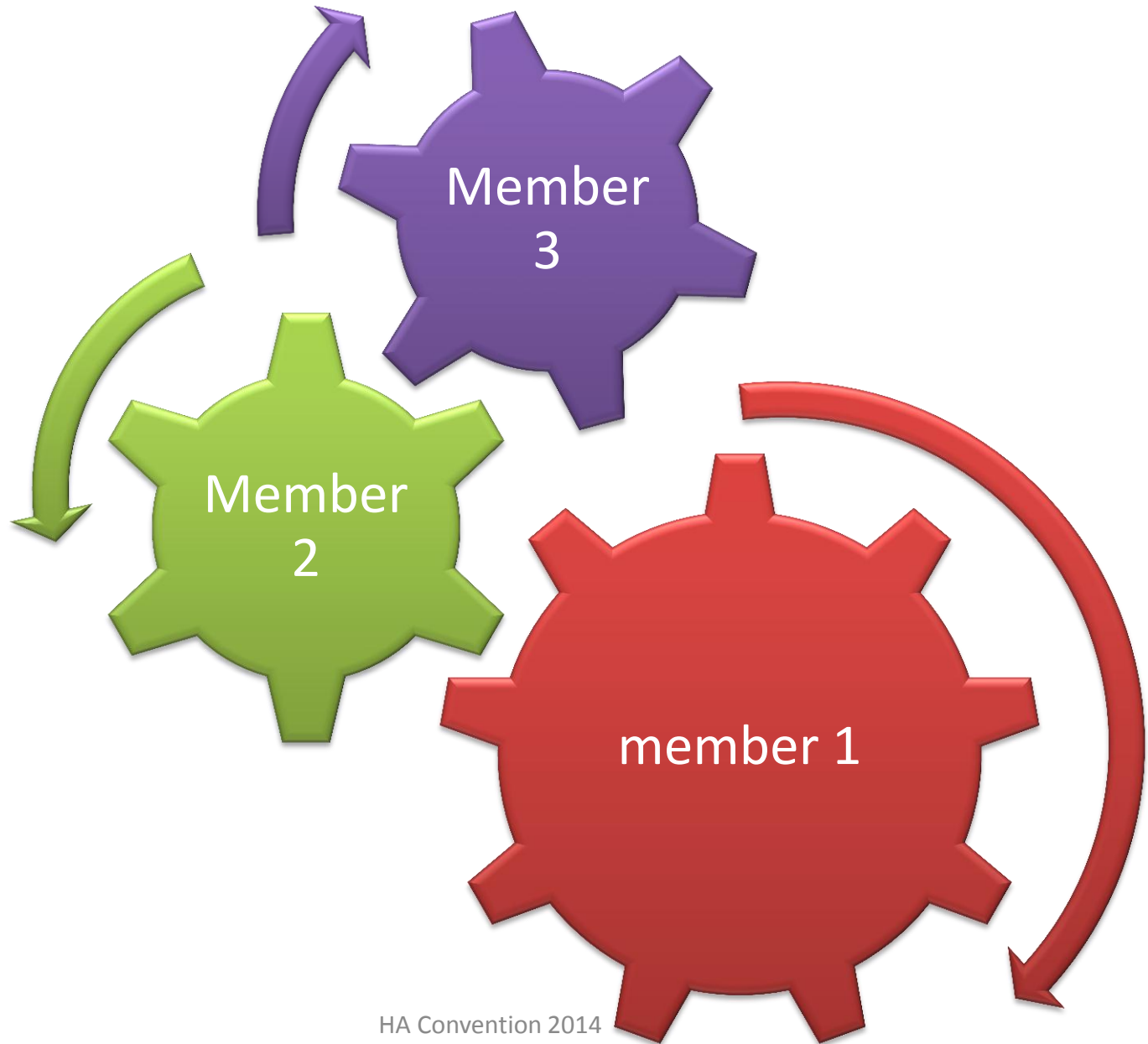
Dr HO Lap-yin

Director, Multi-disciplinary Simulation and Skills Center,
Queen Elizabeth Hospital,
Hong Kong



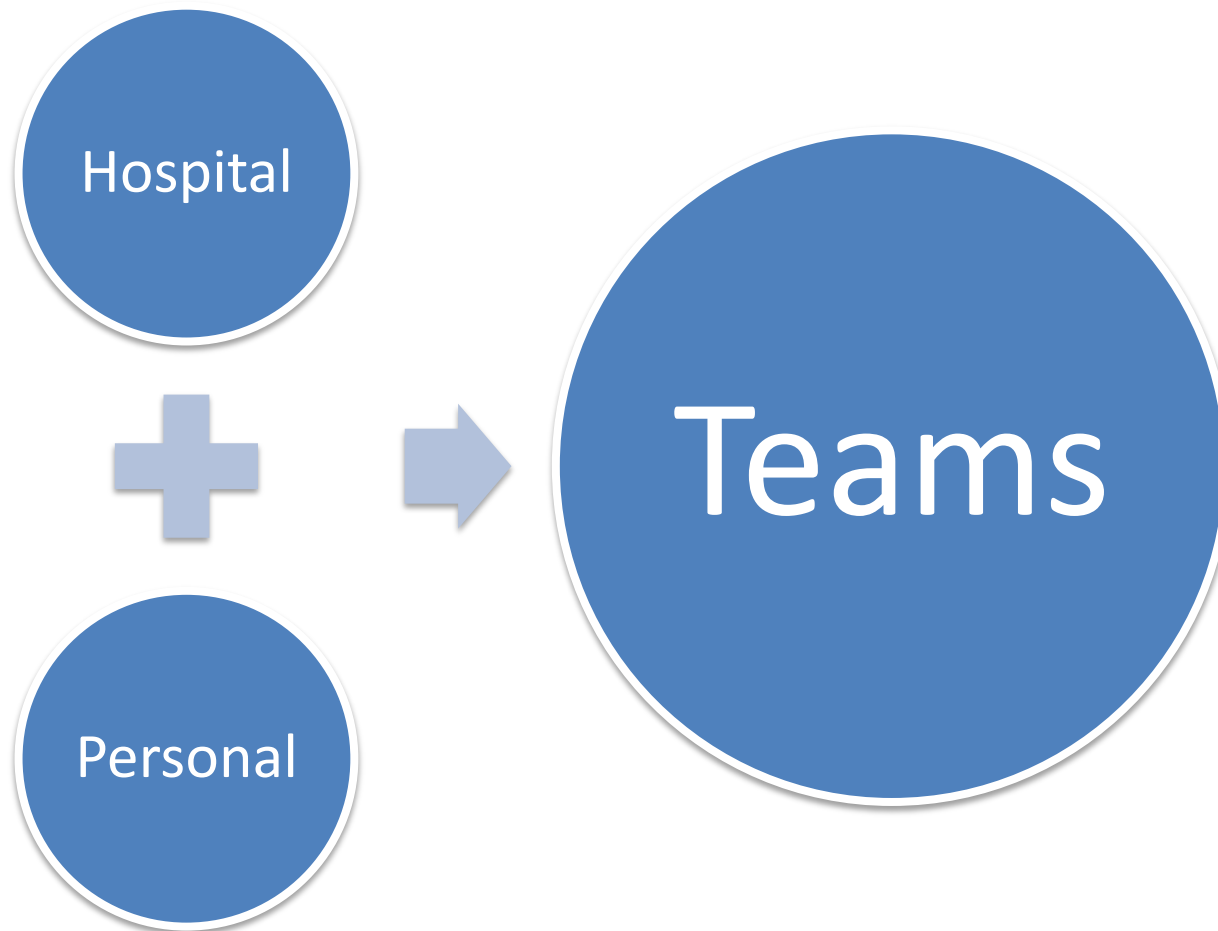
CRM is...







Two levels of CRM





Personal skills

- Decision making
- Leadership
- Assertiveness
- Communication



Hospital system

- Team briefing /debriefing
- Standardized communication
- Teamwork and leadership
- Speak up culture



Aviation CRM

- 28th December, 1978
- United Airlines Flight 173





Healthcare vs Aviation

- Multiple teams
- Members in and out
- Simultaneous commitment
- Ill-defined membership
- Highly complex



Critical Area Survey

- Feb, 2013
- 4 areas (A&E, ICU, Operation Theatre & Delivery Suite)
- 319 responses



Factors that prevent you from having excellent communication and teamwork?

Factors	
Too many things to attend at the same time	27%
Different personality of colleagues	24%
Dare not challenge seniors	12%



Major obstacles to patient safety?

Time pressure	24%
Inadequate manpower	27%
Insufficient equipment/ drugs	3%
Poor team collaboration/communication	6%
Workload too heavy	25%
Patient too ill	5%
No clear instructions from senior/leader	5%
Junior colleagues do not follow instructions	5%



Can't think

Can't
communicate



Simulation





Simulation

1. Learning mode
2. Scenario experience
3. Guided reflection
4. Individualized learning



Learning mode

1. Come to learn
2. Interruption free
3. Suspension of disbelief





Scenario experience





Scenario experience

- Tailor made
- Relevance





Guided Reflection

1. Debriefing
 - “what went well?”
 - “why it went well?”
2. Observation
3. Group dynamics





Individualized learning

- Tell me one thing:
 - “you have learnt today?”
 - “you’ll do differently tomorrow?”



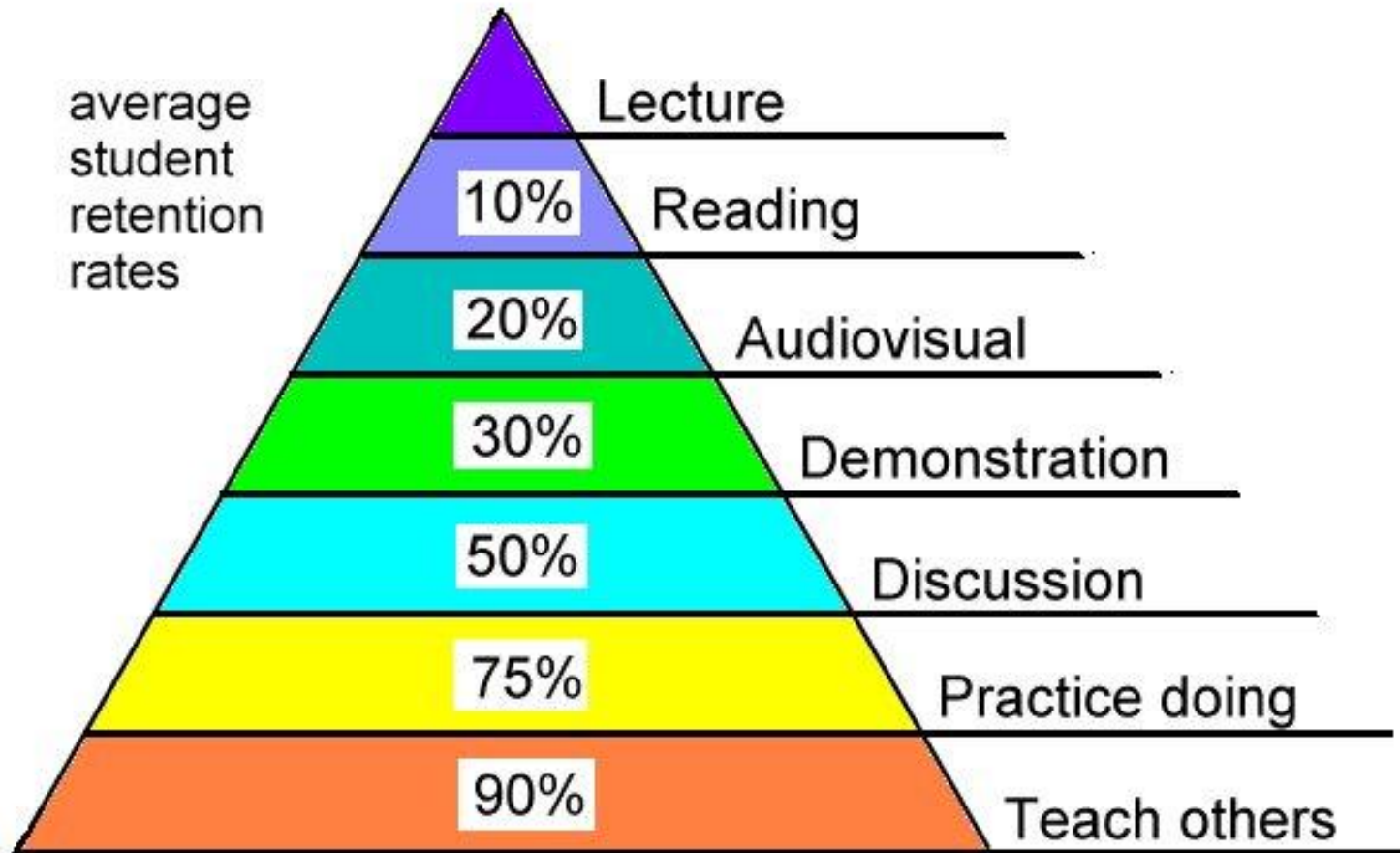


Power of Simulation

- Experiential learning
- Reflective
- Individualized
- Behavioral change



Learning Pyramid



Source: National Training Laboratories, Bethel, Maine



Simulation based CRM

Advantages:

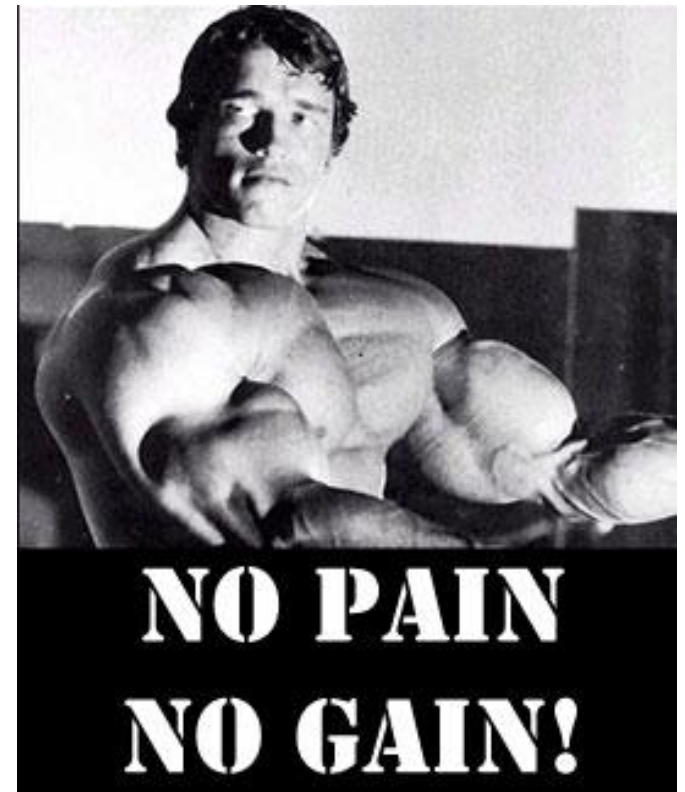
- Relevant context
- Awakening
- Know each other



Simulation based CRM

Disadvantages

- Resources
 - Instructor
 - Learner
 - Simulation Units





Alternatives

- Different disciplines
 - Doctors, nurses
- Cross specialties
 - OT & OG
 - Surgery & AED
- Play different roles
- Generic scenarios



Simulation-based CRM training in HA





Facilities

- Simulation Units
 - Environment
 - Equipment
 - Administration
 - Technical support





Trainers

- CRM simulation instructors
 - Expertise
 - Skills
 - Certification
 - Trainer database





Program

- Pilot 2013
- Corporate Program





Consultancy 2013

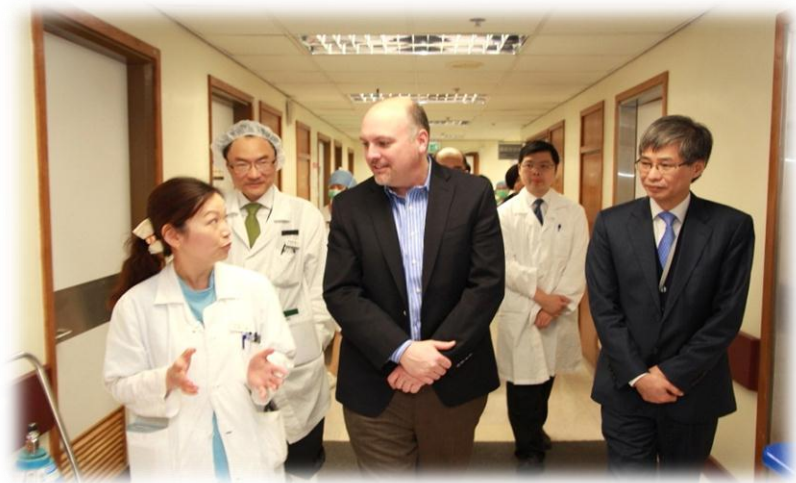




Senior Staff Training Programs

1) Overview training

- ✓ Senior Ranking Staff
- ✓ To take on CRM concepts





Train-the-Trainer Program

2) Intensive train-the-trainer workshop

- ✓ 92 frontline clinical staff from 4 clinical areas:
- ✓ a) the operating theatre; b) intensive care unit; c) obstetrics and gynecology; and d) accident and emergency unit





Frontline Staff Training Program



- Front-line team training
- Coaching
- Development of training materials



Training materials

- CRM videos
- Trainer manual
 - CRM
 - Clinical Scenarios





CRM

● Crew Resource Management Scenario Practice

Simulation Scenario Practice

- Team Briefing
- Team Debriefing
- Situational Awareness
- Assertiveness
- Decision-Making
- Teamwork and Leadership
- Conflict Management
- Standardized Communication





Examples of Scenario Practice

- Anaphylaxis
- Civil Disaster
- STEMI
- Deteriorated patient in the ICU
- Difficult Intubation in ICU
- Eclamptic fit in PACU
- Pathological CTG
- Hypokalemia
- Difficult airway
- Blood transfusion
- Eclamptic fit

Department:	Anaesthesia & OT Services and Obstetrics & Gynaecology
Scenario Title:	Eclamptic fit in PACU
Author:	Dr. Menelik Lee (RS/O&G/QEH) and Dr. Teresa Ma (CON/O&G/QEH)
Last Updated:	1-6-2013

Background of the scenario:
 F/30, Para 0. Antenatal course uneventful. Family history of hypertension. Antenatal BP normal, no proteinuria. Induction of labour at 41 weeks for past-term. Cervix remained 2F despite adequate uterine contraction for 10 hours. BP ~ 145/92 mmHg before C/S, trace proteinuria, asymptomatic. Emergency LSCS done for failed induction, under SA and C/S uneventful. Total blood loss 500ml. BP remained ~140/90 during OT.

Learning Objectives:
 To demonstrate the

- Importance of communication skills
- the significance of team work and leadership
- the function of briefing and debriefing

Sequence 1:
 Situational awareness, standardized communication, assertiveness, decision making.

Sequence 2:
 Team briefings, decision making, teamwork and leadership, standardized communication.

Sequence 3:
 Team briefing, decision making, standardized communication, team debriefings

Roles:

Participants

- 1 midwife
- 2 PACU nurses
- 1 obstetrician
- 1 anaesthetist

Simulation team

- Facilitator

Case Briefing for Each Role:

- F/ 30
- G1P1
- familial history of hypertension, yet antenatal BP was normal, no proteinuria
- Induction of labor was ordered for 41 weeks past term, Cervix remained at 2F despite Uterine contraction for 10 hours, trace proteinuria
- Emergency C/S under SA done, blood lost 500ml

Midwife 1 :	• To care the Patient who is resting in PACU after C/S.
2 PACU nurses	• Arrive upon the request for assistance by the midwife
Obstetrician	• Arrive after the call from PACU
Anesthetist	• Arrive after the call from PACU and receive briefing from obstetrician, to start managing the patient in accordance to patient's condition.

Possible Scenario Flow:		
Time	Scenario/Problem	Action Expected
0-3min	Sequence 1: • Patient resting in PACU after C/S, cared by midwife. Conscious and alert, a little bit of headache. • Developed generalized tonic-clonic convulsion after C/S, last for 20 seconds. Drowsy after convulsion.	<ul style="list-style-type: none"> • 1 Midwives on scene, O2, BP check 160/110, recovery position, call for help from nurse in PACU, OBS doctor and anaesthetist • CRM: situational awareness, standardized communication, assertiveness, decision making
4-6min	Sequence 2: • 2 PACU nurse arrived first, communicated and assisted the midwives to continue care and resuscitate the client	<ul style="list-style-type: none"> • ABC, examination, etc BP 160/110 • CRM: team briefing, decision making, teamwork, standardized communication
7-9min	Sequence 3: • OBS Doctor arrived, briefing by the midwife, take over the case, give drug and order investigation (Anaes not immediately available), • BP 160/110 when no meds given. 150/90 after meds given	<ul style="list-style-type: none"> • con't ABC, examination, bloods, drugs, etc • CRM: team briefing, decision making, teamwork and leadership, standardized communication
10-12min	Sequence 4: • Anaesthetist arrived, briefing by obstetrician, support airway and give appropriate management	<ul style="list-style-type: none"> • take over the leadership mode, con't ABC, support airway • consult ICU • CRM: team briefing, decision making, standardized communication, team debriefing

Simulator Set up:
 F/30 mother in PACU, complaint a bit of headache at first, then developed generalized tonic-clonic convulsion for 20 secs, then changed to drowsy stated after convulsion
 Bp 160/110

Environment and Equipment Set Up:

1. OT bed
2. Transport monitor (central monitor)
3. Blood-taking trolley
4. Drip stand x 2
5. Infusion pump
6. IV fluid
7. Patient ID bracelet
8. Drugs: MgSo4 & Labetalol
9. Faked job sheets & specimen labels
10. O2 cannula or mask
11. Foley catheter and urine bag
12. Gloves
13. Dect phone
14. Medical record containing AN record, labor record, obstetric record, Consent form x C/S, baby chart, I/O chart, plain CMS OT record

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Learning Objectives:
To demonstrate:

- Importance of situational awareness, standardized communication, assertiveness, decision making.
- Team briefings, decision making, teamwork and leadership, standardized communication.
- Team briefing, decision making, standardized communication, team debriefings.

Sequence 1:

Situational awareness, standardized communication, assertiveness, decision making.

Sequence 2:

Team briefings, decision making, teamwork and leadership, standardized communication.

Sequence 3:

Team briefing, decision making, standardized communication, team debriefings

Roles:

Participants

- 1 midwife
- 2 PACU nurses
- 1 obstetrician
- 1 anaesthetist

Simulation team

- Facilitator

Case Briefing for Each Role:

- F/30
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- Emergency C/S under SA done, blood lost 500ml

Midwife 1 :

- To care the Patient who is resting in PACU after C/S.

2 PACU nurses

- Arrive upon the request for assistance by the midwife

Obstetrician

- Arrive after the call from PACU

Anaesthetist

- Arrive after the call from PACU and receive briefing from obstetrician, to start managing the patient in accordance to patient's condition.

7-9min

Sequence 3:

- OBS Doctor arrived, briefing by the midwife, take over the case, give drug and order investigation (Anaes not immediately available), BP 160/110 when no meds given.
- BP 160/90 after meds given

- con't ABC, examination, bloods, drugs, etc
- CRM: team briefing, decision making, teamwork and leadership, standardized communication

10-12min

Sequence 4:

- Anaesthetist arrived, briefing by obstetrician, support airway and give appropriate management

- take over the leadership mode, con't ABC, support airway
- consult ICU
- CRM: team briefing, decision making, standardized communication, team debriefing

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Emergency LSCS
 BP remained ~145/92

Learning Objectives:
 To demonstrate the
 • Importance of communication skills
 • the significance of team work and leadership
 • the function of briefing and debriefing

Sequence 1:
 Situational awareness

Sequence 2:
 Team briefings, decision making

Sequence 3:
 Team briefing, decision making

Roles:

Participants
 • 1 midwife
 • 2 PACU nurses
 • 1 obstetrician
 • 1 anaesthetist

Simulation team
 • Facilitator

Case Briefing for Each Role:
 • F/30
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 • familial history of hypertension, yet antenatal BP was normal, no proteinuria
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leadership mode, can't
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Bp 160/110

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Sequence 1:
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Sequence 2:
 Team briefings, decision making, standardized communication, team

Sequence 3:
 Team briefing, decision making, standardized communication, team

Roles:

- Participants**
- 1 midwife
 - 2 PACU nurses
 - 1 obstetrician
 - 1 anaesthetist

Simulation team

- Facilitator

Case Briefing for Each

- F/30
- G1P1
- familial history of hypertension, yet antenatal BP was normal, no proteinuria
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4-6min	Sequence 2: • 2 PACU nurse arrived first, communicated and assisted the midwives to continue care and resuscitate the client	• ABC, examination, etc BP 160/110 • CRM: team briefing, decision making, teamwork, standardized communication
7-9min	Sequence 3: • OBS Doctor arrived, briefing by	• con't ABC, examination, bloods, drugs, etc

Roles:

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Sequence 3:
 Team briefing,

Roles:

Participants

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- 2 PACU nurses
- 1 obstetrician
- 1 anaesthetist

Simulation team

- Facilitator

Case Briefing

- F/30
- G1P1
- familial history of hypertension
- Induction of labor
- Emergency C/S

Midwife 1 :

2 PACU nurses

Obstetrician

Anesthetist

Case Briefing for Each Role:

- F/30
- G1P1
- familial history of hypertension, yet antenatal BP was normal, no proteinuria
- Induction of labor was ordered for 41 weeks past term, Cervix remained at 2F despite Uterine contraction for 10 hours, trace proteinuria
- Emergency C/S under SA done, blood lost 500ml

Midwife 1 :	<ul style="list-style-type: none"> • To care the Patient who is resting in PACU after C/S.
2 PACU nurses	<ul style="list-style-type: none"> • Arrive upon the request for assistance by the midwife
Obstetrician	<ul style="list-style-type: none"> • Arrive after the call from PACU
Anesthetist	<ul style="list-style-type: none"> • Arrive after the call from PACU and receive briefing from obstetrician, to start managing the patient in accordance to patient's condition.

Possible Scenario Flow:

Time	Scenario/Problem	Action Expected
0-3min	Sequence 1: <ul style="list-style-type: none"> • Patient resting in PACU after C/S, cared by midwife. Conscious and alert, a little bit of headache. • Developed generalized tonic-clonic convulsion after C/S, last for 20 seconds. Drowsy after convulsion. 	<ul style="list-style-type: none"> • 1 Midwives on scene, O2, BP check 160/110, recovery position, call for help from nurse in PACU, OBS doctor and anaesthetist • CRM: situational awareness, standardized communication, assertiveness, decision making
4-6min	Sequence 2: <ul style="list-style-type: none"> • 2 PACU nurse arrived first, communicated and assisted the midwives to continue care and resuscitate the client 	<ul style="list-style-type: none"> • ABC, examination, etc BP 160/110 • CRM: team briefing, decision making, teamwork, standardized communication
7-9min	Sequence 3: <ul style="list-style-type: none"> • OBS Doctor arrived, briefing by the midwife, take over the case, give drug and order investigation (Anaes not immediately available), • BP 160/110 when no meds given. 	<ul style="list-style-type: none"> • con't ABC, examination, bloods, drugs, etc • CRM: team briefing, decision making, teamwork and leadership, standardized communication

leadership mode, con't at airway

briefing, decision making, communication, team

ed generalized tonic-clonic

d, Consent form x C/S, baby

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Roles:
Participants

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- 2 PACU nurses
- 1 obstetrician
- 1 anaesthetist

Simulation team

- Facilitator

Case Briefing for Each Role:

- F/30
- G1P1
- familial history of hypertension, yet antenatal BP was norm
- Induction of labor was ordered for 41 weeks past term, Cerv contraction for 10 hours, trace proteinuria
- Emergency C/S under SA done, blood lost 500ml

Midwife 1 :	• To care the Patient who is res
2 PACU nurses	• Arrive upon the request for a
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10-12min	<p><u>Sequence 4:</u></p> <ul style="list-style-type: none"> • Anaesthetist arrived, briefing by obstetrician, support airway and give appropriate management 	<ul style="list-style-type: none"> • take over the leadership mode, con't ABC, support airway • consult ICU • CRM: team briefing, decision making, standardized communication, team debriefing

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Simulation team

- Facilitator

Case Briefing for Each Role:

- F/30
- G1P1
- familial history of hypertension, yet antenatal BP was normal
- Induction of labor was ordered for 41 weeks past term, Cervix 2F, adequate uterine contraction for 10 hours, trace proteinuria
- Emergency C/S under SA done, blood lost 500ml

Midwife 1 :	• To care the Patient who is resuscitated
2 PACU nurses	• Arrive upon the request for assistance
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Anesthetist	• Arrive after the call from PACU, to start managing the patient's condition.

Possible Scenario Flow:

Time	Scenario/Problem	Action Expected
0-3min	Sequence 1: • Patient resting in PACU after C/S, cared by midwife. Conscious and alert, a little bit of headache. • Developed generalized tonic-clonic convulsion after C/S, last for 20 seconds. Drowsy after convulsion.	• 1 Midwives on scene, O2, BP check 160/110, recovery position, call for help from nurse in PACU, OBS doctor and anaesthetist • CRM: situational awareness, standardized communication, assertiveness, decision making
4-6min	Sequence 2: • 2 PACU nurse arrived first, communicated and assisted the midwives to continue care and resuscitate the client	• ABC, examination, etc BP 160/110 • CRM: team briefing, decision making, teamwork, standardized communication
7-9min	Sequence 3: • OBS Doctor arrived, briefing by the midwife, take over the case, give drug and order investigation (Anaes not immediately available), BP 160/110 when no meds given.	• con't ABC, examination, bloods, drugs, etc • CRM: team briefing, decision making, teamwork and leadership, standardized communication

Simulator Set up:
 F/30 mother in PACU, complaint a bit of headache at first, then developed generalized tonic-clonic convulsion for 20 secs, then changed to drowsy stated after convulsion
 Bp 160/110

- Environment and Equipment Set Up:**
1. OT bed
 2. Transport monitor (central monitor)
 3. Blood-taking trolley
 4. Drip stand x 2
 5. Infusion pump
 6. IV fluid
 7. Patient ID bracelet
 8. Drugs: MgSo4 & Labetalol
 9. Faked job sheets & specimen labels
 10. O2 cannula or mask
 11. Foley catheter and urine bag
 12. Gloves
 13. Dect phone
 14. Medical record containing AN record, labor record, obstetric record, Consent form x C/S, baby chart, I/O chart, plain CMS OT record



CRM

Debriefing Notes:

CRM

1. Communication
2. Teamwork
3. Leadership

Debriefing Notes:

CRM

1. Communication
2. Teamwork
3. Leadership
4. Team debriefing

Sample debriefing Questions

- What went well/not so well?
- What/how can we improve?
- Did we have the right tools?
- Ask for questions/concerns



Plans





Acknowledgement

- CCEs (HKEC, KCC, NTWC)
- HAHO (MG)
- Simulation Training Committee
- CRM Steering Committee
- Team-based Simulation QA Group
- CRM Working Group
- CRM Training Materials Editorial board



Thank you

See you in CRM training!