International Collaboration for an Australian First In-Utero Surgery

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Simulation Education Coordinator

Mater Education and Health Services
A Simulation to Support Multidisciplinary International Collaboration for an Australian First In-Utero Surgery

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Mater Education and Health Services
Acknowledgements

- The Vanderbilt team
- Mater Maternal Fetal Medicine team
- The Perioperative team
- Perioperative and procedural services education coordinators and clinical facilitators
- MEPIC team members
- Mater Media Services
- Mater Foundation
- Mater Mothers’ Auxiliary
- Spina Bifida Queensland
- The families
Information About Us

Melanie Ferguson
Perioperative Educator

Pauline Lyon
Simulation Educator
Delegate Information

- Anyone from Vanderbilt University Hospital?
- Who are you?
- Where are you from?
- Sim experience
Mater Mothers’ Hospitals are the largest provider of maternity care in Australia, delivering more than 10,000 babies every year.
Maternal Fetal Medicine
Mater Perioperative Service

- Situated within Mater Hospital Brisbane
- 16 operating theatres in the suite
- 3 dedicated obstetric theatres
- Fetal surgery is undertaken in the adult theatres
Mater Practice Improvement Centre (MEPIC)

- Located within Mater Education
- Supports organisational wide simulation activities: MEPIC & Point of care simulations
- Educational & Systems integration simulations
The Challenge – 2 babies

- <24wks gestation diagnosed with myelomeningocele
- A change of practice to undertake in utero repairs of myelomeningocele
Available Australian Treatment to Repair Myelomeningocele

- Post natal repair only
- Taken to theatre within 24 hours for closure of the defect
Contemporary Repair of Myelomeningocele

Vanderbilt & Mater Surgical Teams
The Vanderbilt Team’s Journey

14359 KM
8922.27 Miles
The Surgery
They want to run a sim
Director of MFM’s Vision

Bring the USA team and the Australian team together to undertake an Australian first surgery.

To ensure the safety of the mother and baby.

Prepare the teams effectively to undertake the surgery.
What Might Work

Who needs to be involved?  Who needs to know?

What have we got? What do we need?

Perioperative process: Pre, Intra & Post op

Theatre & staff availability

Role clinical support - simulation development & delivery

Fact finding, research

Time frame
Flow Chart of Communication Channels

- Director MFM
  - MFM Midwife
  - Mater Perioperative team
  - Perioperative Educator
  - Vanderbilt team
  - Simulation Educator
  - Perioperative NUMs
  - CSSD

- Mater Hospital CEO
- Birth suite
- Media Services
- Mater Education Managers
- Marketing
- ORMIS Administrator
- Mater Hospital CEO
- Birth suite
- Media Services
- Mater Education Managers
- Marketing
- ORMIS Administrator
Developing the criteria for the simulation activity

- Sim experience of teams
- Clinical expertise
- Must be patient focused
- Safe environment
- Flexible to meet needs
- Role – simulation development, delivery, evaluation
- Process focus. ? Education requirement
- Known & unknown processes to be explored PDSA.
- Has to be inclusive & interprofessional

- Education requirement
- Role – simulation development, delivery, evaluation
- Process focus.
Planning Timeline

12 days from notification to delivery of the simulation
Simulation Preliminary Planning

- Key Indicators
- Research
- Logistics
- Key Personnel
- Type of simulation
- Knowledge review
- Skill acquisition
- Specific scenarios

Simulation Activity Development Tool
Scenario Template Process Review: Scenario specific requirements

- Scenario Title
- Purpose
- Personnel
- Key Faculty
- Standards
- PDSA
- Severity ranking
- Validation

<table>
<thead>
<tr>
<th>Details Simulated activity</th>
<th>Present</th>
<th>Identified concern</th>
<th>Action</th>
<th>Severity Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior To In situ Simulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vanderbilt Team greeted at theatre reception and taken to the change rooms (0930)</td>
<td>LH DM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team identification management</td>
<td>DM</td>
<td>All team members to be issued with a specific name tag</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic theatre orientation to be undertaken prior to commencement of in situ simulation by nominated person</td>
<td>DM</td>
<td>Specific coloured team hat (6 x different coloured hats required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Consents obtained for Staff</td>
<td>DM</td>
<td>Toilets, fire exits etc</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Simulation Resources</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera to take still pictures</td>
<td>MF/PL</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flip charts to draw theatre layout</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coloured pens</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White board - located in theatre</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sim Mom</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/GU Prem Manikin</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observation Theatre 11 (live stream)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Equipment and streaming facilities operational and positioned correctly (Patient Consent obtained)</td>
<td>NF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape to secure media leads</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media consent Forms</td>
<td>PL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum of 20 chairs to be sourced from Corbett Room for theatre 11</td>
<td>MF</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SIMULATION Prep: 08.00 TO COMMENCE: 0900
Relevant Standards

NSQHS Standards
A better way to care

Australian Government
Department of Health
Therapeutic Goods Administration

Certified Product

ANZCA
AUSTRALIAN AND NEW ZEALAND COLLEGE OF ANAESTHETISTS

Australian Health Practitioner Regulation Agency

ACORN
AUSTRALIAN COLLEGE OF PERIOPERATIVE NURSES

HPSN World 2017
Practice with a Purpose
Development of The Simulation

- Briefing
- Point of Care Sim
- Resources required
- PDSA Risk Rating
- Validation
- Crisis Resource Management
- Debriefing
- 1 Sim 12 stages
- ?
Development of the Scenario

Pre Operative

1. Resources, OT set up & ORMIS
2. Ultra Sound Management
3. Pre Admission to OT & Pre Op checks
4. Anaesthetic & Tocolytic management
5. Maternal case: Obstetric- Obs stand down
6. Fetal case Neuro- to Neuro stand down
7. Plastic case – plastic stand down
8. Fetal management
   - Ultra sound
   - Cardiologist
   - Emergency fetal management
9. Obs close & case finalise
10. PACU / Birth Suite / ICU
11. Emergency considerations maternal
12. Post Op environment and resource management
Process testing scenario framework

- **PDSA**

<table>
<thead>
<tr>
<th>Stage:</th>
<th>Sim Observer</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details simulated activity</td>
<td>Present</td>
<td>Identified concern</td>
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</table>

- **Risk Ranking**

<table>
<thead>
<tr>
<th>Severity Ranking</th>
<th>Task failure</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is used to assist in the prioritisation of concerns identified in relation to efficiency</td>
<td>4</td>
<td>Serious problem</td>
</tr>
<tr>
<td>Task failure</td>
<td>3</td>
<td>Minor hindrance</td>
</tr>
</tbody>
</table>
Validation

**Primary**
- Ensuring clinical accuracy
- Simulation efficiency
- Consultation & review by clinical & simulation experts

**Secondary**
- Did the simulation address the objectives?
- Review undertaken post simulation
Critical Resources

- Preference cards from Vanderbilt team
- Specialised stapling device from Covidien (Premium Poly CS)
- Purchase of Allis Adairs Forceps
- What available equipment was suitable
Critical Resources

- Confirmation of team members to be involved
- Sutures not available in Australia
- Theatre space
- Administrative support (Registration of USA Doctors, Flights)
- Room for observers
Briefing

- Creating a Safe Container / Psychological Safety
- Basic Assumption
- Flow of scenario
- Debriefing
Debriefing

- Conducted @ the conclusion of each stage
- Primary debriefer a clinician experienced in simulation
- Plus Delta/Pendleton debriefing focusing on:
  - feelings and safe container
- Key considerations addressed:
  - simulation objectives
  - identified concerns
  - participants key points
CRM Principles/ Human Factors
Non Technical Skills

Where do they fit?

- Leadership & team work
- Situational awareness
- Communication strategies - Speaking up
- Alternative plans & emergency actions
Were we ready?
Safe Container
Speaking Up & Clarifying
Adapting & Working As A Team
Individual Team Discussions
Anaesthetics
Individual Team Discussions Surgical
Bringing The Individual Teams Together
Language Differences Identified
Education Elements
One Final Check
Surprises
Pleasant & Not So Pleasant

- Time limitations
- Engagement of staff
- Observers & crowd control
- Media attention
- Process testing simulation that turned into an education simulation
- Cultural similarities
- Communication differences
- Mutual respect
From Simulation
Are we ready?
To Surgery
To Success – Baby Harvey
“We are so grateful to so many people ... I look at him and I just think that he is a miracle.”

— Claudine Fitzgibbon
Personal Journey’s & Reflections

“To be able to simulate the surgery is an amazing opportunity to be able to step through the procedure, find out if there are any issues and to play out different scenarios to ensure that safety for the mother and baby is optimised prior to the actual day of surgery,”
Personal Journey’s & Reflections
There is no doubt that every part of the world needs this as a surgical option for their patients. Glenn Gardener and his team in Brisbane worked hard to make this happen. For us to be a part of this was a tremendous honour.

Dr Jay Wellons M.D
MSPH (Neurosurgery)
Processes streamlined
Problems identified & managed
Simulation Successful
Clinically prepared
Team cohesiveness demonstrated
Safe for mother & baby
References


Management of Myelomeningocele Study (MOMS) (February 10, 2011) Retrieved February 15, 2017 from https://www.youtube.com/watch?v=tPZE90ljCA

Baby Harvey [Image]. (2017). Obtained from Claudine Fitzgibbon and used with permission


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