How to improve the quality of the design and evaluation of interprofessional in-situ simulation-based education

ASPiH Conference 2017
Workshop
Introductions

Dr. Jonathan Hurst MB ChB (Hons) MSc PG Cert MRCPCH
Neonatal Specialty GRID Registrar
Previous Neonatal Simulation Fellow at St. Mary’s Hospital, Manchester
Author of model being presented (work submitted for PG Cert in Simulation & Technology Enhanced Learning, Manchester Metropolitan University, 2017)

Mrs. Leah Greene MRes, BSc (Hons), PG Cert HEPR, FHEA
Senior Lecturer in Simulation-Based Education
Module lead for SiH: Practical application module
Manchester Metropolitan University

Dr. Suzanne Gough PhD, PFHEA, MA Education, PGC-AP, BSc (Hons) Physiotherapy, MCSP
Senior Lecturer in Physiotherapy
Manchester Metropolitan University
Workshop learning objectives

1. Develop insight into the challenges and barriers of implementing sustainable interprofessional in-situ simulation activities in the healthcare setting.

2. Critically discuss methods to overcome local challenges to the provision of interprofessional in-situ simulation.

3. Develop insight into a new model to facilitate the design and evaluation of interprofessional in-situ simulation, mapped to new ASPiH standards (2016).

4. Reflect on the application of the new model to their own area of practice.
Learning objective 1:

Develop insight into the challenges and barriers of implementing sustainable interprofessional in-situ simulation activities in the healthcare setting
Learning objective 2:

Critically discuss methods to overcome local challenges to the provision of interprofessional in-situ simulation
Learning objective 3:

Develop insight into a new model to facilitate the design and evaluation of interprofessional in-situ simulation, mapped to new ASPiH standards (2016)
Learning objective 4:

Reflect on the application of the new model to your own area of practice
Group work 1

‘Quick fire’ responses

‘What are the challenges and barriers to implementing interprofessional in-situ simulation-based education in your healthcare setting?’

(5 minutes)
New model for healthcare settings

Hurst, J. (2017)

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)
Funding (Equipment, faculty training)
Time constraints
Space / equipment
Participant & Faculty availability
Buy-in, expectations, requirements
Scenario theme
Number of participants available
Professional group / roles
Level (of experience)
Remote senior support availability

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)

Hurst, J. (2017)
Interprofessional in-situ simulation

1. Organisation / Management
2. Participants
3. Facilitators / Faculty
4. Learning theories & practice
5. Simulation design & Learning Objectives
6. Simulation facilitation & debriefing
7. Linked learning activities
8. Evaluations / Outcomes

Sustainability & feedback

Professional group / role
Number available
Skill set / confidence
Team composition

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)

Hurst, J. (2017)
Theories
- Behaviourism & experiential learning
- Constructivism
- Complexity (systems behaviour & systems change)

Practices
- Flipped classroom
- Scaffolding
- Zone of proximal development
- Deliberate practice
- Time on task
- Mentoring

Adapted from Jeffries, P. R. (2005), and Gough, S. et al. (2016)
Hurst, J. (2017)

Fidelity, realism, authenticity
Space / equipment availability
Cues
Support mechanisms
Technical vs. non-technical factors

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)
Hurst, J. (2017)

- Pre-brief
  - Introduction
  - Orientation
  - Safeguards / Confidentiality

- Scenario
  - Duration
  - Focus
  - Progression / problem solving
  - Manikin operation

- Debrief
  - Location
  - Safeguards
  - Format

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)
Hurst, J. (2017)

Reflection (group and self)
Evidence of participation (portfolio)
Further reading (guidance / protocols)
Appraisal
Integration into clinical practice
Further simulation participation
Hurst, J. (2017)

Participant
- Knowledge
- Skills
- Behaviours
- Critical thinking (technical, non-technical skills)
- Satisfaction
- Translation to practice

Facilitator
- Effectiveness
- Confidence

Organisation
- Meeting expectations
- Patient safety issues
- Systems
- Compliance

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)
<table>
<thead>
<tr>
<th>Evaluations / Outcomes</th>
<th>Organisation / Management (Each professional group)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant – knowledge, skills, behaviours, critical thinking (technical, human factors), satisfaction, translation to practice Facilitator – effectiveness, confidence Organisation – meeting expectations, patient safety issues, systems, compliance</td>
<td>Funding (equipment, faculty training) Time constraints Space/equipment Participant &amp; Faculty availability Buy-in, expectations, requirements</td>
<td>Scenario theme Professional group / role Level Number available Remote senior support availability</td>
</tr>
</tbody>
</table>

**Linked learning activities**
- Reflection (group and self)
- Evidence of participation (portfolio)
- Further reading (guidance/protocols)
- Appraisal
- Integration into clinical practice
- Further simulation participation

**Facilitators / Faculty**
- Professional group / role
- Number available
- Skill set / confidence
- Team composition

**Interprofessional in-situ simulation**

**Simulation facilitation & debriefing**
- Pre-brief – introduction, orientation, safeguards / confidentiality
- Scenario – duration, focus, progression / problem solving, manikin operation
- Debrief – location, safeguards, format

**Simulation design & Learning Objectives**
- Technical vs. human factors
- Fidelity, realism, authenticity
- Space / equipment availability
- Cues
- Support mechanisms

**Learning theories & practice**
- Theories – e.g. behaviourism & experiential learning, constructivism, complexity,
- Practices – e.g. flipped classroom, scaffolding, zone of proximal development, deliberate practice, time on task

---

Hurst, J. (2017)
<table>
<thead>
<tr>
<th>Evaluations / Outcomes</th>
<th>Organisation / Management (Each professional group)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant</strong> – 9, 12</td>
<td>2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14, 16, 17, 18, 19, 20, 21</td>
<td></td>
</tr>
<tr>
<td><strong>Facilitator</strong> – 2, 3, 7, 8, 11, 14, 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Organisation</strong> – 5, 7, 8, 9, 11, 12, 13, 16, 17, 18, 19, 20, 21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linked learning activities</th>
<th>Interprofessional in-situ simulation</th>
<th>Facilitators / Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 9, 11</td>
<td>ASPiH standards (2016) mapping</td>
<td>1, 2, 3, 4, 10, 12, 14, 18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Simulation facilitation &amp; debriefing</th>
<th>Simulation design &amp; Learning Objectives</th>
<th>Learning theories &amp; practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 3, 9, 10, 14</td>
<td>5, 6, 9, 12, 13, 15</td>
<td>10</td>
</tr>
</tbody>
</table>

Hurst, J. (2017)
Group work 2

Using the blank template

‘Explore the practicalities of using such a model in your workplace and how the new ASPiH standards (2016) can be achieved’

(15 minutes)
<table>
<thead>
<tr>
<th>Evaluations / Outcomes</th>
<th>Organisation / Management (Each professional group)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant</strong> – knowledge, skills, behaviours, critical thinking (technical, human factors), satisfaction, translation to practice</td>
<td><strong>Funding</strong> (equipment, faculty training)</td>
<td>Scenario theme</td>
</tr>
<tr>
<td><strong>Facilitator</strong> – effectiveness, confidence</td>
<td><strong>Time constraints</strong></td>
<td>Professional group / role</td>
</tr>
<tr>
<td><strong>Organisation</strong> – meeting expectations, patient safety issues, systems, compliance</td>
<td><strong>Space/equipment</strong></td>
<td>Level</td>
</tr>
<tr>
<td><strong>Participant &amp; Faculty availability</strong></td>
<td><strong>Participant &amp; Faculty availability</strong></td>
<td>Number available</td>
</tr>
<tr>
<td><strong>Buy-in, expectations, requirements</strong></td>
<td><strong>Remote senior support availability</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linked learning activities</th>
<th>Facilitators / Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection (group and self)</td>
<td><strong>Professional group / role</strong></td>
</tr>
<tr>
<td>Evidence of participation (portfolio)</td>
<td><strong>Number available</strong></td>
</tr>
<tr>
<td>Further reading (guidance/protocols)</td>
<td><strong>Skill set / confidence</strong></td>
</tr>
<tr>
<td>Appraisal</td>
<td><strong>Team composition</strong></td>
</tr>
<tr>
<td>Integration into clinical practice</td>
<td></td>
</tr>
<tr>
<td>Further simulation participation</td>
<td></td>
</tr>
</tbody>
</table>

**Interprofessional in-situ simulation**

<table>
<thead>
<tr>
<th>Simulation facilitation &amp; debriefing</th>
<th>Simulation design &amp; Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-brief – introduction, orientation, safeguards / confidentiality</td>
<td><strong>Technical vs. human factors</strong></td>
</tr>
<tr>
<td>Scenario – duration, focus, progression / problem solving, manikin operation</td>
<td><strong>Fidelity, realism, authenticity</strong></td>
</tr>
<tr>
<td>Debrief – location, safeguards, format</td>
<td><strong>Space / equipment availability</strong></td>
</tr>
<tr>
<td><strong>Cues</strong></td>
<td><strong>Support mechanisms</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning theories &amp; practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theories – e.g. behaviourism &amp; experiential learning, constructivism, complexity,</td>
</tr>
<tr>
<td>Practices – e.g. flipped classroom, scaffolding, zone of proximal development, deliberate practice, time on task</td>
</tr>
</tbody>
</table>
Case study
Theory into Practice

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)

Hurst, J. (2017)
The unit leads for simulation, nurse education & the lead nurse discussed:
• Organisational expectations (technical (NLS) and non-technical (Human factor) training)
• Provisions for training space, equipment, faculty training & availability.

Embedded in a **2-hour slot** in the annual mandatory update programme.
The simulation set-up mirrors that in the workplace – junior and senior nurses and doctors (max. 3 of each profession). Consultants & shift coordinators involved directly or by telephone for advice. Nursing participants are rostered to attend in non-clinical time.
A multiprofessional faculty, made of neonatal consultants, sim fellow, and senior nurses (including education team), trained in facilitation & debriefing practice. At least 2 facilitators are present per simulation.
To aid ‘collaborative practice’, socio-cultural constructivist theory and ‘Scaffolding are employed during the development and execution of the simulation sessions. A flipped-classroom approach is used for more complex sessions - relevant information is provided one week before the simulation.

Hurst, J. (2017)
Technical & human factor learning objectives around the acute deterioration of a neonate are delivered using real anonymised scenarios. Senior help is available to participants for guidance / assistance. If a high emotional load is anticipated, specific faculty personnel are available to provide appropriate support.
Facilitation & debriefing in line with recognised standards (INACSL), allowing participants to problem solve.
The participants’ airway management skills are formatively assessed by the faculty after the debrief & participant reflection. Further reading is highlighted during debriefing. All participants receive a certificate of participation.
The simulations are evaluated on multiple levels, aiding sustainability:

**Participant** – feedback form, direct discussion, appraisal

**Facilitator** – facilitator debrief, peer-review

**Organisation** – including liaison with risk management, training compliance figures
Conclusions

• Explored the *challenges* and *barriers* of implementing sustainable interprofessional in-situ simulation activities in the healthcare setting

• Reflect on the *application of the new model to their own area of practice*, in line with new ASPiH standards (2016) to aid improve quality of the *design* and *evaluation* of a *sustainable* interprofessional in-situ simulation-based education programme
New model for healthcare settings

Adapted from Jeffries, P.R. (2005), and Gough, S. et al. (2016)

Hurst, J. (2017)
Acknowledgements

• Suzanne Gough and Leah Greene for co-delivering this workshop and their extensive feedback and support in the development of this model

• Fellow students undertaking PG Cert in Simulation and Technology Enhanced Learning at MMU for support and peer feedback

• Supporting simulation faculty at St. Mary’s Hospital, Manchester for their continued support with facilitation of NICU mandatory training simulation programme, using this model.