Promoting Excellence And Reflective Learning in Simulation (PEARLS): A Blended Approach to Healthcare Debriefing

Walter Eppich¹,², Mark Adler¹,², Traci Robinson³, Wendy Bissett³, James Huffman³, Kristin Fraser⁴, Josh Ross⁵, Tobias Everett⁶,⁷, Jon Duff⁸, Adam Cheng³,⁴¹¹Northwestern University Feinberg School of Medicine
²Ann & Robert H. Lurie Children’s Hospital of Chicago/USA
³KidSim Simulation Program, Alberta Children’s Hospital
⁴University of Calgary, Calgary/CA
⁵University of Wisconsin, Madison/USA
⁶Hospital for Sick Children, Toronto/CA
⁷University of Toronto, Toronto/CA
⁸Stollery Children’s Hospital, Edmonton/CA

Disclosure

- **Eppich**
  - Center for Medical Simulation, Boston/USA
  - Honoraria to teach on train-the-trainer courses with PAEDSIM e.V.
- **Cheng**
  - Simulation Educator with Royal College of Physicians and Surgeons of Canada
  - SSH Board of Directors
- **Others**
  - No disclosures

Welcome & Introductions
Our basic assumption

- Everyone participating in training is intelligent, capable, does their best, and wants to improve

Center for Medical Simulation

Ground rules

Learning objectives

After this session, you will be better able to:
1. Identify three different educational strategies used during debriefing and when to use them
2. Discuss how learner self-assessment focused facilitation strategies and directive feedback and teaching fit within the PEARLS debriefing framework
3. Apply the PEARLS blended approach to debriefing using the decision support aid and the PEARLS debriefing tool
Workshop Outline

• Introductions
• PEARLS overview
• Video exercises
  – Self-assessment (e.g. Plus-Delta)
  – Focused facilitation (e.g. Advocacy-Inquiry)
  – Directive Feedback
  – Putting it all together
• Take Home Messages

Debriefing

• Facilitated reflection in experiential learning\textsuperscript{1}
• Involves “the active participation of learners, guided by a facilitator or instructor whose primary goal is to identify and close gaps in knowledge and skills.”\textsuperscript{2}

1 Fanning and Gaba 2007
2 Raemer et al. 2011

Debriefing

• Feedback and debriefing an essential component of simulation-based education\textsuperscript{1,2}
• What method of debriefing is best?
  – No head to head studies\textsuperscript{3}
  – No current method is ideal

\textsuperscript{1}Issenberg et al. 2005
\textsuperscript{2}McGaghie et al. 2010
\textsuperscript{3}Raemer et al. 2011
What educators are doing?**

- Applying phases
- Ask learners to self-assess – e.g. Plus-Delta (+/Δ)
- Facilitating discussion – e.g. Advocacy-Inquiry
- Provide directive feedback and teaching

*Krogh, K, AMEE 2013
†Steinwachs 1992
‡Fanning & Gaba 2007
|Archer 2010

What makes the debriefing effective?

1. Supportive environment
2. Allows for trainee reactions / emotions
3. Specific, concrete observation
4. Honest but non-threatening approach
5. Trainees shares their perspectives on events
6. Focus on improvement or sustaining excellence


PEARLS Framework
What are the characteristics of these methods, and when should they be used?

---

**Learner Self-Assessment**

- **What went well (plus)**
  - Easy to learn
  - Multiple issues identified quickly

- **What could be changed (delta) AND WHY?**
  - Educator must tactfully close performance gaps

---

**Learner Self-Assessment**

- **Advantages**
  - Learner centered
  - Easy to learn
  - Multiple issues identified quickly

---

**Learner Self-Assessment**

- **Disadvantages**
  - Easy to get off track
  - Can easily miss opportunity to discuss rationale
  - Educator must tactfully close performance gaps

---
### Performance gap

- **Frames**
- **Actual performance**
- **Desired performance**
- **Performance gap**

Rudolph et al 2008

### Advocacy-Inquiry

**Advantages**
- Promotes reflective learning
- Allows for understanding of frames/rationale
- Group discussion
- Exploration of team dynamics

**Disadvantages**
- Can be time consuming
- Very difficult to master
- Risk of conversation going off-topic

### Directive Feedback

- Educators offers practical solution(s) to performance gaps
- Focused on actions
- **Best for:**
  - Technical skills
  - Knowledge gaps
Directive Feedback

• Advantages
  – Rapidly close performance gaps
  – Where rationale evident, discussion not required
  – Time efficient

• Disadvantages
  – Assumed rationale may be incorrect
  – No exploration of rationale
  – May be taken the wrong way if not delivered effectively
  – Teacher centered
  – Limits group discussion
PEARLS Framework

**ANALYSIS**

Select method of Debriefing

Were All Learning Objectives Covered?

How much time do you have?

ASK

Is the rationale evident?

NO

Directive Feedback

Plus Delta

Advocacy Inquiry

Revisit Learning Objectives

Long Time - Rationale

Short Time + Rationale

Short Time + / - Rationale

Generate list of Performance Gaps (+/\Delta)

Close Performance Gaps

Learner Driven

Analyze Individual Performance Gaps

Instructor Driven

Close Performance Gaps

Instructor Driven

Desktop Framework

May shorten if students appear to have a shared understanding of case

Descriptive Phase

REACTIONS

Reactions Phase

DESCRIPTIVE

Descriptive Phase

PEARLS Framework

SELECT APPROACH

1. How much time do you have?
2. How much time do you have?
3. How much time do you have?

Learner Self-Assessment

Direct Feedback and Teaching

Learner Generates Performance Gaps

Instructor Generates Performance Gaps

Close Performance Gaps

Learner Driven

Instructor Driven

Application / Summary

Learner Driven

Instructor Driven
PEARLS Debriefing Script (Overview)

**PEARLS Debriefing Framework**

**REACTION**
- "How did that feel?"
- Potential follow-up questions:
  - "How was that for the rest of you?" "What were the rest of you feeling at the time?"

**DESCRIPTION**
- "Can someone summarize what the case was about from a medical point of view? What were the main issues you had to deal with?"
- Potential follow-up questions:
  - "What was your plan?" "What were the next steps?"

**ANALYSIS**
- "Now that we are clear about what happened, let’s talk more about that case. There were aspects I think you managed effectively and other areas that you might want to have done differently. I would like to explore each area with you."

**Learner Self-Assessment (e.g., Pus-Delta)**
- "What aspects of the case do you think you managed well?"
- "What aspects of the case would you want to change?"

**Directive feedback and teaching**
- "I noticed you [insert performance gap here]. Next time, you may want to…[close gap] because [provide rationale]."

**Facilitation (e.g., Advocacy-Inquiry)**
- Specifically state what you would like to talk about ("I would like to spend a few minutes talking about XXX")
- Elicit underlying rationale for actions: see page 2 for approach

**APPLICATION/SUMMARIZING**
- Learner Driven: "I like to close the debriefing by having each of you state one or two takeaways that will help you in the future."
- Instructor Driven: "In summary, the key learning points from this case were:...

---

**Video Exercise 1**

- **Case:**
  - 12 month old baby
  - Found at home unconscious, GCS 5
  - RR 10 on arrival, Sat 92% RA, HR 50
  - Presumptive diagnosis:
    - Severe head injury, increased ICP

---

**Objectives**

- **Demonstrate**
  - Steps of rapid sequence intubation in a trauma patient
  - Adequate c-spine immobilization
- **Clear communication and teamwork surrounding airway management management**
Video Exercise 1

- Identify performance gaps
- Debriefing exercise
  - Learner Self-Assessment
- Facilitator feedback

Video Exercise 1 – Learner Self-Assessment (Plus-Delta)

<table>
<thead>
<tr>
<th>Identify Performance Gaps</th>
<th>Close Performance Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>What aspects of the case do you think you managed well?</td>
<td>Close gaps through teaching and discussion</td>
</tr>
<tr>
<td>What aspects of the case management would you want to change AND WHY?</td>
<td>- Instructor prompted</td>
</tr>
<tr>
<td></td>
<td>- Learner driven</td>
</tr>
</tbody>
</table>
Video Exercise 2
Focused Facilitation

- Watch video
- Identify performance gaps
- Debriefing exercise
  - Advocacy Inquiry
- Facilitator feedback

Video

PEARLS Debriefing Script

<table>
<thead>
<tr>
<th>ADVOCACY/INQUIRY</th>
<th>PERFORMANCE GAP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP 1:</strong> EXPLORE PERFORMANCE GAP</td>
<td><strong>PERFORMANCE GAP</strong></td>
</tr>
<tr>
<td><strong>I saw that...</strong></td>
<td>I noticed that performance gap was related to...</td>
</tr>
<tr>
<td><strong>I heard you say...</strong></td>
<td>I heard that performance gap was related to...</td>
</tr>
<tr>
<td><strong>How do you see it?</strong></td>
<td>How do you see it?</td>
</tr>
<tr>
<td><strong>I wonder what your thoughts were at the time?</strong></td>
<td>I wonder what your thoughts were at the time?</td>
</tr>
<tr>
<td><strong>What was going through your mind?</strong></td>
<td>What was going through your mind?</td>
</tr>
<tr>
<td><strong>How did you decide that...</strong></td>
<td>How did you decide that...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>STEP 2:</strong> UNDERSTAND RATIONALE AND CLOSE PERFORMANCE GAP</th>
<th><strong>POSITIVE PERFORMANCE GAP</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>So what I'm hearing is that...</strong></td>
<td>Identify and reinforce existing frame through discussion</td>
</tr>
<tr>
<td><strong>If I understand correctly, you are saying that...</strong></td>
<td>Discuss to highlight positive learning need</td>
</tr>
<tr>
<td><strong>What strategies do you see going forward that would help you?</strong></td>
<td>What strategies do you see going forward that would help you?</td>
</tr>
<tr>
<td><strong>How will this impact your performance next time?</strong></td>
<td>How will this impact your performance next time?</td>
</tr>
<tr>
<td><strong>How would you manage that situation differently next time?</strong></td>
<td>How would you manage that situation differently next time?</td>
</tr>
<tr>
<td><strong>How will your train of thought change the next time you encounter a similar situation?</strong></td>
<td>How will your train of thought change the next time you encounter a similar situation?</td>
</tr>
</tbody>
</table>
Video Exercise
Directive Feedback

<table>
<thead>
<tr>
<th>Observed Performance Gap</th>
<th>Close Performance Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>I noticed........</td>
<td>Next time, you may want to........ because......</td>
</tr>
<tr>
<td>I observed........</td>
<td>An alternative way to do this....because......</td>
</tr>
<tr>
<td>I saw that........</td>
<td>What I do to prevent the patient from [insert result here], is.... because.....</td>
</tr>
<tr>
<td>I heard you say........</td>
<td>My take on the guidelines is.... because.....</td>
</tr>
</tbody>
</table>

Video Exercise 3
Putting it all together

- Watch Video
- Case
  - 12 month old boy
  - Fever, vomiting, unwell x 3 days
  - Diagnosis: Myocarditis

- Identify performance gaps
- Debriefing exercise
  - Reactions phase
  - Descriptive phase
  - Analysis (1 or 2 performance gaps)
- Facilitator feedback
Video review

Video Exercise
Putting it all together

PEARLS

- Provides a framework for context-specific application of commonly used approaches to debriefing
- The PEARLS scripted debriefing tool can serve as an adjunct in faculty development initiatives
- Future work will determine the extent to which PEARLS promotes various aspects of debriefing expertise
Acknowledgements

- Vincent Grant, Traci Robinson, Helen Catena, Wendy Bissett, Kristin Fraser, Gord McNeil (KidSim Team)
- Nicola Robertson (PEARLS flow diagram)
- Mark Adler (Northwestern University)
- Jenny Rudolph (Center for Medical Simulation)
- EXPRESS Collaborative
- Royal College of Physicians and Surgeons of Canada (SET team)

Questions?

Walter Eppich, MD, MEd  
[w-eppich@northwestern.edu](mailto:w-eppich@northwestern.edu)

Adam Cheng, MD  
[chenger@me.com](mailto:chenger@me.com)