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at Guy's & St Thomas'  
LONDON

# Using *In Situ* Simulation to Identify Latent Threats During Critical Airway Management

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Guy's and St Thomas' NHS Foundation Trust



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# Aims of session



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- State the potential latent risk factors associated with unexpected difficult intubations
- Present the benefits & specific challenges of *in situ* simulation
- Describe the principles of a new model of debriefing specifically for *in situ*

# NAP4: A Brief Refresher



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- 20% of all airway incidents occurred in the ICU
- 60%+ patients significant harm:-
  - death, or significant brain injury
- Incidence of harm much greater than in anaesthesia, or ED
  - *National Audit Project in 2011 (NAP4)*

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# OT v ICU: Compare + Contrast

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**crowded spaces & poor patient accessibility**

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# Critical Care Patient & Staff Factors...



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- Increased urgency
- Limited Cardiorespiratory Reserves
- Rapid Decompensation
  
- Infrequent intubations
- Airway skills variable amongst Dr's & Nurses
- Rotation staff in a "new environment"

# Recommendations: All ICU's Have:



# Simulation based-education: Lab or *In situ*?



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# *In situ supporting evidence*



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“Outcomes for simulation that is physically integrated into clinical environment...”

- Technical proficiency improved
- Desirable individual & team behaviours reinforced
- Active & latent systems issues identified
- *In situ* simulation can be a catalyst for change in clinical care systems and improved clinical outcomes *(Patterson et al 2011)*

“Robust opportunities to diagnose & improve organizational & system-level processes” *(Rosen et al 2012)*

# In situ across GSTT



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*..and further more!*

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# *In situ advantages*

- Real time
- Real roles
- Real environment
- Real equipment
- Real pressures
- Deliberate practise



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# GSTT Critical Care Aims



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1. Identify latent threats when preparing for intubation ICU & HDU (remote locations)
2. Rehearse management of the unexpected difficult intubation
3. Create a culture of enthusiasm to learning in a safe, real environment

# Here's what we did



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## Datix airway incidents

- Modified for anonymity

Set our kit up in critical care

## Explained our intentions

- Staff
- External teams
- patients
- relatives



# Latent Threats Identified



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- Videolaryngoscope malfunction
  - Airtraq Failure- Batteries leaked, expiry 3 years previously
- Location of Glidescopes - not easy to find in a hurry
- Delays in getting the right help to distant HDU Sites (>30mins!)
- Intubation trolleys in HDU were impractically small for need
  - Intubation checklist shortage
- Kit for a CICO in HDU not immediately accessible/ available

# Immediate Improvements



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- Trolleys all checked, restocked, purposed for need
- Emergency Contact List developed for HDU
- Staff self reporting
- Refresher knowledge & confidence gained in Airway management & Rescue techniques

# This Is What Our Staff Said:



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This is so different to a simlab!- **much better**

I have felt **anxious** at the prospect of setting up an airway on HDU- this has been invaluable

Highlighted the importance of **checking expiry dates** on infrequently used kit



# Here's What Our Patient's Said



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This is really great watching you train for emergencies- you've made my day more interesting too.....

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# Spreading the News



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## In-Situ Newsletter- Sharing our Stories December 2015: Page 1



**Thank you** all for your help with getting the first round of ICU In-Situ Simulation off the ground.

This month, we rehearsed the management of the Unanticipated Difficult Airway.

Some real positives were achieved from these sessions which I'd like to share with you:

1. We refreshed our knowledge of [difficult airway algorithm](#)
2. You felt that rehearsing difficult intubations [improved your familiarity](#) with the Difficult Airway Trolley contents
3. Practicing intubation drills allowed us to harness the potential of the [Equipment Dump-Sheet and Checklists](#)
4. You are working on an [emergency contact list](#) for Page HDU- to help you bring the *right* help, when *you* need it



5. [Family and awake patients enjoyed and valued](#) our efforts for in-situ training and did not feel it was disruptive!



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## In-Situ Newsletter- Sharing our Stories December 2015: Page 2



You also helped us identify and address some important equipment issues:

1. Our Airtraq did not work on EW1- on inspection, the batteries had leaked and it expired in 2013
2. Glidescopes can be found on EW2 next to the Difficult Airway Trolley
3. Our intubation checklists are a very popular aide-memoire. So popular, that we were reminded to restock them!
4. Larger trolleys are needed on HDU to lay out the intubation dump sheet and kit



Your invaluable contributions have made a big step towards [improving local patient safety](#).

I hope you found it as rewarding as us, and look forward to seeing you soon!

Certificates for Participants available for Collection

Please let me know if you haven't received yours:  
Shantha.Chandrasekharan@gstl.nhs.uk

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# Challenges of running *in situ*



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- **Organisation**
  - Bed space
  - Teams
  - Equipment set up
  - Permission & consent
- **Time constraints**
  - Space and logistics
  - Resource intensive
- **Enough time for debriefing**
  - Perception of 'additional pressure' of time away from **real** patient care
  - and many more...



# Are you too busy to improve?

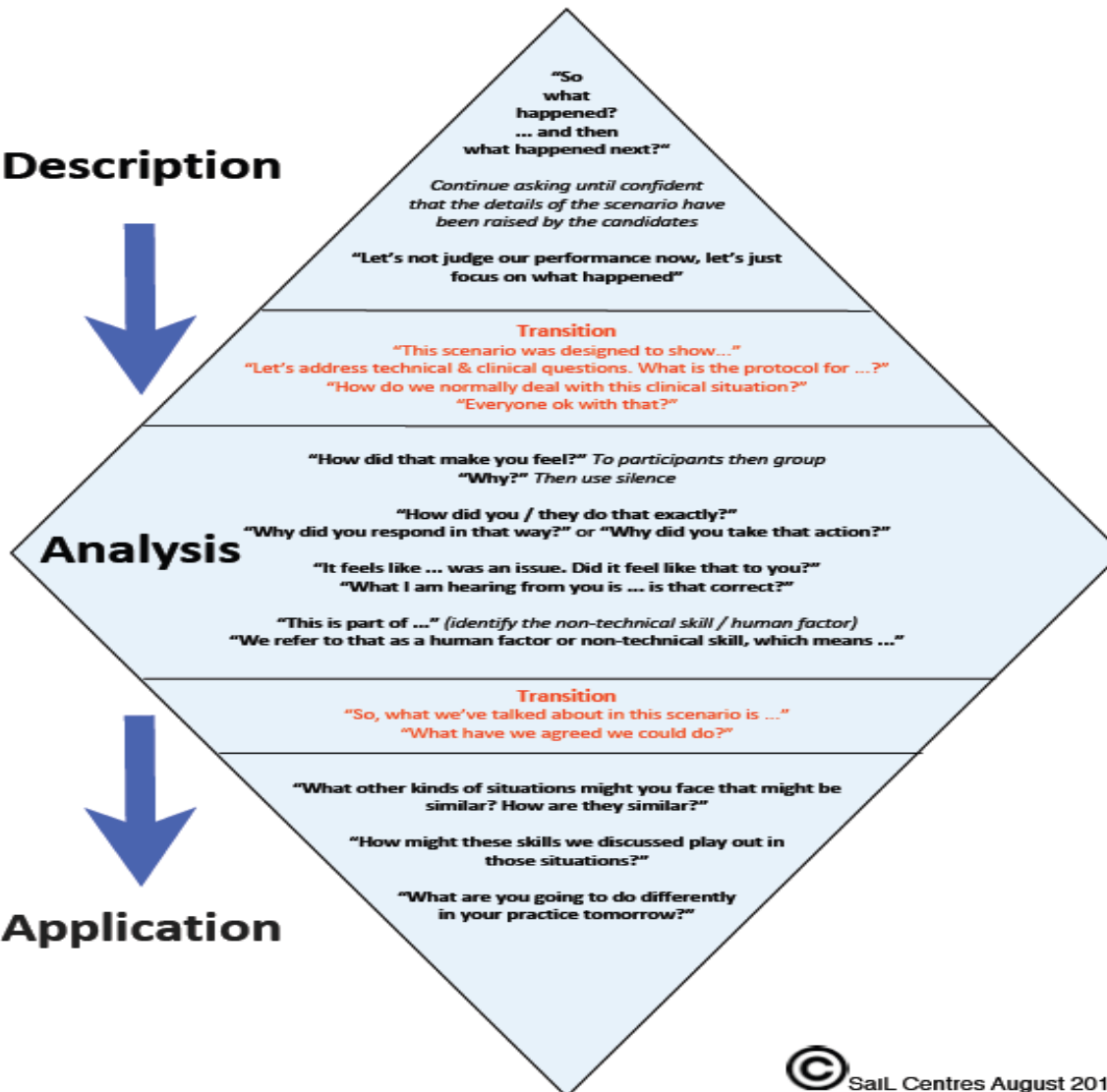


# Debrief Diamond: Key Phrases to Remember



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**Description**



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# Debrief Diamond: Underlying Principles



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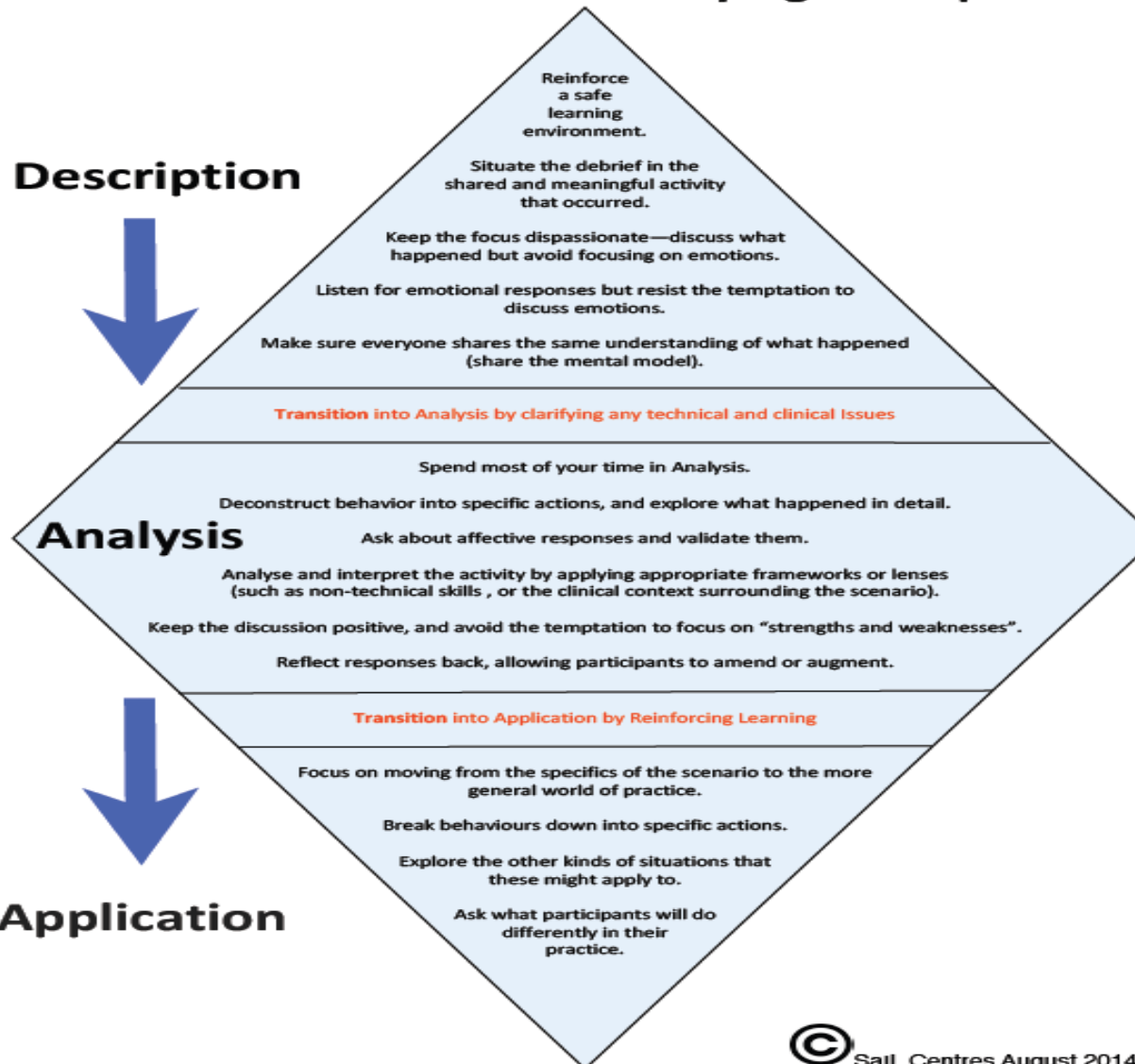
## Description



## Analysis



## Application



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Time  
5 mins

*"How do you feel?"*  
(reactionary vent)  
**Description**

*"Could someone describe what happened?"*  
*"Did anyone see things unfold from a different perspective?"*

**Transition**

*"This scenario was designed to stimulate discussion about. . ."*  
*"Does anyone have any technical questions?"*

**Analysis**

Consider what the learning objective are

**Systems testing**

**Use Plus/ Delta model**

*"What went well (for the team/ department/ hospital)?"*

*"What could be done differently (for the team/ department/ hospital)?"*

*"Has anyone seen this in real life?"*

Close the performance gap with a mini-didactic teaching if appropriate

**Individual /Team Human Factors**

**Use Advocacy with Inquiry**

*"One thing I thought we could talk about... is that ok?"*

*"I noticed you . . . (name the behavior/ action) ... when the guidelines say. . . And I wonder what you feel about that?"*

*"Why do you think you approached it in this way?"*

*"Has anyone seen this in real life?"*

Sign-post appropriate non-technical skill and direct participants to further resources

**Transition**

*"So we have talked about how . . . can affect us/impact on our behaviors/ actions"*

**Application**

*"What will you do differently now?"*

*"How are you going to use what you have learned?"*

*"What are the changes we need to take forward?"*

*"Who should these be discussed with?"*

*"Who is going to take these forward?"*

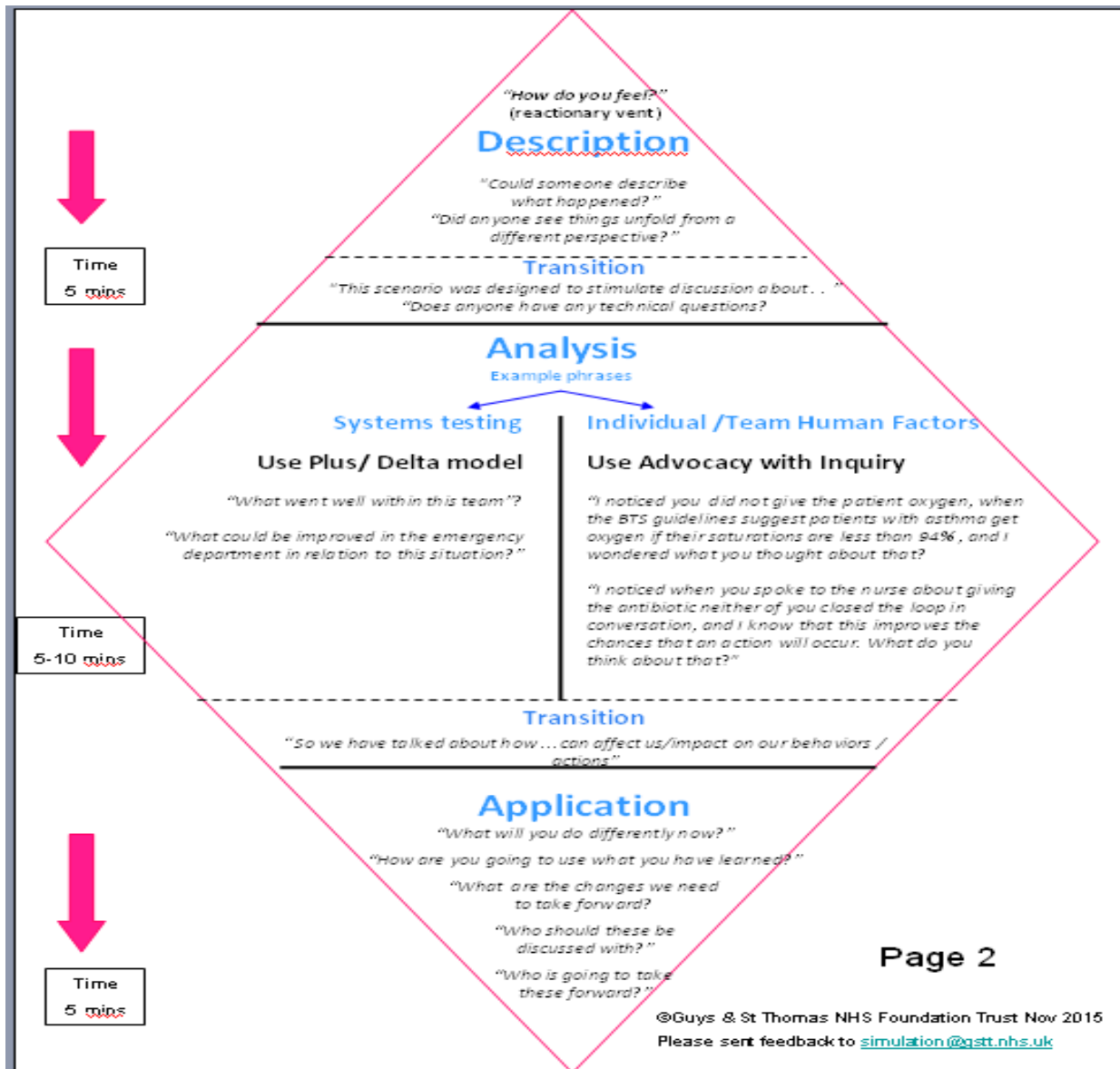


Time  
5 mins

# The Diamond Debrief for Insitu



# The Diamond Debrief for Insitu





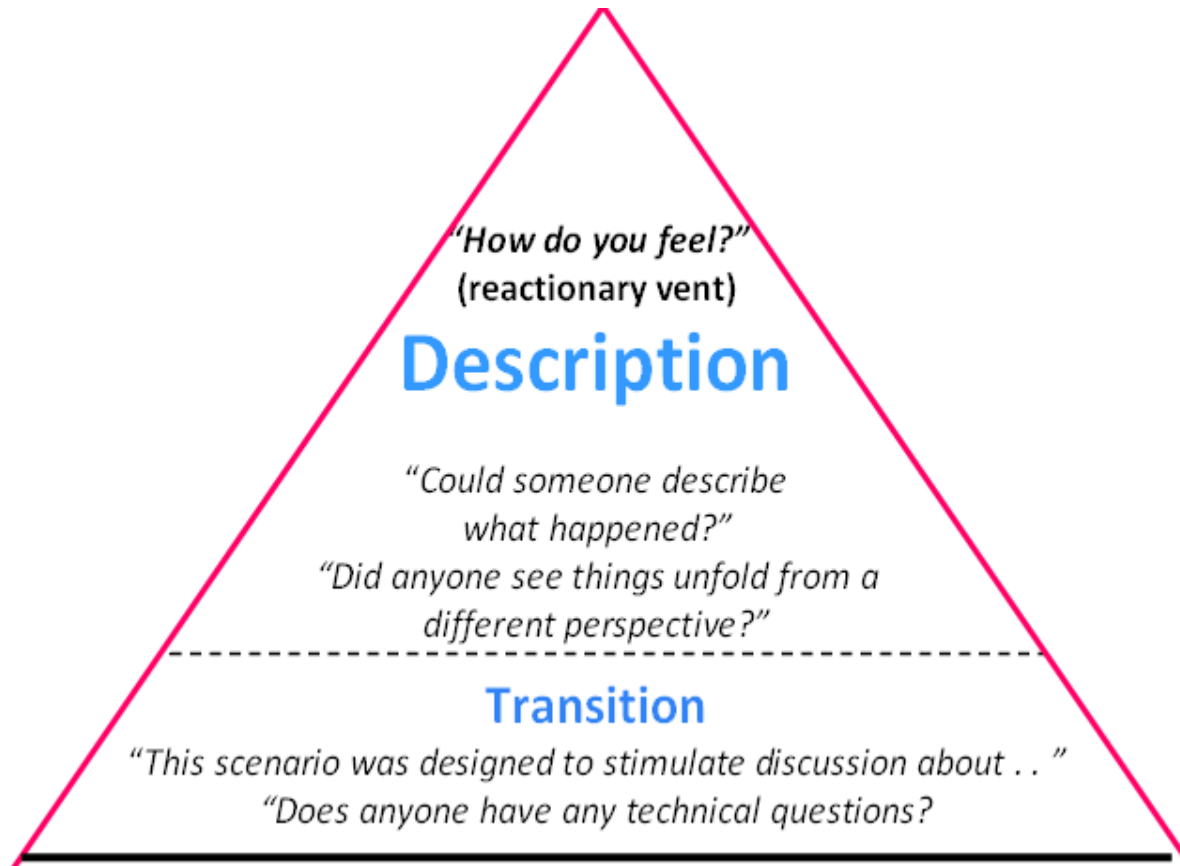
# The Description phase



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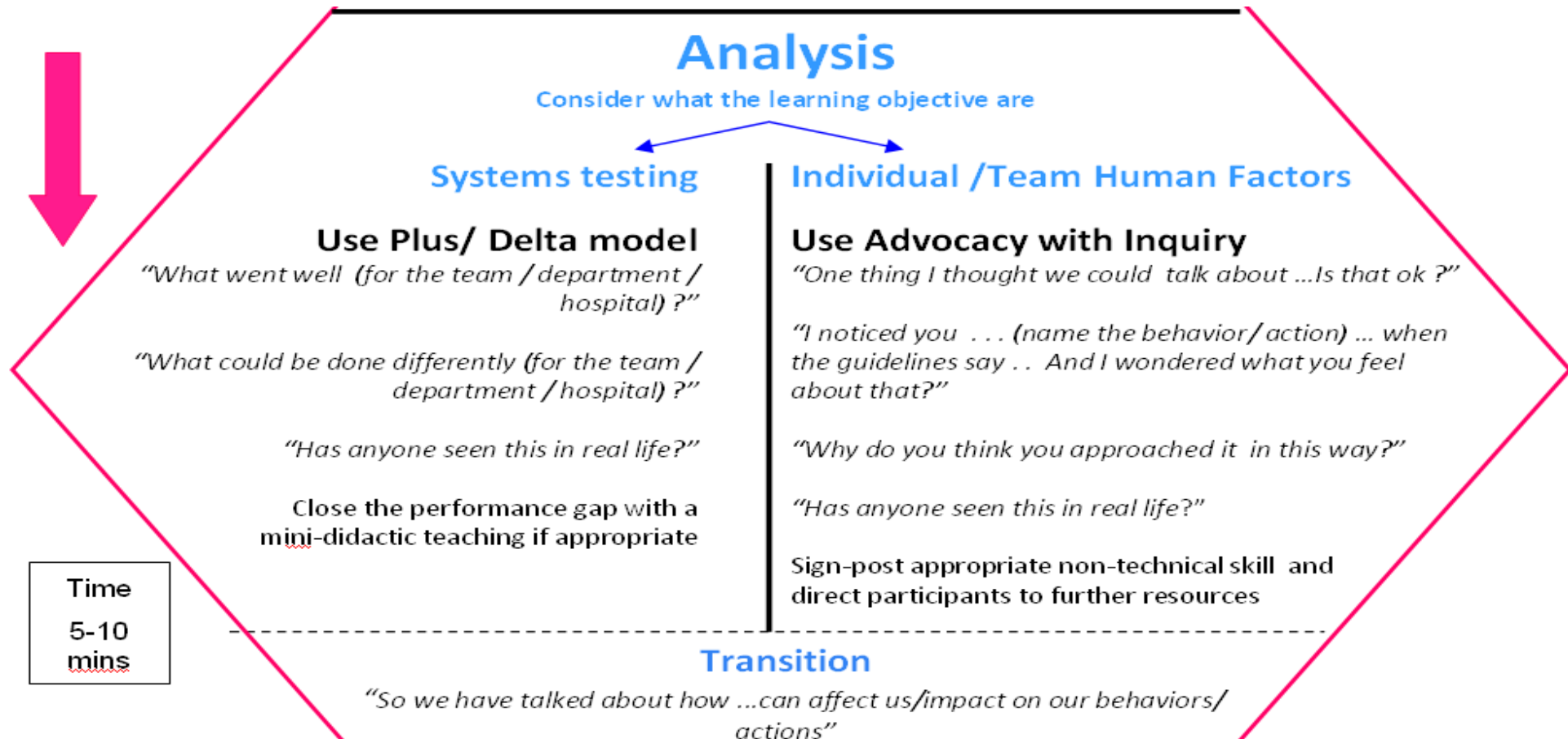
Time  
5 mins



# The Analysis phase



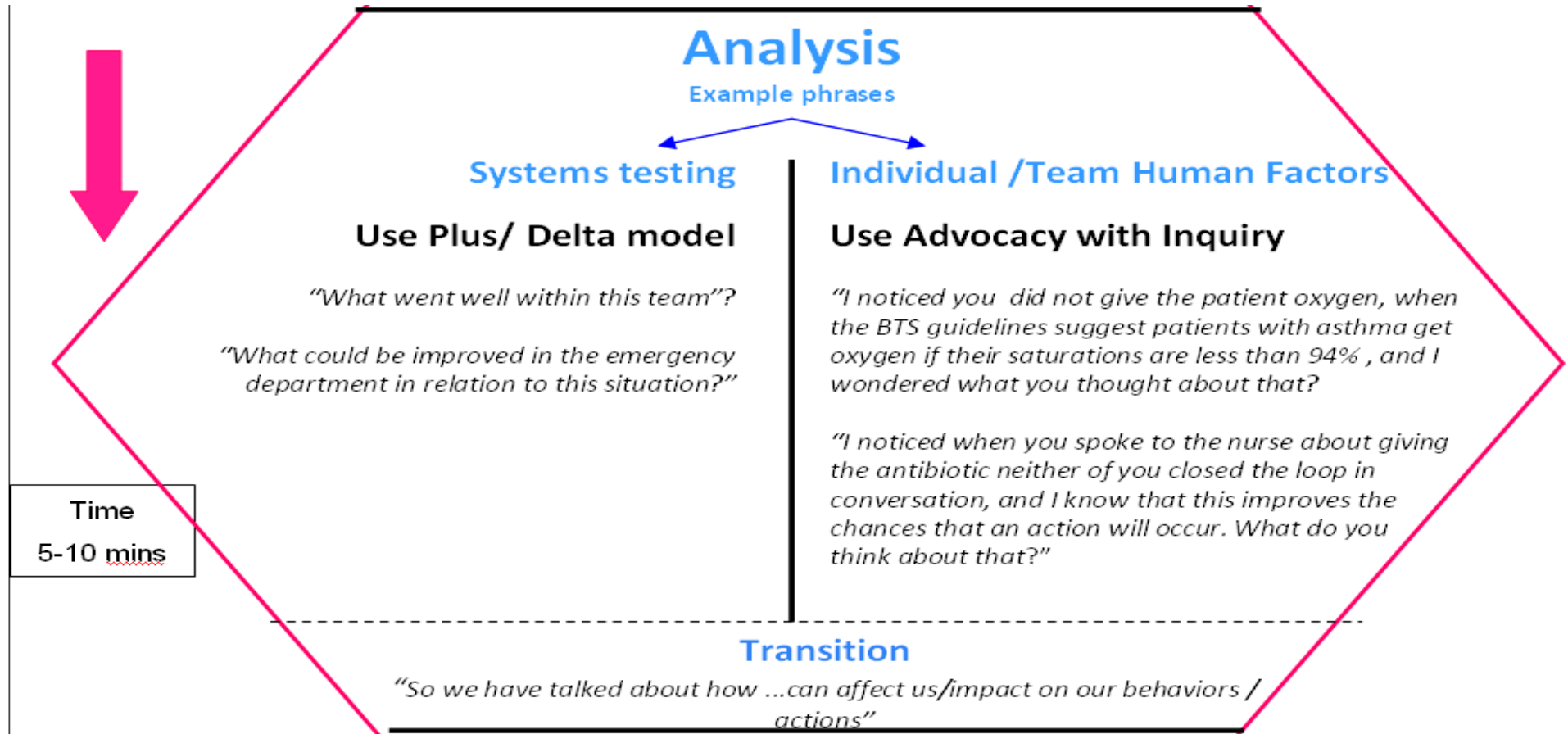
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# The Analysis Phase



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# The Application phase



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Time  
5 mins

## Application

*"What will you do differently now?"*

*"How are you going to use what you have learned?"*

*"What are the changes we need to take forward?"*

*"Who should these be discussed with?"*

*"Who is going to take these forward?"*

# Summary



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## *In situ* simulation:

- provides a rich resource to identify latent threats & immediate safety improvements to be made
- team & individual proficiency in high stakes procedures
- encourages staff engagement in change processes
- poses significant challenges to faculty/ depts.- time
- Can be reassuring to patients / families



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**Any questions?**

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# References



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# Keeping in touch

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