

IN PRACTICE

A108 **'MOULIN ROUGE' – EMERGENCY PREPAREDNESS, RESILIENCE & RESPONSE (EPRR) AND SIMULATION: A CASE STUDY ASSESSING THE IMPACT OF A TRANSFORMATIONAL SIMULATION**

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Introduction: In February 2025 Newcastle Hospitals Trust ran a multi-disciplinary, multi-stage simulated exercise demonstrating care for a patient with a viral haemorrhagic fever (VHF). The exercise, entitled 'Moulin Rouge', followed on from work at the Royal Free Hospital, London (Exercise 'Mamma Mia'), which conducted an exercise using a Trexler-based method of isolation and care in 2024 [1]. The Infectious Diseases (ID) team at Newcastle simulated a PPE-based care model to explore the relative challenges and benefits compared against the Trexler model.

Aim: To review the impact of a transformational simulation enabling practice and evaluation of effective procedures for

providing peri-partum and neonatal care for a patient with a VHF.

Methods: The Trust's Emergency Preparedness Resilience & Readiness (EPRR) lead anticipated that the exercise was likely to be large scale and that simulating the clinical elements would be essential. Planning closely followed the transformational simulation framework [2], with weekly design meetings attended by representatives of each department involved. Simulation representation from an early stage allowed for the appropriate targeting of simulation resources, as well as providing advice on the appropriate structuring of the four exercise scenarios taking place over two days.

The simulation team provided several key components: audio-visual (AV) support for the exercise, a neonatal manikin, and an extensively modified obstetric manikin to allow for caesarean-section, hysterectomy, and significant (4.5litres>) blood loss.

The AV support included pre-recorded video, alongside an unobtrusive multi-camera live stream, in-room audio and live narration, with patient observations inserted into the live stream as required. This enabled the large number of observers to participate in the debriefing discussions after each scenario.

The c-Section & hysterectomy modifications were developed and refined with expert obstetrics and gynaecology teams to ensure that they would be able to perform in their role in as realistic a manner as possible.

Results: Of the 100 attendees 33 completed the exercise evaluation form. Attendees were asked to grade on a Likert scale whether the exercise 'did not meet'/'partially met'/'met' stated objectives (Figure 1). Weighting for percentage = Not met 0%; partially met 50%; fully met 100%.

Discussion: Moulin Rouge had nine stated objectives, seven of which required some level of clinical simulation (Figure 1). EPRR often utilises a less resource intensive 'tabletop' approach to deliver an exercise, however the inclusion of transformative simulation enhanced the debriefing discussion and highlighted unexpected human factor elements that may not have been noticed without it. Evaluations emphasise that the transformative simulation was vital in enabling a high-level discussion of the complex issues raised by the exercise objectives and will directly influence national discussion and policy around the management of patients with a VHF.

Ethics Statement: As the submitting author, I can confirm that all relevant ethical standards of research and dissemination have been met. Additionally, I can confirm that the necessary ethical approval has been obtained, where applicable

REFERENCES

1. Alonso A, Cohen J, Cole J, Emonts M, Karunaharan N, Meadows C, O'Hara G, Owens S, Payne B, Porter D, Ratcliffe L, Riordan A, Ludwig-Schmid M, Sinha R, Tunbridge, Whittaker A E, Beadsworth M, Dunning J, and NHS England HCID Networks. 'Clinical Management of Hospitalized Patients With High-Consequence Infectious Diseases in England' Health Security 2024;22:S1,S50-S65
2. Gurnett P, Weldon S, Spearpoint K and Buttery A: 'Transformative Simulation: To Patient Safety and Beyond' in 'Patient Safety: Emerging Applications of Safety Science', 1st Ed. Class Publishing 2024

SUPPORTING DOCUMENTS – FIGURE 1-A108

Objective	% agree that objective met (n = 33)
Objectives marked (S) were demonstrated through simulation.	
<i>Weighting: Not met 0%, Partially met 50%, Fully met 100%.</i>	
Test the protocols for activating an HCID response within the organisation.	96.43
Allow participants to familiarise themselves with the PPE ensemble and IPC requirements of caring for a VHF patient. (S)	95.31
Test the clinical protocols for peripartum care of a VHF patient. (S)	92.86
Test the clinical protocols for management of a L2 and subsequently L3 patient with a VHF in the HLIU environment. (S)	93.55
Test the effectiveness of communication between the clinical team caring for the patient. (S)	93.75
Test the effectiveness of communication and escalation procedures - as outlined in the incident response framework - between the Hospital Control Team and clinical staff caring for the patient (tactical to operational). (S)	96.15
Allow participants the opportunity to increase their familiarity with the clinical environment and skills required to perform an emergency caesarean section and manage and major haemorrhage in the HLIU. (S)	96.67
Explore where there are gaps in the protocols and procedures for managing a confirmed HCID patient admitted to the Trust. (S)	90.00
Explore issues around Category A waste management at the Trust.	78.26

Figure 1. Evaluation from observers stating whether the objectives of the exercise had been met.

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