

# A simulation-based preceptorship for patients with rare and life-threatening illness: working together with a regional specialist treatment centre to improve patient outcomes nationally

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## Aims

To deliver a unique 'simulation-based preceptorship' programme for NHS trusts managing patients with rare but life-threatening disease.

## Methods

Thrombotic microangiopathies (TMAs) are a group of rare conditions representing medical emergencies, with a high mortality if left untreated. Acute management is challenging and requires urgent multispecialty input to stabilise the patient and arrange life-saving treatment. Teams come under high pressure to manage critically unwell patients, where delays in management can significantly affect patient outcome.

There is public expectation that healthcare professionals are competent at managing life-threatening conditions and patients are shocked to learn that doctors frequently perform a skill or manage a condition for the first time on a real patient. Reflecting the experience of the airline industry, simulation provides safe exposure to rare disease and crisis situations.

In response to a series of patient deaths regionally, Liverpool now hosts a supraregional specialist TMA service, which has transformed patient outcomes from a previous national average of around 50% mortality to 100% patient survival.

A simulation-based preceptorship was designed and delivered through collaboration between the Royal Liverpool University Hospital, University College London Regional TMA Treatment Centres and the Liverpool Simulation Team, ensuring a competent faculty with clear objectives. Five teams of three professionals per NHS trust, medical and nursing, were invited to a 1-day event in Liverpool and, as important stakeholders, patients and carers were included to educate healthcare teams around communication and their care when faced with emergency medical crises.



**Fig 1. High-fidelity simulation scenario.** Life-threatening presentation in the emergency department resus-agitated pregnant lady with thrombotic thrombocytopenic purpura and her partner (actors), simulation team and invited participants challenged with urgent, effective management.

## Results

The preceptorship represented the first programme of its kind to use simulation innovatively as the primary tool for impact. High-fidelity TMA scenarios were created using simulated patients or actors to challenge learners in managing TMA patients within simulated, high-pressure but safe environments (Fig 1). Scenarios covered the spectrum of urgent referral through acute presentation/deterioration to patient and family interaction, comprehensively covering the complexities of team dynamics, practical skills and communication under stressful conditions. The concept of human factors was explored in the debrief, in addition to highlighting possible local patient safety concerns or opportunities to improve the quality of service delivery.

Support and helpful aids were provided by the host specialist centres that had learnt lessons from the past and gathered experience through centralisation of service. Many of the learners were simulation naïve; however, formal feedback was excellent, commending the value of such a programme for rare disease and in particular the value of simulation in the learning experience. For NHS trusts moving towards regional service provision for TMAs,

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soon to be commissioned by NHS England, attendees highlighted the value of such a powerful and insightful learning tool.

### Conclusions

The TMA preceptorship demonstrates clear alignment to wider stakeholder needs, patient safety and care quality. Recreation of the realism experienced with this challenging patient group, combined with the experience of regional specialist centres, has resulted in a highly successful initiative, now hosting further NHS

trusts annually towards better national standards of care and outcomes for patients with rare disease.

Raising the profile of UK physicians leading innovation, the preceptorship was awarded runner-up for the international Porterhouse Medical Live Communique Award for Excellence in Education Professional Education Programmes, 2017. ■

### Conflict of interest statement

No conflicts of interest to declare.