

**Impact case study (REF3b)**

<p><b>Institution:</b> University of the West of England (UWE), Bristol</p>
<p><b>Unit of Assessment:</b> 28 – Modern languages and linguistics</p>
<p><b>Title of case study:</b> Creating effective teamwork in obstetric emergencies</p>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>Maternity staff from hospitals in the UK and around the world have benefited from training to improve their communication and team-working skills in emergency situations. This has been achieved through input into a standard training manual now in wide use, and through the development of course content used in ‘train-the-trainer’ sessions for consultant obstetricians, consultant anaesthetists and senior midwives who have in turn been able to train their colleagues. Research findings at UWE, Bristol, contributed to showing that clinically better results correlate with specific linguistic behaviours. The findings of the work made a direct contribution to this training content.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>Safety in obstetric emergencies can be improved: 50% of maternal deaths and 75% of intrapartum stillbirths could have been prevented with better clinical management and teamwork. NHS litigation costs have also been associated with poor teamwork. Teamwork has therefore been identified as a training priority (e.g. the UK House of Commons report on the need for NHS to improve team work). However, teamwork training does not draw on any standard curriculum. A model borrowed from aviation-related studies on teamwork training is often used as the basis for training. Since joining the University of the West of England (UWE), Bristol, as a Senior Lecturer (2007-2013) Dr Jo Angouri has conducted research in health-care discourse. Since 2009 she has been collaborating with a multidisciplinary team on the project that led to the impact presented here. The project was carried out in 2009-10. Angouri was a core team member, the only linguist on the team, and oversaw the analysis of the discourse. She was line manager for one Research Associate, Dr Katherine Bristowe (UWE, Nov 2009 – Oct 2010). Angouri’s (UWE) input led to a change of mindset in relation to the importance of team talk and to the breadth and depth of linguistic analyses in the design.</p> <p>The aim of the underpinning research was to investigate what makes certain <i>ad hoc</i> teams interactionally more effective than others in the hospital context and what this means for clinicians and patients.</p> <p>Overall we found that the following patterns were associated with significantly better team performance: using structured handovers, declaring what the emergency is early and following a linear interactional pattern in which the team leader directed a message to a named interlocutor who acknowledged, executed and confirmed task completion. Explicit information about the nature of emergency, condition of baby and mother and treatment plan was also associated with better teamwork by patient actors.</p> <p>During the life of the project we conducted three studies which are discussed in detail below.</p> <p><b>Studies A and B</b> built on the Simulation and Fire-drill Evaluation (SaFE) study, a randomised controlled trial which investigated the effectiveness of training for obstetric emergencies. In <b>Study A</b>, 108 randomly selected maternity professionals in 18 teams in six hospitals in Southwest England were videoed managing a patient-actor in a simulated emergency. The team set the administration of an essential drug as a surrogate, from a clinical perspective, for team efficiency and patient outcome. Clinically better teams were likely to have stated the emergency earlier and were more likely to have used a tight control of the floor with the addressor allocating tasks and the message being directed to an addressee, acknowledged, executed and confirmed. Better teams also tended to have more structured handovers.</p> <p><b>Study B</b> found that there was a significant correlation between patient-actor perception of</p>

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communication, and the number and duration of communication episodes. Patient-actor perception of safety was better when the content of the communication episodes included: possible cause(s) of the emergency, the condition of their baby, and the ultimate treatment (need to expedite delivery).

**Study C** aimed to go beyond simulated data and analyse the perceptions of health care professionals about effective teamwork in medical emergencies. Focus groups were audio recorded, transcribed by Bristowe (UWE), and coded and analysed (by Angouri/Bristowe, UWE, Hambly, Frenchay Hospital, Siassakos, Southmead Hospital). Findings indicated that awareness of the clinical situation, the patient's needs, and of the team members' roles were perceived as crucial for team performance and clinical outcome. The availability of senior clinicians also emerged as central for the management of emergencies.

### 3. References to the research (indicative maximum of six references)

1. Siassakos, D., Bristowe, K., Draycott, T., Angouri, J., Hambly, H., & Winter, C. (2011). Clinical efficiency in a simulated emergency and relationship to team behaviours: A multisite cross-sectional study. *BJOG: An International Journal of Obstetrics & Gynaecology*, 118(5), 596-607. [doi:10.1111/j.1471-0528.2010.02843.x](https://doi.org/10.1111/j.1471-0528.2010.02843.x)

Runner-up, "The Simmy Award" for most influential articles in simulation (finalist), International Meeting for Simulation in Healthcare 2012

2. Siassakos, D., Bristowe, K., Hambly, H., Angouri, J., Crofts, J., & Winter, C. (2011). Team communication with patient actors: Findings from a multisite simulation study. *Simulation in Healthcare*, 6(3), 143-149. [doi:10.1097/SIH.0b013e31821687cf](https://doi.org/10.1097/SIH.0b013e31821687cf)

3. Siassakos, D., Bristowe, K., Hambly, H., Angouri, J., Yelland, A., Draycott TJ, Fox, R. (2012). Teamwork for Clinical Emergencies: Interprofessional Focus Group Analysis and Triangulation With Simulation. *Qualitative Health Research* 22(10), 1383-94. [doi: 10.1177/1049732312451874](https://doi.org/10.1177/1049732312451874)

4. Siassakos, D, Fox, R, Bristowe, K, Angouri, J, Hambly, H, Robson, L & Draycott, TJ 2013, 'What makes maternity teams effective and safe?: Lessons from a series of research on teamwork, leadership and team training'. *Acta Obstetrica et Gynecologica Scandinavica* 92(11),1239-43. [doi: 10.1111/aogs.12248](https://doi.org/10.1111/aogs.12248)

This impact case study draws on the results of an NBT (North Bristol Trust) funded project: Grant title: The active ingredients of effective teamwork and leadership in maternity PI: Dimitrios Siassakos, Southmead Hospital, Funder: North Bristol Small Grants Scheme, 2009-10, £19,986, Co-applicants: Jo Angouri (UWE), Helen Hambly (Frenchay Hospital), Dimitrios Siassakos (Southmead Hospital), Sanjay Vyas (Southmead Hospital), Catherine Winter (Southmead Hospital).

### 4. Details of the impact (indicative maximum 750 words)

Angouri's research has had impact on two levels, (a) on the way teamwork and team communication is understood by the project team and (b) on training that was developed as a result of the study. More specifically:

#### Economic and societal impacts:

The team's findings have been used to revise and update relevant guidance and chapters in the 2nd Edition of the PROMPT 2 (PRactical Obstetric Multi-Professional Training) course manual, which is used for multi-professional training of maternity staff in the South West, the UK and around the world (corroborating source CS1). The manual is part of a training package focused on obstetric emergencies.

The team's findings have been used in three course programmes: (a) local PROMPT courses at Southmead Hospital, Bristol, (b) a train-the-trainers days at the Royal College of Obstetricians and Gynaecologists and (c) SMASH (Saving Mothers with Advanced Simulation scenarios for High-risk

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situations) course.

Specifically:

A. Multi-professional teams from individual maternity units attend a PROMPT Train the Trainers day and take the package back to their own unit to train all of their maternity staff. By July 2013 PROMPT had reached most maternity units in England. The trainees are Obstetricians, Anaesthetists, and Midwives (all trainers in their own respective units).

The team's findings have been used in the Teamwork Chapter of the manual and have been used for teamwork and leadership training generally threaded throughout debriefing in all practical sessions (discussions being 5-10 minutes at 6 drills stations). The courses have been held every two months at Southmead Hospital, Bristol, and 50-60 participants were trained each time, a total of over 300 per year (or 900 since 2009-2010). They have therefore had impact both regionally and nationally. Feedback forms (CS2) indicate that the participants have developed awareness of the significance of teamwork and team communication for improved clinical practice.

B. Teamwork, as elucidated in our findings, has been a central part of train-the-trainers courses held at the Royal College of Obstetricians and Gynaecologists. Teamwork is a chapter in both the Trainee and the Trainers manuals (Trainee manual, Module 1 Teamwork p1-13 but also thread throughout the manual; Trainer manual, Module 3 Teamwork p17-25 and throughout). These courses have been held four times per year with 8-16 teams of trainers from maternity units around the UK, and also around the world, being trained. In this area again the research's impact has had both national and international reach. The second edition of PROMPT 2 was introduced in June 2012. 52 UK maternity units (208 multi-professional trainers) have already been trained. Feedback forms (CS3) show that the courses met the needs of the participants and were relevant to the trainees' everyday practice.

C. The team's findings have also informed the regional advanced SMASH (Saving Mothers with Advanced Simulation scenarios for High-risk situations) course for senior maternity staff (labour ward leaders). This is a one-day course held yearly. The course started with a lecture on teamwork and leadership (delivered by a team member) based on our findings. The PowerPoint slides (CS4) for this course drew directly on the research. These were followed by six stations with extensive 20-30 minutes debriefing between stations, using formative checklists based on our work. Anaesthetists, Obstetricians, and Midwives have attended (20-25 participants). The course feedback indicates high satisfaction and relevance to improving clinical practice (see letter of support from trainee, corroborating source CS5).

PROMPT has had a national and international impact on medical professionals' training. Outside the UK, PROMPT 2 is used in Australia, New Zealand, Hong Kong, China, USA, Iceland, Belgium and Ireland. The PROMPT 2 edition, which includes the teamwork research jointly led by Dr Angouri, is listed as the fastest-selling book ever published by the RCOG Press. The manuals are now published by Cambridge University Press and there are region-specific versions for the USA, China and Australia/NZ (CS6).

## **5. Sources to corroborate the impact**

### **- All files available through UWE -**

CS1. Testimonial from Obstetrician, Southmead Hospital, Bristol corroborating the influence of the research in changing attitudes towards the perceptions of team communication and teamwork. [1 on REF Portal]

CS2. Feedback forms from trainees attending PROMPT course at Southmead Hospital. This is a random sample the forms, corroborating consistently positive feedback, and showing that the participants improved their understanding of teamwork and the relationship between talk and action in the obstetric emergency context.

CS3. Feedback forms from PROMPT 2 course at the Royal College of Obstetricians and Gynaecologists. The evaluation forms show that for the majority the session on teamwork fully met their training needs.

CS4. PowerPoint slides used for SMASH course. These include explicit reference to the research

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findings.

CS5. Testimonial from Obstetrics & Gynaecology Trainee, Severn Deanery. Corroborates the benefit from the SMASH course in improving communication skills in emergency situations, resulting in improved team performance in clinical practice. [2]

CS6. Testimonial from co-author, PROMPT manual corroborating the incorporation of the research findings into the PROMPT 2 manual, together with the high sales of the manual by RCOG and publication of region-specific versions by Cambridge University Press. [3]