



Centre for Medical Education:

Research News

Towards a 'pedagogy of uncertainty': MITS and INFUSE

If you take contextual factors into account, prescribing is a complex act. It is a major stressor for newly qualified doctors, who write two thirds of prescriptions in UK hospitals. And it is error-prone. This has resisted best efforts to teach prescribing skills. It is a wicked problem, which makes it an interesting challenge for educationalists.

Insulin, intravenous fluids, and anticoagulants are particularly interesting. This 'unholy trinity' of drugs have several things in common:

- They are commonly prescribed
- They have a narrow therapeutic window
- They cause significant harm

We are examining how people prescribe, and learn to prescribe insulin and intravenous fluids in our current work, which aims to refine a 'pedagogy of uncertainty'. At the heart of this educational approach is a rule of thumb, which helps doctors respond safely to uncertain situations. Described by the acronym SMAC², it encourages them to consider:

- The Situation
- Myself
- How to Act under present circumstances
- Checking
- And Checking again



The MITS (Making Insulin Treatment Safer) team has developed a set of procedures, whereby foundation doctors analyse significant events related to insulin prescribing and are 'debriefed' on these by a trained debriefer, who uses an approach based on empowerment theory to help them commit to save future behaviour.

We have, to date, trained 22 pharmacists, 25 doctors, 10 nurses, and 2 patients with type 1 diabetes as 'MITS debriefers'. They have conducted upwards of 60 case-based discussions with foundation doctors, 53 of which we have now analysed in detail.

The MITS intervention is well received. Our innovative use of a person with diabetes as a debriefer has, in particular, attracted favourable comment. The findings fully confirm the indeterminate nature of prescribing acts. They also highlight, graphically, features of the clinical systems within which foundation doctors learn, which make those decisions challenging as well as indeterminate.



We acknowledge, with thanks, funding from the Health and Social Care Northern Ireland Research and Development Directorate.

We are also, currently, piloting an intervention based on Dr Richard McCrory's doctoral research into how medical students learn to prescribe intravenous fluids. This will be within the Clinical Assistantship programme during the academic year 2017 – 18. It will have the following components:

- A lecture during the Preparation for Practice course, when students will consider the challenges of stepping aside and prescribing those fluids
- A simulation during the Acute Care Course, when they will observe a simulated prescribing event and analyse key features of it
- On a pilot basis, students on several sites writing dummy prescriptions based on close observation of practice, and then being debriefed on it in much the same way as in MITS.

Tim Dornan for the MITS Team and INFUSE Steering Group

Simulation based education: Beyond the manikin.... but not the person

Gerry Gormley and Jenny Johnston have secured funding for a new PhD studentship in CME. The project entitled 'Simulation based education: beyond the manikin....but not the person' has been advertised and the successful candidate will be due to start in Sept 2018. The overall aim of this project is to develop an understanding of the key concepts of patienthood that best guides simulation based educational practice, particularly when working with simulated patients. This educational PhD provides an exciting opportunity to investigate the representation of patients, and their illness experiences, in simulation based educational (SBE) frameworks. SBE aims to have a transformative impact on learners in providing competent and compassionate healthcare. The overall purpose of this project is to explore how best patients, and their experiences of illness/healthcare, are best represented in SBE frameworks.



Patients, persons, people and manikins

Technology (for example simulation manikins) in SBE acts as an enabler for learning that should be underpinned by sound / theorised pedagogy. Crucially the instrumentalisation of patients by using clinical manikins risks dehumanising the patient-learner relationship in SBE. As medical educators we are morally and ethically bound to ensure we represent and involve the individuals who our students will serve - patients. Despite their name of 'simulated' patients, SPs do not see their role as being simulated. Instead, they view themselves as real patients, and as patients' representatives. This sense of vocational identity - of giving something of themselves in order to help medical students and their future patients - is a cornerstone of their activity. They are highly conscious of their own agency in countering a dehumanising technical discourse of medicine. Coupled with the fact that the SBE has and continues to explore more complex real-life encounters – now more than ever we need to have patients' experiences help shape and guide simulate based learning. It could be argued that by not keeping SBE rooted in the diverse range of real patient experiences, can have a detrimental impact of the transfer of skills into real practice.

'Out of the mouths of babes'. Systems research into child-centred medical education

Professors Tim Dornan and Mike Shields of QUB, together with Prof Graham Roberts of Southampton University, were recently awarded ASME's inaugural doctoral studentship. This enables us to carry forward our work on patient-centred medical education, in paediatric contexts. Children, like adults, are sometimes treated as 'teaching objects'. We propose that they might be involved in a in a less paternalistic way and given more agency.

In order to research how this might be, the award will allow a doctoral student first to conduct a review of published research into children's involvement in medical education. The next stage will be to observe clinical education directly to see how, in reality, children are involved in it. The context for this will be cystic fibrosis; a chronic disease in which children have extended

and repeated health care experiences, and develop expertise related to the disease.

Having completed this ethnographic work, the doctoral student will invite children to describe their experiences by drawing 'rich pictures'. This novel research technique has been used successfully by Dr Richard McCrory in his doctoral research; using it in children is an interesting new direction. The next phase of the work will be to explore doctors' readiness to give children agency in practice and education. And, finally, to pilot an intervention and evaluate how children could be given more agency.

Dr Freddie Speyer, paediatric trainee in Southampton, will be conducting the research as an external PhD student. This will enable him to triangulate observations in England with observations in Northern Ireland and thereby enhance the transferability of his research. We look forward to welcoming him as a regular visitor to Belfast and member of our education research community.

Research Student Lifecycle Update

The Research Student Lifecycle aims to provide students, faculties, schools, supervisory staff, and other University stakeholders with greater visibility of where research students are in the Research Student Lifecycle.

The Centre for Medical Education is embracing this new system and students, supervisors and administrators can now easily access, upload and track all necessary parts of the student's journey. Students can upload supervisory meeting reports, supervisors can carry out APR using the system and administrators can ensure all elements of the process are being carried out within timescales set.



Knowing your left from your right?

Dr Carl Brennan, GPSt3 research registrar

How accurate do you feel you are differentiating right from left? Some find this skill easy while others more difficult. Choosing left or right is a complex skill which requires numerous cognitive functions, such as, mental rotation. Additionally, there are numerous possibilities why individuals differ in their ability to differentiate left from right but evidence is sparse. Given that right-left discrimination is a 'skill' can an individual improve their ability to differentiate left from right?



Figure 1: Left-Right SAFMEDS Flashcard



Figure 2: waiting for the interview

Precision training, is a method developed in Applied Behaviour Analysis (ABA) which has been used to teach skills to a high degree of speed and accuracy i.e. fluency. Precision teaching using flashcards is called, 'Say All Fast, Minute Each Day, Shuffle' (SAFMEDS). Bespoke Left-Right SAFMEDS flashcards (figure 1) have been developed and it is being investigated their impact of individuals left-right discrimination ability.

To add to this Left-Right excitement, BBC radio presenter Emer Maguire (presenter of 'Science and Stuff with Emer Maguire') was intrigued and invited Dr Gerry Gormley and me for a radio interview to discuss the world of Right and Left. Sitting in the waiting area of the BBC broadcasting house the nerves began to build (figure 2) - however I didn't need to worry! Emer discussed the format of the radio interview and put us at ease as she reported she had difficulty choosing left or right herself!

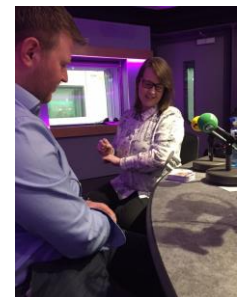


Figure 3: Emer practicing with the Left-Right SAFMEDS Flashcards

During the interview we explored Left-Right discrimination as a skill and the factors which may impact on an individual's Left-Right discrimination ability, such as, mental rotation, gender and distraction. Then it was time for Emer to try out the Left-Right SAFMEDS Flashcards (figure 3). To find out how Emer performed using the Left-Right SAFMEDS Flashcards follow the link:

<http://www.bbc.co.uk/programmes/p05kxvjw>



Figure 4: interview complete but do you notice anything? L-R Gerry Gormley, Emer MaGuire, Carl Brennan

This was a great opportunity to present the world of left/right to a wider audience. To find out more listen to the full interview at 'Science and Stuff with Emer Maguire' (<http://www.bbc.co.uk/programmes/b099b3k8#play>) (between minutes 5 and 12) (aired: 24/10/2017). Additionally, to gain further insight in to Left-Right Discrimination read "When Right could be so Wrong. Laterality Errors in Healthcare" published in the Ulster Medical Journal [[https://www.ums.ac.uk/umjo87/087\(1\)003.pdf](https://www.ums.ac.uk/umjo87/087(1)003.pdf)].

INMED 2018

Dr Richard Conn



In March, a small but intrepid QUB delegation (two students and one Prof) travelled to Cork to attend the Irish Network of Medical Educators Annual Scientific Meeting, or INMED as it's universally known. The conference, hosted this year in University College Cork, brings together medical educators from across Ireland.

We attended for the pre-conference workshops and the first day of the programme. Workshops were led by our very own Prof Tim Dornan, along with Deirdre Bennett from UCC, and Dorene Balmer from the Children's Hospital of Pennsylvania. Both were aimed at novice qualitative researchers and complemented each other nicely, amounting to a research masterclass, covering everything from philosophical foundations to practical conduct.

Keynote speakers were the aforementioned Prof Balmer, and Prof Pim Teunissen from the University of Maastricht in the Netherlands. Balmer described her research on entrustment, the process of determining when a trainee is ready to perform a clinical activity without supervision. A strength of the research was her ethnographic approach - directly observing participants in the clinical environment. At times, however, I struggled to relate to her descriptions of close relationships between supervisors and trainees – such explicit focus on trainee development seems like a pipe dream in our service-driven NHS. Teunissen spoke on 'Workplace learning in the era of competency based medical education' (CBME). Medical schools in the south are currently introducing CBME, and are grappling with the implications of doing so. For those of us working north of the border, these issues are not so immediate, but Teunissen's advice was equally relevant: assess the assessable, but for less tangible (but equally important) competencies, focus instead on ensuring conditions exist for learners to develop as they should.

Most of the rest of the programme was given over to presentations of research and innovation from across Ireland. While some of this research lacks transferability, it's a good way to get a sense of what people are doing in other places, and to meet educators dealing with similar issues to ourselves.

All in all, INMED does a good job of combining different aspects of medical education scholarship across its three day programme. Next year's conference is being hosted in Galway, and would be well worth a trip.

Upcoming Events



Research Training Sessions: 10.30am

Tuesday 20 March	Critical Pedagogy
Tuesday 10 April	Discourse
Tuesday 22 May	Mixed Methods

SERN Lunchtime Seminars: 12.30pm

Thursday 23 March
Friday 20 April
Thursday 31 May



To book a place for any of these please contact Deborah.millar@qub.ac.uk

ACHIEVEMENTS/AWARDS

Alongside achieving the first research-funding stream for research in medical education from ASME, Prof Tim Dornan was also recently awarded an Honorary Fellowship of the Academy of Medical Educators (HonFACadMed).

Congratulations to Dr Michael Williams who was shortlisted in the QUB Staff Excellence Awards Achieving Ambition category for his development of the Simulated Eye Clinic.

CALL FOR CONTENT

We would be delighted to feature a wide range of topics in this newsletter. If you would like to contribute a recent success, interesting development, future event etc, please forward to Deborah.millar@qub.ac.uk