



[news](#) [science wire](#)

# 'Transformation' of medical education as major global conference launches

12 November 2018

Health | Innovation/Technology

**Experts from 15 countries gathered in Singapore to see how Imperial and its partners are driving a high-tech leap forward in medical education.**

Doctors may have a greater capacity to do good, but our capacity to do harm is greater than ever. Dame Parveen Kumar Transform MedEd keynote speaker

The first Transform MedEd conference, organised by Imperial's School of Medicine and the Lee Kong Chian School of Medicine (LKCMedicine) – Imperial's joint medical school with Nanyang Technological University – attracted more than 350 delegates on 9 and 10 November, including 36 educators, researchers and innovators from Imperial.

The role of virtual and augmented reality, artificial intelligence, hololens and high-fidelity simulation in creating new and immersive forms of learning experiences were demonstrated and debated.

The conference took place just months after the first cohort of new doctors graduated from LKCMedicine. It was co-chaired by Martin Lupton, Vice Dean (Education) of Imperial's Faculty of Medicine, and his LKCMedicine counterpart Professor Naomi Low-Ber.

Mr Lupton said: "Collaboration between Imperial and NTU has led to profound improvements in medical education at both Imperial's School of Medicine and LKCMedicine. Advances in technology, pedagogy and practice have enabled this transformation. Our common ambition to push the boundaries of medical education catalysed this conference."

Professor Simone Buitendijk, Vice-Provost (Education) at Imperial, who helped open the conference, said: "This international conference reflects Singapore's status as a global hub for medical education. From artificial intelligence to curriculum mapping software, collaboration between Imperial and NTU is changing the way future doctors learn."

Dame Parveen Kumar, Professor of Medicine and Education at Barts and the London School of Medicine and Dentistry, delivered the keynote address, questioning whether it is “time to ditch the textbook.” At LKCMedicine and Imperial’s School of Medicine, this is a live question: students receive an iPad rather than a textbook on day one.

Professor Kumar, who co-authored the classic textbook *Clinical Medicine*, explained that “medical knowledge will double every 73 days by 2020.” In this environment, much of what medical educators teach, “will be rubbish in a few years’ time”. Meanwhile, technological advances mean “doctors may have a greater capacity to do good, but our capacity to do harm is greater than ever.” She advocated blended learning, a combination of traditional and new teaching methods, to deal with this era of transformation.

A group of scholars from Imperial’s Medical Education Research Unit confirmed Professor Kumar’s viewpoint in one of 50 posters presented at Transform MedEd. Dr Sohag Saleh and colleagues evaluated blended learning among hundreds of second year medical undergraduates, finding that the blended approach, and especially group work, significantly improves learning outcomes.

## Managing the curriculum of the future

---

New ways of managing this great complexity in medical education were showcased elsewhere at the conference.

Imperial’s Sofia platform, which is already in use in the School of Medicine, provided a glimpse into how students and educators can wield greater control over their curriculum and learning outcomes. Sofia allows for dynamic visualisation and management of learning outcomes and resources. Trainee doctors can immediately see areas of medicine that they have been taught, refer back to learning tools and notes, and focus on weaker areas. Sofia is being deployed across all of Imperial’s Faculties to visualise curriculum review outcomes.

Fernando Bello, Professor of Surgical Computing and Simulation Science, demonstrated how Clinicians and medical students will be able to undertake rectal examinations with unprecedented accuracy and control, thanks to an augmented reality innovation by Imperial, LKCMedicine and NTU’s Institute of Media Innovation. The see-through visualisation for learning and teaching of digital rectal examinations allows real-time sight of examinations being performed on model rectums.

IBM’s Farhana Nakhoda argued that “augmented clinical intelligence” is setting in motion a “new era in healthcare”, and Monash University’s Professor Debra Nestel explained how growing students’ communication skills with patient-focused simulations.

## Flipping the classroom, putting patients first

---

NTU President Subra Suresh said "the boundaries between the physical, digital, and biological worlds" are becoming "increasingly blurred - we should examine how we can use technology to break down the walls between classrooms and clinical learning environments."

A workshop on team-based learning mixed LKCMedicine students with international educators. They drew on LKCMedicine's 'flipped classroom' approach – where students learn content outside of class, applying what they learned in the classroom – and the School's exceptionally frequent use of team-based learning, to debate issues as diverse as the role of peer evaluation, dealing with academics who have a 'god complex', and incentivising student enthusiasm for formative assignments.

## Empathy and experiential learning

---

LKCMedicine Dean Professor James Best said, "Our mission is to train a new generation of doctors who know how and when to use the latest technology, while never losing sight of what matters the most – the patient, who is at the heart of their care."

During a panel on education for real-world healthcare application, Professor Simone Buitendijk echoed this sentiment: "Patients, teachers students all want to be seen, they want to be heard, and we ought to use technology to enhance that, whether that's FaceTime or the 'flipped classroom'."

Among the exhibitors were a group of first-year LKCMedicine students demonstrating ageing simulation tools that help them experience age-related physical impairments, including a narrowing field of vision, high-frequency hearing loss, head mobility restrictions, joint stiffness, loss of strength and grip, as well as reduced coordination skills. Attendees could try on a pair of tremor-inducing gloves while attempting to use chopsticks – one small way students are working to have greater empathy and understanding of their patients.

Imperial's Giskin Day and Dr James Moss put on games for students, including medical variants of Monopoly and Top Trumps, as well as a challenge to blindly count the number of objects - of varying tactility, size and shape - in a bag, honing some of the skills needed in surgery where there may be no visual stimulus. They showed delegates how play has a serious place in a medical education.

## Science fiction becomes fact?

---

During a symposium on artificial intelligence (AI) in medical education, Gideon Shimshon, Director of the Digital Learning Hub at Imperial, said: "Recent advances in AI have brought what sounds like science fiction into the realm of the possible."

He explained how Imperial's digital learning strategy is introducing experimentation around the student and teacher experience and technological innovation. This includes exploring virtual tutors to deal with 'first line' most frequently asked questions, allowing educators to handle more complex student queries.

## Leadership and self-care

---

During a panel on 'Transforming healthcare through our graduates', Professor Simone Buitendijk, alongside a multi-national group of medical educators, shared her views on leadership, a field where, she argued, empathy, knowing an organisation, trust, and shared goals are essential.

"People are working too hard in academia," she said. "We need to first make ourselves happy and healthy first so we can do the same for our students - like on an airplane where they tell you to first put on your own mask in case of an emergency."

"At Imperial getting to parity of esteem between teaching and research is the most important leadership goal for the next five to 10 years," Professor Buitendijk added.

Though they were talking in LKCMedicine's high tech Learning Studio, fellow panellist Dr Dujeepa Samarasekera of the NUS Yong Loo Lin School of Medicine emphasised that the group were not showing slides "because we all believe that power corrupts and PowerPoint corrupts absolutely."

## 'Resounding success'

---

Conference co-chair Martin Lupton said: "The inaugural Transform MedEd has been a resounding success, and we look forward to exploring and applying these new ideas and connections with colleagues around the world. I would like to thank all the members of the Imperial team who worked so hard to make this possible, in particular Professor Sue Smith."

***The second Transform MedEd will take place at Imperial College London in Spring***

**2020.** Photos and graphics subject to third party copyright used with permission or © Imperial College London.

**Andrew Scheuber**

Communications and Public Affairs