

Epidural simulator will help reduce risk of harm to patients

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The simulator has been developed by Bournemouth University and Poole Hospital, and will help train doctors to perform epidurals. It has already been shortlisted for several prestigious awards.

An epidural simulator created by Bournemouth University (BU) and Poole Hospital will help train doctors to carry out the procedure – and reduce the risk of harm to patients.

The simulator has been developed by PhD student Neil Vaughan and Professor Venky Dubey from BU's School of Design, Engineering and Computing, alongside Dr Michael Wee and Dr Richard Isaacs from Poole Hospital.

It uses [sophisticated software](#) to replicate the conditions of giving an epidural to a real-life patient, and will allow adjustments for different heights, BMIs, angles, and rotations of the spine.

The simulator will be used to help doctors train to do the procedure – an injection into the spine to provide pain relief during labour – to improve results and reduce the risk of harm to patients.

Dr Wee, a consultant anaesthetist at Poole Hospitals NHS Foundation Trust, said: "I developed the simulator because there is a need to provide precise training in a delicate clinical procedure which has potential devastating effects to the mother when things go wrong.

"A [high fidelity](#) epidural simulator will help to reduce the learning curve and thereby improve the success of epidurals whilst reducing potential harm to the mothers."

He added: "I decided to team up with Bournemouth University's School of Design, Engineering and Computing as they have the necessary expertise and skills in developing the epidural simulator."

"The jointly funded PhD studentship is also a great incentive as it is an example of an NHS Hospital working collaboratively and fruitfully with a local university to produce ground-breaking research and products."

Development of the simulator began in 2010, and it is currently undergoing clinical trials on patients.

The project has already received international attention, and been shortlisted for a number of prestigious awards – including the National Patient Safety Awards 2013, in the Technology and IT to Improve Patient Safety category, and The Design of Medical Devices International Student Design Showcase 2013.

It will also be part of the American Society of Mechanical Engineering (ASME) Innovation Showcase in June – competing against Ivy League universities to secure further funding.

BU is the only UK university represented at the Showcase.

Dr Venky Dubey, Associate Professor in Research at BU, said: "Our team is recognised as world-leading in epidural research by many international bodies."

"It is hoped that these successes will establish Bournemouth University as the internationally-recognised research institution."

The ASME Innovation Showcase takes place in Indianapolis on June 22 and the National [Patient Safety](#) Awards take place in London on July 9.

Provided by Bournemouth University

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