

## Drug prescribing system could boost patient safety

Posted on Monday 30th July 2012

Research led by the University of Birmingham has shown that a specialised drug prescribing system could help to prevent a repetition of the notorious 2002 killings of elderly patients by nurse Colin Norris.

A nurse at the Leeds General Infirmary and St James Hospitals, Norris was convicted in 2008 of murdering four patients using insulin, which lowered their blood glucose levels and led to their deaths. The condition of a low blood glucose concentration is known as hypoglycaemia.

One question raised by the case was how likely it is for so many patients to suffer from hypoglycaemia, a condition that is rare in patients if they are not being treated for diabetes or in critical care.

Researchers at the University of Birmingham and Queen Elizabeth Hospital Birmingham (QEHB) have analysed information on 37,898 inpatients to establish how commonly hypoglycaemia occurs among non-diabetic patients on general wards.

The study, which was funded by the National Institute for Health Research (NIHR) via the Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for Birmingham and Black Country, highlights the Birmingham Health Partners initiative between the University and University Hospitals Birmingham NHS Trust.

They confirmed that significant hypoglycaemia is rare in non-diabetic patients, but also identified the potential for the hospital's electronic prescribing system to spot unexplained clusters of the condition.

This could enable clinicians to spot the sort of misuse of insulin which led to the deaths of patients under the care of Colin Norris and other convicted killers.

In 1991 nurse Beverley Allitt was found guilty of murdering four children and trying to kill another nine at a hospital in Lincolnshire. In 2006 staff nurse Benjamin Geen was convicted of murdering two of his patients and attacking 15 others with injections including insulin at a hospital in Oxfordshire.

Dr Krishnarajah Nirantharakumar, a clinical research fellow at the University, led the research, which used the Prescribing, Information and Communications System (PICS) to look at hypoglycaemia patients.

*"We looked back at the rate of hypoglycaemia in non-diabetic patients outside critical care for 2010, and we found that it was very rare: only 13 in every 10,000 admissions below a blood glucose value of 2.7mmol/l. We then analysed the case notes of the patients whose blood glucose concentration was below this value and found most had plausible medical explanations in the case notes,"* says Dr Niranthakumar.

*"Then, because it was shown to be so rare, we questioned whether we could identify these patients using PICS while they're with us. If so, then it would be a way of increasing vigilance for the misuse of insulin like in the Colin Norris case."*

Dr Jamie Coleman, a consultant clinical pharmacologist at QEHB, says the potential for increasing patient safety is a further benefit of an already successful system.

*"We have very good information systems that can provide retrospective surveillance data like this, but these systems also provide secondary benefits with automatic collection of data which may allow a greater degree of surveillance for patient safety."* says Dr Coleman.

*"Within our organisation there were, ultimately, no unexplained cases but the potential is there to improve safety further."*

The research, "Hypoglycaemia in Non-Diabetic In-Patients: Clinical or Criminal?" is available on-line on the PLoS ONE website:  
<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0040384>

For more information please contact Jenni Ameghino, Press Office, University of Birmingham, 0121 415 8134. 07768 924156.

Notes to editors

\* Birmingham Health Partners (BHP) is a landmark joint working agreement between the University of Birmingham and University Hospitals Birmingham NHS Foundation Trust. Established in November 2011, it enhances the longstanding working relationship between the two institutions and enables patients to benefit from new therapies delivered by expert clinicians working alongside top research scientists and world-leading clinical trials teams. [www.birminghamhealthpartners.co.uk](http://www.birminghamhealthpartners.co.uk)

\* Based at the new Queen Elizabeth Hospital Birmingham, BHP will fuel collaborative projects in key research areas including cancer, immunology and infection, experimental medicine and chronic disease, and is intended to strengthen and develop the global reputations of both the University and the Trust.

[Privacy](#) | [Legal](#) | [Cookies and cookie policy](#) | [Accessibility](#) | [Site map](#) | [Website feedback](#) | [Charitable information](#)

© University of Birmingham 2015

