

Target incoming students to halt spread of meningitis, say researchers

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Credit: University of Nottingham

A campaign targeted at students arriving at university for the first time could hold the key to reducing the spread of meningitis and septicaemia, say researchers at the universities of Nottingham and Leicester.

In a paper published in the academic journal *Public Health*, the researchers show how a campus-based vaccination campaign was successful in ensuring that almost three-quarters of students arriving at Nottingham were immunised against the potentially deadly disease.

The approach was so successful it has now been highlighted as an example of best practice by Public Health England in a report advising on the prevention and management of [meningitis](#) and septicaemia in [higher education](#).

Dr David Turner in the University's School of Life Sciences, who led the

research, said: "It is really important to offer the MenACWY vaccine to first year [university](#) students to prevent cases of meningitis in this at-risk group."

In England, cases of meningitis caused by the Meningitis W (MenW) bacteria have been rapidly increasing since 2009 due to the emergence of a highly aggressive strain of the disease.

The ST-11 strain is associated with severe illness which often requires treatment in intensive care and has a higher death rate than other strains of meningococcal disease.

Different symptoms

Its symptoms also differ from other kinds of meningococcal disease - some people may develop joint infections or a severe respiratory tract infection, such as pneumonia, epiglottitis or supraglottitis (two conditions where there is a dangerous swelling around the "lid" that covers the windpipe, blocking the flow of air into the lungs).

Some adults affected with MenW septicaemia have suffered mainly gastrointestinal symptoms initially without the characteristic non-blanching rash before the rapidly progressing disease has led to their death.

In response, Public Health England introduced a programme of immunisation offering vaccination against four different types of Meningitis – A, C, W and Y - to all adolescents and young adults aged between 14 and 18 years of age, as well as first-year university students including international and mature students up to the age of 25.

The aim was to disrupt the transmission of the dangerous MenW bacteria and to prevent its further spread to at-risk groups of people

within the wider population.

Higher rates of transmission of the meningitis bacteria occur in students during the first year of university and, as students tend to travel frequently around the country to return home or to visit friends, there is a risk they could spread the disease to other communities throughout the UK.

Analysing Nottingham uptake

The academics at Nottingham studied the uptake of the MenACWY vaccine in first-year students.

During registration at the university between 17th and 23rd September 2015, as part of standard clinical practice, interviews were conducted with each student by University of Nottingham Health Service healthcare professionals to establish whether students had been vaccinated before arriving at university and to record their details on the UNHS registration database.

As part of a targeted, localised campaign, students who said they hadn't been vaccinated were offered an immediate free vaccination.

Searches of the UNHS registration database were later performed to determine vaccination coverage in the registered group of first-year students before arriving at Nottingham, as well as a smaller group of international students who were less likely to have received the vaccine in their home country before arriving at university in the UK.

The searches revealed that just 31 per cent of the students had been previously vaccinated – coverage that would be potentially too low to significantly reduce the spread of meningitis.

However, following the local campaign by the healthcare professionals at UNHS, that figure rose to a far healthier 71 per cent.

Dr Turner added: "The significant boost in coverage following the vaccine campaign at registration at the University of Nottingham demonstrates the importance of offering vaccination at enrolment in tertiary educational establishments and suggests that rolling out this strategy more widely could significantly improve vaccine coverage in this age group."

"The campus-based mass vaccination campaign delivered during the registration period also provided significant logistical advantages compared with offering a large number of individual appointments."

"However, a large proportion of unvaccinated students still declined vaccination due to a lack of perceived need or benefit suggesting that further advertising of the national campaign could be necessary to raise awareness of the vital need for the MenACWY vaccine."

Dr Chris Bayliss, Reader in Bacterial Genetics, Department of Genetics, University of Leicester, commented: "Vaccination is highly effective at preventing meningitis, septicaemia and the other infections caused by meningococci. Our study shows that offering MenACWY vaccination as students arrive at a University is a really effective way of maximising protection of this vulnerable age group."

The campaign at the University of Nottingham was featured as a case study in the recent publication *Guidance on the Prevention and Management of Meningococcal Meningitis and Septicaemia in Higher Education Institutions* issued by Public Health England.

The report recommended that the Nottingham example may be helpful in identifying ways in which Higher Education Institutions can play an

active role in improving awareness and promoting vaccination uptake amongst [students](#).

More information: Guidance on the prevention and management of meningococcal meningitis and septicaemia in higher education institutions: [www.gov.uk/government/uploads/ ... Y_HEI_Guidelines.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/584811/Y_HEI_Guidelines.pdf)

Provided by University of Nottingham

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