

New system to detect patients' antibiotic resistance takes just 30 minutes

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A new device being developed by medical experts will transform the time it takes to detect antibiotic resistance in patients from several days to just half an hour.

The development will allow doctors to effectively treat patients with infections known to have high levels of antibiotic drug resistance, which has been described as one of the greatest health threats to human health.

Antibiotic resistance is a huge challenge to current medical practices, which rely heavily on the use of antibiotics. Bacteria can become resistant to antibiotics in a number of ways through mutations of their own genes or by "ingesting" new resistant genes.

Rising antibiotic resistance not only leads to treatment failure, but also is driving doctors towards using increasingly more potent antibiotics for simple infections, often at an increased cost to the health service. This cycle escalates the risk of bacteria developing resistance to these antibiotics, potentially reducing their use for the future.

The new joint programme, between researchers at St George's, University of London's Applied Diagnostic Research and Evaluation Unit (ADREU) and experts at Atlas Genetics, a UK-based diagnostics company, has been awarded £1.5 million by the National Institute for Health Research (NIHR) to tackle antibiotic resistance by focusing on [sexually transmitted infections](#).

The "Precise Study" will lead to the development of disposable cartridges used on small desk-top devices sampling urine and vaginal swabs will identify infection and detect resistance within 30 minutes of patients visiting a hospital or clinic.

Dr Tariq Sadiq, Chief Investigator at St George's, University of London, said: "This process of diagnosis has already been shown to be very reliable and so we are confident that we will be able to identify which drugs to use to successfully treat the infection.

"Within one short visit, patients will get their diagnosis and a bespoke treatment. We believe that this test and treat method will reinforce patient and doctors' confidence in the antibiotics chosen for treatment."

The team at St George's have been testing the accuracy of identifying specific genetic mutations that indicate resistance for guiding appropriate treatment in patients, and are now ready to use this method in collaboration with Atlas' rapid testing technology.

Atlas Genetics is integrating this new method of detection on to their io system to provide both bacterial identification and antibiotic resistance in a single 30 minute test. The project includes healthcare professional and patient input into the design of the test and will conclude with a 1,000 patient clinical study, coordinated by St George's and is expected to finish in 2017.

John Clarkson, CEO of Atlas Genetics, said: "Our cutting-edge diagnostic technology will enable patients to get their test results faster and guide clinicians to the best treatment option within a single appointment. This is an essential step in making sure [antibiotics](#) are used correctly every time and we are excited to be part of the solution to [antibiotic resistance](#) in the UK and globally."

Provided by St. George's University of London

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