

## C. diff treatment forms basis of medical students' business idea

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Two University of Aberdeen medical students have come up with a business idea to support clinicians treating Clostridium difficile (C. diff) on the NHS.

The infection affects around 15,000 people in the UK every year, however is difficult to treat conventionally with [antibiotics](#) because around one in four people who catch it relapse, resulting in lengthy hospital visits.

A procedure called Faecal Microbiota Transplantation (FMT) involves implanting healthy donor faecal matter into the infected bowel. A recent randomised controlled trial (RCT) cured 81% of patients compared to 31% using conventional methods.

Fourth year medical students James McIlroy and classmate Matthew Bracchi have formed a social enterprise (EuroBiotix CIC) which will hopefully allow people to receive this procedure more easily through the NHS.

"We appreciate it's not the most pleasant of topics but C. diff is a serious problem for sufferers and the NHS and we believe our idea is a serious potential solution, with recent trials showing FMT to be a very effective treatment method," explains James.

"It's hard to get this treatment on the NHS because of the costs and logistical factors associated with screening a unique donor for every

FMT. Effectively we want to create a blood bank model but with donated healthy faecal microbiota instead of blood."

James and Matthew say there are a number of advantages to their innovation over current methods, namely:

- Having prepared material in a 'bank' removes the time and effort required to find a donor
- Increases convenience and avoids potential contamination issues that preparing the material would have for a doctor
- Should improve the safety and quality of material through the introduction of more stringent and standardised safety protocols
- Offers better comparison of outcome data across different hospitals and different clinical trials because material will be from the same donor; using different donors and processing techniques gives inconsistencies in clinical research

James, who is the company's CEO, adds: "The FMT procedure is normally carried out in the form of a colonoscopy, nasogastric/duodenal tube or a rectal enema to restore the bacterial balance. Donors would go through a rigorous questionnaire, physical examination and then would have to be screened for any infectious diseases.

"FMT is not regularly accessible for doctors to perform in the UK because the doctor needs to find a suitable donor, screen them for infectious diseases, and then prepare the [transplant](#) material themselves, which is time consuming and expensive.

"Our vision at EuroBiotix is to expand access to FMT by providing screened ready-to-use faecal transplant preparations to [clinicians](#) working in the NHS.

"We've established a community interest company that wants to expand access to FMT and research involving the gut bacteria, by providing these screened samples that doctors can use at cheaper prices than they would if they were doing it themselves."

The duo's idea has already won them a number of awards, including the Santander Business Pitching competition and 3rd place in the Scottish Institute for Enterprise Young Innovators Challenge. They also travelled to Copenhagen last week to compete in the University Startup World Cup, where EuroBiotix CIC finished in the top 3 in the Lifescience and Medtech category.

James came up with the idea while working towards his dissertation for his Bachelor of Medical Science degree in Edinburgh last year.

"I was doing some research for my dissertation investigating the role gut bacteria may play in obesity," he explains. "I read about a major outbreak of *C. diff* and discovered these faecal transplants and decided I had to get something going.

"The business was only formed in November 2014 and it's been a rollercoaster ride so far. But I've really enjoyed it and it's been an unbelievable learning curve.

"Now that we are back in full time study we'll be balancing increasing our medical knowledge with building the company up. Fortunately, our degree and venture go hand in hand, and the medical school has provided us with fantastic support thus far."

Professor Rona Patey, Head of the Division of Medical and Dental Education, said: "We are very proud of James and Matthew's commitment, professional approach and achievements and have been delighted to have been able to support them in their endeavours. They

provide us with an outstanding example of the innovation and contribution that is already being made by the next generation of doctors."

Provided by University of Aberdeen

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