The Outbreak Module: A partnership between Biomedical Scientists and Universities

By Jack McKoen and Zonya Jeffrey
Manchester University NHS Foundation Trust, Manchester Royal Infirmary, Oxford Road Manchester, M13 9WL

Objective

In June 2021, Manchester University NHS Foundation Trust (MFT) and Manchester Metropolitan University (MMU) partnered together and provided a week of biomedical science practicals for MMU Healthcare Science students. This year we focused on how NHS laboratories respond to outbreaks.

Our goal was to engage undergraduate students, introduce them to laboratory-based careers and give them the preliminary experience needed to enter the workplace. We ran a successful program and built on the foundational work of Malcolm Armstrong and Dr Lisa Coulthwaite’s “Live Labs”. The students improved their confidence, team work and communication skills. Our workshop provides an alternative, more flexible approach to traditional laboratory placements that can be more accessible to students.

Outbreak models are a useful tool for teaching students how NHS laboratories function.

They encompass all aspects of our work: from testing samples and monitoring cases, to providing information and increasing public awareness.

Why do we use MRSA as our example outbreak?

- Regularly tested for in NHS laboratories
- Well-known HCAI¹
- Public awareness of the infection
- Accessible qualitative and quantitative tests
- Clear testing workflow

Outbreak: “An incident where two or more persons have the same disease or similar symptoms and are linked in time, place and/or person association”²

How we run the course:

**Talks**

**Tests**

**Reports**

**Presentations**

What we provide:

- Specialist talks from NHS and UKHSA employees
- Hands-on experience with current qualitative and quantitative laboratory tests
- Support from Biomedical Scientists and staff
- A logical, step-by-step investigation of an outbreak
- A fun and inclusive environment

Benefits to the students:

- Knowledge of NHS methods
- A toolkit for conveying complex scientific ideas to a general audience
- A clear connection between their university lectures and practical applications
- Team working and investigative skills
- Experience with relevant clinical microorganisms

How does our module improve the students education and prepare them for the workplace?

- They encompass all aspects of our work: from testing samples and monitoring cases, to providing information and increasing public awareness.
- MRSA is regularly tested for in NHS laboratories and is well-known as an HCAI.
- Public awareness of the infection is crucial in outbreak preparedness.
- Accessible qualitative and quantitative tests ensure clear and logical investigation of outbreaks.

References:


Image Credits: Mark Perkins, Gram stain showing Gram-positive coccus and gram-negative bacilli. Report screen grabs courtesy of Soumaya Boudjemline, Emma Fellows and Iffat Shahzad. All other images are courtesy of Zonya Jeffrey and Jack McKoen.