

MICROBIOLOGY: RAPID DIAGNOSTICS WARTS AND ALL

David Westrip, Deputy Chair of the British Society for Microbial Technology, outlines some of the key themes from the upcoming BSMT 39th Annual Microbiology Conference.

The 2024 British Society for Microbial Technology (BSMT) conference is dedicated to the memory of Mahsa Amini, an Iranian student about to start a microbiology degree but who was arrested on 13 September 2022 for improperly wearing the mandatory head covering. She died in police custody several days later.

This year the BSMT conference returns to UKHSA in Colindale. Whilst we are pleased to return to see old friends, unfortunately the venue is not big enough to take all the 20 companies which regularly sponsor the event. Please check the BSMT website for the commercial companies exhibiting and those who are unable to exhibit, but are equally valued as regular supporters of BSMT.

A rapidly evolving field

Rather than focusing on any one area of microbiology, the BSMT has again

produced a programme comprising of six highly respected speakers covering a range of pertinent topics. This will no doubt provide a thought-provoking and insightful day of talks.

The discipline of microbiology continues to be a rapidly evolving field with new technologies and approaches being developed every year. As we emerge into the post SARS-CoV2 period microbiology departments are now often looking to adopt, develop and expand their existing repertoire in response to developments in technology and increasing demands and expectations from clinical colleagues.

NHS laboratories may sometimes be perceived as slow to adopt changes and embrace these opportunities. Clinical and technical dreams are forever bound by cost implications and demonstrable patient impact. Public money remains a precious resource so significant scrutiny is in place to mitigate spontaneity and

reactivity in service developments. The leap into molecular platforms is happening, but microbiology often seems encumbered by the fact that traditional agar-based techniques remain comparatively cheap. Whilst some controls are no doubt necessary, financial restrictions are likely to remain a significant factor requiring careful planning and justification to develop services in the medium to long term.

Assess and value

One clear trend that continues is the increased adoption of rapid and molecular technologies, which now play a greater than ever role in microbiology. In the resource-limited environment, we are perhaps not driven so much by what we would like to do as whether there's likely an assay out there that will do it. A more relevant question seems to be, given all these options, which can demonstrably provide additional value in terms of rapidity, sensitivity, or efficiency in any given local environment? To this effect Dr Luke Moore, the first speaker of the day, will discuss how we can assess and value rapid diagnostic techniques. Any guidance and insight in this area is likely to be welcomed by many laboratories in



navigating through the plethora of novel assay and rapid techniques now available. The second speaker in the morning session, Dr Jesus Rodriquez-Manzano, has a long history of developing rapid diagnostic solutions and is presenting specifically on the use of digital technologies to enhance multiplexing in PCR. This session is likely to provide significant thought-provoking ideas about the direction of future microbiology laboratory services.

Direct rapid sequencing

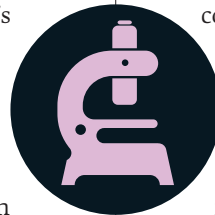
Adela Alcolea-Medina returns to the BSMT following her talk a couple of years ago with an update on her work on the direct rapid sequencing for respiratory samples. In her original presentation, this technique provided significant promise, providing accurate and clinically actionable results in around eight hours. This has interesting implications around laboratory workflow and clinical evaluation of these results within the working day it nonetheless seems like a potentially powerful tool covering bacterial and viral pathogens including those not normally easily cultured.

It will be interesting to see how this technique has developed and where it

may sit in the routine laboratory's repertoire in the future.

Antimicrobial resistance

SARS-CoV-2 may have raged through the world, but it is notably not specifically featured in this year's programme. However, the slower burning issue of antimicrobial resistance cannot be so easily ignored. Anecdotal evidence from individual laboratories certainly seems to support national trends of increasing resistance, particularly amongst the Gram-negative organisms. Isolates which only a few years back would have been notable are now becoming worryingly routine. Dr Michelle Cole the interim head of the STI reference lab in UKHSA will pick up this topic and




“Clinical and technical dreams are forever bound by cost implications and demonstrable patient impact”

discuss AMR surveillance using a molecular approach. Later in the day this topic will be followed up by Dr Alicia Demirjian, who will discuss the UK 2024–2029 antimicrobial resistance plan, which will give valuable insight into UKHSA's national approach for the next five years. It will be interesting to see the consideration of international perspectives as individual national plans, particularly in better resourced countries, may only have limited impact if antimicrobial resistance is left unchecked globally.

Resource-limited setting

Attendees will have the opportunity to engage with many of the fields most innovative and exciting companies in the diagnostic sector at this year's

conference. However, it remains important to consider that much of the world does not have such access to healthcare and diagnostic services that we are used in the UK. In a contrast from the other talks of the day,

Ivor Mitchelmore will be sharing his perspective and reflections on his work setting up and developing the microbiology service in a resource-limited setting. Ivor has spent several years post-retirement helping to develop the microbiology service in West Bengal. Here the focus has been upon acquiring the fundamental equipment and developing the skills in more traditional microbiology techniques to support the hospital service. In a scenario whereby we look to maximise efficiencies in high-cost molecular and rapid testing it is perhaps necessary to consider our relative privilege and appreciate we have the financial resources to make choices on a different level to that of many diagnostic services across the world. 

This year's BSMT conference will be held on **2 May 2024** at UKHSA in Colindale.

Early bird tickets are available until 15 April with limited spaces. Visit bsmt.org.uk