

FIS 2021

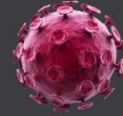
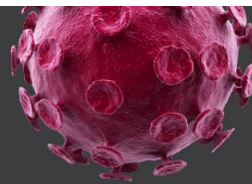
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



FIS2021 cannot be held responsible for errors or inconsistencies contained within the abstract supplement. Only major formatting alterations have been made and abstract content remains consistent with what was entered at time of submission by the author/s.

How to search this document

Laptop, PC or similar: 'Ctrl' + 'F' or 'Edit' then 'Find'

Smart device: Open this PDF in either the 'iBooks' app (Apple) or 'My Files' app (Android). Both are built in apps and have a magnifying glass search icon

Talks are ordered chronologically by session and by room/lecture theatre.

Contents

A quick reference guide by topic, paper number and presentation type can be found at the end of the document or [click here](#).

(Click paper title to take you straight there)

Friday 5 November

Lowbury Lecture: Tales of the unexpected in antibiotic resistance	5
JD Williams Lecture: The slow pandemic: Lessons from 'The captain of all these men of death'	5
First insights into the bioFire joint infection syndromic panel	6
Barnet Christie Lecture: Precision targeting of preventative therapy for tuberculosis.....	7

Monday 8 November

Presentation title – to be confirmed.....	8
The AERosolisation And Transmission Of SARS-CoV-2 in Healthcare Settings (AERATOR study): Results from oxygen delivery systems and lung function testing.....	8
SARS-CoV-2 environmental contamination from hospitalised COVID-19 patients receiving aerosol generating procedures.....	9
How long is the green road to sustainability?	9
Role of audits in decontamination.....	9
Development of a training manual for decontamination.....	10
Heavy petting.....	10
When the drugs don't work.....	10

FIS2021 cannot be held responsible for errors or inconsistencies contained within the abstract supplement. Only major formatting alterations have been made and abstract content remains consistent with what was entered at time of submission by the author/s.

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

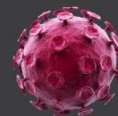
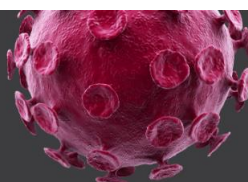
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



Treating blindly	10
Developments in AST and AMR surveillance of anaerobic bacteria	11
Fusobacterium necrophorum – what does WGS tell us?	11
Biofilms, Fusobacterium nucleatum and AST	11
Development and implementation of hospital-onset COVID-19 infection surveillance	12
Global applications of hospital-onset COVID-19 infection surveillance and integration into IPC systems	13
Hospital COVID-19 surveillance system using network analysis.....	13
Dosing of ABX in response to EUCAST	13
Antibiotic Dosing in Sepsis	13
Optimising antimicrobial dosing in paediatrics.....	14
Truth to power: IPC as the champion of compassionate people-centred care	14
Leading in complex organisations and challenging times.....	14
Humble leadership: The secret ingredient in quality improvement project leadership	14
Gonorrhoea resistance and an update on management approaches	15
Congenital Syphilis: an update.....	15
Treatment challenges in symptomatic mycoplasma genitalium infection.....	15
Local ASP reflections during COVID-19 pandemic	16
Antimicrobial stewardship and COVID-19 on the ICU	16
Antimicrobial stewardship and COVID-19 a national perspective.....	16
Mapping bacteriophages to clinical need.....	16
A synergy between natural products and vancomycin to combat vancomycin resistant enterococcus	17
Current concepts and controversies in control of healthcare-associated pathogens.....	18
Ex vivo perfusion and antimicrobial use in liver transplants	18
Outcomes of faecal transplants in stem cell transplant recipients	18
Antimicrobial and anti-fungal stewardship in stem cell transplant recipients.....	19
Tuesday 9 November	
Establishing a framework for a standardised national approach to COVID-19 therapeutics.....	20

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

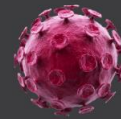
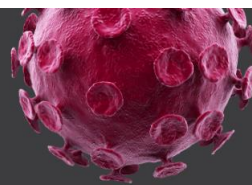
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



Setting up a new professional advice forum in COVID-19 - rapid review of antivirals.....	20
Setting up a new professional advice forum in COVID-19; lessons learned.....	20
Soon after the emergence of COVID-19 it became clear the SARS-COV2 virus caused some people to develop a hyperinflammatory syndrome. HiHASC (the Hyperinflammatory HLH Across Speciality network) was set up in 2018 as a small group of 38 professionals from a multidisciplinary background interested in the prototype hyperinflammatory syndrome haemophagocytic lymphohistiocytosis (HLH) which presents to many specialities but is not the expert province of any one discipline. As the pandemic progressed, this group convened weekly, using virtual meetings to share evolving knowledge. Membership grew rapidly to nearly 200 and HiHASC fed into policy and research decisions about trials of immunomodulatory agents for COVID19 and facilitated a rapid retrospective cohort trial to elucidate the hyper inflammatory COVID19 phenotype COV-HI. This talk aims to overview the network development and highlight successes and mistakes on the path of interdisciplinary working leading to joined up care to improve patient outcomes.	20
Biocide usage and antibiotic resistance. To Be or Not to Be	20
Efficacy of biocides against klebsiella pneumoniae - From cross-resistance to antibiotics to the role on biofilm formation.....	21
Rationalising Biocide Use in the Antimicrobial Era.....	21
NTM microbiology: what to expect from your friendly reference laboratory	21
Extrapulmonary NTM (EP-NTM): not simply extra thoracic pulmonary disease Extrapulmonary NTM (EP-NTM): not simply extra thoracic pulmonary disease	22
This presentation introduces the extrapulmonary NTM network and background in the first half of the talk. The second half presents some clinical cases.....	22
Drug therapies for NTM: what's on the horizon?.....	22
Septic arthritis diagnosis.....	22
Surgical management of septic arthritis of native joints in adults	22
A high index of suspicion for septic arthritis especially allows a rapid initiation of therapy. Early signs of infection must lead to prompt synovial fluid aspiration, which is the most important diagnostic workup.....	23
The key to successful management of septic arthritis is the rapid initiation of appropriate antimicrobial therapy, and joint drainage. Joint drainage can be achieved by arthroscopy, repetitive needle aspirations or arthrotomy,.....	23
in particular dependent on the involved joint, the extent and Gächter stage of the infection.	23
Antibiotic treatment for septic arthritis	23

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

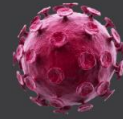
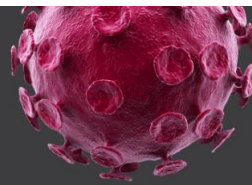
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



Use of whole genome sequencing for antibiotic resistance detection	23
Rapid bacterial diagnostics and antibiotic stewardship	23
Recent developments in the diagnosis of bloodstream infections and rapid antibiotic sensitivity testing	24
Importance of cross speciality working: Lessons from bone and joint infection clinical care and research	24
When source control is more difficult than it sounds: Vascular graft infections	25
Room for improvement in diagnostics: Challenges in the diagnosis and management of eye infections.....	25
Generating evidence in research lite areas: Designing clinically relevant studies to improve the management of complex abdominal infections	25
Presentation title – to be confirmed.....	25
Characterisation of host immune responses to Salmonella Typhi in an endemic setting – a comparison of natural typhoid infection with controlled human infections	26
Vaccines to target people with diabetes: characterising the pathways of immune response to M. tuberculosis and B. pseudomallei in people with diabetes compared to non-diabetics.....	26
Presentation title – to be confirmed.....	27
Molecular testing for SARS-CoV2.....	27
Using lateral flow devices for COVID detection by the general public, concordance with PCR and peoples' behaviours	27
SARS-CoV2 serological testing; natural and vaccine antibody detection	27
Antifungal prophylaxis in paediatric hematopoietic cell transplant.....	28
Paediatric candidemia, a global perspective	28
Paediatric antifungal stewardship	29

FIS 2021

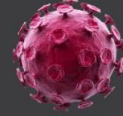
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Friday 5 November

Lowbury Lecture: Tales of the unexpected in antibiotic resistance

Professor Marc Bonten, UMC, Utrecht, Netherlands

Antibiotic resistance is a global threat for human healthcare. Its prevalence and infection incidence rise due to antibiotic-induced selection and transmission between human hosts, but also between animals, humans and the environment. Our efforts to control antibiotic resistance, therefore, encompass the prudent use of antibiotics and transmission control. Yet, these actions frequently require a consideration of what is good for my patient now and what is best for the future. The complexity of the epidemiology of antibiotic resistance implies unexpected consequences of what seems to be conventional wisdom. In this Lowbury lecture I will address some of these “tales of the unexpected.” More specifically, I will discuss recent insights in the relationship between antibiotic resistance in animals and the risk of infections caused by resistant pathogens in humans. And I will address how the use of more antibiotics may benefit critically ill patients and those undergoing surgery, and at the same time reduce the prevalence of antibiotic resistance. Or not?

JD Williams Lecture: The slow pandemic: Lessons from ‘The captain of all these men of death’

Dr Grace Smith, Clinical Lead for National Mycobacterial Reference Service, UK Health Security Agency

Tuberculosis should be thought of as a slowly progressing worldwide epidemic, or pandemic, and has been recognised as an infection of humans from palaeontological evidence and from eloquent descriptions in ancient texts. Known as phthisis and consumption, the disease was named as tuberculosis in the mid-19th century, and in the next few years, recognised as transmissible by respiratory spread and the causative agent confirmed as *Mycobacterium tuberculosis*.

During this period, between 1851 and 1910, around four million died from TB in England and Wales – more than one third of those aged 15 to 34 and half of those aged 20 to 24 died from TB. Surveillance of TB, initially based on mortality data, has improved, and has been reported globally since 1997.

TB remains one of the top 10 causes of death worldwide and, until the Covid pandemic, the leading cause of death from a single infectious agent. Every day, over 4000 people die from TB and nearly 30,000 people fall ill.

FIS 2021

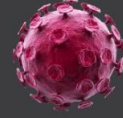
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



About a quarter of the world's population is infected with *M. tuberculosis* and at risk of developing TB disease.

In 2019, about 0.5 million people fell ill with drug-resistant TB, a major contributor to deaths from antimicrobial resistance globally. WHO reports concern that the COVID-19 pandemic threatens to reverse recent progress in reducing the global burden of TB disease and I will discuss the impact of COVID on TB control in England. Most people notified with TB are concentrated in major urban centres. Inequalities remain an important feature of TB epidemiology with disparities in geography, country of birth, ethnicity and social risk factors

Human TB is mainly caused by members of the *Mycobacterium tuberculosis* complex (MTBC), a group of closely related (>99% nucleotide sequence identity) acid-fast bacilli. The human adapted MTBC evolved as a 'professional pathogen', as an obligate pathogen of humans without any environmental or animal reservoir.

As the MTBC has little sequence variation compared with other bacteria, established techniques used to study bacterial genetic variation are of limited use, and much of the ecology and evolution of the MTBC remained unknown until next-generation sequencing overcame these limitations by indexing MTBC diversity across the whole genome, thereby enabling detailed analyses. Following the establishment of the MTBC ancestor the MTBC evolved further into several human-adapted lineages and lineages that are adapted to various wild and domestic mammals.

The introduction of next-generation sequencing to clinical diagnostics for mycobacteria has also been important in overcoming many of the limitations in determining drug resistance and routine analysis of strain relatedness is driving understanding of transmission dynamics, and I will discuss evidence from our service that can be used to focus contact tracing and interrupt transmission.

First insights into the bioFire joint infection syndromic panel

Dr Catherine Aldridge, Consultant Microbiologist, Newcastle Upon Tyne Hospitals NHS Foundation Trust

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

FIS 2021

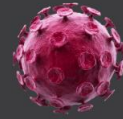
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Barnet Christie Lecture: Precision targeting of preventative therapy for tuberculosis

Dr Rishi K Gupta, Honorary clinical research fellow, University College London

Scale-up of preventative treatment for tuberculosis (TB) for people at highest risk of incident disease represents a cornerstone of global control efforts. Identifying the at-risk population remains a key hurdle to successful implementation since the tuberculin skin test (TST) and interferon-gamma release assays (IGRAs), used as surrogates for latent M. tuberculosis infection (LTBI), are poor predictors of incident disease.

During my PhD, I have developed and evaluated a range of emerging approaches to better target preventative treatment for TB by combining epidemiological and 'omics approaches - spanning individual participant data meta-analysis, risk prediction and whole blood transcriptomics. In this lecture, I will provide a state-of-the-art overview of these approaches.

First, I evaluate whether current latent TB diagnostics may be optimised by implementing higher test cut-offs, or using a newer generation IGRA. Next, I pool data from 20 previous cohort studies to develop and validate a personalised risk prediction model for incident TB (PERISKOPE-TB; <http://periskope.org>), which incorporates quantitative TST/IGRA results, age, TB exposure history and immune function variables. Finally, in an analysis of 1,126 whole blood RNA samples, I show that 8 candidate RNA biomarkers show promise to stratify short-term risk of TB disease, particularly among recent TB contacts.

FIS 2021

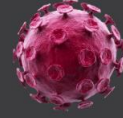
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Monday 8 November

Presentation title – to be confirmed

Professor Jonathan Reid, University of Bristol

09:30, FIS Theatre

Respiratory aerosols are a potential route for the transmission of respiratory pathogens between infected and susceptible individuals. Particle sizes exhaled when we breath, speak and cough span a wide range, with large droplets (greater than 100 micrometres in diameter) settling over short distances (<2 m). Smaller particles are inhalable and can remain airborne for minutes to hours, with the smallest respirable particles (smaller than 5 micrometers in diameter) able to penetrate deep into the respiratory tract. In this presentation, we will review the factors that control the rate at which individuals emit aerosol mass, the environmental factors that influence the airborne survival of pathogens such as SARS-CoV-2, and the dependence of viral load on particle size. By understanding the baseline emission rates from healthy individuals, the potential sources of infectious aerosols in aerosol generating procedures can be assessed.

The AERosolisation And Transmission Of SARS-CoV-2 in Healthcare Settings

(AERATOR study): Results from oxygen delivery systems and lung function testing.

Dr James Dodd, University Of Bristol & North Bristol Nhs Trust

09:45, FIS Theatre

Rationale:

Continuous Positive Airways Pressure (CPAP), high flow nasal oxygen (HFNO) therapy and lung function testing are currently designated as aerosol generating procedures despite limited high quality experimental data. We aimed to characterise aerosol emission during these procedures and compare them with breathing, speaking and coughing.

Methods:

Aerosol emissions were measured simultaneously in ultra-clean, laminar flow theatres. Data on healthy volunteers and patients were compared to subjects breathing, speaking, and coughing followed by using CPAP and HFNO and lung function testing.

Results & conclusions:

Standard non-humidified CPAP is associated with less aerosol emission than breathing, speaking or coughing. Aerosol emission from the respiratory tract does not appear to be increased by HFNO.

FIS 2021

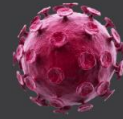
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Spirometry (performed with a standard filter) does not generate significant aerosols compared with coughs in healthy volunteers and patients with lung disease. Peak flow does generate aerosols, although a viral filter reduces this >10-fold. Cough appears to be the main aerosol generating risk out of all measured activities.

SARS-CoV-2 environmental contamination from hospitalised COVID-19 patients receiving aerosol generating procedures

Dr Chris Green, University of Birmingham & University Hospitals Birmingham NHS Foundation Trust

10:00, FIS Theatre

Many hospital admissions for moderate/severe COVID19 were treated with CPAP and HFNO, which are considered 'aerosol generating procedures' with potential for added risk to healthcare workers and nosocomial infection. We conducted a prospective environmental sampling study that looked at the frequency of viral RNA in the air and surfaces in the immediate clinical area for COVID-19 patients undergoing CPAP or HFNO care, compared with standard oxygen therapy. We found only a few environmental samples were positive by PCR and none were positive by viral culture, despite viral RNA in almost all nasopharyngeal swabs at the this stage of disease. Furthermore, the use of CPAP/HFNO and/or coughing did not appear to influence the level of environmental contamination.

How long is the green road to sustainability?

Rose Gallagher MBE, Royal College of Nursing

09:30, JD Williams Theatre

Delivery of the UN Sustainable Development Goals (SDG's) is critical for the peace and prosperity of the planet. Social, economic, and environmental actions are required by all countries through global partnerships. Environmental sustainability is critical for the continuity of human and other life on our planet. Delivering health and care services contributes to many of the challenges the SDG's seek to address. This presentation will describe how healthcare, and in particular decontamination services contribute to sustainability and suggest ways in which we can address these challenges.

Role of audits in decontamination

Sarah Marshall, Joint Advisory Group

09:45, JD Williams Theatre

- Role of joint advisory group (JAG) in auditing endoscopy departments
- How audits are undertaken?
- What are the priorities of auditing?
- Reviewing your endoscopy service as the type and number of procedures are increasing
- Lessons learnt through audits, and continual progression with equipment, facilities and governance.

FIS 2021

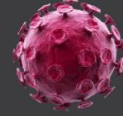
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Development of a training manual for decontamination

Val O'Brien, Central Sterilising Club

10:00, JD Williams Theatre

The presentation will cover how the idea of a new training manual came about and which experts are involved in its development. There are a number of detailed text books available for those with specific interests in Decontamination however no one single document or manual is available that provides a high level overview of the principles of decontamination practice. Many years ago an MDA Microbiology Advisory Committee Manual existed in three parts which covered Protocols, Principles and Procedures. This document was sadly archived some years ago. Some of its content is still relevant today and will form the basis of this new training manual. The target audience is anyone wishing to understand the fundamentals of Decontamination. The presentation will provide an overview of the content, accessibility and timescales for the development of this new manual.

Heavy petting

Dr Clemency Nye, University Hospital Wales

09:30, Lowbury Auditorium

PET scans can be a useful tool when investigating patients with pyrexia of unknown origin, in whom previous workup has failed to provide a diagnosis. In Wales prior to 2019, all PET scan requests went through a national funding application process, which was a significant barrier to their use, and caused delays in patient investigation and management. In 2019 the Infectious Disease team at University Hospital Wales was granted the ability to request PET scans without applying for funding. We have reviewed all PET scans performed in patients with pyrexia of unknown origin since this time. The main aims of this review were to assess how useful PET scans have been in the diagnosis and management of these patients, and examine when is the optimal time to perform a PET scan in the patient's investigation journey.

When the drugs don't work

Dr Gwennan Jones

09:45, Lowbury Auditorium

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Treating blindly

Dr Shuchita Soni, Public Health Wales and Cardiff and Vales University Health Board

10:00, Lowbury Auditorium

A difficult case of PUO. A patient who had multiple presentations of a mysterious multi organ inflammatory condition. This waxed and waned over the course of a couple of months. Eventually after many courses of antibiotics, reviews from various teams, scans and biopsies a multi system inflammatory condition was identified as the cause for this condition. A unifying diagnosis of IgG4

FIS 2021

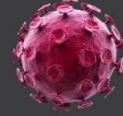
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



related disease was made which was steroid responsive. This ultimately led this patient to have a remission in his condition. Despite a few further flares and lifelong immunosuppression the patient is currently leaving and healthy and fulfilling life. IgG4 related disease is a new condition which unifies previous diagnoses as separate entities - previously known as Autoimmune pancreatitis, retroperitoneal fibrosis, Aortitis etc. This is also now a consideration in cases with PUO and multi system disease.

Developments in AST and AMR surveillance of anaerobic bacteria

Trefor Morris, Lead Biomedical Scientist, UK Anaerobe Reference Unit (UKARU), Public Health Wales
11:00, FIS Theatre

The UKARU provides reference level anaerobic microbiology services to the UK and beyond. During the last decade, an increase in demand for antimicrobial susceptibility testing (AST) to monitor the development of resistance has increased the need for an accurate and timely method for anaerobic bacteria. Over the last few years the UKARU has worked alongside EUCAST to support the development of a disk testing methodology for the most common anaerobic species. Also UKARU is using the data collected from its routine referrals to develop a live MIC database for all anaerobic species. Updates on both of these will be presented.

Fusobacterium necrophorum – what does WGS tell us?

Michael Perry, Deputy Lead Scientist, UK Anaerobe Reference Unit (UKARU), Public Health Wales
11:18, FIS Theatre

The Gram negative rod/coccobacillus, *Fusobacterium necrophorum* is associated with clinical entities ranging from recurrent sore throat to life-threatening Lemierre's disease. Little is known regarding the genetic nature of this obligate anaerobe and whole genome sequencing may confer insights into the spectrum of disease caused by the pathogen. Several hundred *F. necrophorum* strains, referred to the UK Anaerobe Reference Unit over the previous 40 years, were sequenced for further whole genome sequencing analysis. Genetic resistance determinant detection was undertaken with very few genes detected. For those that were present many, but not all, led to a phenotypic effect; and an increased incidence was seen in isolates from the last two decades compared with those isolated prior to the early 2000s. Single nucleotide polymorphism (SNP) and whole genome multi-locus sequence typing (wgMLST) analysis showed a high rate of concordance and revealed potentially significant findings. Future, more in depth, analysis may improve our understanding of *F. necrophorum* colonisation and pathogenesis.

Biofilms, *Fusobacterium nucleatum* and AST

Sarah Kuehne, Senior Lecturer, University Of Birmingham

11:36, FIS Theatre

Fusobacterium nucleatum is an important pathogen foremost in the human oral cavity, where it is implicated in the shift from a healthy to a disease associated biofilm, particularly in periodontitis (gum disease). This anaerobe bacterium occurs predominantly in multi-species biofilms, where it has

FIS 2021

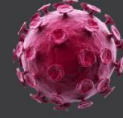
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



a critical role as bridging organism, facilitating the build-up of biofilm and recruiting more pathogenic bacteria.

F. nucleatum has long also been recognised for its implication in extra-oral diseases, such as colorectal cancer, preterm birth and Irritable Bowel Disease.

In this talk, I will explore the complexity of multispecies infections and the importance to be able to assess their antimicrobial profile. I will present methodologies including the use of live/dead staining, confocal microscopy and a newly developed imaging analysis tool. The Biofilm Viability Checker allows precise calculation of the percentages of live and dead bacteria and we have shown that it can be used on different types (shapes) of bacteria, including multispecies biofilms.

Development and implementation of hospital-onset COVID-19 infection surveillance

Dr James Price, Director Of Infection Prevention And Control, Imperial College Healthcare NHS Trust
11:00, JD Williams Theatre

Background: Understanding nosocomial acquisition, outbreaks and transmission chains in real-time will be fundamental to ensuring infection prevention measures are effective in controlling COVID-19 in healthcare. We present the design and implementation of a hospital-onset COVID-19 infection (HOCl) surveillance system for an acute healthcare setting to target prevention interventions.

Methods: Utilising data routinely collected through electronic healthcare systems we developed a novel surveillance system for determining and reporting HOCl incidence and providing real-time network analysis. We provided daily reports on incidence and trends over time to support HOCl investigation, and generated geo-temporal reports using network analysis to interrogate admission pathways for common epidemiological links to infer transmission chains. By working with stakeholders the reports were co-designed for end users.

Results: Real-time surveillance reports revealed: changing rates of HOCl throughout the course of the COVID-19 epidemic; key wards fuelling probable transmission events; HOCl over-represented in particular specialities managing high-risk patients; the importance of integrating analysis of individual prior pathways; and the value of co-design in producing data visualisation. Our surveillance system can effectively support national surveillance.

Conclusions: Through early analysis of the novel surveillance system we have provided a description of HOCl rates and trends over time using real-time shifting denominator data. We

FIS 2021

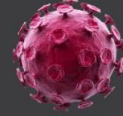
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



demonstrate the importance of including the analysis of patient pathways and networks in characterising risk of transmission and targeting infection control interventions.

Global applications of hospital-onset COVID-19 infection surveillance and integration into IPC systems

Professor Benedetta Allegranzi, Infection Prevention and Control Technical Lead, World Health Organisation

11:15, JD Williams Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Hospital COVID-19 surveillance system using network analysis

Professor Mauricio Barahona, Imperial College London

11:30, JD Williams Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Dosing of ABX in response to EUCAST

Stephen Hughes, Consultant Antimicrobial Pharmacist, Chelsea and Westminster Hospital NHS Foundation Trust

11:00, Lowbury Auditorium

EUCAST breakpoints have changed with the revision of the 'Intermediate' breakpoints zone. This will impact both the laboratory based practice but also our front-end users such as our clinicians and prescribers.

The logic for the introduction of 'Susceptible; increased exposure' as a replacement for 'Intermediate' is discussed with background on the need for change and how this will likely impact on services.

The session includes some options for interpreting these breakpoint changes in to clinical practice, both through empiric and bespoke prescribing. We also will discuss some of the implications that these dose changes may have on our practice, including unfamiliarity of users with the new terminology 'Susceptible; increased exposure', the impact of dose changes on local and national AMS performance measured (total DDD/1,000 admissions) and the impact of high-dosing on patient tolerance (e.g. risk of oto- and nephro-toxicity with high dose aminoglycosides)

Antibiotic Dosing in Sepsis

Marisa Lanzman, Senior Pharmacist Microbiology & ITU, Royal Free London NHS Foundation Trust

11:15, Lowbury Auditorium

FIS 2021

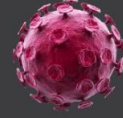
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Discussion around timing of antibiotic doses in sepsis:

- What is the optimum time to start antibiotics in a patient diagnosed with sepsis?
- What is recommended in Surviving Sepsis guidelines 2021

Optimising antimicrobial dosing in paediatrics

Orlagh McGarrity, Lead Antimicrobial Pharmacist, Great Ormond Street Hospital for Children NHS Trust

11:30, Lowbury Auditorium

Finding the optimal dose of antimicrobials in the treatment of infection in paediatrics, the challenges unique to dosing of antimicrobials in paediatrics and ways to overcome these challenges in practice.

Truth to power: IPC as the champion of compassionate people-centred care

Julie Storr, Consultant, S3 Global

13:30, FIS Theatre

In many countries during the COVID-19 pandemic, infection prevention and control (IPC) voices were reportedly not as influential in some critical policy areas and associated decisions that were made in the name of IPC. This was the case across many levels of health and social care. Why? Is there something wrong with the modus operandi of IPC and if so, how might this be rectified? Drawing on the UK experience, and with a specific focus on decisions, directives and their implementation related to the thorny issue of “visitor” restrictions imposed across health and social care, this solution-focused session kicks off the IPC leadership stream by considering the value, power and influence of IPC. It will explore and challenge exactly what happened over the last 20 months and considers the need for IPC leadership to more vocally champion compassionate, people-centred care.

Leading in complex organisations and challenging times

Dr Neil Wigglesworth, Director Of Infection Prevention and Control, East Kent Hospitals University NHS Foundation Trust

13:50, FIS Theatre

A personal reflection on leadership during the Covid-19 pandemic. This short talk will focus on the contrast between the command and control leadership style prevalent in the first wave of Covid-19 and the need for a more compassionate leadership subsequently.

Humble leadership: The secret ingredient in quality improvement project leadership

Dr Matsikachando Moyo, Lecturer, Solent University

14:10, FIS Theatre

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

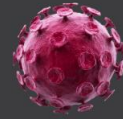
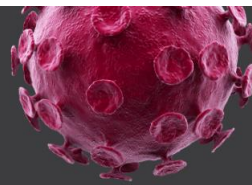
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



A leader is a person who influences a group of people towards the achievement of a goal. When it comes to leading Quality Improvement (QI) projects, many would agree that a leader should also enable and facilitate others to make their contribution. Indeed, to ensure the success of such projects, the leader's engagement and relationship skills are also fundamentally important.

In this talk, Mat will speak on humble leadership and how this style of leadership was applied in one of his successful QI projects to promote engagement and working relationships characterised by mutual respect. This approach to leading a project helped Mat influence key stakeholders towards implementing and sustaining change in two key infection prevention and control related practices (patient hand hygiene and the decontamination of clinical equipment when taking patients' vital signs). In addition to enabling and facilitating stakeholders to make contributions to the project, the utilisation of humble leadership principles promoted stakeholder ownership of the project's success. This ownership resulted in new practices being embedded into everyday (routine) practice when clinicians were taking patients' vital signs.

Gonorrhoea resistance and an update on management approaches

Professor Jonathan Ross, Professor of Sexual Health and HIV, University Of Birmingham

13:30, JD Williams Theatre

As gonococcal resistance continues to rise, antibiotics are required not just in the short term for the treatment of infection but also new approaches designed to extend the utility of new therapies. An evidenced, rather than convenience, based approach to designing drug regimens is required focused not just on short term efficacy but also with the potential to minimise the development of resistance. The dose and length of therapy, use of cyclical treatments, and role of dual therapy need to be considered and evaluated. In addition, a more focused approach to infection testing and treatment has the potential to reduce antibiotic exposure and support good antibiotic stewardship, while retaining control of infection and minimising the risk of sequelae.

Congenital Syphilis: an update

Dr Helen Fifer, Consultant Microbiologist, UK Health Security Agency and Achyuta Nori, Consultant Sexual Health/HIV Physician, Guy's And St Thomas' Nhs Foundation Trust

13:45, JD Williams Theatre

This is a brief update to highlight the increase in congenital syphilis, diagnostic pitfalls and new surveillance system.

Treatment challenges in symptomatic mycoplasma genitalium infection

Dr Mike Rayment, Consultant Physician, Chelsea and Westminster Hospital

14:00, JD Williams Theatre

FIS 2021

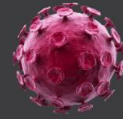
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Local ASP reflections during COVID-19 pandemic

Mark Gilchrist, Imperial College Healthcare NHS Trust

13:40, Lowbury Auditorium

Imperial College Healthcare NHS Trust (ICHNT) is a large tri-site tertiary referral academic hospital in West London. The Antimicrobial stewardship programme (ASP) has been extensively developed over many years and operates through five main portfolios which includes Clinical, Surveillance, Governance and policy, Education and training and Research, with our partners from Imperial College.

Throughout the COVID-19 pandemic the ICHNT ASP has been and continues to be stress tested. The programme has shown stewardship resilience particularly at the front door around antibacterial prescribing but in other areas has allowed valuable learning to drive improvement, particularly around antifungal management and diagnostics. The ASP structure and governance principles have been key to developing an ICHNT COVID treatment group which has overseen the operationalisation of new and emerging COVID therapies.

This presentation will give an overview of the key tests and learning which allow the programme to continually evolve.

Antimicrobial stewardship and COVID-19 on the ICU

Felicia Lim, Consultant Medical Microbiologist, University Hospitals Leicester

13:55, Lowbury Auditorium

The COVID-19 pandemic presented an extraordinary challenge to the ICU, with a rapid increase in admissions and subsequent antimicrobial usage. New systems and procedures had to be implemented to cope with the situation. This presentation highlights the issues we faced in antimicrobial stewardship on the Intensive Care Unit at the Leicester Royal Infirmary and the steps we have taken to overcome them. We also reflect on the lessons we have learnt from the pandemic and our future antimicrobial stewardship plans.

Antimicrobial stewardship and COVID-19 a national perspective

Andrew Seaton, NHS Greater Glasgow and Clyde

14:10, Lowbury

AuditoriumThe Scottish Antimicrobial Prescribing Group (SAPG) delivers a national antimicrobial stewardship (AMS) programme through engagement with local antimicrobial management teams (AMTs) and other stake-holders. Prescribing surveillance, education and quality improvement are central to the programme. Anticipating that the COVID-19 pandemic would exert a significant impact on AMS, SAPG issued primary and secondary care antibiotic prescribing advice in March 2020,

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

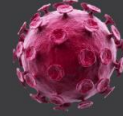
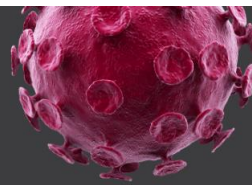
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



increased prescribing surveillance and feedback in primary care and conducted a national antibiotic point prevalence survey in COVID-19 hospitalised patients. SAPG advice emphasised avoiding empirical/escalating antibiotics in COVID-19 and promoting WHO Access agents, IV to oral switch and short duration therapy. Prescribing guidance was refined in May and October and in November 2020 a joint letter to prescribers was issued by the Scottish Chief Medical, Nursing and Pharmacy Officers to promote AMS in COVID-19. During 2020 World Antibiotic Awareness Week radio messages including avoiding antibiotics in COVID-19 were broadcast. 2020 national antibiotic prescribing indicators show reductions in primary care antibiotic prescribing, reduction in IV antibiotic use and increase (to >60%) in WHO Access antibiotics in hospitals. SAPG has provided important national leadership in AMS during the COVID-19 pandemic.

Mapping bacteriophages to clinical need

Prof Martha Clokie, Professor Of Microbiology, University of Leicester

15:00, FIS Theatre

Phage therapy is undergoing a revival of interest worldwide. It is applicable to target antibiotic resistant bacteria or bacteria in difficult to reach parts of the body that render antibiotics ineffective. Phage therapy can also be considered within a newer concept of modifying the microbiome to selectively remove key pathogens.

Some countries, such as Georgia and Russia have a long relationship with Phage Therapy, this is where the practice of using phages started. France and Poland also have a long tradition of using Phage therapy. More recently, Belgium has been advancing the practice both in treating patients and by addressing regulatory issues. There has also been compassionate use in Germany and Switzerland. Other European countries including the UK have active research scenes, not reflected in phages being used in patients.

I will discuss how and where phages are being developed and used for human therapy and describe where phage collections and genomic data are stored and collated. I will review the limitations and breakthroughs to developing phage therapeutics and show how these are being addressed within Europe. Finally, I will contextualise human phage therapy work using phage therapy to target animals, which can inform human phage therapy development.

A synergy between natural products and vancomycin to combat vancomycin resistant enterococcus

Professor Katie Laird, Professor of Microbiology, De Montfort University

15:15, FIS Theatre

Vancomycin Resistant Enterococcus faecium (VRE) has become endemic in healthcare settings, reducing treatment options for enterococcal infections. New antimicrobials for VRE infections are therefore a high priority. Essential Oils (EOs) synergistically enhance the activity of some antibiotics, suggesting that EO-antibiotic combinations could re-sensitize resistant bacteria and maintain the

FIS 2021

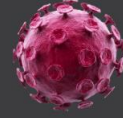
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



antibiotic repertoire.

This study aimed to identify EO-antimicrobial combinations that synergistically re-sensitize VRE to vancomycin and to investigate the synergistic mechanism of action of a lead combination.

Synergistic interactions between oregano, rosewood and cumin EOs, their compounds carvacrol, linalool and cuminaldehyde and vancomycin were determined using checkerboard and time-kill assays. The in vivo activity of a synergistic EO-vancomycin combination was determined by a *Galleria mellonella* larvae assay. The mechanism of action of the combination was then investigated by transcriptomic analysis, β -galactosidase leakage and salt tolerance assays. A combination of 1.98 mM carvacrol, 4.20 mM cuminaldehyde and 0.031 mg/L vancomycin synergistically inhibited VRE (4.67 log₁₀ reduction), reducing the MIC of vancomycin below its sensitivity breakpoint. The combination also inhibited 10 VRE clinical isolates (2.33-5.25 log₁₀ reduction). However, no antimicrobial activity was observed in vivo, suggesting drug development is required for this combination to be useful. Transcriptomic data indicates that the combination affected carbohydrate metabolism and cell wall biosynthesis, which alongside β -galactosidase leakage and loss of salt tolerance indicate that cell envelope damage play a role in the synergistic mechanism of action.

Current concepts and controversies in control of healthcare-associated pathogens

Dr Curtis Donskey, Hospital Epidemiologist, Cleveland Va Medical Center

15:30, FIS Theatre

The hands of healthcare personnel and high-touch surfaces are generally recognized as important sources of transmission of pathogens in healthcare settings. Therefore, efforts to prevent transmission of healthcare-associated pathogens typically emphasize provider hand hygiene and cleaning and disinfection of high-touch surfaces in patient rooms. The goal of this presentation is to highlight recent evidence that portable equipment and other shared devices, floors, and hands and clothing of patients may be underappreciated as sources of dissemination of health care-associated pathogens. Practical approaches to address these sources of transmission are considered.

Ex vivo perfusion and antimicrobial use in liver transplants

Dr Emmanuel Wey, Royal Free Hospital

15:00, JD Williams Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Outcomes of faecal transplants in stem cell transplant recipients

Dr Rohma Ghani, Infectious Diseases And Microbiology Registrar / Clinical Research Fellow, Imperial College and Dr Frances Davies, Consultant Microbiologist, Imperial College NHS Trust

15:15, JD Williams Theatre

FIS 2021

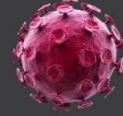
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



The gut microbiome can be adversely affected by chemotherapy and antibiotics prior to hematopoietic stem cell transplantation (HSCT). This affects graft success and increases susceptibility to multidrug-resistant organism (MDRO) colonization and infection. We used Faecal Microbiota Transplantation (FMT), the transfer of healthy screened donor stool to an affected recipient, as a rescue therapy for the gut microbiota of MDRO-colonised patients with haematological malignancy.

FMT was performed on 8 patients, colonised with MDROs detected on rectal screening (FMT-MDRO group) pre-HSCT. Clinical outcomes were compared with 11 matched MDRO colonized HSCT patients who did not receive FMT (non-FMT MDRO group).

At 12 months, survival was significantly higher in the FMT-MDRO group (70% versus 36% $p = 0.044$). Post HSCT, fewer FMT-MDRO patients required intensive care (0% versus 46%, $P = 0.045$) and experienced fewer days of fever when normalized for admission days (0.11 versus 0.29 days, $P = 0.046$). At 12 months, the non-FMT MDRO group had significantly lower survival (36.4% versus 61.9% respectively, $p=0.017$) than a paired non-MDRO colonised cohorts. However, there was no difference in survival between the FMT MDRO group and a paired cohort (70% versus 43.4%, $p=0.14$),

Reduced survival associated with MDRO colonization in HSCT patients, may be ameliorated by FMT.

Antimicrobial and anti-fungal stewardship in stem cell transplant recipients

Dr Samir Aggarwal, Barts and the London NHS Trust

15:30, JD Williams Theatre

Haemato-oncology patients represent a highly vulnerable, immunocompromised cohort at risk of severe sepsis. Febrile neutropenia guidelines are essential and centre-specific. So, what is the role of antimicrobial stewardship (AMS) on top of the clinical team's daily review? What is the best way to deliver AMS in this complex area? By whom? With what tools? I will address these issues from my experiences of AMS in Haemato-Oncology at Barts Health NHS Trust and discuss our local antimicrobial management policies, some early data and the online "FATs" AMS audit tool being piloted in 4 centres across the UK.

FIS 2021

Federation of Infection Societies Conference

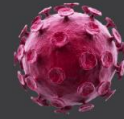
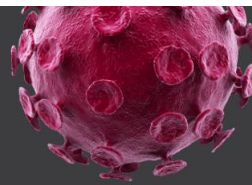
Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by

BIAAM
British Infection Association



Tuesday 9 November

Establishing a framework for a standardised national approach to COVID-19 therapeutics

Professor Reecha Soffat

09:30, FIS Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Setting up a new professional advice forum in COVID-19 - rapid review of antivirals

Dr Lance Turtle, Senior Clinical Lecturer In Infectious Diseases, University Of Liverpool

09:45, FIS Theatre

Setting up a new professional advice forum in COVID-19 - rapid review of antivirals.

Setting up a new professional advice forum in COVID-19; lessons learned

Dr Rachel Tattersall, Consultant Rheumatologist, Sheffield Teaching Hospitals NHSFT

10:00, FIS Theatre

Soon after the emergence of COVID-19 it became clear the SARS-COV2 virus caused some people to develop a hyperinflammatory syndrome. HiHASC (the Hyperinflammatory HLH Across Speciality network) was set up in 2018 as a small group of 38 professionals from a multidisciplinary background interested in the prototype hyperinflammatory syndrome haemophagocytic lymphohistiocytosis (HLH) which presents to many specialities but is not the expert province of any one discipline. As the pandemic progressed, this group convened weekly, using virtual meetings to share evolving knowledge. Membership grew rapidly to nearly 200 and HiHASC fed into policy and research decisions about trials of immunomodulatory agents for COVID19 and facilitated a rapid retrospective cohort trial to elucidate the hyper inflammatory COVID19 phenotype COV-HI. This talk aims to overview the network development and highlight successes and mistakes on the path of interdisciplinary working leading to joined up care to improve patient outcomes.

Biocide usage and antibiotic resistance. To Be or Not to Be

Professor Jean Yves Maillard, Professor Of Pharmaceutical Microbiology, Cardiff University

09:30, JD Williams Theatre

There should be little doubts that bacteria have a tremendous ability to adapt and survive antimicrobial challenges, to the point that, today, there is hardly any antibiotics left in our armoury to treat certain bacterial infections. One ongoing question is the impact of biocidal products (disinfectants, antiseptics) and antimicrobial surfaces in contributing to emerging antimicrobial resistance. Whilst evidence in the laboratory settings is clear, the dearth of studies in the clinical and broader environments casts doubts on the clinical significance of in vitro findings. Bacteria becoming resistant to the in use concentration of a biocidal product is rare and usual linked to the inappropriate and misuse of the product. However, the impact of biocidal products post-application, where the remaining concentration of the main active ingredient may be low, remains a concern.

FIS 2021

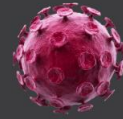
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



With the current market trend focussing on product residual activity, the question of the impact of biocide usage on emerging antimicrobial resistance remains highly relevant.

Efficacy of biocides against klebsiella pneumoniae - From cross-resistance to antibiotics to the role on biofilm formation

Marta Martins PhD, Assistant Professor In Microbiology, Trinity College Dublin

09:45. JD Williams Theatre

Klebsiella pneumoniae is responsible for a wide range of infections, including urinary tract infections, bacteremia, pneumonia, etc. Although historically K. pneumoniae has been associated with infections in immunocompromised patients, that has now extended to healthy individuals. K. pneumoniae have become increasingly resistant to antibiotics due to the production of extended-spectrum β -lactamases with devastating outcomes to the patient. Contributing to the difficulty in treating these infections is the ability of K. pneumoniae to form biofilms on medical devices and other surfaces. Clinical isolates of K. pneumoniae obtained from St. James's Hospital (Dublin, Ireland) were characterised for their antibiotic resistance profile; tolerance and potential cross-resistance to commonly used biocides; and biofilm formation. Ten out of the eleven isolates were multidrug resistant. Main resistance was obtained to Trimethoprim, Tetracycline, Cefpodoxime, and Aztreonam. Resistance against Cefpodoxime was particularly relevant as this is a third generation, or 'last resort' cephalosporin. Some potential for cross-resistance to the biocidal components, benzalkonium chloride and triclosan, was observed in several isolates. When synergistic combinations of antibiotics and chemosensitisers were tested against biofilms of K. pneumoniae, the results obtained were promising. Taken together, the use of combined therapies could be considered in the future treatment of K. pneumoniae infections.

Rationalising Biocide Use in the Antimicrobial Era

Dr Tina Joshi, Lecturer In Molecular Microbiology, University of Plymouth

10:00, JD Williams Theatre

Biocides are widely used in healthcare and industry to control infections and microbial contamination. Ineffectual disinfection of surfaces and inappropriate use of biocides can result in the survival of microorganisms, such as spores on clinical surfaces, often contributing to the transmission of infectious agents. Biocidal disinfectants, such as chlorine releasing agents, employ varying modes of action to kill microorganisms, and are being used widely. There are now reports of emerging bacterial tolerance to biocides. These reports are important when considering the potential for antibiotic and biocide co resistance. Here we present information that will encourage interest in biocide stewardship alongside antibiotic stewardship in the antimicrobial era.

NTM microbiology: what to expect from your friendly reference laboratory

Dr Esther Robinson, Head Of TB Unit, UK Health Security Agency

FIS 2021

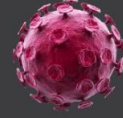
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



09:30, Lowbury Auditorium

Non-tuberculous mycobacteria (NTM) are causing increasing issues in clinical practice. Laboratory diagnostics are key to informing clinical management. In England, the majority of NTM isolates are processed through the UKHSA National Mycobacterial Reference Service laboratories. This talk describes the routine processing of such isolates by whole-genome sequencing for speciation, and antibiotic susceptibility testing. Use of sequencing data for understanding potential transmission of NTM, especially in a nosocomial context is also increasing, but not yet routine.

Extrapulmonary NTM (EP-NTM): not simply extra thoracic pulmonary disease

Dr Anna Goodman, Consultant, Guy's and St Thomas' Foundation NHS Trust

09:45, Lowbury Auditorium

This presentation introduces the extrapulmonary NTM network and background in the first half of the talk. The second half presents some clinical cases.

Drug therapies for NTM: what's on the horizon?

Professor Andres Floto, Cambridge Centre for Lung Infection, Royal Papworth Hospital, Cambridge & University of Cambridge Department of Medicine

10:00, Lowbury Auditorium

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Septic arthritis diagnosis

Natividad Benito, Infectious Diseases Senior Consultant, Hospital de la Santa Creu i Sant Pau

11:00, FIS Theatre

Since septic arthritis is a medical emergency, a low threshold for suspicion of infectious arthritis should be kept in order to diagnose it as early as possible. Consequently, all acute arthritis should be considered infectious until proven otherwise. We review the diagnostic approach and microbiological methods recommended by the guidelines developed by the European Bone and Joint Infections Society (EBJIS).

Surgical management of septic arthritis of native joints in adults

Charles Vogely, Orthopedic Surgeon, UMC Utrecht

11:15, FIS Theatre

FIS 2021

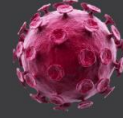
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



A high index of suspicion for septic arthritis especially allows a rapid initiation of therapy. Early signs of infection must lead to prompt synovial fluid aspiration, which is the most important diagnostic workup

The key to successful management of septic arthritis is the rapid initiation of appropriate antimicrobial therapy, and joint drainage. Joint drainage can be achieved by arthroscopy, repetitive needle aspirations or arthrotomy,

in particular dependent on the involved joint, the extent and Gächter stage of the infection.

Antibiotic treatment for septic arthritis

Alex Soriano, Head of Infectious Diseases Department, Hospital Clínic of Barcelona

11:30, FIS Theatre

The antibiotic treatment for septic arthritis should be promptly initiated and should cover the most frequent pathogens. During the session we will discuss the principles for the selection of antibiotics, the diffusion to the synovial fluid and the limitations of the antibiotics in this particular environment.

Use of whole genome sequencing for antibiotic resistance detection

Dr Matthew Ellington, Clinical Scientist, UK Health Security Agency

11:00, Lowbury Auditorium

Whole genome sequencing (WGS) offers the potential to predict antimicrobial resistance from a single assay. The published literature now details the ability of methods to accurately detect some antimicrobial resistances in the genomes of particular bacterial species. The themes of technical success and remaining technical challenges will be explored along with potential experimental solutions and new methods.

Rapid bacterial diagnostics and antibiotic stewardship

Dr Andrew Conway Morris, Mrc Clinical Scientist/consultant In Intensive Care, University of Cambridge

11:15, Lowbury Auditorium

The past decade has seen the emergence of pathogen-focussed molecular diagnostics, with a steady increase in the availability of bacterial and fungal tests to complement well-established viral assays. Although the theoretical benefits of rapid bacterial diagnostics are obvious, there are several reasons why their implementation may not lead to improvements in antimicrobial stewardship. Nowhere is the more apparent than in intensive care (ICU). Critically ill patients are at high risk of bacterial infections and are least-well positioned to withstand delayed or missed treatment. However, they are also a group in which diagnosis of infection is difficult. This leads to widespread use of broad-spectrum antimicrobials, with predictable consequences for antimicrobial resistance

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

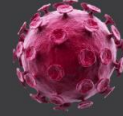
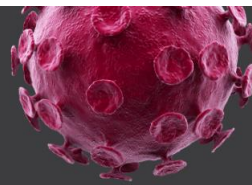
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



and other forms of drug-related harm.

This talk will focus on the current state of rapid diagnostics in ICU, focussing on pneumonia as the commonest infection. I will discuss the issues of antimicrobial harm in ICU and the available rapid diagnostics. I will discuss an in-house customisable diagnostic developed in Addenbrooke's Hospital, describing its impact on antimicrobial stewardship and the lessons learned from this including its deployment during the COVID-19 pandemic. Looking to the future, I will cover emerging technologies and how we may be able to best implement them.

Recent developments in the diagnosis of bloodstream infections and rapid antibiotic sensitivity testing

Kerry Roulston, Clinical Scientist, Royal Free London NHS Foundation Trust

11:30, Lowbury Auditorium

Current diagnosis of bloodstream infection (BSI) utilises automated blood culture systems to detect bacteria. Subsequent antibiotic sensitivity testing (AST) using agar plates or semi-automated systems can take up to 48 hours. During this time, patients may be receiving inappropriate empiric antibiotic therapy which could be ineffective against the causative organism or inappropriately broad-spectrum. Rapid laboratory diagnosis and AST has the potential to reduce morbidity and mortality and improve antimicrobial stewardship by directing earlier appropriately targetted antibiotic therapy. This presentation will discuss recent advances in the diagnosis of BSI, with a focus on rapid AST and the potential impact for antimicrobial stewardship.

Importance of cross speciality working: Lessons from bone and joint infection clinical care and research

Prof Martin McNally, Consultant In Limb Reconstruction Surgery, Oxford Bone Infection Unit

13:30, FIS Theatre

Infection can affect all of the bones and joints in the body, in a wide range of patients from healthy children, to multiply comorbid elderly adults. Adequate management of all aspects of the condition is impossible for a single doctor trained in one medical or surgical speciality.

The Oxford Bone Infection Unit was set up in 1996 to facilitate easier working between, primarily, orthopaedic surgeons, infectious disease physicians, microbiologists and plastic surgeons. All patients are jointly managed between a surgeon and a physician. New patients are seen together in combined clinics. These have evolved from a single clinic to sub-specialty clinics for osteomyelitis and fracture-related infection, prosthetic joint infection and foot infection.

The Unit fosters frequent interaction which allows group to learn quickly from each other, how to effectively treat complex bone and joint infections. A mutual respect for the needs of each speciality and the benefits they bring develops.

FIS 2021

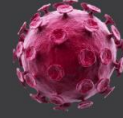
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



This cross specialty working has produced protocols for diagnostic pathways, empiric antimicrobial therapy, surgical approaches, tissue sampling, histological diagnostics and classifications of osteomyelitis and prosthetic joint infection. These have been implemented in countries all around the world.

Perhaps the biggest advantage of good cross specialty working is that it is less stressful for the team members, more fun and much more rewarding than isolated practice.

When source control is more difficult than it sounds: Vascular graft infections

Rosie Darwood, Consultant Vascular Surgeon, Leeds Teaching Hospitals NHS Trust

13:45, FIS Theatre

Vascular graft infections are a dreaded complication for vascular surgeons as source control can pose risks to both life and limb. Rosie will discuss the options available, the role of endovascular techniques and infection prevention measures used by vascular surgeons.

Room for improvement in diagnostics: Challenges in the diagnosis and management of eye infections

Dr Sri Sharma, Consultant Medical Ophthalmologist/ Mrc Fellow, Oxford University / Oxford Eye Hospital

14:00, FIS Theatre

In this presentation we discuss the challenges and benefits of improving microbiological diagnosis in low volume ocular samples. The presentation will provide clinical examples and open discussion about how microbiologists and ophthalmologists might collaborate to resolve these issues.

Generating evidence in research lite areas: Designing clinically relevant studies to improve the management of complex abdominal infections

Andrew Kirby, Associate Clinical Professor, University of Leeds

14:15, FIS Theatre

Why the infections colorectal surgery patient suffer from is a research lite area will be described. We will then describe how we worked in this research lite area, developing pilot data to support a novel approach of fixed-extended antibiotic durations for patients with complicated intra-abdominal infections; and collaborated with infection and surgical trainees to generate outcome data for this patient group. These collaborations and data have been used to successfully apply for NIHR funding to trial fixed-extended antibiotic durations for patients with complicated intra-abdominal infections.

Presentation title – to be confirmed

Professor Adam Cunningham, University of Birmingham

13:30, JD Williams Theatre

FIS 2021

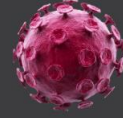
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Characterisation of host immune responses to Salmonella Typhi in an endemic setting – a comparison of natural typhoid infection with controlled human infections

Dr Michelo Simuyandj, Centre for Infectious Disease Research in Zambia

13:45, JD Williams Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Vaccines to target people with diabetes: characterising the pathways of immune response to M. tuberculosis and B. pseudomallei in people with diabetes compared to non-diabetics

Professor Susanna Dunachie, Nihl Global Research Professor, University of Oxford

14:00, JD Williams Theatre

Melioidosis is a neglected tropical disease caused by the Gram-negative bacterium *Burkholderia pseudomallei*. There are an estimated 89,000 deaths per year worldwide from melioidosis, and the hospitalised case fatality rate is up to 50% in low- and middle-income countries. The host-pathogen interface for *B. pseudomallei* and *M. tuberculosis* share some clinical, cell biology and immunological features, including diabetes as a risk factor for increased susceptibility. Our collaboration between University of Oxford, University of Mahidol (Thailand) and London School of Hygiene and Tropical Medicine aimed to characterise the impact of diabetes mellitus on the transcriptomic signature of melioidosis and TB.

We profiled RNA expression in whole-blood from 110 melioidosis patients and controls from Northeast Thailand and 239 TB patients and controls from the international TANDEM consortium. We used both supervised (differential gene expression and Gene Set Enrichment Analysis – GSEA) and unsupervised (Weighted Gene Correlation Network Analysis – WGCNA) approaches to compare the pathways identified as enriched in diabetes.

For both melioidosis and TB patients, diabetes status resulted in up-regulation of pathways involved in inflammation, neutrophil degranulation and platelet regulation. Diabetes was associated with lower interferon-signalling pathways in TB and with increased pathways involved in the endoplasmic reticulum (ER) stress response in melioidosis. Validation using two independent datasets from Thailand and cellular studies of the ER stress response in people with and without diabetes is underway.

This study gives new mechanistic insight into the impact of diabetes on immune defence against these complex intracellular pathogens.

FIS 2021

Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

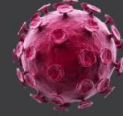
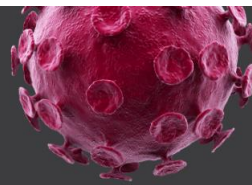
Monday 8 - Tuesday 9 November | Online



Hosted by



British Infection Association



Presentation title – to be confirmed

Dr Angela Minassian, University of Oxford

14:15, JD Williams Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Molecular testing for SARS-CoV2

Dr Catherine Moore, Consultant Clinical Scientist, Public Health Wales

15:00, FIS Theatre

The COVID-19 pandemic posed significant challenges for routine diagnostic laboratories, especially as molecular testing was deployed widely as the mainstay for case detection. This presentation will talk about the technologies deployed and also highlight the problems encountered as testing capacity was pushed to levels not routinely undertaken for any single pathogen.

Using lateral flow devices for COVID detection by the general public, concordance with PCR and peoples' behaviours

Dr Derren Ready, Consultant in Public Health Infections, UK Health Security Agency

15:15, FIS Theatre

Background: Testing asymptomatic contacts of confirmed COVID-19 cases for the presence of SARS-CoV-2 could reduce onward transmission and lessen the impact of self-isolation on un-infected individuals. This study investigated the feasibility and acceptability of implementing a 'test to enable approach'

Methods: Contacts of confirmed COVID-19 cases were offered serial lateral flow device (LFD) testing plus PCR as an alternative to self-isolation for the first 7 days post exposure. Asymptomatic participants with a negative LFD result were given 24 hours of freedom from self-isolation between each test. A self-collected confirmatory PCR test was performed on testing positive or at the end of the LFD testing period. An online cross-sectional survey was offered to participants.

Results: 812 consented to daily testing & were sent a testing pack, of those who declined 39% stated they had already accessed PCR testing. 570/812 (70.2%) reported one or more LFD result; 102 (18%) tested positive. 83% of PCR positive samples and 99.6% of PCR negative samples were correctly detected by LFD. Following a negative test, 58% reported having fewer risky contacts.

Conclusion: This study shows a high acceptability, compliance and positivity rates when using self-administered LFDs among contacts of confirmed COVID-19 cases.

SARS-CoV2 serological testing; natural and vaccine antibody detection

Dr Kate Templeton, Royal Infirmary of Edinburgh

FIS 2021

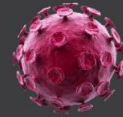
Federation of Infection Societies Conference

Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by



15:30, FIS Theatre

Abstract unavailable at time of publishing. Please refer to e-conference site for most current abstract content.

Antifungal prophylaxis in paediatric hematopoietic cell transplant

Dr Daniel Chang, Assistant Professor Of Pediatrics, Duke University

15:00, Lowbury Auditorium

Invasive fungal infections (IFIs) are the cause of significant morbidity and mortality in pediatric hematopoietic cell transplant (HCT) patients. Recent guidelines have been published regarding antifungal prophylaxis in this population. It is important to stay abreast of the most recent knowledge in this field, due to the introduction of new antifungal agents and the development of novel immunosuppressive therapies. On the other hand, antifungal agents can be associated with adverse effects and come at a financial cost, which is why antifungal use should also be appropriate.

In this session, we will review the literature regarding indications for antifungal prophylaxis in pediatric HCT recipients. We will also discuss the approach to special high-risk pediatric HCT populations. While each center may have their own specific protocols, standardization of practices may help decrease the incidence of IFIs in pediatric HCT patients.

Paediatric candidemia, a global perspective

Dr Nelesh Govender, Centre Head, National Institute for Communicable Diseases

15:15, Lowbury Auditorium

Candida is an important cause of healthcare-associated bloodstream infections in both resource-rich and resource-limited settings. Neonates, infants and older children have risk factors for candidaemia that are quite different to adults. In a population-based study of candidaemia in the United States, common underlying conditions included prematurity among neonates, surgical procedures among infants and malignancies in older children. The highest burden of candidaemia is reported among neonates, with incidence rates generally higher in low- and middle-income countries. This may be driven by large outbreaks of infection, overcrowded neonatal units, scarce infrastructure and staffing resources, and lack of infection prevention and antifungal stewardship programmes. The species distribution and antifungal susceptibility of the causative pathogens are also different in paediatric bloodstream infections and varies by geographic region. In contrast to the epidemiology in high-income countries, paediatric candidaemia was mainly diagnosed among neonates and infants in South Africa, an upper-middle-income country, and was characterised by a high prevalence of fluconazole-resistant *Candida parapsilosis* infections, emergence of *Candida auris* causing invasive infections and a high crude mortality. A limited antifungal armamentarium further complicates management of invasive infections in resource-constrained settings.

FIS 2021

Federation of Infection Societies Conference

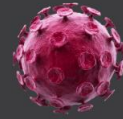
Friday 5 November | Manchester Central, UK

Monday 8 - Tuesday 9 November | Online



Hosted by

BIA
British Infection Association



Paediatric antifungal stewardship

Professor Adilia Warris, Paediatric Infectious Diseases Specialist, University of Exeter

15:30, Lowbury Auditorium

The challenges faced in the management of Invasive Fungal Diseases (IFD) urge the need for antifungal stewardship programmes. To identify areas to improve a rational use of antifungals in children, detailed insight in paediatric antifungal prescribing practices is a first step towards a paediatric antifungal stewardship programme. During my presentation I will discuss the outcomes of a multicentre point prevalence study (PASOAP) performed in 12 paediatric centres in the UK and outline how these results will feed into a national paediatric antifungal stewardship programme.