



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Editorial

Reflections on the past and perspectives on the future at the Healthcare Infection Society – 40th Anniversary special celebratory meeting



Introduction

The Healthcare Infection Society's (HIS) 40th Anniversary event was held on May 19th, 2022 at BMA House, London, following a delay of nearly two years due to the disruption of lockdowns and the social distancing requirements of the COVID-19 pandemic.

Over 100 delegates attended the event. Attendees comprised active members of the Society, past and present. The sessions marked the contribution of the Society to the field of infection prevention and control (IPC) during just over four decades, through reflections and learnings on past achievements, but the meeting also looked forward to the challenges and opportunities in the coming years (Table 1).

HIS founding member and subsequent Chair of the Society, Dr David Shanson, opened the meeting by presenting on the history of the Society. He described the first meeting of microbiologists interested in IPC, held on June 14th, 1979 and chaired by Professor David Williams. There was some discussion over whether to establish a new society or to advocate for greater emphasis on IPC and healthcare-associated infections (HCAI) within an existing society. From this meeting, a steering committee was formed leading to the establishment of the 'Hospital Infection Society' as the HIS was initially known, and a new journal, the *Journal of Hospital Infection* (JHI), in 1980. The first international HIS conference was held in 1987 in London, and from an initial membership of 264 members, the Society has grown to a current membership of over 1300.

Session 1: Overview of healthcare-associated infections and the evolution of the Healthcare Infection Society

The first session provided an overview of HCAs over the past 40 years, and the influence of HIS in developing strategies for IPC through international conferences, annual Lowbury Lectures to highlight key themes, and HIS training and education activities.

Dr Susan Hopkins (United Kingdom Health Security Agency) reminded all present of the increasing emphasis on IPC and the surveillance of HCAI from the 1990s in the UK. More government focus occurred from the 2000s with targets engaging local management, resulting in the provision of more resources. Organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridioides difficile* were prevalent in the 2000s with new clones emerging. Reduced prevalence occurred through local and national policies, and government initiatives [1]. However, new challenges have since emerged, such as *Escherichia coli* infections and multi-antibiotic resistance [2]. The COVID-19 pandemic has highlighted the importance and increasing value of linked data from laboratories, primary and secondary care in real time leading to rapid decision making.

Dr Bob Spencer (HIS Honorary Archivist) reviewed the themes of the 43 Lowbury Lectures. Professor Edward Lowbury was a founding member of HIS, a microbiologist and a poet, and all Lowbury Lecturers are awarded a copy of *Mystic Bridge*, a book of Lowbury's poems [3]. Lowbury Lectures over time have included important common pathogens and themes such as Legionella, fungi, HIV and *Mycobacterium tuberculosis*, surgical site infections and hand washing.

Dr Julian Sutton (University Hospital, Southampton) summarised the changing nature of infection training. Dr Sutton described the transformation from a relatively unregulated and heterogeneous form of training in the 1990s throughout the UK to dual training in infectious diseases and microbiology, introduced in the early 2000s. In August 2015, four essential elements were stipulated: infectious diseases; inpatient care; laboratory-based medical microbiology and medical virology work; and outpatient and consultation work. Currently, the training programmes have six different pathways, with the most popular dual-training combinations being medical microbiology and infectious diseases or medical virology, and infectious diseases and internal medicine.

Sessions 2 and 3: Impact of the Healthcare Infection Society-funded research and top papers from the *Journal of Hospital Infection*

These sessions focused on HIS-funded research and influential publications in the JHI, as the HIS has always prioritised the funding and publication of high-quality research on HCAI.

Professor Jean-Yves Maillard (Cardiff University) presented his HIS-funded research on alcohol hand rub activity and biocides, which led to new national standards. Other research funded by the HIS included his team's work on the importance

Table I

Key themes and ongoing developments and challenges in healthcare-associated infection (HCAI) prevention and control

Theme	Ongoing and future developments
Antibiotic resistance	Greater focus on Gram-negative bacteria and resistance in the community
Training	More options than just clinical microbiology or infectious diseases with increasingly a hybrid approach
Research	Supporting research as part of career development and the application of molecular biology and linked data to better understand and control HCAI
Guidelines	More scientifically rigorous, but pandemic demanded more rapid guideline development
Patient and public involvement	Increasingly welcomed but greater accessibility, clearer communications and more engagement required

of dry biofilms, increasingly recognised as important in enabling microbes to persist in the healthcare environment [4].

Dr Elaine Cloutman-Green (Great Ormond Street Hospital, London) reflected on how HIS funding has played a pivotal role in changing her career trajectory. Dr Cloutman-Green had received HIS support through a Mike Emmerson Research Grant, and she has also received funding for public engagement.

Dr Jim Gray (Editor in Chief, JHI), highlighted some influential papers published in the very first issue of the JHI, where the opening editorial highlighted the goal to 'advance scientific information in these topics and facilitate communication between the many workers in the field' [5]. He chose a theme for each decade of publication: MRSA in the 1980s, *C. difficile* in the 1990s, hand hygiene in the 2000s, multi-drug resistant Gram-negative bacteria in the 2010s, and finally, COVID-19 more recently [6].

Martin Kiernan (University of West London) challenged our assumptions on IPC priorities, where perhaps we have not focused enough on issues such as making the monitoring of hand hygiene compliance easier, failing to seriously address hospital-acquired pneumonia, our somewhat belated recognition of the importance of Gram-negative bacterial transmission from environmental reservoirs, the need for further progress on catheter-associated urinary tract infection and the importance of *Staphylococcus capitis* in certain settings [7,8].

Session 4: Working parties and guidelines

Professor Mark Wilcox (University of Leeds) focused on HIS-developed guidelines on MRSA (2006) and *C. difficile* (2008) and their impact. He argued that the publication of both sets of guidelines coincided with – rather than preceded falls in the rates of – MRSA bloodstream infections and *C. difficile*. However, these guidelines served to highlight the key IPC measures and were a valuable professional and educational resource [9,10].

Professor Peter Wilson (HIS Guidelines Committee Chair) emphasised the importance of guideline development in improving patient care through reducing HCAs, and on the challenges in producing evidence-based guidelines. HIS guidelines have been National Institute for Health and Care Excellence (NICE) accredited since 2015, resulting in greater rigour in accessing and analysing the scientific evidence. Recent challenges have included the explosion in publications on

COVID-19, making the rapid development and publication of guidelines in this area difficult [11,12].

Sessions 5 and 6: Looking forward and panel discussion

Jennifer Bostock (Lay member of the HIS Working Parties) presented a patient perspective on HCAs, not actively sought until quite recently, and she discussed the impact of HIS guidelines on patient care. She stressed the need for patient/lay input, and the need to make guidelines more comprehensible by, for example, avoiding or explaining acronyms. This must be an ongoing theme into the future.

Professor Sharon Peacock (University of Cambridge) outlined how whole genome sequencing (WGS) has in recent years become more versatile and cheaper. The benefits have been seen in our greater understanding of the spread of SARS-CoV-2 through the COVID-19 Genomics UK Forum (COG-UK). New frontiers discussed include the use of WGS to stem antimicrobial resistance, applying it to host genome susceptibilities and the microbiome, and linking WGS results with public health databases [13].

Professor Peter Davey (University of Dundee) reviewed the use – and especially the overuse – of antibiotics in the 20th century. The presentation outlined the challenges in reducing antibiotic use in the 21st century, especially in hospitals, but he highlighted how major beneficial changes in prescribing are associated with relatively small changes in resistance [14].

Professor Cath Noakes (University of Leeds) summarised our understanding of respiratory transmission over 40 years, including through droplets, aerosols, fomites and contact. She argued against simple categorisations of respiratory viral transmission as droplet or aerosol, emphasised how medium-sized particles are the most unpredictable, and she explained exciting new methodological approaches used in research in this field [15].

The final session of the day was a lively interactive debate with a panel of Dr Luke Moore (Imperial College, London), Dr Tim Boswell (Nottingham University Hospital), Professor Sharon Peacock, Dr Oliver Bannister (Oxford University Hospitals NHS Foundation Trust) and Jennifer Bostock. Topics covered included the impact of HIS as an organisation during the pandemic, engagement of the public through the HIS on IPC and HCAI, and the challenges in ensuring adequate IPC education for trainees.

Exhibition and archive material

The event was followed by a reception during which attendees could watch video footage of HIS members' appearances on BBC's *Newsnight* and *Panorama* programmes, and a Public Laboratory Health Service video entitled *Surveillance: Not Just a Search for Infection*. Videos were also shown of past HIS Foundation Course lectures and Lowbury Lectures, kindly supplied by Professor Barry Cookson. An exhibition of artwork by Anna Dumitriu entitled *BioArt and Infectious Disease* included 'Ex Voto', an interactive piece in which attendees were invited to create a votive reflecting on their experiences of the COVID-19 pandemic.

Acknowledgements

We thank HIS staff for their professionalism, endurance and persistence in continuing to organise this meeting during the pandemic, the 40th Anniversary Event Programme Committee for their input and the chairs of each session, namely, Elisabeth Ridgway, Peter Jenks, Geoffrey Ridgway, Manjula Meda and Tom Rogers.

Authorship

NM drafted the first version and both CF and HH reviewed and modified that draft. All authors reviewed and agreed the final draft prior to submission.

Conflicts of interest

All authors declare no conflicts of interest related to the contents of this manuscript.

Funding

All authors attended the meeting and drafted the manuscript in their capacities with the Healthcare Infection Society and the *Journal of Hospital Infection*.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jhin.2022.08.006>

References

- [1] Dingle KE, Didelot X, Quan TP, Eyre DW, Stoesser N, Golubchik T, et al. Effects of control interventions on *Clostridium difficile* infection in England; an observational study. *Lancet Infect Dis* 2017;17:411–21.
- [2] Schlackow I, Stoesser N, Walker AS, Crook DW, Peto TE, Wyllie DH. Infections in Oxfordshire Research Database Team. Increasing incidence of *Escherichia coli* bacteraemia is driven by an increase in antibiotic-resistant isolates: electronic database study in Oxfordshire 1999–2011. *J Antimicrob Chemother* 2012 Jun;67(6):1514–24. <https://doi.org/10.1093/jac/dks082>.
- [3] Lowbury E.J.L. *Mystic Bridge*. Frome: Hippopotamus Press; 1997.
- [4] Ledwoch K, Dancer SJ, Otter JA, Kerr K, Roposte D, Rushton L, et al. Beware biofilm! Dry biofilms containing bacterial pathogens on multiple healthcare surfaces; a multi-centre study. *J Hosp Infect* 2018;100:e47–56.
- [5] Editorial. *J Hosp Infect* 1980;1:1–2.
- [6] Kampf G, Todt T, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *J Hosp Infect* 2020;104:246–51.
- [7] Kotay S, Chai W, Guildford W, Barry K, Mathers AJ. Spread from the sink to the patient: *In situ* study using green fluorescent protein (GFP)-expressing *Escherichia coli* to model bacterial dispersion from hand-washing sink-trap reservoirs. *App Environ Microbiol* 2017;83. e03327-16.
- [8] Tevell S, Baig S, Hellmark B, Martins Simoes P, Wirth T, Butin M, et al. Presence of the neonatal *Staphylococcus capitis* outbreak clone (NRCS-A) in prosthetic joint infections. *Sci Rep* 2020; 10(1):22389. <https://doi.org/10.1038/s41598-020-79225-x>.
- [9] Coia JE, Duckworth GJ, Edwards DI, Farrington M, Fry C, Humphreys H, et al. Guidelines for the control and prevention of methicillin-resistant *Staphylococcus aureus* (MRSA) in healthcare facilities. *J Hosp Infect* 2006;63:S1–44.
- [10] Berrington A, Borrellio SP, Brazier J, Duckworth G, Foster K, Freeman R, et al. National *Clostridium difficile* Standard Group: Report to the Department of Health. *J Hosp Infect* 2004;56(Suppl 1):1–38.
- [11] Bak A, et al. SARS-CoV-2 routes of transmission and recommendations for preventing acquisition: joint British Infection Association (BIA), Healthcare Infection Society (HIS), Infection Prevention Society (IPS) and Royal College of Pathologists (RCPath) guidance. *J Hosp Infect* 2021;114:79–103.
- [12] Muggleston MA, Ratnaraja NV, Bak A, Islam J, Wilson JA, Bostock J, et al. Presymptomatic, asymptomatic and post-symptomatic transmission of SARS-CoV-2: joint British Infection Association (BIA), Healthcare Infection Society (HIS), Infection Prevention Society (IPS) and Royal College of Pathologists (RCPath) guidance. *BMC Infect Dis* 2022;22:453.
- [13] Nicolls SM, Poplawski R, Bull MJ, Underwood A, Chapman M, Abu-Dhab K, et al. CLIMB-COVID; Continuous integration supporting decentralisation sequencing for SARS-CoV-2 genomic surveillance. *Genome Biol* 2021;22:96. <https://doi.org/10.1186/s13059-021-02395-y>.
- [14] Hernandez-Santiago V, Davey PG, Nathwani D, Marwick CA, Guthrie B. Changes in resistance among coliform bacteraemia associated with a primary care antimicrobial stewardship intervention: A population-based interrupted time series study. *PLOS Med* 2019;16(6):e1002825. <https://doi.org/10.1371/journal.pmed.1002825>.
- [15] Coldrick S, Kelsey A, Ivings MJ, Foat TG, Parker ST, Noakes CJ, et al. Modelling and experimental study of dispersion and deposition of respiratory emissions with implications for disease transmission. *Indoor Air* 2022;32. <https://doi.org/10.1111/in.1300>.

N. Mahida^{a,b}

C. Fears^b

H. Humphreys^{b,c,*}

^aDepartment of Clinical Microbiology, Nottingham University Hospitals, Nottingham, UK

^bHealthcare Infection Society, Montagu House, Wakefield Street, London, UK

^cDepartment of Clinical Microbiology, The Royal College of Surgeons in Ireland University of Medicine and Health Sciences, Ireland

* Corresponding author. Address: Department of Clinical Microbiology, RCSI Education and Research Centre, Beaumont Hospital, Dublin D09 YD60, Ireland. Tel.: +35387 2865424. E-mail address: humphreys@rcsi.ie (H. Humphreys)

Available online 23 August 2022