



Editorial

Learning from pragmatic local research



Infection Prevention in Practice (IPIP) aims to disseminate the latest research related to all aspects of infection, providing practical information for healthcare professionals working in the field of infection prevention and control (IPC).

At the 2020 Federation of Infection Societies and Healthcare Infection Society conference (FIS/HIS International 2020), IPIP awarded prizes to three high-quality poster submissions. Georgia Lamb described a quality improvement project designed to improve antibiotic prescribing within surgical teams, Lynette Phee examined the fitness for purpose of their local Carbapenemase Producing Organism (CPO) screening programme, and Rhys Wenlock identified a high level of asymptomatic staff infection during a nosocomial ward outbreak of COVID-19 using whole genome sequencing. The winning authors were offered a fee-free open access publication with IPIP and their work accompanies this Editorial.

Their posters reflect IPIP's core values, offering pragmatic insights and guidance to clinicians working in the fields of infection and IPC. Scientific research places a high degree of importance on the hierarchy of evidence, making it difficult for good quality single centre studies/observations to be published. IPIP is glad to provide a platform for these articles as they each have significant merit to practising clinicians.

Lamb *et al.* used a combination of interviews and surveys to assess local surgical teams' attitudes and perceptions to antibiotic prescribing [1]. They used this information to design a daily ward round check list, which included antibiotic review, along with education and increased guideline accessibility to improve prescribing practice. Prior to any intervention Lamb *et al.* found compliance to the surgical antibiotic prophylaxis (SAP) guidelines was 51.2%. After the authors implemented interventions extended SAP reduced by 20% and guideline compliance increased by 9.1% [1].

Lamb *et al.* are not the first to report positive findings following antibiotic stewardship interventions. Chin *et al.* report similar success after they used a combination of education and prospective audit and feedback to reduce fluoroquinolone use by 56.9% across their regional health system [2]. The global challenge of antibiotic stewardship across widely differing healthcare systems is highlighted by Budunki *et al.*'s finding of 18.1% compliance with SAP guidelines in the Democratic Republic of Congo – although encouragingly Chimini *et al.* showed a reduction in antibiotic prescribing in neonates in Zimbabwe with improved training for prescribers [3,4].

The overall positive impact of antimicrobial stewardship has been well described by Jover-Sáenz *et al.*, who reviewed the clinical, microbiological and economic impact of their antimicrobial stewardship programme at their hospital over a 5-year period [5]. They found antimicrobial consumption reduced by 5.7%, most noticeably on the intensive care unit, where there was a reduction in multi-drug resistant organisms (relative risk of 0.78) and they saved €479,243 annually on the cost of antimicrobials.

One particularly interesting finding by Lamb *et al.* was the lack of agreement between anaesthetists and surgeons as to who was responsible for prescribing the SAP. This lack of clarity and accountability may in part explain the poor antibiotic prescribing seen, and the authors acknowledge this as an area which needs to be addressed.

Given the threat posed by CPO it is important organisations share their experiences to increase understanding on how best to tackle them [6]. Phee *et al.* describe how universal (rather than targeted) CPO screening could help uncover their true prevalence and therefore help inform IPC practices to reduce their spread [7]. To understand the epidemiology of CPO in England, PHE launched an electronic reporting system for these organisms [8]. However, Phee's findings of a significantly higher detection rate with universal, as opposed to risk factor-based screening, suggests that unless a universal screening protocol is introduced we may never have a true idea of their epidemiology. This is supported by Fahy *et al.* in Ireland, who have also adopted universal screening despite their CPO rate being considerably lower than that reported by Phee *et al.* (0.28% VS 2.1%) [9]. Fahy *et al.* favour universal screening as it reduces the need to risk assess patients on admission and saw a large reduction in the number of CPO contact cases; thereby helping to reduce cross transmission and allowing rapid response to possible outbreaks. Phee *et al.* reference Lapointe-Shaw *et al.* who found that universal screening was cost effective with a prevalence above 0.3%, significantly lower than the overall 2.1% found in the present study [7,10]. However, notwithstanding the upfront cost of universal screening, their findings that it was likely that silent CPO transmission events on non-screening wards were being missed leading to episodic CPO outbreaks adds weight to the IPC argument for universal screening.

Nosocomial COVID-19 outbreaks are an ongoing challenge, with healthcare worker (HCW) involvement readily reported [11,12]. Transmission between patients and HCW has been described, in part due to environmental contamination with SARS-CoV-2 virus [13,14]. Wenlock *et al.* nicely describe a nosocomial COVID-19 outbreak involving a high level of

asymptomatic staff infection, using whole genome sequencing to demonstrate that staff were involved, although further work is required to understand the direction of transmission [15]. Interestingly, Chan *et al.* describe five key elements that they introduced in a tertiary centre in Hong Kong that resulted in no nosocomial cases or HCW acquisitions [16]. One key element focused on staff safety, which they achieved through a combination of staff education and training in the management of COVID-19 cases and the appropriate use and supply of PPE.

These three excellent papers demonstrate that local pragmatic research, despite not being at the top of the pyramid of evidence, provides valuable insights into key clinical issues.

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