and MRSA are among the three most common nosocomial pathogens according to local epidemiological data [2], strongly suggests that the hospital environment was responsible for occupational exposure of clinical students to *S. aureus* and MRSA. Mobile phones contaminated with MRSA can subsequently act as reservoirs resulting in spread among MRSA-naive populations and environments, leading to community-acquired MRSA infections [6]. This study shows that it is necessary to include clinical students in hospital infection control policies.

The presence of *S. aureus* and MRSA on mobile phones could also be a symptom of a larger problem. Ulger *et al.* found that the hands of their studied population had consistently higher rates of contamination compared with each person's respective mobile phone [7]. It is therefore probable that MRSA can be found on the hands of more than one-fifth of our clinical student population. Of the micro-organisms isolated on TSA, *Acinetobacter* spp., *S. pneumoniae* and *P. aeruginosa* are known nosocomial pathogens.

This study is limited by the small number of participants, and its results should be validated with a larger population of clinical students and other groups of HCWs in future studies. Confirmation of the identity of cultured micro-organisms could be undertaken using additional identification techniques such as polymerase chain reaction and Analytical Profile Index systems. The antimicrobial susceptibility of these pathogens could also be performed to see how their resistance patterns measure up with those of NIs.

NIs are preventable with proper HCW behaviour and compliance with evidence-based infection prevention procedures and guidelines. Hence, there is an urgent need to emphasize mobile phone hygiene in order to mitigate the transmission of pathogens in and outside the hospital, while reaping the benefits of point-of-care use of these devices.

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Is it necessary to test the sterility of urine prior to outpatient cystoscopy?

Sir,

Antibiotic prophylaxis before simple cystourethroscopy is well defined by the American Urological Association (AUA) guidelines [1]: only patients with a risk factor for urinary tract infection (UTI) should receive prophylaxis based on fluoroquinolone or trimethoprim-sulphamethoxazole for <24 h. In the French Urological Association guidelines [2], antibiotic prophylaxis is not recommended, irrespective of risk factors for UTI. Moreover, there is no consensus regarding systematic bacteriuria screening in asymptomatic patients before cystoscopy, leading to a variety of individual practices. The prevalence of asymptomatic bacteriuria is high, ranging from 5.6% to 22% in the literature [3,4]. However, the rate of febrile UTI after cystoscopy is low. Recent studies reported a rate of <5% [5–7]. The high frequency of asymptomatic bacteriuria, which contrasts with the few infectious complications related to cystoscopy, should raise questions about the need to control urine sterility prior to the procedure.

For several years now, we have not performed routine urine culture (UC) testing before cystoscopy in asymptomatic

patients in our centre. We decided to perform a prospective internal audit of this strategy to evaluate whether we had any reasons to modify it. Immediately before cystoscopy, a midstream urinary sample was taken for UC. The result of this test was therefore not known at the time of the procedure. No antibiotic was administered before or after cystoscopy. The primary endpoint was the occurrence of a febrile UTI, defined as the presence of a fever >38°C (100.4°F) associated with symptoms of the lower urinary tract (irritative voiding symptoms, urinary burning, dysuria) and/or a postprocedural positive UC. Secondary endpoints were the occurrence of one or several of the following events: irritative voiding symptoms, medical consultation, antibiotic treatment and hospitalization. Data were collected through a self-administered questionnaire to be completed 15 days after cystoscopy. Events were analysed according to the outcome of the UC carried out immediately before the cystoscopy. Results were also analysed according to the risk factors for UTI acknowledged by AUA (i.e. sex, age, diabetes, externalized catheters and colonized endogenous material).

The questionnaire was completed by 377 case patients. Urine culture was negative in 315 cases, 26 were positive, 30 were contaminated and six could not be performed. Four patients (1.1%) reported a febrile UTI. All four patients had a sterile pre-operative UC. When comparing subgroups of patients with or without sterile UC, no significant difference was observed regarding the main and secondary outcomes, except for irritative symptoms which were reported more frequently in the positive UC group [odds ratio (OR) 5.0, 95% confidence interval (CI) 1.4—17.85)]. No significant difference was found between the contaminated and the sterile urine sample groups. AUA-defined risk factors for UTI were not significantly associated with any of the events evaluated by the questionnaire. Benign prostatic hypertrophy was significantly associated with a greater occurrence of irritative symptoms (P=0.015; OR 1.87, 95% CI 1.13—3.12). Urinary tract abnormalities — defined as any anatomical, innate or acquired anomaly including stenosis, ureter abnormality, urinary diversion, implantation of prosthetic material and neurologic bladders — were significantly associated with increased risk of having a medical consultation (P=0.002; OR 6.61, 95% CI 2.42—18.11) and antibiotic treatment (P=0.0001; OR 10.05, 95% CI 3.40—29.68).

Two recent meta-analyses tackling the issue of antibiotic prophylaxis in patients with pre-operative sterile UC led to divergent conclusions, each with moderate levels of evidence. Carey *et al*. [8] showed a significant advantage when using prophylactic antibiotics to prevent postcystoscopy infection. However, the number needed to treat to prevent one episode of symptomatic UTI was quite high at 32. In contrast, Garcia-Perdomo *et al*. [9], following their systematic review and meta-analysis, did not find evidence to recommend the use of antibiotic prophylaxis to prevent UTI and asymptomatic bacteriuria in patients who underwent cystoscopy with sterile urine in an ambulatory setting. To our knowledge, only one study to date has focused on the occurrence of febrile UTI after cystoscopy without screening for bacteriuria [4]. Herr retrospectively analysed a cohort of 3108 patients followed for bladder cancer at the Memorial Sloan-Kettering Cancer Center, and found a significant difference between patients with or without sterile urine. Febrile UTI occurred in 1.4% (34/2435) of the patients with sterile urine and 3.7% (25/673) of the patients with asymptomatic bacteriuria (P<0.01). We did not find such a difference in our smaller but prospective cohort of 377 patients. However, despite his findings, Herr's conclusion was similar to ours as he stated that antibacterial therapy before outpatient flexible cystoscopy did not appear to be necessary in patients who had no clinical signs or symptoms of acute UTI [4].

Following the results of our audit, we decided not to modify our present strategy. No systematic UC is performed before a diagnostic outpatient cystoscopy in asymptomatic patients. However, this does not apply any longer to patients with known urinary tract abnormalities. In those patients, we decided to ensure systematically that UC is negative before performing cystoscopy.

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Healthcare worker screening in *Streptococcus pyogenes* outbreaks using throat and perineal swabs

Sir,

We read with interest the letter from Meda *et al*. in relation to our recent article on the outbreak of invasive group A streptococcal (iGAS) infection using agar settle plates to detect perineal shedding from a healthcare worker (HCW) [1,2]. We are grateful for the opportunity to discuss the outbreak and its management in more detail and value this feedback from our colleagues.

We fully agree with Meda *et al*. that the screening of HCWs is a sensitive subject and should only be carried out after careful consideration. The ongoing nature of our outbreak despite the implementation of additional cleaning measures and the questioning/screening of staff (to identify symptomatic GAS carriage) necessitated this additional action. As Meda *et al*. highlight, it is recognized that HCW screening can have a significant psychological impact. However, with a mortality rate of 8–23% for severe GAS infections [3–5], staff screening is often required to prevent cross-transmission, as they are also at risk of acquisition. Good occupational health support is imperative when HCW screening is performed. Their involvement in an outbreak at an early stage allows for a seamless transition from detection, treatment and ongoing follow-up/psychological support for any affected HCW.

Meda *et al*. have questioned our proposal to perform throat and perineal swabs as initial screening sites for HCWs in iGAS outbreaks. This is not a novel idea; in fact, the US Centers for Disease Control and Prevention recommend that, in an outbreak situation, HCW screening should involve anal, skin lesion, throat and vaginal swabs [6]. Furthermore, we disagree that perineal swabs should only be considered later, on the basis that they are a significantly invasive test. Perineal swabs are performed on thousands of patients everyday across healthcare organizations in the UK and worldwide for meticillin-resistant *Staphylococcus aureus* screening, and this is considered accepted practice. In essence, the HCW becomes a patient when under the care of an occupational health physician. It is also worth noting that in this outbreak, no staff member refused any part of the screening process. This was possibly due to the communication undertaken by both the infection prevention and control team and occupational health teams to help address any HCW concerns.

Perineal swabs were obtained in this outbreak due to ongoing patient cases despite screening HCWs using throat swabs. HCW 9 was screened after Cases A, B and C had been detected. At this time, only throat swabs were performed and HCW 9 was negative. If our conclusion that HCW 9 was the ongoing source of the outbreak is correct, had we performed perineal screening initially (after Cases A, B and C), the outbreak may have been halted prior to the ongoing infection of the fourth (D) and fifth cases (E). It would also have saved time and resources for minimal additional work. Many HCWs may not volunteer that they have symptoms such as pruritis ani, and a universal approach to perineal swabs being taken may bypass this problem and reduce any stigma the individual HCW may feel.

Further weight to dispersal from perineal carriage is provided by negative settle plates on the five days when HCW 9 was not on shift. This is despite the fact that only one other HCW (HCW 75) who had GAS isolated from their throat was on shift during these times. This suggests that shedding may be higher from perineal than from throat GAS carriage. If this is the case, this adds weight to performing perineal screens earlier rather than later in an outbreak situation.

Additional reasons for considering timely perineal screens are that the result may alter subsequent treatment and screening of the HCW. It has been shown that rectal carriage of GAS (likely to be similar to perineal carriage) is difficult to eradicate with penicillin-based regimens [6]. HCW 9 cleared throat carriage but not perineal carriage following a course of penicillin. Clindamycin and azithromycin have been suggested for those with rectal carriage for GAS if the isolate is susceptible [6]. Indeed, HCW 9 cleared their perineal carriage following a course of azithromycin, local mupirocin cream and chlorhexidine body washes. The presence of GAS on perineal swabs may therefore alter which treatment is chosen as the first-line treatment to eradicate GAS carriage, and perineal swabs are of importance to screen reliably for clearance of carriage. In view of this, we feel that having this information from the outset improves outbreak management and its efficiency.

We agree with Meda *et al*. that whole-genome sequencing may provide further information and can be used to construct phylogenetic trees. However, our organization has an excellent surveillance system, and we were able to detect inpatients with GAS infection and those that been discharged and then re-admitted to completely different hospital areas. Using this surveillance system, four iGAS cases in patients who were, or recently had been, on one medical ward was highly unusual and provided strong epidemiological data for cross-transmission. Furthermore, all patient isolates and the perineal GAS isolate from HCW 9 were identical (*emm* 28.0). It is also important to highlight that national surveillance data for iGAS isolates in England is reported using *emm* typing, and we liaised with the national reference laboratory (Public Health England) during the outbreak for support in comparing isolates [7].

In conclusion, we continue to advocate that perineal swabs are a useful tool that can be utilized early on in HCW screening during iGAS outbreaks. Not only may they improve detection of GAS carriage, but they may also influence the choice of eradication therapy used. In addition, it is our opinion that when epidemiology strongly indicates isolates are linked, there is no added benefit of whole-genome sequencing.