Editorial

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Hand hygiene: From research to action

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Hand hygiene is the cornerstone of infection prevention and control (IPC). When optimally performed, hand hygiene reduces healthcare-associated infections (HAI) and the spread and antimicrobial resistance (AMR). Poor compliance with hand hygiene practices remains a challenge for IPC practitioners all over the world. Both the quality and quantity of research on hand hygiene have increased tremendously over the past two decades (Pires et al., 2017), guiding our better understanding of the topic and pushing all of us to actions.

In this issue of *JIP*, Ng et al. examined hand hygiene knowledge and beliefs of nurses and doctors at a tertiary care hospital in Abu Dhabi, United Arab Emirates (Ng et al., 2017), where cultural and religious backgrounds are thought to influence hand hygiene behaviour. Study findings suggest that further hand hygiene education is needed, including on the critical role and value of alcohol-based handrubs (ABHRs) in daily practice (World Health Organization [WHO], 2009a). Furthermore, addressing physicians' beliefs would appear particularly important considering that they could be leaders and role models in healthcare. The impact of leadership and role models is nicely illustrated in the study by Petrilli et al. (2017) who reported the effect of organisational changes on hand hygiene following the merging of two wards in Firenze, Italy. While compliance with hand hygiene practices dropped significantly among nurses following the merger, it improved among doctors who benefited from a hand hygiene physician champion. These study findings confirmed that engaged and effective leadership is key in IPC, and in hand hygiene promotion in particular. The WHO Guidelines on Hand Hygiene in Healthcare and the derived multimodal promotion strategy (WHO, 2009a, 2009b) recommend the involvement of clinician leaders, champions and role models, later identified as key components of successful IPC programs (Zingg et al., 2015) and part of the recently published WHO Core Components for IPC (WHO, 2016a).

The use of non-sterile clinical gloves is a serious issue for all IPC experts facing hand hygiene education and compliance monitoring; it has been addressed in the WHO Guidelines on Hand Hygiene in Healthcare (WHO, 2009a). Glove use is not a substitute for hand hygiene; they are frequently overused during patient care, and this is associated with an increased risk for cross-transmission. Wilson et al. (2017) conducted a study among third-year nursing students who completed a questionnaire indicating tasks for which they would wear non-sterile gloves and influences on their decision; the authors also obtained public perception of the use of gloves by healthcare workers (HCWs). Among the flags of concern raised by this unique and well-conducted study is the fact that third-year nursing students had not received any specific information or training about the use or misuse of gloves other than while in clinical practices! They reported using gloves routinely for tasks for which gloves are neither required nor recommended; the study reveals major inconsistencies in reported behaviour, as well as the fact that nursing students do not master the concept of standard precautions. The public was quite uncomfortable with and observed inappropriate glove use by HCWs. The results of this study call for more research in the field of clinical practices and glove use in particular.

This issue of *JIP* also includes the first report of integrated findings from a qualitative research study on hand hygiene compliance among HCWs applying the GRADE–CERQual process of quality assessment. (Chatfield et al., 2017). Important study findings include the fact HCWs believe that they have access to adequate training, but that institutional management and resource support are sometimes lacking; further research into healthcare cultures perceived as supportive of IPC activity is advocated. Results of this meta summary of qualitative and mixed method studies reinforce the need for institutions worldwide to apply the WHO multimodal strategy for hand hygiene promotion, proven to be universally successful (Allegranzi

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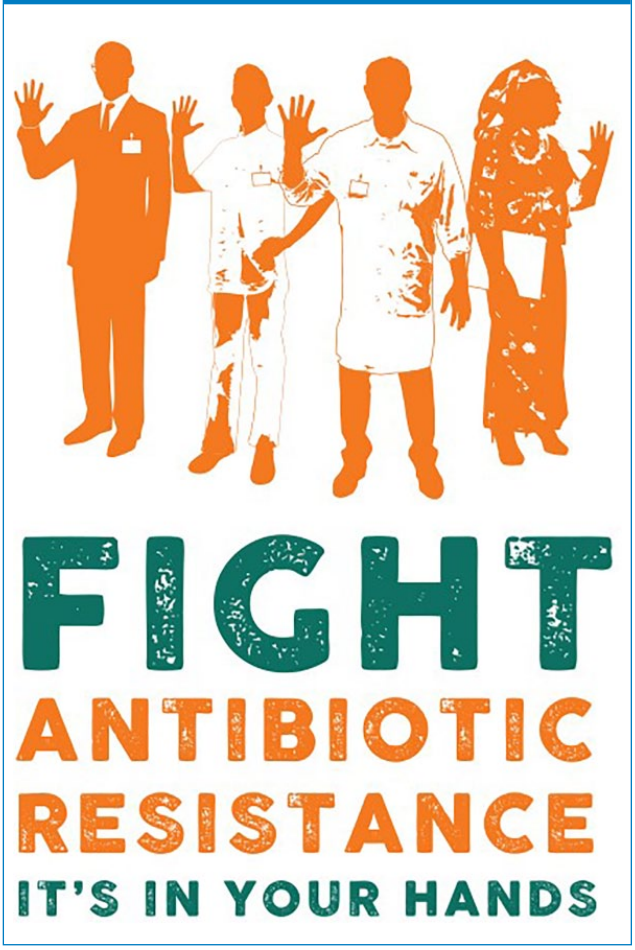
Table 1. 5th May 2017 Key World Health Organization campaign messages.

Health workers: 'Clean your hands at the right times and stop the spread of antibiotic resistance.'
Hospital Chief Executive Officers and Administrators: 'Lead a year-round infection prevention and control programme to protect your patients from resistant infections.'
Policy-makers: 'Stop antibiotic resistance spread by making infection prevention and hand hygiene a national policy priority.'
IPC leaders: 'Implement WHO's Core Components for infection prevention, including hand hygiene, to combat antibiotic resistance.'

Figure 1. WHO 5th May 2017. Fight antibiotic resistance together; it's in our hands. Reproduced with permission (WHO, 2016b).



et al., 2013) including the five elements: system change; HCW education; compliance monitoring and performance feedback; reminders in the workplace; and institutional safety culture supportive of hand hygiene and other IPC activities.

Hand hygiene, appropriate glove use when indicated, and applying multimodal and multi-disciplinary approaches to problem-solving are daily routine for IPC experts. This is nicely illustrated in the report by Martínez de Artola et al. from Tenerife, Spain. The authors detailed the multiple ICP measures applied to control an outbreak of Van A *Enterococcus faecium* in their haematology-oncology ward; it included active surveillance and screening, genotyping, enhanced ICP policies, including hand hygiene and barrier precautions and environmental control, and a multimodal, multidisciplinary team approach involving the hospital's Board of Directors. Changes in empiric antimicrobial therapy, restricting the use of glycopeptides, were also implemented. The outbreak involved 22 patients and was controlled in less than one year (Martínez de Artola et al., 2017).

Time for action. Papers in this issue of *JIP* are very timely. Preventing HAI and reducing their avoidable impact on health systems is critical today to make facilities safer for patients worldwide (WHO, 2016a). In addition, the increasing public health burden of antimicrobial resistance (AMR) urges to action (WHO, 2015). Stronger political commitment in reducing AMR was highlighted at the last United Nations General Assembly in September 2016 in New York. Hand hygiene is at the centre of effective IPC to combat AMR spread (WHO, 2009a). The WHO recently issued guidelines on the Core Components of effective IPC programs (WHO, 2016a). Their implementation will allow for strong, resilient health systems in all settings. The guidelines include the application of a multimodal strategy that consists in achieving system change (infrastructure and resources), raising awareness, education and training, monitoring and timely feedback and a patient safety culture that includes visibly committed leadership. This approach improves hand hygiene, reduces infections and saves lives (Luangasanatip et al., 2015). Therefore, on the occasion of the upcoming 5th May 2017 Global Annual Hand Hygiene Day, WHO urges policy-makers, top-level managers, IPC specialists and other health professionals to focus on the fight against AMR spread, by building ever stronger hand hygiene and IPC programs (Table 1).

We encourage health facilities worldwide to endorse the WHO's 5th May 2017 campaign (WHO, 2016b) and further improve hand hygiene, fight antibiotic resistance and commit to progressing towards adherence with all core components of IPC programs (Figure 1).

Let's continue to promote hand hygiene from research to action.

Let's fight antibiotic resistance together; it's in our hands.

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