Journal Watch

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The Journal Watch feature is provided as a service to our readers. The intention is to highlight new research and other developments in infection prevention and control and related fields, published elsewhere. A brief description of each article and its main findings is given here; readers are encouraged to refer to the full published article for details of the work. The editorial management group would welcome feedback and recommendations for articles to feature in this column; for comments and recommendations please contact the editor: editor@ips.uk.net

This issue of *Journal of Infection Prevention* features a guest editorial from Professor Tricia Hart and two very different articles written from the perspective of the patient. The first article in this Journal Watch is chosen to reflect this theme.

Sharp D, Palmore T, Grady C. (2014) The ethics of empowering patients as partners in healthcare-associated infection prevention. *Infection Control and Hospital Epidemiology* 35(3): 307–9.

Unusually for the articles chosen for Journal Watch, this article is a brief commentary. It is worthwhile highlighting it, however, as a useful discussion on the ethics of informing and empowering patients. The authors assert that there is very little written that is specific to healthcare associated infection (HCAI) about whether, or how to, inform and empower patients. The two key themes of this paper are autonomy and what the authors describe as 'patient welfare'. This latter concept is perhaps a combination of the notions of beneficence and non-maleficence, well known to healthcare workers who've studied any ethics. The authors suggest that anything less than a full and frank discussion with patients, about the HCAI risks to which they may be exposed, threatens the patient's autonomy. Such a threat prevents patients making informed decisions about their health and healthcare choices. Interestingly they state that just informing patients about the risks associated with a specific procedure is inadequate and that the information needs to begin at, or before admission. They refute the argument that the provision of such risk information will create added stress with the argument that, as with the decision to have surgery, a patient needs all the information to make a truly autonomous decision. They further argue that the patient's welfare is best served through genuine engagement and partnership which they consider to be 'arming them with information'. The authors rehearse familiar arguments for and against empowerment but assert that the process begins with engagement and the giving of information whether or not the patient chooses to participate in empowerment strategies. The paper concludes with some brief discussion about the practicalities of giving information, or disclosure as the authors term it. This includes the nature of the information, both style and content, and the opportunities in the patient journey to share it. The detail is in the full article.

The second article in this issue, from *BMJ Open* reports the findings of several years of Norovirus hospital outbreak surveillance in England.

Harris JP, Adak GK, O'Brien SJ. (2014) To close or not to close? Analysis of 4 years' data from national surveillance of norovirus outbreaks in hospitals in England. *BMJ Open* 4:e003919 doi: 10.1136/bmjopen-2013-003919.

Large datasets can provide interesting information. In this case, the authors had access to the data reported from almost 6,000 hospital outbreaks. After some exclusions, which are slightly unclear in the methods and with limited rationale, the analysis was completed on 3,427 outbreaks. Given the large number of exclusions I'd like to have seen more discussion of this aspect of the study. The authors compared outbreaks in which there was 'prompt closure', defined as closure within three days of the first symptoms, with outbreaks where closure took longer (either four to six days or seven days and longer). The results are largely unsurprising; firstly, in 80% of outbreaks, closure was prompt. Secondly, the outbreaks were shorter, affected fewer patients and caused a shorter period of disruption when closure was prompt. Interestingly, the opposite was true for duration of closure, number of staff affected and number of cases per day. These findings would benefit from more investigation. The authors also used regression analysis and controlled for the effect of season, ward type and ward size. The findings of this further analysis support those above, with prompt closure being associated with shorter outbreaks, less disruption and fewer affected patients. Of note, where wards were not closed at all, there was no significant difference in the length of outbreak compared to prompt closure as well as fewer affected staff and patients. Again these findings need further investigation. An interesting point can be found in the discussion; 'In the USA, outbreaks are rarely reported and hospitals tend to have single or double occupied rooms', food for thought in the 'all single rooms' debate. Finally, it would be interesting to see this work repeated when the impact of the policy of bay closure has had more chance to have an impact.

The choice of the next article and accompanying commentary from *Infection Control and Hospital Epidemiology* is an example of author's prerogative ... I have a longstanding interest in the practice of isolation and transmission-based precautions.

Dhar S, Marchaim D, Tansek R et al. (2014) Contact precautions: more is not necessarily better. *Infection Control and Hospital Epidemiology* 35(3): 213–21.

This article reports the results of a large multi-centre prospective study of compliance with contact precautions, set in 11 US teaching

hospitals. Briefly the study used trained 'anonymous undercover observers' to observe compliance with specific elements of contact precautions that they describe as a 'contact isolation precaution bundle'. The specific elements were: hand hygiene before donning gown and apron, gowning, gloving, removal of gown and gloves when exiting; and hand hygiene after removing gown and gloves. At the same time they measured the 'burden of isolation', i.e. what proportion of patients were in isolation. Over a period of eight months they observed 1,013 interactions with patients in isolation. There is a lot of information and detail in the results and I'd recommend reading the full article but I'll give a flavour of the headline results. I have to agree with the accompanying commentary (Anderson et al, 2014) that there are two particularly important findings from this study – first that compliance overall was at best poor and at worst woeful. Overall compliance with all elements of the bundle was only 29%, although this is heavily skewed towards the very poor compliance with the initial hand hygiene (37%). Compliance with the other elements ranged from 60% to 80%. The second interesting point is the lack of standardisation in the use of contact precautions, with four of the sites requiring a face mask as well as gloves and aprons and a number of differences in the range of organisms for which contact precautions are required. Other interesting findings include a lower compliance in ICUs compared to other wards and lower compliance when organisations had active surveillance for methicillin resistant *Staphylococcus aureus* (MRSA). Finally, the meaning of the article title is found in the result that, in general, compliance decreased when the burden of isolation increased; with for example, hand hygiene compliance on room entry as low as 5% when the isolation burden exceeded 60%.

The continuing and increasing interest in human behaviour and the impact on infection prevention practice is the focus of the next article in this issue, taken from *American Journal of Infection Control*.

Fuller C, Besser S, Savage J, et al. (2014) Application of a theoretical framework for behaviour change to hospital workers' real-time explanations for noncompliance with hand hygiene guidelines. *American Journal of Infection Control* 42: 106–10.

The authors of this study took the idea of hand hygiene observation a stage further. Nested within a large cluster randomised trial of hand hygiene interventions, the study involved covert observation of hand hygiene behaviours, followed by an immediate debrief (my word) of the healthcare worker. In real-time the observers asked the healthcare workers for their self-described explanations of their non-compliance. The responses were coded into standardised behavioural domains using a recognised behavioural theoretical model – the Theoretical Domains Framework. The authors argue that this composite model, based on a range of psychological theories and constructs, has greater utility in explaining healthcare worker (HCW) behaviours than any single model, e.g. the Health Belief Model or Theory of Planned Behaviour. In this study the explanations of 185 episodes of non-compliance were coded into eight domains, including 'other'; however the majority of the episodes fell into only three domains. These three domains were 'Memory/attention/decision making'; 'Knowledge'; and 'Environment context/resources'. These results are perhaps unsurprising, the HCW 'forgot', 'didn't know' or

was 'too busy'. For me these findings, particularly in the domains of 'Memory/attention/decision making' and 'Environment context resources' reinforce strongly the need to apply Human Factors and systems thinking to the problem of compliance with infection prevention practices. The authors note that the approach has its weaknesses, especially the potential for social desirability bias (giving a response that they believe is more acceptable) and also the fact that the responses were not recorded verbatim and could have been incorrectly 'translated' – perhaps a more detailed qualitative methodology could be used to further explore these findings. If you have access to this issue of *AJIC*, take a little time also to read the article by Karen Lee and colleagues (Lee et al, 2014) as it also explores hand hygiene behaviours, using another novel approach.

Finally, an article from *Journal of Hospital Infection*, that I believe is of interest to anyone considering, or at the early stages of designing, research studies in infection prevention and control.

Wolkewitz M, Barnett AG, Palomar Martinez M, et al. (2014) Interventions to control nosocomial infection: study designs and statistical issues. *Journal of Hospital Infection* 86: 77–82.

I have included this paper primarily as an opportunity for professional development. Whether you are considering designing a research study, are part of a larger team where such studies are conducted, or just want a greater understanding of study designs, this is a good place to start. For those for whom the word 'statistics' strikes terror, be reassured, the short section on 'statistical issues' can be considered an optional part of the paper! The value of this paper is that it very neatly summarises the options for designing a study of an intervention in clinical settings to address an infection prevention need. It also gives information on control of bias and confounding for each proposed study design. The paper starts with the assumption that each design will be used to study groups (clusters) of clinical settings, the paper talks about hospitals or ICUs but I see no reason why this doesn't include general wards. Briefly the paper gives an explanation of five types of study: Pre-post intervention (interrupted time series analysis); pre-post intervention with a control group; parallel cluster randomised; cross over cluster randomised; and stepped-wedge cluster randomised. One important message from this paper is that it is possible to design relatively robust intervention studies in infection prevention and control and that the simplest and least robust design (i.e. the pre-post intervention study) can be considered a pilot study that can lead to more rigorously designed studies to establish causality. Even if all you need is an understanding of the terms used above to describe the study designs, I recommend reading the full paper.

All of these articles, particularly the last, illustrate the value to our professional development of reading and reflecting on articles from the specialist and wider literature. If you happen upon an article that you believe would be of value to readers of *JIP*, please let me know so it can be included in Journal Watch (editor@ips.uk.net).

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Declaration of conflicting interest

The author declares that there is no conflict of interest.

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