Communication strategies in acute health care: evaluation within the context of infection prevention and control

R. Edwards, N. Sevdalis, C. Vincent, A. Holmes

Department of Infectious Diseases, and Centre for Infection Prevention and Management, Imperial College London and Imperial Healthcare NHS Trust, London, UK
Department of Surgery and Cancer, and Centre for Patient Safety and Service Quality, Imperial College London, London, UK

Article history:
Received 1 October 2011
Accepted 21 May 2012
Available online xxx

Keywords:
Communication
Infection prevention and control
Behaviour
Behaviour change
Training

Background: Communication in healthcare settings has recently received significant attention in the literature. However, there continues to be a large gap in current understanding of the effectiveness of different communication channels used in acute healthcare settings, particularly in the context of infection prevention and control (IPC).

Aim: To explore and evaluate the main communication channels used within hospitals to communicate with healthcare workers (HCWs) and to propose practical recommendations.

Methods: Critical review of the main communication channels used within acute healthcare to communicate information to HCWs, and analysis of their impact on practice.

Findings: The analysis covers verbal communications, standardization via guidelines, education and training, electronic communications and marketing strategies. Traditional communication channels have not been successful in changing and sustaining best practice in IPC, but newer approaches (electronic messages and marketing) also have pitfalls.

Conclusion: A few simple recommendations are made in relation to the development, implementation and evaluation of communications to HCWs; top-down vs bottom-up communications; and the involvement of HCWs, particularly ward personnel.

Introduction

Communication and the channels through which it occurs within hospital settings are critical for effective clinical care. However, there continues to be a large gap in current understanding of the effectiveness of different communication channels used in acute healthcare settings. From the perspective of infection prevention and control (IPC), there is often a need to disseminate information rapidly to healthcare workers (HCWs), particularly in instances of infection outbreaks, epidemics, and national or local emergencies. It is therefore necessary to identify which communication channels are (most) effective.

Systematic mapping and analysis of communication processes in health care have highlighted both the complexity and fragility of communication channels in acute care environments, and demonstrated that the communication process is prone to error. At present, throughout developed healthcare systems, substantial funding goes in to developing and disseminating a range of communications throughout hospitals (Table I). Unfortunately, these communications are often undertaken without consideration of the appropriateness...
of the communication format, content or objective. Furthermore, assessment of the impact of these communications on HCWs’ practice is often not performed.

The aim of this paper is to begin to fill this gap. Specifically, the authors sought to explore and evaluate the main communication channels used within hospitals to communicate with HCWs, and to understand the impact of these communications on practice. An analysis of the traditional routes of communication used within IPC was undertaken (drawing on studies relating to healthcare communications), their practical relevance to IPC was considered, and their efficacy in changing HCWs’ behaviour was reviewed. The ultimate aim is to propose practical recommendations for the development and quality/impact assessment of communications within acute hospitals.

Infection prevention and control: a valuable context for analysis

The social and economic burden of healthcare-associated infections (HCAI),6 and public and media interest in hospital infection rates7 have contributed to increasing the profile and importance of infection prevention throughout hospitals. As a result, there is now increased demand for communication about IPC issues with HCWs within acute hospitals. In England, hospitals are expected to have a communication strategy to provide accurate information on HCAI to HCWs, patients and the public.8 However, although hospitals have implemented a range of initiatives to facilitate communications,9 the use of multiple communication channels and messages means that communications often lack consistency or direction. Moreover, the lack of evaluation of their effectiveness means that little is known about how they relay the desired messages, or how they impact on clinical practice or HCWs’ behaviour.

The numerous communication channels that regularly disseminate large amounts of information from different sources can contain conflicting or confusing messages. This can contribute to disparities in attitudes and behaviours of HCWs. The psychological theory of ‘cognitive dissonance’ offers a way to understand such inconsistencies.10 Cognitive dissonance occurs when a belief/opinion and a behaviour are not in agreement. Such disagreements cause discomfort for the individual, who then seeks to eliminate the dissonance.10 In the context of IPC in hospitals, cognitive dissonance can result in disempowering HCWs who are in conflict about which communication to translate into practice. As more and more communications get disseminated within hospitals on IPC issues, the risk of dissonance increases, potentially resulting in confused HCWs who lack clarity regarding professional roles, behaviours and practices. As such, there needs to be awareness of what and how to communicate with HCWs in order to ensure clarity about what is expected of them, and where the hospital’s priorities lie, such that quality of care can be improved. HCWs’ job satisfaction can be maintained and patient experience can be optimized. The key question, therefore, is how information relating to IPC is best channelled throughout an acute hospital, and how it can achieve positive behavioural change (e.g. hand hygiene) and improve infection outcomes.

Infection prevention and control: how is it communicated?

Verbal communications

HCWs prefer direct modes of communication (e.g. face-to-face and telephone interaction) over more indirect modes of communication (e.g. computer systems or policies).5,11–13 Up to 83% of HCWs’ communications are channelled through direct interactions; as a result, HCWs can be interrupted by a new communication event every 36 s.11 HCWs may feel justified in interrupting colleagues in an effort to multi-task effectively and care for large numbers of patients; however, constant disruptions can decrease patient safety, and increase staff stress and workload.3,14 In IPC, an example of this culture of direct communication may be reflected in the struggle of HCWs to refer to notes or hospital policies for guidance on IPC procedures, preferring instead to contact the IPC team directly. Reliability on verbal communication increases the likelihood of variability in practices,4 whereas documented pathways or policies can provide a more consistent means of communication.

Such over-reliance on verbal communications with the IPC team, however, may be inadvertently encouraged by that team. Sociological analyses show that direct communication offers HCWs the opportunity to negotiate professional status, roles and practice; in other words, it achieves much more than information exchange.12,15 In healthcare settings, professional identities are constructed primarily through comparisons between groups of HCWs, often based on expertise or speciality.15 Groups seek to establish a positive identity of themselves and differentiate themselves from others, and interprofessional interactions become the ‘arena’ of these identity issues.16 The persistent involvement of IPC teams in verbal communications regarding ward management of
infection offers a significant re-inforcement to the IPC team’s professional identity and standing within the hospital. Such sociological views of communication and its functions within health care suggest that some self-reflection on communication practices may be useful, so that the strengths and weaknesses of verbal communications are appreciated by HCWs.

**Standardization**

Policies and guidelines are implemented throughout hospitals as a means of providing all HCWs with the resources to carry out effective IPC, whilst attempting to standardize practice. However, there are barriers to the effectiveness of such standardized communications. Although there is increasing availability of evidence-based guidelines and care bundles, HCWs struggle to adopt behaviours outlined in such documents.17 Adherence to guidelines can be variable depending on guideline format and content, resources available to staff, associated training and perceived inconvenience to current practice.18–20

One study found that the largest barrier to the practical implementation of guidelines for preventing ventilator-associated pneumonia was HCWs’ disagreement with the interpretation of outcomes of evidence-based trials.21 Further to this, the degree of non-adherence to guidelines did not reflect the strength of evidence-based support, thus leading to the conclusion that ‘published guidelines and clinical trials alone cannot be expected to change practices at the bedside’.21

The increased use of policy and guidelines throughout health care has not been successful in streamlining practice in relation to IPC.19,20,22 Although guidelines form a repository for information, they are not an effective relay of information to HCWs who need to actively seek out and access the document, usually during periods of direct patient care. Further, HCWs who do reference guidelines need to overcome contextual and cultural barriers (e.g. the concept that guidelines are detrimental to clinical judgement and autonomy). Guideline or policy developers should, therefore, actively consider potential barriers to adopting these into practice.

**Education**

Traditionally, education has been a means through which IPC teams have attempted to relay information and policy contents across hospital staff. However, time pressures, perceived lack of relevance, and diminished interest in the topic of IPC are barriers to education reaching HCWs effectively. Poorly structured education and training events also contribute to ‘trained’ HCWs having poor knowledge of IPC measures even after education sessions.23,24 Even with successful training, those who do acquire a sound understanding often have difficulty translating taught IPC measures into daily clinical practice.23

As discussed in relation to direct, verbal communication, professional identity issues across different professional groups within a hospital often inform HCWs’ practice. This social aspect of clinical practice and the status associated with a professional group means that it may be difficult for HCWs to change their IPC behaviours even following training. Peer support is a mechanism that can reinforce a message imparted during training and the relevant behaviour (e.g. in prescribing antibiotics or hand-washing), or make it irrelevant within a professional group.16 It is therefore crucial to consider the social and cultural context within which educational interventions are implemented. A key question for educators is to find the critical threshold of HCW engagement at which education and training is reliably translated into everyday practice.

**Electronic messaging: 21st century benefit or more noise?**

Technologically advanced means of communication have become more widely used throughout health care.25 However, there has been little evaluation of the usefulness or efficacy of electronic messaging as a means of information relay to HCWs. E-mail has replaced numerous verbal communications. Whereas verbal means of information exchange involve interaction between colleagues and ‘negotiation’ of messages, e-mail provides less opportunity for interaction and relationship building. In fact, there is often uncertainty in senders of electronic messages whether their e-mails are read or actioned. The delayed and intermittent nature of e-mail may also contribute to decreased productivity due to the increased time taken to complete tasks and repetitions when using this communication channel.

E-mails have also altered the reach of communications, with mass audiences within hospitals reached easily via group messages. However, large numbers of group e-mails often result in large amounts of information being disseminated to people to whom the content does not apply. The consequence of this is that the audience ‘learns’ that the messages are not of direct application or interest, and therefore e-mails go unread. This means that important messages can get lost in the ‘noise’ generated by heavy e-mail traffic. Finally, there is often a reduced sense of responsibility to action such communications; as large numbers of people are involved, personal accountability is reduced significantly. IPC teams who need to communicate with large numbers of staff, for example, in instances of outbreaks, can find all these aspects of electronic communication very problematic.

Another social aspect of electronic communications is that they have been introduced into an already pressurized work environment, in which care activities should be prioritized, yet HCWs are expected to assimilate and respond to an ever-increasing volume of often undifferentiated messages (a point related to the point above). Moreover, in the medical and nursing cultures, being engaged in direct patient care is greatly valued, whereas whatever is perceived to be a desk-based or ‘form-filling’ task to be carried out at a desk is regarded negatively. Desk-based activities may therefore not be valued very highly.13,24 These are barriers to the effective use of electronic communications, whether mobile or desk based, as HCWs struggle to read e-mails and perform many computer-based tasks within the ward environment. It is worth considering whether mass electronic communications are a practical form of communication relay to HCWs trying to perform tasks at the bedside.

**Marketing strategies**

Within acute care, IPC teams have widely used commercial marketing strategies as an approach to promoting effective IPC behaviours relating to hand hygiene, influenza and norovirus. Such marketing programmes often use imagery to attract
throughout acute care settings are increasing, there needs to be further consideration of the content and format of these communications. Clear, measurable behavioural change objectives linked to infection outcomes should be put in place and evaluated prospectively.

**Table II**

Critical evaluation of communication channels with healthcare workers: key points

- Use of multiple communication channels and inconsistent messages can create a dissonant workforce who are uncertain about what information to prioritize or adopt, and how to translate it into practice.
- Verbal communication relies heavily on interrupting colleagues, which creates a culture of disruption, contributing to a stressful work environment that can compromise patient safety.
- Electronic communications have changed the way of transferring information, with larger audiences reached but less opportunity for social interaction between healthcare workers.
- Education and training does not reliably change practice. Social and cultural influences on behaviour and practice need to be considered during development and implementation of education programmes.
- Marketing and imagery is often used to promote compliance with infection control practices, although there is little research on how imagery can change a behaviour. Some evidence suggests that images may be more successful than words or numbers at getting into healthcare workers’ consciousness.

**Table III**

Recommendations to improve the efficacy of information relay to healthcare workers within acute hospitals

<table>
<thead>
<tr>
<th>‘Verbal economy’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider the fragility of verbal communication networks</td>
</tr>
<tr>
<td>Interventions aimed at economizing verbal communication may impact on patient safety and institutional productivity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ward-based assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform ward-based assessments prior to education initiatives</td>
</tr>
<tr>
<td>Identify cultural and social barriers to translating new information into practice</td>
</tr>
<tr>
<td>Address these in the development and implementation of education programmes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit the ‘one size fits all’ approach</td>
</tr>
<tr>
<td>Develop communications with an increased understanding of target audiences and their communication preferences (ideally based on primary research)</td>
</tr>
<tr>
<td>Develop communications with actionable messages</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurable objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop communications with clear, measurable objectives</td>
</tr>
<tr>
<td>Assess the impact of communications against set objectives</td>
</tr>
<tr>
<td>Evolve communication strategies in line with measured outcomes to increase efficacy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Healthcare worker engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involve healthcare workers in the development and dissemination of information</td>
</tr>
<tr>
<td>Engage ward staff in communicating hospital priorities</td>
</tr>
<tr>
<td>Limit the top-down approach to information dissemination</td>
</tr>
</tbody>
</table>

**Conclusions and future directions**

Using IPC as a case study, this paper has offered an appraisal of communication with HCWs within acute hospitals. The key points of this analysis are summarized in Table II. The authors consider that there is currently a strong drive to release ever-increasing communications, in numerous formats and at significant cost, without true consideration of their aims or measurement of their impact on practice. Traditional communication channels, however, have often been unsuccessful in changing and sustaining best practice in IPC.

Table III provides some practical recommendations that aim to improve communication with HCWs throughout acute hospitals. All means of communication (written, electronic or other) need to be used responsibly and systematically (i.e. in a planned and strategic manner). There may even be an argument for a shift in focus from institution-wide to more localized communications, which, for example, could allow wards to manage local communications that more closely reflect the needs and practices of their own staff. There have recently been interesting approaches, based on network analysis and ‘systems’ thinking, to ‘bottom-up’ and ‘top-down’ communications within hospital settings. Such approaches stress that the two types of communication can co-exist, and can promote successful organizational learning and improvement in the context of IPC. Such a successful marriage of the two assumes that the top-down communications disseminate clear, explicit knowledge and direction throughout the hospital, whereas the bottom-up communications take place at local level (i.e. within a ward) and offer tacit knowledge and understanding within the local context (i.e. within a department or ward).

The key premise of such organizational learning and improvement approaches is that the communications should be targeted, clear and have actionable elements for implementation by HCWs (not just generic advice). Recent
application of such an approach did result in significant improvements in IPC outcomes. It is important that the balance between hospital-wide and local communications is taken into account and evaluated when a communication strategy is developed and when new communications are designed. In addition, appropriate research is certainly required to further understand the process and efficacy of communications, and how these contribute to the success and limitations of interventions aimed at changing HCWs’ behaviour. An increased understanding of how best to disseminate information throughout a hospital will enhance emergency preparedness and response, facilitate clearer perception of institution priorities, and reduce unnecessary communications that cost time and money.

Acknowledgements

The authors wish to thank Dr Tammy Boyce for her valuable contribution to this study.

Conflict of interest statement

None declared.

Funding sources

National Institute for Health Research Biomedical Research Centre Funding Scheme at Imperial College, and National Centre for Infection Prevention and Management funded by the UKCRC. Holmes, Sevdalis and Vincent are also affiliated with the Imperial Centre for Patient Safety and Service Quality, which is funded by the National Institute for Health Research, UK.

References