SOLUTIONS

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Attitudes and Beliefs Also Influence the Effectiveness of Hospital Cleaning

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Beliefs and attitudes change over time and are influenced at conscious and subconscious levels. Although protocols, products, and elbow grease all contribute to the effectiveness of hospital cleaning, the impact of environmental services workers' attitudes and beliefs on their performance cannot be ignored.

Improved environmental cleaning can reduce hospital-associated infections (HAIs); however, the attitudes and beliefs of environmental service workers (ESWs) regarding their work and their impact on the effectiveness of cleaning have not previously been explored. We hypothesized in a recent study *(American Journal of Infection Control 40 (2012) 260-2)* that these attitudes and beliefs might influence the effectiveness of their cleaning.

METHODS

SickKids is a 260-bed, academic paediatric hospital. A study with ESWs working in the 11-bed neonatal intensive care unit and the 18-bed pediatric intensive care unit was carried out to examine ESWs' attitudes and beliefs about their job and their impact on cleaning effectiveness.

The theory of planned behavior framed the development and analysis of a validated 20-statement survey tool designed to elicit perceptions and predictors of behavioral intentions associated with the ESW role. The tool was distributed to 30 ESWs working in the ICUs, who identified their degree of agreement using a 5-point Likert scale. Focus groups scheduled at the ESWs' convenience were facilitated - four sessions before and 3 after the educational intervention were attended voluntarily by a total of 18 participants.

Virox is very excited about participating in each of these conferences & education days.   We wish the best to all of the various organizers and would like to thank them for their dedication and effort in organizing these very important educational opportunities.   We look forward to attending and talking to all of the participants.

Spring/Summer 2012 Virox Update

Congratulations 2012 CHICA Scholarship Winners!!
Virox Technologies would like to congratulate the 2012 CHICA Scholarship winners. Nineteen Infection Prevention & Control Practitioners from across Canada were chosen by the CHICA-Canada Board of Directors. This year's winners are: Tammy MacDonald, Tammy Barre, Dr. Rishi Bhardwaj, Tara Donovan, Mary Anne Lupenette, Bridget Maxwell, Diane Quinn, Rosalie Byers, Dea Graessli, Dana Male, Ivy Turner, Nina Williams, Linda Adam, Alisa Cuff, Mandy Deeves, Amanda Knapp, Daphne Murray, Joanne Tench and Nancy Todd-Giordano.

Partnerships in Paediatric Patient Safety Corporate Sponsor
In our continued support of facilities dedicated to patient safety, Virox is the corporate sponsor for the SickKids Foundation 7th Annual Partnerships in Paediatric Patient Safety Symposium: "Partnering in Patient Safety for a Better SickKids" that will be taking place on June 25th SickKids Hospital. The symposium will focus on enhancing awareness of the required organizational practices (ROPs) that organizations must have in place to enhance patient safety and to minimize risk. For more information on this event please contact the Patient Safety Symposium organizers at 416-813-7654, ext. 28022.

2012 CHICA Cleaning, Disinfection and Sterilization Symposium
In line with our mandate to provide educational opportunities to the Infection Control Community, Virox has partnered with CHICA-Canada to sponsor the second bi-annual pre-conference day on Monday June 18th on cleaning, disinfection and sterilization at the 2012 CHICA National conference in beautiful Saskatoon. The day promises to provide the most current information on disinfection of the environment, medical device reprocessing, patient safety, audit tools and occupational health and safety.   The breadth of subject matter is sure to lead to debate of best practices, reflection on misconceptions and lead us to search for responses in face of the challenges we face in our daily practice and research. It is in this sense that Virox hopes to furnish information, practical skills and common ground for everyone who is actively in and/ or interested in cleaning, disinfection and sterilization. For more information on the day please check out the CHICA-Canada website at www.chica.org. Please visit our booth at the CHICA – Canada Conference for more information.

Introducing Accel PREVention Hydrotherapy!
Accel has once against set a new standard for disinfection. Accel PREVention Hydrotherapy is the first Health Canada registered, **concentrated intermediate level disinfectant** with a 5 minute contact time for use in hydrotherapy tubs and foot spas. For more information please visit the Accel section of the Virox website (www.virox.com).

GREEN TEAM UPDATES
In past updates, we have focused primarily on the initiatives we have been focusing on from a corporate perspective as we move closer to our goal of LEED certification. For this update, we wanted to highlight on our "green" products.

Choosing hydrogen peroxide as the active ingredient in all of our products was based not only on its ability to kill pathogens or based on the oxidizing powers from a cleaning perspective, but as importantly for the fact that hydrogen peroxide is environmental friendly. Hydrogen peroxide (H_2O_2) degrades in to water (H_2O) and Oxygen (O). It leaves behind no active residue on the surface that can lead to the development of resistance microorganisms and is benign to the environment.   Aside from hydrogen peroxide, the other ingredients used to develop our formulations are as equally benign. They

Motivation and Job Satisfaction of Cleaning Staff

ANNETTE JEANES, UNIVERSITY COLLEGE HOSPITALS NHS FOUNDATION TRUST, LONDON, UK

Job satisfaction is an important indicator of how individuals feel about their job, and can be influenced by a number of factors. A few months ago we undertook a study to, outwardly at least, determine the efficacy of an ultra-microfibre cleaning system in our London, England hospital. However we also incorporated an interview of the cleaners involved in the study that allowed in insight into their job satisfaction and motivation.

The primary role of hospital cleaning professionals in the study hospital was to undertake regular and predominantly manual cleaning of the environment. This includes floor mopping (dry and wet), high dusting, surface cleaning, refilling of dispensers for hand hygiene, emptying waste bins, and all other non-clinical elements of cleaning in the hospital environment. In addition, in some areas of the hospital the cleaning professionals have beverage and meal duties. Each task was allocated a defined method and time for completion, and every area of the hospital had a detailed work schedule, which specified the order and timing of the task.

Measurement of job satisfaction

The need to measure job satisfaction has led to the development of many tools. Many measuring tools use Likert scales or the "faces" scale of job satisfaction, while others use simple yes/no, true/false answers. They vary in length and complexity. Tools are available commercially, and divide job satisfaction into between 9 and 20 facets. These are largely subjective, and it could be argued that measuring absenteeism and turnover of staff may be a more objective measure.

Development of the questionnaire

There are several detailed studies of job satisfaction and motivation related to medical, nursing, and allied health professionals, but few relating to hospital cleaners in the UK. Some, such as Mbindyo et al (2009), developed a motivational measurement tool and explored its utility and validity. Their tool was eventually modified to reflect 10 aspects of motivation, and included organisational commitment, job satisfaction, and burnout. Others focused specifically on retention, turnover and sickness.

We formulated simple and concise interview questions based on commonly used themes. This included the cleaners' backgrounds and their impression of the new cleaning system as well as more open questions allowing opportunities to voice opinions about their work. We included two additional questions related to access to the internet and computers, as others have found that staff groups such as cleaners miss opportunities because they do not have access to the intranet, internet, and information which others take for granted.

Nice to be asked

Participation was entirely voluntary and no staff declined participation. Several pointed out that they are rarely asked for their opinion and that it was a nice change. All staff interviewed believed they were trusted in their workplace, and 93% believed they got the cooperation of the people they worked with.

Motivation

Many of the staff interviewed had always been cleaners at the hospital, and there appeared to be minimal career progression. Few had ambitions beyond their current job and workplace. The primary motivation to do the job was to earn money to live, even though it was a low wage. Many worked additional hours and were dependent on this to supplement their income.

The hospital cleaners' working day was controlled and each task allocated a time. Their ability to determine for themselves how best to clean was limited, and their chances to contribute ideas for improvement were scarce. Additional training associated with the job was not highly valued, particularly as they had to do this in their working time, which meant they had to catch up with the work later. There was little incentive to change the way they worked. The cycle of long, tiring hours of work and lack of free time led to limited opportunities for other types of work, education, or leisure activities.

Job satisfaction

The tasks cleaners performed were simple, repetitive and tiring. They received little encouragement and were largely motivated by themselves, with occasional comments from staff, supervisors, and patients. Satisfaction with the job done was prompted primarily by the self-assessment. At times they perceived their job was not recognized as valuable. It was unclear how demoralizing this was, as it seemed to be the accepted norm. Staff recruitment and retention may be affected by this and other issues identified.

Perception of education and intelligence

Some of the cleaning staff recognized that they were perceived as unintelligent by others, although some had considerable academic qualifications. The opportunity to speak about themselves was welcomed. Although they recognized that they were perceived as having low social status and of little value to the organisation, they all recognized that they did an important job. While it is not possible to determine what unconscious cues and expectations they experienced, it was clear that they were offered few opportunities to develop and their expectations were low.

GREEN TEAM UPDATES

can be found on various safe ingredients lists; EPA Inerts List, FDA Generally Regarded as Safe (GRAS) list and the CleanGredients list to name a few.

In past years, when manufacturing companies have had to reformulate to remove harmful Nonylphenol or Alkylphenol Ethoxylates (a class of surfactant or soap), Virox did not. From the onset, these harmful chemicals were never included as ingredients used to formulate our AHP-based cleaners and disinfectants. In fact, in 2009 Virox and our AHP technology became the first Canadian company to receive the Champion Status in the Design for the Environment Program's Safer Detergents Stewardship Initiative (SDSI) because of this.

Today we have a complete line of products that have been EcoLogo certified in Canada via our Accel line. Accel PREVention is a line of products that includes a concentrate, hydrotherapy and a ready-to-use liquid that were the first ever EcoLogo certified intermediate level disinfectants with rapid and realistic contact times. Accel PREVention Concentrate and Accel PREVention Hydrotherapy are concentrated intermediate level disinfectants, which carry 5-minute contact times against bacteria, viruses, fungi and mycobacteria, with a 30 second sanitizing claim. Accel PREVention RTU is a ready to use liquid intermediate level disinfectant, which carries a 3-minute contact time against bacteria, viruses, fungi and mycobacteria, with a 30 second sanitizing claim.

We look forward to updating you again in the fall where we hope to announce that our LEED certification project has wrapped up and we are awaiting our final approval!

Advocacy for Health Worker Safety

MAGGY TOMKINS, ALBION STREET CENTRE, AUSTRALIA

Advocacy has various meanings to different people and even to the same people at different times. To many people advocacy appears to primarily refer to attempts to influence public policy or resource allocation through the political process. To others it's about gaining rights for certain groups. For the purposes of this article, advocacy is about being able to convince others that health care worker (HCW) safety is a good idea. Most of the literature on health promotion is written from the point of view of advancing the health of the patient. The literature that does exist on advocacy for healthy work environments is often about bullying and violence in the workplace, not prevention of infectious diseases.

In a technical brief for World Health Organization staff and consultants, the first of "the key actions to consider in implementing interventions for the prevention of HIV transmission in the health care settings at country level" is "advocacy": promotion of "a ZERO tolerance policy on HIV/AIDS and other blood borne diseases transmission in health care settings, to the benefit of health care workers and patients". Advocacy has a key role in building and maintaining occupational health programmes and is essential to shape the social and political climate.

As with many things in life, it often comes down to economics. You will need to be able to demonstrate that adopting a HCW safety program will save money.

The World Health Organization suggests several quantifiable benefits of workplace health promotion for the organisation; including a more positive image, improved staff morale, reduced staff turnover and absenteeism, increased productivity, reduced health care/insurance costs and reduced risk of fines and litigation.

"There is mounting evidence that unhealthy work environments contribute to medical errors, ineffective delivery of care, and conflict and stress among health professionals. Negative, demoralizing and unsafe conditions in workplaces cannot be allowed to continue. The creation of healthy work environments is imperative to ensure patient safety, enhance staff recruitment and retention, and maintain an organization's financial viability."

Organizations of the future will have no choice but to take a strategic approach to create and sustain healthy work environments to ensure patient safety, nurse recruitment and retention, and organizational financial viability - all of which are linked into the safe practice environment.

Convincing the workforce

While it can be difficult to engage HCWs who already have a heavy workload, there are several strategies, which will assist this process:

• Reinforce policies for HCW safety. Ensure that policies are regularly updated and reinforced by in-service education and that resources are available to allow compliance.

• Include responsibility for HCW safety in individual position descriptions.

• Follow up this responsibility by addressing HCW safety initiatives during performance development and appraisal procedures.

• Give staff some autonomy and responsibility for HCW safety. An interesting article describes using student nurses to be hand-washing ambassadors by teaching them to perform direct observation of staff practices for an ongoing surveillance project.

• Use fun implementation activities to create awareness of new policies; for example a policy launch event, a HCW safety week, a competition to design a poster, etc.

• Design effective training, which provides opportunities to develop mastery, mentoring and follow up.

• Encourage a safety culture. The purpose of developing and instilling a culture of safety in the workplace is to promote habitual safety practice. Employees should feel uncomfortable when not wearing personal protective equipment (PPE) during appropriate situations and supervisors should reinforce the importance of PPE and enforce policies so that noncompliance is the rare exception and not the rule.

Being an inspiring leader is an important part of asking staff to engage with new practices. While there are individual and organizational factors to consider, it is the nursing leadership who must acknowledge the necessity and value of maintaining a healthy work environment. They must embrace it, authentically live it, and engage others in the journey. The American Association of Critical-Care Nurses identified the standards for establishing and sustaining healthy work environments as being: skilled communication, true collaboration, effective decision making, appropriate staffing, meaningful recognition and authentic leadership.

Skills required

So what skills are needed to advocate for HCW safety?

Of course good communication skills are key; also good leadership skills as mentioned above, and being able to analyse and interpret research to be meaningful and translatable into evidence-informed practice.

Knowing how to be political and innovative also helps. Advocates need to adopt the same set of opportunist, responsive, imaginative, flexible, dramatic and above all newsworthy tactics that are the stuff of all successful public opinion, political and commercial campaigning. So plan and implement your advocacy for HCW safety like a political campaign.

Good luck!

Maggy Tompkins is clinical nurse coordinator for SafeHandS, a "virtual" network designed to link and support health care workers across the Asia-Pacific region who are caring for people with HIV and other communicable diseases. SafeHandS is a forum where health care workers can share issues and ideas. Members can encourage and learn from each other to improve health care worker safety, and healthcare workers are welcome from anywhere around the globe.

Explore their website to find out more - www.uow.edu.au/health/safehands/index.html.

Variable Evidence for Interventions

Nicole Kenny
Virox Technologies Inc

An effective infection prevention and control program can prevent acquisition and transmission of infectious pathogens among patients, staff and visitors. However, infection control practices can be time consuming, costly, and tedious, particularly if the success of the intervention is nominal. Often, too, the success or failure of an intervention can't necessarily be attributed to any single intervention.

Several factors can decrease the certainty of attributing improved outcomes to a specific intervention. These factors include: (a) difficulties in controlling for important confounding variables, (b) the use of multiple interventions during an outbreak, (c) regression to the mean (i.e., improvement over time without any interventions), and/or (d) over-estimation of treatment effect since each patient's 'treatment' is deliberately chosen rather than randomly assigned. Thus, when crafting an intervention, it is critical to assess the quality of studies including potential biases, and consistency of results.

Also, care "bundles" have recently been introduced into patient care. Bundles are defined as a group of evidence-based interventions related to a disease process, that when implemented together, result in better outcomes than single interventions.

Effective infection control is an integral part of patient safety and quality. Infection control practices must be based on evidence from studies as well as the clinical experience of experts. The emergence of care bundles that incorporate several evidence-based practices together have led to further reduction of healthcare-associated infection and further promise to improve infection control and patient safety.

Patient Safety Climate: Variation in Perceptions by Infection Preventionists and Quality Directors

PROF. ELAINE LARSON, CENTER FOR HEALTH POLICY, COLUMBIA UNIVERSITY SCHOOL OF NURSING, NEW YORK, NY

A "culture of safety" has been defined as the shared values and patterns of behavior that determine the degree to which all organizational members direct their attention and action towards minimizing patient harm. Many healthcare institutions have adopted a "culture of safety" philosophy as an integral part of their delivery process or service.

Healthcare-associated infections (HAI) are a key patient safety issue. In the past 20 years, the overall incidence of HAI has increased by 36%, and the substantial human suffering and financial burden of these infections is staggering. Annually, in the United States, approximately 2 million patients develop an HAI, and nearly 90,000 of these patients are estimated to die. The Centers for Disease Control and Prevention has recently estimated the annual hospital costs of HAI in the United States to be between 25.0 to 31.5 billion dollars per year.

In a recent study *(Interdisciplinary Perspectives on Infectious Diseases Volume 2011, Article ID 357121)* we explored whether patient safety climate varied between two different but essential roles in the prevention of infection and across different hospitals: Infection Preventionists (aka Infection Control Professionals) and Quality Directors. The aims of this study were (1) to compare the perceptions of two aspects of patient safety climate between Infection Preventionists and Quality Directors in the same hospital, (2) to identify setting and role characteristics associated with differences in perceptions of patient safety climates, and (3) to identify setting characteristics that predict more positive perceptions of patient safety climates.

This study was an analysis of two cross-sectional surveys conducted simultaneously. There were 322 eligible hospitals; 149 hospitals (46.3%) responded to both surveys. Seventeen hospitals with insufficient data were excluded. Additionally, hospitals were removed from specific analyses if there were two or more missing responses and imputation was not possible.

We found that Infection Preventionists and Quality Directors in the same hospital varied in their perceptions across the two patient safety climate scales. However, our hypothesis that Infection Preventionists would perceive a lower climate of patient safety compared to Quality Directors was

supported in only one of the microclimates. Generally, Infection Preventionists had more positive perceptions of Senior Management Engagement, and the Quality Directors had more positive perceptions of Leadership on Patient Safety.

In a study of personnel in 92 hospitals, Singer and colleagues found differences in perceptions of safety climate by both role (i.e., senior management, supervisor, and front line worker) and by discipline (i.e., physician, nurse, other clinician and nonclinician). Similar to our findings, these researchers found that senior managers perceived fewer problems with Senior Management Engagement than front line workers.

Another key finding of our study is that budget was an important predictor of more positive perceptions of patient safety climates. Having an independent budget for the infection prevention and control department may allow for more autonomy and development of infrastructure to promote patient safety. According to a policy brief by Pronovost et al., efforts are being made at Johns Hopkins Hospital to improve the safety culture by investing resources to monitor the rate-based measures of quality and safety. These authors noted that fulfilling a commitment to safe and high-quality care is not possible without significant investment in patient safety infrastructure. Based on a study by Fukuda et al., implementing hospital-wide safety practices requires considerable financial investment. Results from their study confirmed that hospitals with greater financial and organizational resources are more capable of promoting the activities required for patient safety and infection control.

Conclusions

Although there have been many efforts to curb the increase in HAI, it is clear that this preventable issue is slow to improve. Leaders play a pivotal role in hospital initiatives to improve quality. This study represents an advance over previous studies on the relationship between safety climate and personnel perceptions by examining those leaders who are essential to the prevention of HAIs in acute health care settings. Given the finding that there are differences in perceptions among essential leaders, this discord could be an inhibition toward achieving the goal of decreased HAIs. It is essential for those personnel in leadership to work collaboratively in order to not only enhance health care environments but also make it safer for patients.

TWELFTH CONGRESS
OF THE INTERNATIONAL FEDERATION OF INFECTION CONTROL
10-13 October 2012 - Sheraton, Croatia

You Are Invited

Health care associated infections (HAIs) have a major impact on the quality of the care we provide for our patients. Under the umbrella of patient safety, the prevention and control of these infections has become a major challenge that needs to be addressed by all those working in health care systems.

The International Federation of Infection Control (IFIC) has been associated with eleven past conferences, held in countries ranging from Turkey to Chile, Lithuania to South Africa. IFIC conferences are international in scope, with lecturers and participants from all over the world.

They provide an opportunity to meet internationally renowned experts and opinion leaders, hear state of the art presentations, and participate in workshops and seminars. The generous amount of time allotted to discussions and workshops, with considerable interaction between the audience and invited experts also provides a unique forum to network with colleagues from all over the world.

The Chair and Board of IFIC are pleased to invite you to Zagreb, Croatia for the 12th IFIC Conference, to be held from 10th to 13th October 2012.

Dr Judith Richards
IFIC Chair

Arjana Tambic Andrasevic
Croatian Society for Medical Microbiology and Parasitology

Dr Michael A. Borg
Chair of Conference Committee

The Virox team believes that infection prevention and control is a global issue. We thank the International Federation of Infection Control on their tireless work, and congratulate them on what looks to be another outstanding conference.

Virox Sponsors Russell Olmsted Teleclass Lecture

The medical sciences in general, and infection prevention and control research in particular, are swimming in data, new discoveries, new recommendations for best practices, etc. The challenge is separating the wheat from the chaff, and finding a way to make it work in your facility. Actually, in most cases the first challenge is locating the good wheat to begin with.

Critique and Use of the Scientific Evidence – Sharpening Skills
On October 25, 2012, Russell Olmsted, immediate Past President of the Association of Professionals in Infection Control (APIC), will present this lecture in the Teleclass Education lecture series.

The objectives of the lecture are as follows:
- List at least one bibliographic search engine to identify evidence related to the practice of infection prevention and control.
- Describe concepts used in critical appraisal of scientific evidence.
- List elements used to score quality and strength of peer reviewed studies.
- List at least one strategy involved in application of evidence to prevent infection.

We would like you to join this teleclass as our guest. Just e-mail Melissa Chito (mchito@virox.com) with the subject line "Teleclass registration", and your contact information in the body of the e-mail. We will arrange with the organizers of the teleclass lecture series to get you registered without cost to you.

A 2-hour education session covered basic infection prevention and control principles and addressed issues raised through the survey and focus groups including time pressures and personal motivating factors. Factors predicting behavioral intent were grouped according to behavioral beliefs/attitudes toward behavior; normative beliefs / subjective norms; and control beliefs/ perceived behavioral control. Focus group analysis followed grounded-theory methodology; microbiology results were analyzed descriptively. Local Research Ethics Board approval was obtained.

Microbial contamination was assessed semiquantitatively before (phase 1) and after (phase 2) the intervention. In phases 1 and 2, 24 and 15 rooms, respectively, were sampled before and after terminal cleaning of the space, as they were vacated by patients. Up to 10 standardized high-touch, patient-specific surfaces were sampled and total aerobic bacterial colony counts per unit area were calculated. Surfaces were classified as adequately or inadequately cleaned. Sites were chosen from the literature and local input and included the computer keyboard, space bar, and mouse, monitor silence button, thermometer, intravenous pump buttons, intercom buttons, room light switch and plate, patient lamp switch, and parent chair.

RESULTS
Fifty-three percent (16/30) of questionnaires were returned and analyzed. ESWs' intentions were consistent at approximately 4.5 out of 5. Normative beliefs had the strongest relation to intent versus behavioral beliefs and control beliefs. ESWs' beliefs about behavioral control were significantly less than their other enabling beliefs.

Before the educational intervention, a mean of 8.4 surfaces were sampled per room pre-cleaning (range, 6-10) versus 8.7 (range, 5-10) post-cleaning. A significant decrease in environmental contamination followed cleaning and was more significantly reduced after the intervention. Before cleaning, the most contaminated surfaces included the parents' chair, thermometer, computer keyboard and mouse, and patient light switch. After cleaning, over one third of sites on parent chairs remained contaminated.

DISCUSSION
Our results support previous reports that hospital cleaning is improved by educating ESWs on the contribution of the environment to HAIs. The rich qualitative data from the focus groups demonstrate that ESWs intend to do a good job; they take pride in their work and are committed to patients and families. This is grounded mainly in normative beliefs and subjective norms, ie, the perceived social pressure to perform. Despite the intent to do their job well, however, they perceive little behavioral control. Positive feedback might lessen their frustration and in turn reduce their perceived helplessness.

Environmental cleaning after patient discharge significantly reduced contamination of high-touch patient items both before and after the intervention. The number of rooms and surfaces sampled was subject to patient turnover and was thus not consistent in the 2 phases of the study. Persistence of contamination of items such as parent chairs may also have been due to movement and handling.

Hospital housekeeping is a complex task, and understanding the behavioral determinants of cleaning by ESWs is essential to informing the development of interventions that can influence ESWs' beliefs and attitudes and, in turn, improve the effectiveness of environmental cleaning in a sustained way.

Motivation and Job Satisfaction of Cleaning Staff

Patients and visitors
Talking to patients was perceived as good but was problematic as it delayed or slowed down their work. Although not fully explored, it also exposed the cleaners to emotional issues of loss and stress at times. The presence of patients in the beds and visitors at the bedside made cleaning more difficult, and was also sometimes a hindrance. Cleaners are a valuable source of communication and support for patients and visitors, but the burden this imposes and the effect on their workload is not clear. In addition, they were not given training and support in communicating with patients. Several of the cleaners were not completely fluent in English and this also hampered communication with English-speaking patients.

Recommendations
As this was a small pilot study the recommendations are limited
- Effort and consistency of the quality delivered must be recognized to motivate cleaning staff and indicate where improvements can be made. Systems which deliver rapid feedback to staff are available and should be used.
- More work should be undertaken to understand how to motivate cleaning staff and how both the quality and efficiency of their work can be enhanced. Considerable advances in other aspects of health care have not been mirrored in delivering cleaning. Cleaning could and should be made easier and less labour intensive. This may be as simple as providing extension tools for high dusting.
- The potential for career progression and development of cleaning staff should be supported. An investment in these staff should be viewed as an investment in the NHS. Potential barriers such as language may be overcome by offering short courses. Access to a workplace computer with internet access would also help personal advancement, pride of work and institutional loyalty. Leave to study ad develop should be offered in a similar fashion to that of other staff.

Conclusions
There is clear evidence linking the patient environment, acquisition of healthcare-associated infection, and the subsequent financial costs. An investment in those in a position to clean and decontaminate our healthcare facilities to higher and more consistent standards would seem an obvious strategy to enhance quality and efficiency in an increasingly resource-limited service.

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