

Infection prevention and control: Who is the judge, you or the guidelines?

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Abstract

Objectives: The aim of this study was to explore the attitudes and behaviours of registered nurses and their colleagues around the adoption of standard precautions in order to determine strategies to promote adherence.

Design: A qualitative exploratory descriptive design used interviews and focus group to collect data.

Setting: Registered nurses and registered midwives from a tertiary metropolitan hospital took part in the study.

Participants: A voluntary sample of 29 adults was recruited from the Australian nursing ($n = 25$) and midwifery ($n = 4$) workforce. There were six men (mean age = 36.83 years; SD = 8.93) and 23 women (mean age = 41.36 years; SD = 10.25). Participants were recruited through advertisement on notice boards and emails from unit managers.

Results: Thematic analysis revealed five themes but the focus here is on staff judgements which are against the guidelines. Participants indicated that where in their judgement the patient posed no risk and they judged themselves skilled in the procedure, they were justified in deviating from the guidelines. Some staff judgements appeared to be self-protecting, while others were irrational and inconsistent.

Conclusions: Despite use of standard precautions being mandated, staff often deviated from them based on their own assessment of the situation or the patient. Any deviance from the guidelines is of concern but especially so when staff take it upon themselves to apply their own criteria or judgements. These results also suggest there may be some organisational inadequacies with regards to training and supervision of staff.

Keywords

Standard precautions, qualitative, infection prevention, behaviour, judgement, nursing, attitudes

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Infection prevention and control: Who is the judge, you or the guidelines?

Infection prevention and control (IPC) measures are the foundation of best practice among healthcare workers, yet there is a wide variability in their adoption by staff. In the 1800s, Semmelweiss was among the first to introduce handwashing to surgeons and nurses with the aim of reducing the transmission of pathogens to and between patients (Newson, 2001). Since Semmelweiss' time, several guidelines have been introduced to prevent the spread of infections from patient to patient (Centers for Disease Control [CDC], 1975; Garner and Simmons, 1983), but it was with the emergence of the human immunodeficiency virus (HIV) in the 1980s that the focus of IPC explicitly included the protection of healthcare workers themselves. New

strategies were needed to deal not only with the actual but also the feared transmission of HIV from patients to health-care workers in a period when the transmission mode was uncertain.

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These strategies included recommendations for the protection of clinical and laboratory staff (CDC, 1982) and advised staff 'to avoid direct contact of skin and mucous membranes with blood, blood products, excretions, secretions and tissue of persons judged likely to have AIDS' (p. 577). These recommendations were amended later to remove the element of staff judgement (CDC, 1987). Several iterations have occurred since, ranging from those termed universal precautions to the current version labelled standard precautions (SP) (Siegel et al., 2007) which have both patient and healthcare workers' safety in mind. Despite being mandated for staff use at all healthcare facilities, and early studies which demonstrated the efficacy of their use (Beekmann et al., 1994; Ben-David and Gaitini, 1996; Saghafi et al., 1992), healthcare workers' adherence to the use of SP is suboptimal (Pereira et al., 2015).

The SP, which also incorporate universal precautions and previous recommendations around body substance isolation (BSI) (Lynch et al., 1987), state that healthcare workers should routinely take precautions, regardless of patients' known or suspected infection status. Also, SP guidelines prescribe the use of personal protective equipment (PPEs), such as gloves and gowns, and advocate the use of masks and eye coverings to prevent possible exposure to mucous membrane during procedures involving patient's bodily fluids (Siegel et al., 2007). The SP were last updated in 2007 (Siegel et al.) to provide ways to deal with the emergence of new pathogens, increases in the incidence of infections caused by multi-drug resistant organisms, and to cover healthcare settings other than hospitals. SPs are also advocated as a means to reduce cross-transmission of pathogens from staff to patients (Loveday et al., 2014). In Australia, the application of SP is governed by the 2010 National Health and Medical Research Council (NHMRC) guidelines (NHMRC, 2010) and their use is a requirement often enshrined in policies and procedures across all health facilities.

Despite the demonstrated efficacy of using SP (e.g. Beekmann et al., 1994; Ben-David and Gaitini, 1996), studies have consistently shown that staff fail to adhere to at least some, if not all, aspects of the guidelines (Atif et al., 2013; Cummings et al., 1987; Cutter and Jordan, 2012; DeJoy et al., 1996; Gammon and Gould, 2005; Hills and Wilkes, 2003; Knight and Bodsworth, 1998; Kretzer and Larson, 1998; Lam, 2011, 2014; Pereira et al., 2015; Stein et al., 2003; Tait et al., 2000). Among the reasons staff cite for non-adherence are time constraints, loss of dexterity such as when conducting procedures using gloves, lack of nearby sinks and PPEs, and emergency situations (Lam, 2014; Stein et al., 2003; Sundaram and Parkinson, 2007). Perhaps of greater concern are findings that healthcare staff often perform an ad hoc risk assessment of patients, which affects the decision of whether to use PPE (Cutter and Jordan, 2012; Knight and Bodsworth, 1998; Stein et al., 2003). Such assessments by staff are in contradiction with

the principles of SP which are predicated on the assumption that any patient could have an asymptomatic blood-borne infection (Garner, 1996).

Lack of adherence to the guidelines can be described in Vaughan's (1996) terms as a deviance from established practice which, if not corrected, can become normalised behaviour. Price and Williams (2015) argued that healthcare workers need to be made aware of any deviant behaviours and the concept of normalisation in order to amend their behaviours and so prevent unacceptable risks to themselves and their patients. It was, therefore, the aim of this study to explore further the attitudes and behaviours of registered nurses around SP in order to determine strategies to reduce deviance and promote adherence.

Method

Design

A cross-sectional design was employed to obtain semi-structured qualitative data from registered nurses on their attitudes towards and behaviours regarding the use of SP.

Participants

A non-probability voluntary sample of 29 adults was recruited from the nursing ($n = 25$) and midwifery ($n = 4$) workforce of a large Australian metropolitan hospital. There were six men (mean age = 36.83 years; SD = 8.93) and 23 women (mean age = 41.36 years; SD = 10.25). The male participants had been practicing for an average of 11.88 years (SD = 7.92), the female participants for an average of 16.70 years (SD = 9.89).

Procedure

Participants were recruited by notices posted on bulletin boards in wards at a large metropolitan hospital and via an email to staff by nurse unit managers who had previously been contacted by the researchers and advised of the study and requirements of participants. Interested parties were invited to attend one of several scheduled focus groups or to contact the researchers to make a one-on-one appointment. Interviews and focus groups were audio-recorded with the permission of participants for subsequent transcription.

Materials

All participants were required to provide demographic data on their gender, age, profession and continuous years of practice since graduation. Participants were offered an individual semi-structured interview or a focus groups. Seventeen participants volunteered to participate in a focus group and 12 in one-on-one interviews. Semi-structured interviews and focus groups lasted 35–48 min. Before the

conclusion of each interview or focus group, the notes of the interview taken by the researchers were validated with the participants. A standardised interview guide was used across all interviews/focus groups. Questions such as: are you aware of universal precaution (UP)/standard precaution (SP) guidelines? What do you think is the most important aspect of the guidelines? Do you think people always follow these guidelines when required? Why/Why not? were used as prompts, with follow-up questions as needed.

Ethical considerations

This study was approved by the appropriate university and healthcare facility ethics committees. The data were confidential but not anonymous as participants were seen by the interviewer. No names, however, were collected and all participants were requested to avoid using people's names when referring to any incident, behaviour or attitude and, for those meeting in groups, when conversing among themselves. Any names inadvertently used by participants were not transcribed.

Data analysis

The interviews were transcribed verbatim into a Word document. Thematic analysis was used to identify patterns within the data (Braun and Clarke, 2006).

Findings

The thematic analysis process resulted in five themes: organisational culture; role modelling; leadership; the presence of contextual cues; and judgement/risk assessment. It is this last theme that is of particular interest as it can be seen, at some level, to subsume elements of the other themes. It gives great insight into aspects of individuals' cognitions, attitudes and behaviours which are of particular concern with respect to their deviance from the guidelines despite the organisation's culture, others' role modelling, good leadership and availability of equipment. Furthermore, this theme not only reveals that staff deviate from components of the guidelines such as gloving and handwashing, but also indicates that this deviance is in contradiction to the fundamental requirements of SP. As such, it is the focus of this paper.

Most participants stated that staff frequently used their judgement of the patient and the risks associated with a particular procedure before deciding whether or not to use SP. Comments where the staff judged or evaluated the patient and/or the situation and where the use of SP was dependent on this judgement include:

'Sometimes, depending on the patient, if it is a normal patient I don't wear gloves but if it is a patient that has very flaky skin, does not look very well kept and looked after, then I would put gloves on to protect myself. You kind of eyeball the patient and decide.' (Participant 15) and

'I think also that we tend to use [PPE] more when our patients are like of an unkempt appearance... hum... or they may have been incontinent of faeces or urine.' (Participant 29)

Judgement of the patient's status was also used as a justification for not reporting injuries, for example:

'I can give examples of nurses getting needle stick injuries with a patient and not reporting it saying that she [the patient] doesn't look like she has HIV or anything... so I guess as well as risk assessment some of it you could classify as prejudice assessment as well.' (Participant 24)

Conversely, one participant stated:

'But I have noticed that other staff member will be like [*sic*] before they do something with a patient they will say, this patient is Hep. C positive but to me it's like, it is good to know but at the same time it is not needed if we have SP.' (Participant 11)

Some participants stated that if they were informed by, or informed, their colleagues of a patient's status they would then be guided by this information in deciding whether or not to adopt SP.

Others stated that adherence to the guidelines was not universal when dealing with blood, but they were under the impression that the adoption of guidelines was mostly universal when dealing with faeces as faeces are viewed as dirty. For example:

'I think also that we tend to use it [SP] more when our patients are like of an unkempt appearance... or they have been incontinent of faeces and urine.' (Participant 7)

Yet, staff's judgement of patients was said to occur differentially when working with paediatric compared with adult patients where adoption of SP was often more stringent when dealing with aged care patients than with babies.

For instance, when dealing with children the concept of clean/dirty was seen as less relevant and the guidelines less applicable. That is, children were seen as clean while older adults were seen as dirty:

'Different patients would make me act differently, I think baby poo or wee doesn't really bother me but to get adult ones [on me] is disgusting... babies are clean.' (Participant 12)

'Yet technically you should wear gloves when changing nappies cause [*sic*] they are wet and dirty nappies. I reckon the decision would be different with older people as they are dirty and babies aren't.' (Participant 4)

'For example, I used to work in an environment where we did procedures and for an adult we were absolutely doing everything [PPE] whereas if it was a tiny person [child/baby], we did not necessarily wear gloves. Babies are clean.' (Participant 23)

Not all participants operated in these ways, however, as one respondent stated:

‘Making assumptions on whether a patient is a regular *Typhoid Mary* or not, that doesn’t enter into it.’ (Participant 8)

Another participant commented that:

‘SP use should be universal and there is a need for a *shift in mentality so that everyone* [is viewed] *as infectious.*’ (Participant 12)

Some participants saw their job experience as providing a safety net against the risk of injury, particularly when performing venepuncture or cannulation. Those participants stated that adhering to SP in those circumstances was not necessary as they judged themselves as sufficiently skilled and therefore the likelihood of injury was perceived as extremely low:

‘I weigh up the risks and if I feel I am going to be successful and I am pretty damn sure I am going to get it in [cannula] and I am the best person for the job in the room then I will do it and I won’t wear the gloves and usually I am OK. And if I do get blood on my hands, stop what I am doing you know within reason.’ (Participant 13)

‘I feel like if I have to put a cannula in and I am going to go ahead without a glove on I feel pretty confident that I am gonna [*sic*] get it in and I am probably not going to put blood everywhere. I feel confident with my skills.’ (Participant 22)

Participants generally agreed that level of experience influenced their ability to judge a patient’s status, although more junior staff were considered unable to make a valid judgement.

Interestingly, staff observed not wearing PPE when practising the same procedures where others were adhering to SP were described by participants as arrogant if they refused to comply with a request to wear PPE when prompted. Such staff were said to put themselves at risk by refusing to wear PPE. Arrogance was ascribed specifically to the more senior members of the medical or nursing teams as they frequently refused gloves even when offered to them:

‘There is a bit of arrogance with it, they think you know “*I don’t need it because I am not going to get a needle stick injury, I am an anaesthetist I don’t get them.*”’ (Participant 17)

The same was stated in reverse, that is where senior staff in particular did not follow guidelines in either practising or demonstrating clinical procedures. Participants said this acted as a negative influence on the observers’, often the junior staff, adoption of SP.

Discussion

The aim in this study was to ascertain nurses’ attitudes towards and behaviours around their adoption of SP guidelines, and their views on why they and colleagues might or might not follow the guidelines. Five themes were drawn from the data which addressed a range of organisational and individual factors. However, the theme related to nurses’ judgement/risk assessment of patients and their own skills is particularly concerning as not only is the use of SP mandated, any deviation from the guidelines potentially places workers and patients at risk of harm. Furthermore, staff judgements were said to occur even when the other factors, culture, modelling, leadership and availability of materials, were mentioned and, as such, staff judgement are the focus in this report.

Participants reported making judgements of the patient, the procedure and their skills before deciding whether to use SP or not. Cutter and Jordan (2012), Knight and Bodsworth (1998) and Stein et al. (2002) also found that staff often made ad hoc assessments of patients and used this judgement to decide whether to use PPE. Situational appraisal or judgements are consistent with Lazarus and Folkman’s (1984) concept of evaluating events as harmful, threatening or benign before adopting a coping strategy but are inconsistent with the mandated use of SP. Based on SP guidelines, any judgement should be limited to whether or not the clinical procedure or interaction with the patient is likely to expose the healthcare provider to body fluid. If possible exposure is the case, then SP should be implemented.

Participants’ descriptions of the judgements they or others used were often dependent on how the staff judged the patient. For example, patients judged as unkempt, incontinent or with flaky skin prompted the use of SP by participants. Also, the procedure to be performed was often judged by participants as either clean or dirty and this too influenced the use of SP or not. For example, a potential exposure to urine or faeces was a trigger to use gloves while gloves were often not used for taking blood or inserting a cannula. Staff attitudes and practice were also different when changing babies’ nappies compared to handling older patients who were incontinent of urine or faeces: babies were seen as clean while older adults were seen as dirty. This differing perspective could be related to a biased perception of risk, where unrealistic optimism is often displayed when confronted with familiar risks under volitional control (de Zwart et al., 2009; Weinstein, 1984). Whatever the staff’s own rationale in these cases, it is important to note that the provision of different standards of care to different patient groups is also against the Nursing Code of Conduct, which specifies that assumptions should not be made and that people should be treated equally (Nursing and Midwifery Board of Australia, 2013; Nursing and Midwifery Council, 2015).

While judgement of their own experience and of the patient's status were also described as influencing on whether healthcare workers used SP, it is perhaps more concerning that the judgement of a patient's status influenced whether or not staff exposed to blood and body fluids reported these incidents. This comment accords with Hills and Wilkes (2003) and Osborne (2003) who found that the reporting of occupational exposures to blood (OEBs) and of percutaneous injuries increased with staff beliefs that they were at risk of contracting a BBV infection from that particular patient. It remains worrisome that staff judgement of the patient also plays a part in the decision to report an injury to themselves or not, particularly as post-exposure prophylaxis treatments have been shown to decrease the risk of occupational acquisition of HIV. Likewise, the risk of Hepatitis B in unvaccinated individuals is lessened if post-exposure treatment and vaccinations are instigated (Young et al., 2007).

Participants also reported making judgements about their own skill level. Some participants stated that their skill and experience ensured that they would not sustain an OEB during procedures such as venepuncture or cannulation. These comments might also reflect a sense of invincibility among these staff, a perception which has been linked to risk-taking behaviours notably in adolescents (Roberts and Kennedy, 2006; Wickman and Koniak-Griffin, 2013). Similarly, Neves et al. (2011) have shown that a lack of fear of the consequences of a behaviour, such as acquiring a disease or being exposed to a pathogen, reinforced healthcare workers feelings of self-confidence and decreased use of protective measures.

It was interesting to observe that although participants made positive assessments of their own skills and abilities and rationalised their non-use of SP in certain circumstance, they failed to credit other staff's ability to make similar 'valid' judgements. Not only did they not notice this dissimilarity, but Participant 17 recounted an instance when an anaesthetist was described as arrogant when he refused to accept the gloves offered to him by a nurse. Ironically, this participant had earlier stated that she had cannulated a patient without gloves as she was skilled enough to do so and did not risk injury. She failed to note that this could be an example of the same 'arrogance' she attributed to the anaesthetist. Participants failing to see their own non-adherence behaviours as similar to other members of the healthcare team echoes reports from Jackson et al. (2014). Again, these behaviours are examples of an unrealistic optimism bias where one's risk of being exposed to blood or body fluids compared to others is perceived as lower. This bias reflects de Zwart et al.'s (2009) description of behaviours reported during the severe acute respiratory syndrome (SARS) epidemic in 2003 and might also be considered to reflect a sense of invincibility in that non-adherers believe 'I am OK'.

It must be noted that the results of this study are limited to a small sample of nurses where the proportion of male

participants (20.70%) was higher than that in the nursing workforce nationally (9.9%; Australian Institute of Health and Welfare, 2012). Possible response bias must also be acknowledged among the nurses who volunteered to participate in these interviews. Future studies using a larger sample and incorporating healthcare workers from a range of professions are necessary to overcome these potential limitations.

Despite limitations, the results from this qualitative study provide a novel insight into individual factors which influenced staff deviance from SP. Staff judgements of patients' status and of their own skills are direct deviations from the guidelines. This deviance undermines the entire premise on which the guidelines are built and past experience (e.g., the Francis Report, 2013) where non-adherence to standards and guidelines resulted in poor outcomes for patients highlights the serious consequences of deviance from the guidelines.

Conclusion

In conclusion, the data obtained from this study reveal that staff judgement of situations, patients and their own skills is an integral part of whether or not they implement or deviate from SP guidelines. The guidelines were formulated following extensive research and reflect the minimum standards for infection prevention and control. For staff to introduce an element of judgement into their application of SP is a deviation from prescribed practice. While deviances from SP by healthcare workers on the basis of their own best judgement might be considered by them to be harmless, the potential for harm is present in every instance and becomes greater if these deviances are generalised and become the new norm (Price and Williams, 2016). Any deviance from accepted standards puts patients and staff themselves at risk. Furthermore, if no immediate or proximal consequences of the deviance from best practice are observed, this can act as an enabler which permits staff to justify their judgements and their lack of adherence to the guidelines.

Clearly, staff judgement, as reported in this study, on whether or not to use SP is contrary to the guidelines and, aside from individual staff being responsible for not deviating from the guidelines, it is also the responsibility of management, the organisation and the leadership within the organisation to ensure staff comply in full with the SP guidelines and abide by professional codes of conduct. Participants also mentioned the organisation culture and poor leadership as well as lack of availability of PPEs as factors which influenced adherence but these are more structural rather than individual or dispositional factors. Clearly changing individuals' perceptions and behaviours is paramount. Aside from reiterating the guidelines and the need to adhere to them in ongoing professional development programmes, placing reminder notices in prominent

places, this discussion should also be part of regular staff performance planning and appraisal sessions. As Price and Williams (2015) stated: ‘To those who disdain “cookbook medicine” [SP], the response should be, “Thank heavens we finally have a cookbook”’ (p. 2).

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