

Educating parents on 'Speaking up for hand hygiene' in PICU: Perceptions and barriers

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ABSTRACT

Background: Hand hygiene is fundamental approach to prevent and control spread of infection. Many measures available to enhance compliance to hand hygiene, yet little is known of 'speaking up for hand hygiene' initiative among parents and nurses especially in paediatric intensive care unit (PICU). **Aim:** To assess parents' and nurses' perceptions on 'speaking up for hand hygiene' in the prevention of ventilator-associated pneumonia (VAP) in a PICU. **Methods:** We revised evidence-based information related to VAP preventative strategies for a PICU population and updated education materials for staff and families using the 'Speaking up for Hand Hygiene' initiative. Parents of children receiving mechanical ventilation were provided with education on hand hygiene. Parents and staff groups were invited to participate in a survey exploring their confidence with this initiative. **Results:** Parents (78.9%) and nurses (91.2%) agreed the initiative would increase hand hygiene practice. Parents (94.5%) would welcome being reminded about hand hygiene but only 68.4% of parents were willing to remind nurses and 78.9% to remind other PICU staff. Nurses (88.2%) reported being willing to remind parents and other PICU staff and 88.2% indicated that they would welcome being reminded about hand hygiene from parents and 94.1% from other PICU staff. **Conclusion:** Parents of children receiving mechanical ventilation and PICU nursing staff perceived 'Speaking up for hand hygiene' as an important initiative. There are, however factors that contribute to a reluctance to prompt hand hygiene that require further research.

Keywords: Intensive Care, Mechanical Ventilation, Pa(e)diatric, Parents, 'Speaking up for hand hygiene'

INTRODUCTION

The concept of speaking up for patient safety is an emerging area of interest and is synonymous with prevention for medication errors and increasing hand hygiene practice in healthcare settings.^{1,2} The expectation of 'Speaking Up' initiatives is to provide immediate feedback to prevent human error before harm occurs.³ Despite the potential benefit in error prevention, constraints exist as to the extent that healthcare workers, patients,

families, parents and caregivers of patients engage with and respond to this initiative.⁴

When the 'Speak Up'™ initiative was first introduced in 2002, patients themselves were the target of the initiative, emphasizing their role in promoting their own safety.⁵ Later, the approach was extended to the families and caregivers of patients. However, evidence of the impact of the extended speak up initiative lacks rigor⁴ and little is known about educating parents of a child receiving invasive mechanical ventilation and their view of this initiative. Flexible visiting hours in PICU support parental availability at the bedside and increase the potential for parent/patient contact and parent/healthcare worker encounters.⁶ Directly or indirectly, parents are well positioned to interact with their child and become an observer to healthcare workers' practices. This is indeed important as parents of these ventilated children, involved directly and indirectly in their child recovery in PICU, and this idea is supported with

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the patient-centred care and family-centred care approach.⁷ Thus, they should be given information on the importance of speaking up for hand hygiene in the prevention of ventilator associated pneumonia (VAP).

The role of patients and their families in speaking up is subtly different when the patient is a child and the family members are parents. A systematic review by Bellissimo-Rodrigues and colleagues⁶ examined 11 papers on the role of parents in the promotion of hand hygiene in paediatric centres. The results suggest that parents understood the importance of hand hygiene to prevent infection, but that they lacked knowledge on indications for hand hygiene. The review also found that most parents were less comfortable to remind healthcare workers about hand hygiene practice unless expressly invited to do so. Hence, the instruction by healthcare workers to parents and families is key to realising the potential of speaking up for safety.⁶ Previous studies have generally explored the role of parents and family members in promoting hand hygiene. This study surveyed parents and nurses' perceptions of 'Speaking up for hand hygiene' after education on hand hygiene in the prevention of VAP in PICU.

AIM

The aim of the study was to assess the perceptions of 'Speaking up for hand hygiene' among parents and PICU nursing staff and identify the reasons why they may be reluctant to prompt each other to perform hand hygiene following hand hygiene education.

METHODS

Design

Guided by a quality improvement framework, this study used a descriptive survey approach to assess the perception of 'Speaking up for hand hygiene' amongst parents and nursing staff.

Sample and Participants

Parents or primary caregivers of children who were mechanically ventilated were initially screened for inclusion into the study via the electronic medical record Metavision (iMDsoft®) platform. The second phase of screening involved consultation with PICU nursing staff to ensure that it was appropriate to approach identified families. Following the screening phases the following inclusion criteria were applied:

Inclusion criteria

- Parent or primary caregiver of a child receiving invasive mechanical ventilation.
- Able to read and understand the English language.

Parents or primary caregiver were approached at the bedside and provided with written information on the study. An explanation regarding the study was given and they were given the opportunity to ask questions about their participation.

All permanently employed PICU nursing staff were invited to participate in the survey.

Education development

The educational material designed for parents of children receiving mechanical ventilation aligned with the organisation's "Speak Up for Safety" initiative. A bi-fold pamphlet 'VAP: How I Can Help my Child in PICU' was developed and distributed to eligible parents during the PICU admission. The pamphlet described simple measures that parents could perform such as hand hygiene (Figure 1). The development of the pamphlet, 'VAP: How I Can Help my Child in PICU', began in mid-April 2016 with a meeting with Queensland Children Hospital PICU clinicians, Lead Nurse of Paediatric Critical Care Research Group and a Nurse Educator from the education unit in the PICU. The meeting was a brainstorming session, sharing information around VAP prevention implementation in the PICU. The fruitful discussion proposed parental involvement in VAP prevention concerning hand hygiene and 'Speaking up for hand hygiene', consistent with the unit interest to empower parents in patient safety. Subsequently, a series of meetings were undertaken with the Nurse Educator and research supervisors to finalise a list of VAP preventative strategies which were practical for parents in the PICU, and education strategies which were suitable for transmitting information. While the hand hygiene is the cornerstone of VAP prevention and it is fundamental to include this preventative measure, the mouth care is indeed significant as this measure is allowed to be performed by the parents with the supervision of nurse in charged in the PICU where this research was carried out. Validated information was retrieved from the World Health Organisation (WHO), the Australian Commission on Safety and Quality in Health.⁸ The content of the pamphlet was revised through five validation phases involving different panels (refer to Table 1).

Table 1: Content validation phases for pamphlet, 'VAP: How I Can Help my Child in PICU'

Phases	Panel members	Recommendations/changes
Phase 1	NR x 2, MOx1, RNx2	The language should be simple and the information succinct.
Phase 2	NR x 2, MOx1, NEx2, SWx1, RN x 2 (representing the PICU Safety and Quality Unit)	To change the title of the pamphlet, simplification and removal of unnecessary information and images.
Phase 3	NR x 2, MO x1, NE x2, SW x1, RN x 2 (representing the PICU Safety and Quality Unit) and two parents	The language needs to be in line with the lowest adult health literacy levels as reported by the Australian Bureau of Statistics, 2009. To condense the information to only one page and add images of hand rub and hand hygiene using soap.
Phase 4	NR x 2, MO x1, NE x2, SW x1, RN x 2 (representing the PICU Safety and Quality Unit) and two parents	Panel approved the pamphlet
Phase 5	MO and PICU Director	Reword the parents' contribution to care section "encourages to speak up" to "it is OK to check if I washed my hands". Finalised and approval obtained.

Key: NR – Nurse researcher; MO – Medical Officer; NE – Nurse Educator; SW – Social Worker; RN – Registered Nurse

The education session for parents was provided informally face to face at the bedside. The 'Speaking up for hand hygiene' pamphlet was given to the parents with the focus of education being on the importance of performing hand hygiene. Parents appeared to be receptive and welcomed the information given. They seemed to understand the information in the pamphlet and had a few questions regarding the hand hygiene resources for those who are allergic to the soap or gel provided in the PICU.

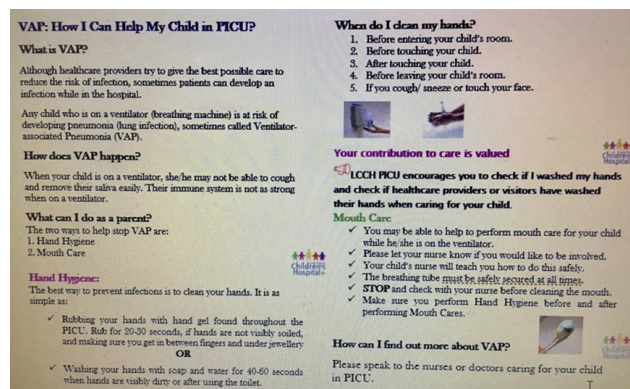


Figure 1. Bi-fold pamphlet "VAP: How I Can Help My Child in PICU?"

Staff education material

Staff education materials (a 32-slide PowerPoint presentation) (see supplementary 1) were also updated to reflect current evidence and posters on VAP preventative strategies were displayed in patient's rooms in PICU (see supplementary 2). In addition, the PICU Patient Safety and Quality Unit implemented hand hygiene promotion in the unit through video and posters.

Instrument

The questionnaire used in this study was adapted from previous publications.⁹⁻¹³ The questionnaire consisted of three sections: Section A: Demographic information; Section B: General perception on information provided in the pamphlet: 'VAP: How I Can Help my Child in PICU' and Section C: Perceptions of parents about the 'Speaking up for hand hygiene' initiative. Pre-testing of the survey questions for face validity was undertaken with five parents in February 2017. These parents made suggestions and comments, and these were included in the final version of the questionnaire. These pilot responses were excluded in the results. For the nursing staff survey, the questionnaire used for data collection was adapted from previous studies.¹⁰⁻¹³ For both questionnaires, kindly see supplementary 3.

Data collection

Parents were invited to complete the survey either using the self-administered questionnaire or an online questionnaire (via Qualtrics™). The questionnaire for nurses was initially available online (Qualtrics™) and subsequently made available in a hard-copy format. The online questionnaire was distributed via an electronic link to staff members' organisational email addresses.

Ethical considerations

Survey participants were provided with explicit information regarding the project, the voluntary obligation of participation, risk and benefits, confidentiality and the opportunity to express any concerns. Informed consent for the survey was obtained after parents and nurses agreed to participate. A response to the online survey constituted informed consent by the participants. The survey had approval from the respective ethical bodies, HREC/16/QRCH/298.

Data analysis

The responses from the self-administered questionnaire for both surveys were manually entered into SPSS software version 24 (IBM Corp, Armonk, NY).¹⁴ All online responses were recorded in Qualtrics™. Quantitative data were summarized as frequency and percentage. The free text responses were thematically analysed.

RESULTS

Demographic characteristics of parents

Thirty parents participated in the study. A total of 19 parental surveys were returned, constituting a 63.3% response rate. The majority of parents who participated in the survey were female (n=15, 78.9%) and were older than 30 years of age (n=12, 63.2%). Of the 17 parents who responded to the question on education level, 52.9 % (n=9) had formal tertiary qualifications. Most parents were not employed in the healthcare field (n=14, 73.7%). Two (11.1%) parents reported previous admission experience with PICU; 77.8% of parents had no prior experience of their child receiving mechanical ventilation.

Perceptions of 'Speaking up for hand hygiene' among parents

Parents agreed the 'Speaking up for hand hygiene' initiative would increase hand hygiene practice among nurses (n=15, 78.9%) and other PICU staff (n=14, 73.7%). Almost all parents (n=18, 94.7%) were willing to be reminded by the nurses and other PICU staff to perform hand hygiene when necessary, but only 68.4% (n=13) of parents were willing to remind the nurses and 78.9 % (n=15) other PICU staff. Of the 19 parents, 52.6 % (n=10) agreed that the pamphlet "VAP: How I Can Help My Child in PICU" was easy to understand. Nine parents (47.4%) were concerned about VAP after having read the pamphlet.

Parental reluctance to prompt for hand hygiene

Parents were reluctant to prompt nurses and other PICU staff to perform hand hygiene and reported that they felt that it was not their place to do so; their reported reasons for their reluctance are shown in Table 2.

Table 2: Reasons parents would be reluctant to prompt nurses and other PICU staff regarding hand hygiene.

Suggestions from parents

Reasons from parents	Nurses	Other PICU staff
Parent felt not their place to remind/question	38.1%	43.5%
Parent worried if the reminder would affect the care of their child	28.6%	21.8%
Parents did not want to interrupt	23.8%	17.4%
Parents would be too embarrassed to remind	9.5%	17.4%

Parents were asked for their ideas on improving overall compliance with hand hygiene. They suggested communicating directly to staff before coming into contact with their child and that all PICU staff should strictly enforce hand hygiene with parents and visitors. Parents also suggested that PICU staff should actively make parents feel comfortable to remind staff to perform hand hygiene and consider using visual reminders such as posters and signs including floor signs visible on entry to the room.

Nursing staff

The survey was available online and in hard copy to 150 nurses in PICU during the data collection period (1 April 2017 to 6 June 2017). Twenty-four nurses responded via the online version and 10 nurses responded via hard copy, resulting in 34 nurse participants completing the survey, a total response rate of 22.7%. Survey participants had a median PICU experience of 5.3 years.

Perception of 'Speaking up for hand hygiene' among nurses

Most nurses agreed that this initiative would increase hand hygiene among parents (n=31, 91.2%) and other PICU staff (n=29, 85.3%). Eighty-eight percent of nurses surveyed reported willingness to remind parents and other PICU staff. Nurses reported they were willing to be

reminded by parents to perform hand hygiene (n=30, 88.2%) and 32 (94.1%) agreed to be reminded by other PICU staff.

Reasons by nurses: reluctant to prompt for hand hygiene

Sixty-seven percent of nurses identified concern about parents' emotional status and if the parents were known to have been confronting, defensive or unwilling to engage in the past, as barriers for reminding parents to perform hand hygiene. Nearly half (46.0%) of nurses were concerned "other reasons" would make them reluctant to remind other PICU staff to perform hand hygiene. Other reasons included work colleagues who were unapproachable, irritable and lacked willingness to accept reminders and medical staff hierarchies in PICU.

Suggestions from nurses

Overall, there was a perceived need for PICU staff to maintain active involvement in hand hygiene promotion. More feedback from auditing was also welcomed. Nurses highlighted the importance of being proactive and vigilant with hand hygiene education not only for patient safety but also staff and visitor protection. Other suggestions were to reintroduce mini hand gel bottles that could clip to nurses' uniforms for easy access, and to offer rewards for consistent good practice at a unit level.

DISCUSSION

Parents and primary care providers of children undergoing mechanical ventilation can contribute to the minimisation of VAP through vigilant attention to hand hygiene.¹⁵ A multidisciplinary quality improvement intervention to achieve sustained improvement hand hygiene practice in PICU has used five primary drivers of change; one of the drivers is patient-family engagement.¹⁶ Education to promote hand hygiene among parents and patients requires information to be presented in a way that enhances understanding.¹⁷ This includes a range of resources and careful consideration with language and formatting to ensure suitability for the lay audience. In this study, parents found the information easy to understand. A similar approach is noted by Davis, Parand, Pinto, and Buetow¹⁸ who used leaflets, information sheets, posters and videos to effectively convey information to the lay audience.¹⁷

Parents reported that the information about VAP in the pamphlet was important, but it did heighten their levels of concern. The unpredictable situation

of their child in PICU, means that parents are in a state of fear and ongoing stress, hence their concern may gravitate more towards their child's wellbeing and stability rather than information related to hand hygiene.^{6,19-20} The present finding consistent with the notion that in paediatric and neonatal settings, hand hygiene becomes instrumental in the prevention of infection including VAP.²¹⁻²² Flexible visiting hours in PICU support parental availability at the bedside and this increases the potential for parent to patient contact and parent to healthcare worker encounters.⁶ Directly or indirectly, parents are well positioned to interact with their child and become an observer to healthcare workers' practices. Parents have a strong desire to be acknowledged and actively involved in the care of their child.²³

In the present study, discrepancy exists between parental perceptions of willingness to be reminded by nurses and other PICU staff and parental willingness to remind nurses and other PICU staff. Parents remain reluctant to prompt healthcare workers, including nursing staff, to perform hand hygiene. The perceived power differential has previously been explored, vulnerability the parent experience and their subsequent reluctance to prompt staff compliance has not been addressed.^{6,24-25} According to two different studies, parents and family members are highly concerned with the attitudes of healthcare workers towards their involvement with safety issues.²⁶⁻²⁷ Similarly, families agreed (96.5%) that they should help remind healthcare workers to perform hand hygiene, but only 67.2% of them were actually willing to remind the healthcare workers.²⁵ The level of parents' willingness to remind nurses to wash their hands could be influenced by social barriers caused by the healthcare worker's professional status.²⁸ This is also mirrored in the study by Kim et al., 2015¹⁰ which found that 70% of families believed that it is not their role to remind healthcare workers to perform hand hygiene. This may complicate the infection prevention in PICU including VAP as the incidence rate of VAP in the same setting where this survey was carried out (9.3 per 1000 ventilator days) was higher in comparison to the latest single setting one-year prospective study in Australia with 7.02 per 1000 ventilator days.²⁹⁻³⁰

Perceived authority of medical staff results in parent's reluctance to remind nurses and other PICU staff to perform hand hygiene. This finding is similar to several studies.^{9,31-32} The Speaking up for Safety initiative was well received by participants in this study and shows potential as a framework to support the dialogue between

parents and staff members.

Staff tolerance of prompting by parents and other staff was reasonable in this study with the majority agreeing that this was welcomed. This is contradicted by a study by Kim and colleagues¹⁰ where only 31% of nurses and 26% of physicians reported that they were willing to be reminded by parents to perform hand hygiene. Possible factors that contribute to greater acceptance or tolerance for prompting may relate to the safety culture within the unit.³³ The Patient Safety and Quality Unit in the study setting published a video promoting 'Speaking up for hand hygiene' and added colourful visual hand hygiene reminders, during the study data collection period. The video includes PICU staff holding a poster with the message, "It is OK to ask me to wash my hands".

The main reason for nurses' reluctance to remind parents to perform hand hygiene was due to the concern about the parents' attitudes and behaviour; or adding to emotional distress. It may not be appropriate to ask parents to perform hand hygiene in these circumstances. Consistent with this finding is that nurses may be more focused on the immediate consequences of families' safety especially parental emotional status, before actually reminding families to perform hand hygiene.³³

Parents' suggestions to improve hand hygiene practice in PICU overwhelmingly focused on the need for clearer communication, with suggestions that the unit should increase efforts to help them feel more empowered to prompt staff to perform hand hygiene. Parents agreed with suggestions to include more visual reminders such as larger graphics to indicate the risks associated with poor hand hygiene in the PICU. The use of a visual reminder is one of the strategies to promote hand hygiene among patients to healthcare workers that may also be applicable to parents.³⁴

From nurses' perspectives, suggestions to increase hand hygiene practice were related to the active involvement of PICU and organisational efforts including to prevent the VAP occurrences. These results corroborate the findings of a previous study that utilised a novel multi-modal strategy of education, performance feedback and the use of an easy-to-use pocket hand rub dispenser which resulted in improved compliance among nurses, respiratory therapists and medical personnel.³⁵ The use of a similar device attached to the scrubs or gown improved hand hygiene among anaesthetists in operating theatres.³⁶ Efforts initiated by the unit were also found to be

an innovative approach to increase adherence to hand hygiene among healthcare workers; the introduction of badges worn by individuals which prompted staff to wash their hands resulted in a marked increase in hand hygiene.³⁷⁻³⁸ Interestingly, offering rewards to those who comply with hand hygiene has been found to work exceedingly well. Talbot et al. (2013)³⁹ enacted this approach using a financial incentive, and their assessment of healthcare workers' hand hygiene compliance improved to more than 95%.

Study limitations

This study was undertaken in single study site with a small sample size and low response rates. Although the parents received the education and pamphlet, in some circumstances they declined to participate in the survey, contributing to the low response rate. In the nurses' survey, although the survey was available online or in a hard copy the response rate remained very low. Several reminders had no impact on the response rate. This may be due to various reasons such as unit activity or patient acuity. Response bias is also a study limitation. Parents and nurses may provide the answers to the surveys that were influenced by the ongoing hand hygiene campaign in the PICU or other source of information regarding hand hygiene. Thus, caution should be exercised in drawing firm conclusions based on these findings. Furthermore, the perception of other PICU staff towards parents and nurses on 'Speaking up for hand hygiene' was not examined and remains an area of potential improvement.

CONCLUSION

This study is among the first to describe parents' and nurses' perceptions of 'Speaking up for hand hygiene' in mechanically ventilated children in PICU, focusing on the prevention of ventilated-associated pneumonia (VAP). The findings in this study strengthen evidence of the benefit of 'Speaking up for hand hygiene' amongst parents and healthcare workers through education and indicate that nurses would welcome reminders from parents and other PICU staff. However, barriers to reciprocity of reminders for 'Speaking up for hand hygiene' persist across the parent and health care worker partnership and are worthy of further exploration.

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Disclosure

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