



# Pediatric Intensive Care Nursing

Journal of the International Pediatric Intensive Care Nursing Association

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## **Editorial**

### **A time for renewal: Updating our Journal**

*Franco A. Carnevale, RN, PhD  
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Montreal, Canada*

*Pediatric Intensive Care Nursing* (PICN) is now in its thirteenth year! It started originally in 2000 as an informal newsletter, immediately following the 2000 WFPICCS World Congress in Montreal. It was originally developed to create a medium for information exchange among nurses interested in pediatric critical care; a 'printable' medium to complement our Internet discussion group that was also started at the same time.

In a short time, the newsletter also included some original articles, over and above the usual informational updates found in a newsletter. It was then decided to make the newsletter more formal, and transform it into a journal, that was to be peer-reviewed by a newly-created International Editorial Advisory Board and indexed in a literature database, so original articles could be identified by others. We were immediately indexed in CINAHL (Cumulative Index to Nursing and Allied Health Literature) and nurses have consistently submitted a combination of original clinical and research articles.

A short while ago, the format of the journal was 'updated' into a more formal-looking format and an official logo for the journal was selected.

We are in our thirteenth year and we have been publishing at least one original research article in every issue for several years. The journal has cultivated a unique forum for exchange among this body of nurses, as there are no other journals exclusively focused on pediatric critical care nursing.

The journal is run on an entirely voluntary basis, without any financial costs. As there are no printing costs, this allows the journal to consider publishing material without concern for the corresponding costs. The journal has aimed at being a supportive publishing forum, assisting junior authors as well as senior authors, including authors whose first language is not English – enabling them to disseminate their work through a non-competitive process. In principle, there is no formal limit to the amount of material we could publish – although we want to keep the journal fairly succinct to ensure it is relevant and interesting for our readers.

Despite its successes, there is no question that we can do more – and do it better. Firstly, we moved from publishing twice a year to only once a year, because we have a relatively small number of manuscript submissions. There is no doubt that many pediatric critical care nurses are engaged in a number of activities that are worthy of publication and exchange with their colleagues. It is understandable that many of these nurses will aim for journals that are more highly ranked than PICN, to strive for the highest possible impact. In many cases, nurses will find that some articles will be more readily received by PICN, because we do not have the significant competition and cost considerations that would limit access to publication, which most other journals would have. I invite all readers to review our author guidelines at the end of this journal, and consider submitting articles on any of your projects that you think would be of interest to others.

We are also looking at storing our PICN issues (current and past) on a publicly accessible website. Until now, the Journal is disseminated only to members of our Internet discussion group: PICU-Nurse-International. Because of our CINAHL indexing, many of our articles are solicited by other readers; I am contacted several times a year by librarians, nurses and other professionals for a copy of a past article published in PICN. We will work to get PICN indexed on PubMed as well; this will greatly increase the visibility of our work. We had previously applied for PubMed indexing and were approved for the scientific content of the journal but then had some difficulties with the technical features of the electronic format that we were using. We will try again!

If you have any additional suggestions for improvements or changes that you would like to see us make, please email me to let me know [[franco.carnevale@mcgill.ca](mailto:franco.carnevale@mcgill.ca)].

I would like to close by taking this opportunity to welcome a new member to our International Editorial Advisory Board, Mr. Ram Mudhoo. He is doing some truly remarkable work in the development of pediatric critical care nursing in Mauritius; bringing greatly needed representation from the continent of Africa. Welcome Ram!!!



## Evaluation of hand hygiene in the neonatal intensive care unit: An observational study

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### ABSTRACT

**Background:** Very low birth weight (VLBW) infants are at high risk for nosocomial sepsis. Hands of health care workers (HCWs) are important vectors of pathogen transmission from colonized or infected infants to susceptible infants. In the Neonatal intensive care unit (NICU), adherence to hand hygiene is recognized as one of the most important means of preventing healthcare-associated infections. Adherence to hand hygiene by health personnel is often poor. However, after a multimodal intervention program (MIP) in a NICU in The Netherlands, a significant increase in adherence to hand hygiene guidelines from 23% to 50% was established in 2006. The aim of the present study was to follow up the evaluation of the adherence to hand hygiene practice, five years after completing a MIP. **Methods:** An observational cross-sectional design in the NICU of Wilhelmina Children's Hospital, University Medical Centre, Utrecht, The Netherlands. The population under study were all HCWs. After the observation, prompt feedback was given by the observer. Subsequently HCWs were asked to fill in a questionnaire. **Results:** 160 observations were carried out; 55 HCWs filled in the questionnaire. An improved adherence rate was observed. **Conclusion:** An increased adherence to hand hygiene was demonstrated. With this knowledge about increased adherence to hand hygiene, policy makers can better judge the necessity of implementing interventions to establish or improve adherence to hand hygiene. There is a need for careful consideration before setting a goal of zero tolerance to hand hygiene non-compliance to avoid failure and frustration.

### INTRODUCTION

Very low birth weight (VLBW) infants (birth weight <1500 g) are a population at high risk for nosocomial sepsis (NS) [1]. Nosocomial sepsis is late-onset sepsis appearing after the first 72

hours of life in hospitalized infants [2] and is one of the leading causes of morbidity, mortality, and duration of hospital stay in the Neonatal intensive care unit (NICU) [2,3]. The average reported rate of NS by Stoll (2002) is 20% in VLBW infants, compared with 0.1% in term infants [4].

Hands of the health care workers (HCWs) are important vectors of pathogen transmission from colonized or infected infants to susceptible infants [5]. Hands may serve as reservoirs for organisms [6]. Cook, (2007) showed a high average of 7.0 (range 1-8) bacterial cultures, such as staphylococci, on the hands of each observed nurse, all through performing care for neonates [7]. Interrupting these transmissions by appropriate hand hygiene is one of the strategies which prevent NS [8,9,10]. According to the World Health Organization [11], appropriate hand hygiene involves maintaining good skin and nail condition and banning artificial nails, jewelry, and long sleeves. Additionally, washing hands only when they are visibly soiled or no alcohol-based formulation is available, and cleaning hands by rubbing them with alcohol-based formulation at five moments: 1) before patient contact, 2) before an aseptic task, 3) after body fluid exposure risk, 4) after patient contact, and 5) after contact with patient surroundings. Adherence to hand hygiene by health personnel is often poor. Pittet (2001) showed in a review that the average adherence rate was 40% with a wide range of 5-81% [12].

### BACKGROUND

Since 1978 the NS occurrence in the NICU of the Wilhelmina Children's Hospital, University Medical Centre, the Netherlands (further named: the NICU) is registered. The long-term trends were published in 2010 [13]. An increase of the NS incidence was noticeable: from 7.1% in period 1988-1992 to 13.9% in period 2002-2006 [14]. This NS rate was found to be too high by the HCWs, hence they intensified their attention

to current hygienic guidelines and implemented a multimodal intervention program (MIP) in 2006 [14]. The aim of the program was to increase adherence to hand hygiene guidelines from NICU personnel in order to decrease the incidence of NS. A significant increase in adherence to hand hygiene guidelines from 23% to 50% and a decrease in NS incidence from 13.4% to 11.8 % was established in 2008 [14]. During the years after finishing this multimodal intervention program adherence to hand hygiene is stimulated by reminders with posters and monthly feedback about sepsis incidence. However, an evaluation of the state of adherence has not taken place since.

The aim of the present study was to follow up the evaluation of adherence to hand hygiene practice, according to the five moments of hand hygiene, conforming to the WHO guidelines, five years after finishing the multimodal intervention program. This evaluation will lead to knowledge about the necessity for interventions to establish or improve adherence to hand hygiene.

## **METHODS**

### **Setting**

The NICU under study is a 28-bed level III unit with roughly 600 annual admissions, covering an area with 30,000 live births per year. The beds are divided into four units: three intensive care units and one high care unit. Each unit is equipped with two hand-washing facilities with soap, paper towels, and a dispenser with an alcohol based hand rub. Moreover, at each bedside a dispenser with an alcohol based hand rub is available [14]. The population under study consisted of HCWs, which included nurses, physicians, laboratory and radiology personnel.

### **Design**

The study was performed through an observational, cross sectional design. HCW's were observed during the period between August and November 2011. Observations were performed throughout three routine care activities during the daytime, without explicit acknowledgement.

During the observations, the adherence to hand hygiene was recorded. An observation form, developed by the WHO [15] was used as a base to develop an observation form, applicable for use in the research. The WHO form was modified by LK, based on the application for the research, application in the field, and literature review [3,7,10,16,17,18]. The WHO form defined hand hygiene action synonymously as either rubbing hands with an alcohol-based hand rub or washing hands with water and soap [15]. There is a difference between hand wash and hand rubbing indications [15], hence we wanted to make a distinction; the modified form does make

a distinction between hand rubbing and washing. Hand hygiene technique, such as let dry after rubbing, is not assessed in the basic WHO observation form [15]. The modified form enabled an assessment of the technique of hand hygiene as sufficient or insufficient, using the guidelines of hand rubbing/washing, developed by the WHO. The kind of task affected the performance of hand hygiene [3,7,10,16,17,18], hence we wanted to make a distinction between invasive and non-invasive and routine and basic life support tasks. The modified form was assessed and tested by an expert in the field and the researcher (LK). Several parallel observation sessions were set up and two observers completed the observation forms separately while observing the same HCW's in their performance of taking care of the infant. Results were then compared and discordant notifications were discussed.

After the observation, prompt feedback was given by the observer to raise awareness about hand hygiene that was performed and to support improvement. Subsequently HCWs were asked to fill in a questionnaire about their experienced workload, awareness of being observed, their knowledge about the protocol, self-assessment and peer-assessment of performed hand hygiene, and their intention to improve their own and their colleagues' hand hygiene. This questionnaire was used in 2005 during the MIP and was modified with Likert-scales, instead of 'yes or no', based on related literature, by LK, and assessed by an expert. In completing the questionnaire, the HCWs gave their informed consent to participate in the study.

### **Data analyses**

Recorded data were entered into Statistical Package for Social Sciences 17 for analysis. The percentages of the characteristics were calculated. The overall percentage of adherence to hand hygiene protocol was also calculated. Subsequently a distinction was made between the five moments of hand hygiene according to the protocol of the WHO. Another distinction was made between invasive and noninvasive tasks.

## **RESULTS**

During the observation period, 55 HCWs were observed, and completed the questionnaire. Each HCW was observed during an average of 2.9 care moments. The majority of the observed HCWs were female (92,7%) and belonged to the nursing staff (67,3%). The mean years of experience were 19.3 years with a range from 2-38 years. The average workload was scored with a 2.51 (on a likert-scale 1-5: very low to very high). Four out of 55 (7.3%) knew they were observed on hand hygiene, the others did not know or did not know at the start. Forty nine out

of 55 (89%) were acquainted with the protocol of hand hygiene. The average score of difficulty to adhere to the protocol was 2.0 (on a likert-scale 1-5: very easy to very difficult). More than 25% of the HCWs admitted not always practicing according to the protocol. Eleven percent of the HCWs believed their colleagues did not follow the protocol, 63.5% of the HCWs believed that colleagues followed the protocol sometimes or often, and 25.5% believed that colleagues always followed the protocol. Twenty seven percent did not provide feedback to colleagues in relation to hand hygiene (see Table 1).

Out of 644 hand hygiene opportunities, the overall rate of hand hygiene compliance was 67.4% (434 out of 644 opportunities). The rate of hand hygiene compliance during the five moments of hand hygiene was 70.8% before patient contact, 67.1% before an aseptic task, 68.7% after body fluid exposure risk, 75.6% after patient contact, and 68.3% after contact with patient surroundings. The rate of hand hygiene compliance was 70.5% before an invasive task, and 66.4% before a noninvasive task (see Table 2).

## DISCUSSION

The aim of this study was to follow up on the evaluation of adherence to hand hygiene practice, according to the five moments of hand hygiene, conforming to the WHO guidelines, five years after finishing a MIP in a Dutch NICU. The most important result of this study was the improved adherence to hand hygiene during the years. An increased adherence from 50% in 2006 to 67.4% in 2011 was established.

This result was accomplished by using posters, prompt personal feedback, and monthly feedback during unit meetings. The incidence of sepsis and the detection of colonization and spread of multi-resistant gram-negative microorganism were also discussed during the unit meetings, as interventions to raise awareness among all NICU personnel.

Additionally, the aim of the MIP was to decrease the NS incidence. Previous research on hand hygiene in this NICU [14] showed a decrease in nosocomial sepsis incidence among infants admitted to the NICU from 13.4% in 2005 (before the intervention program) to 11.3% in 2008 (after the intervention program). This made the program particularly important with regard to the reduction of nosocomial sepsis in the NICU. For this observational study, time of study was too short to evaluate NS and demonstrated outcomes. However, based on previous outcomes and literature we could expect a decrease of NS.

The increase of adherence to hand hygiene can be explained by a number of things. Firstly, using posters, giving prompt personal feedback, and

monthly feedback about the incidence of sepsis and microorganisms during unit meetings, are interventions which seemed to increase adherence to hand hygiene; according to the review by Allegranzi and Pittet (2009).

The biggest established increase of adherence rate in a NICU was from 6.3% to 80%, within seven months with the interventions of education, written instructions, hand hygiene observations, posters, performance feedback, and focus groups [19,20]. However, the adherence maintenance five years afterwards is unknown. Subsequently, the review reported no impact on nosocomial infections. However, the period of seven months could be too short to establish an incidence rate.

Findings in the study by Lam et al (2004) showed an increased adherence to hand hygiene from 40% to 53% (before patient contact) and from 39% to 59% (after patient contact), with the introduction of alcohol-based hand rub, hand hygiene observation, training, hand hygiene protocols, and posters, as interventions. In addition, they demonstrated a reduction of healthcare-associated infections from 11.3 to 6.2 per 1000 patient-days [21].

Secondly, the increase of compliance in hand hygiene could be stimulated partly by the fact that the majority of HCW's were willing to learn and improve their practices. They also declared that they knew the protocol and that acting according to the protocol was easy to very easy. Over 70% declared that they give personal feedback to colleagues with regards to hand hygiene.

A third and last issue which could have influenced the increased adherence, is the Hawthorn effect. Thirty percent of the HCW's knew that they were being observed. Four out of 55 knew they were observed on hand hygiene. Being observed may change a persons' behavior, at least during a short period [22]. This could be seen as a bias of the study results or a limitation of the study, however this finding is in agreement with other studies in which it was also found that social pressure influences hand hygiene behavior [15].

The observations during this research were similar to the observations during the MIP. Therefore, they could have had the effect of the intervention to improve hand hygiene practice and changed behavior for at least the duration of the observation session.

A further increase of adherence could have been reduced by the experienced high to very high workload by 50% of the HCW's. According to Allegranzi and Pittet (2009), understaffing and overcrowding are factors which negatively affect adherence. A high demand for hand hygiene practice as is prevalent in NICUs combined with a heavy workload, are the most important risk

factors for non-compliance and therefore, full compliance may be unrealistic.

In addition, this study showed a difference, although small, between the compliance rates at the five moments. For example, the rate before and after patient contact was >70%, however, the compliance rates before an aseptic task was, after the risk of contact with body fluid, and after contact with patients surrounding were <70%. These findings suggest that HCWs were aware of the importance of hand hygiene, however there was a difference in adherence between the five moments. One hypothesis could be that the HCWs were not aware of all the five moments of hand hygiene. Since there were no other studies found with this distinction, this hypothesis could not be tested.

Unfortunately we were not able to analyze differences between nurses and other HCWs because the observed group of other HCWs was too small. In addition, we were not able to analyze differences between the sexes, because of the small group of males (four in the baseline and five in the second assessment).

This study had strengths and limitations which must be considered when assessing the reliability and validity of the study results. To the best of our knowledge, this is the first study which used the WHO hand hygiene observation method. This method is rooted in evidence-based guidelines. It was designed to provide a user-friendly and robust tool for education, monitoring, and feedback [15]. Direct observations of HCWs during patient care activity by trained and validated observers are recognized as the 'gold standard' for hand hygiene monitoring [11].

The observer, who is a nurse with experience in patient care, was trained by an expert in the field, before observing alone. This started with the full understanding of the five moments of hand hygiene concept during patient care. This was followed by the validation of the observer, by parallel observations jointly with an expert from the field, who was a confirmed observer. Results were compared and discordant findings were discussed.

Another limitation was that certain questions on the questionnaire were not clear enough for the person observed, e.g. 'do you know the protocol in relation to hand hygiene?' It was not clear which protocol was being referred to: the protocol of the UMCU or the protocol of the WHO. Another limitation, the questions on the questionnaire could have been answered in a socially desirable manner, because of the presence of the observer. This may have had an impact on the validity of the questionnaire and the replies that were obtained.

## CONCLUSION

This study demonstrated an increased adherence to hand hygiene, recorded according to the WHO five moments of hand hygiene, with the implemented interventions. It was observed that improvement in hand hygiene practice and infection control requires continuous assessment of behavior and interventions for improvement. However, a high demand for hand hygiene practice combined with a heavy workload, are the most important risk factors for non-compliance and therefore, full compliance may be unrealistic. With this knowledge about increased adherence to hand hygiene, policy makers can better judge the necessity of implementing interventions to establish or improve adherence to hand hygiene. There is a need for careful consideration before setting a goal of zero tolerance to hand hygiene non-compliance to avoid failure and frustration.

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**NB: See the following page for Tables**

**Table 1: Characteristics of healthcare workers**

Participants	N=55
Gender (Female)	51 (92.7)
Occupation	
N (%)	
Nurse	37 (67.3)
Physician	3 (5.5)
Physician-assistant	5 (9.1)
Laboratory employee	4 (7.3)
Radiology employee	5 (9.1)
Other	1 (1.8)
Years of work experience	
1-10 years	17 (30.9)
11-20 years	11 (20.0)
21-30 years	16 (29.1)
31-40 years	11 (20.0)
Experience of workload	
1	9 (16.4)
2	18 (32.7)
3	20 (36.4)
4	7 (12.7)
5	1 (1.8)
Aware of observation	
no	38 (69.1)
partly	13 (23.6)
yes	4 (7.3)
Knowledge of protocol	
No	2 (3.6)
Partly	4 (7.3)
yes	49 (89.1)
Compliance with protocol (Yes)	41 (74.5)
Difficulty level of compliance with protocol	
1	13 (23.6)
2	25 (45.5)
3	14 (25.5)
4	2 (3.6)
5	0 (0)
Self assessment	
1	1 (1.8)
2	5 (9.1)
3	1 (1.8)
4	27 (49.1)
5	7 (12.7)
Want to improve (yes)	51 (92.7)
Providing feedback	
No	15 (27.3)
Sometimes	13 (23.6)
Yes	27 (49.1)

Values are numbers with percentage in parentheses.

**Table 2: Hand hygiene (disinfection)**

Moments of hand hygiene	Compliance rate: proportions of opportunities (%)
Before patient contact	143 / 202 (70.8)
Before an aseptic task	49 / 73 (67.1)
After risk of exposure body fluid	22 / 32 (68.7)
After patient contact	90 / 119 (75.6)
After contact with patient surroundings	123 / 180 (68.3)
Overall	434 / 644 (67.4)
Before Noninvasive task	251 / 378 (66.4)
Before Invasive task	198 / 281 (70.5)





## **Children's drawings: A strategy for understanding the experiences of critically ill children**

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### **Abstract**

This article complements our recently-published paper which reported our examination of children's experience of critical illness. In this article, we present the drawings created by some of the participants. Child drawings are recognized as important means for initiating discussion of complex topics with children, which can help identify themes for research interviews. All participants were asked to make a drawing of him/herself as critically ill. Six of the twelve participants - ranging from 3 to 11 years old - agreed to make a drawing. Observation field-notes were recorded as the participants completed their drawings. Drawing was observed to be a helpful process for fostering discussion with these participants, as they related aspects of their drawing to their experiences. The drawings helped demonstrate the ways these children remembered their experiences. Supporting existing knowledge, drawing should be considered as a research strategy for facilitating disclosure among critically ill children. Although not explicitly examined in this study, drawing would likely also be a helpful strategy for enhancing clinical communication with some critically ill children.

### **Background**

This article complements our recently-published paper which reported our examination of children's experience of critical illness [1]. In this recently-published paper, we investigated the critically ill child's sources of discomfort and comfort. Interpretive phenomenology was used as the study's methodology [2]. Data included interviews with children and field-notes documenting observations of non-verbal data. Twelve children were recruited for the study, ranging from 3 to 17 years of age; including four girls and eight boys.

The detailed report of our analysis of interview and field-note data is documented in our principal article [1]. Briefly summarizing our overall findings: (a) some participants described their Pediatric Intensive Care Unit (PICU) stay favourably or as "not that bad" while others described their experience unfavourably; (b) various types of discomforts were reported (e.g., fears and worries, hurt and pain, invasive interventions, missing significant people, noise, food or eating problems, boredom, physical symptoms); and (c) several sources of comfort were described (e.g., parents, visitors and friends, hospital staff - principally nurses, stuffed animal/favorite blanket, entertainment and play, food, selected medical interventions, thinking of going home, being able to walk or run, sleep, waking up, gifts).

### **Drawings as a research methodology**

If the child's mental and motor function permitted, each participant was asked to make a drawing of him/herself as critically ill. We provided white drawing paper, a set of pencil crayons, and a set of wax crayons.

Child drawings are recognized as important means for initiating discussion of complex topics with children and can help elucidate themes for formal or informal interviews [3-6]. Field-notes were recorded as the participants completed their drawings.

In this article, we present the previously unpublished drawings produced by some of the participants in this study. Six of the twelve participants - ranging from 3 to 11 years old - agreed to make a drawing. Additional information about these participants is outlined in our principal article [1].

Drawing was a helpful process for fostering discussion with these participants, as they related aspects of

their drawing to their experiences. The drawings helped demonstrate the ways these children remembered their experiences.

The drawings were not thematically analyzed, given the controversies surrounding the interpretive validity of such data [3-6]. Rather, conversational data relating to the drawing were analyzed as either interview or field-note data and incorporated into our principal article [1].

The aim of this article is entirely illustrative; to demonstrate the ways in which children can express their experience of critical illness through drawings. The original drawings have been cropped to conceal the participants' names.

### Presentation of participants' drawings

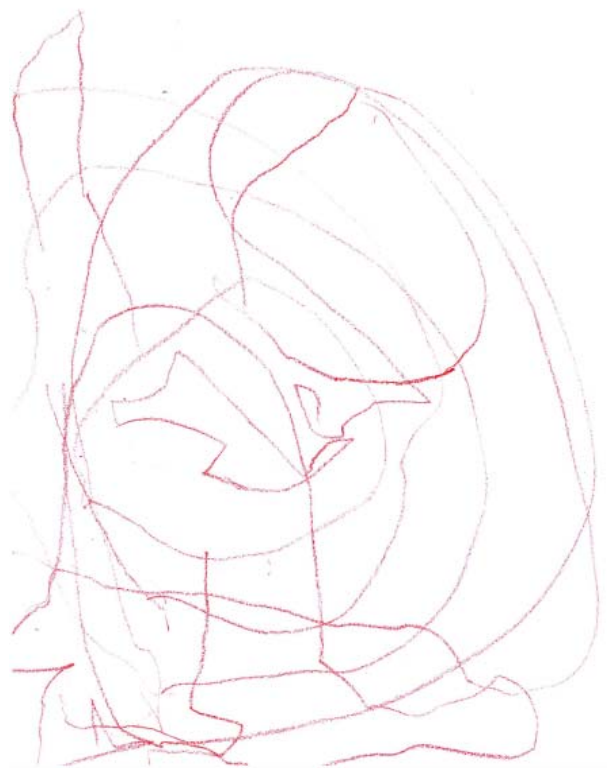


Figure 1: This drawing was made by Tim, a 3 <sup>3</sup>/<sub>4</sub>-year-old boy. This is a drawing of himself. According the participant's account while drawing, he is calm and smiling. He is sitting comfortably on his bed. While he was working on the drawing, he talked about the hospitalization. He mentioned that there was a monster that came to see him; to disturb him and other children. The monster is not part of the drawing. No expression of fears about the monster was included in the drawing.

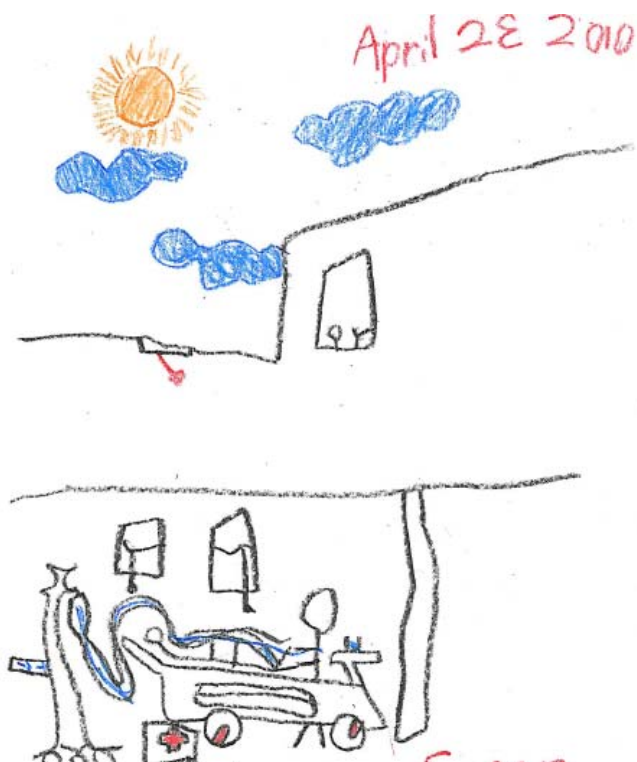


Figure 2: Sebastian (8-years-old) drew himself in bed. Around his bed are an intravenous (IV) pole, a physician, and a “doctor’s kit”, as well as two windows with curtains from which he can see outside. We can see the sun and a few clouds. There is also another window between the two rooms, so we can see the patient through it. He wanted to add many details to make his drawing “perfect”. He drew the table at the foot of the bed with a monitor on it. He said he used different colors to make it more realistic. He spent a lot of time to complete the drawing. He included all of his surroundings in the area he occupied during his PICU stay. Initial contact with this child was a challenge. The interviewer (JG) went to his room four times - it never seemed to be a good time. Finally, she met him when the grand-mother was with him - he was then a very different child. He became chatty and open to drawing and talking. Moreover, drawing clearly facilitated his ability to speak to the interviewer.



Figure 3: Frank (9-years-old) drew himself, dressed with a hospital gown, seated in his chair with his mother beside him. The presence of his mother in the drawing reflects her daily presence for the entire hospitalization and rehabilitation. He was not very enthusiastic to make a drawing; he did not know what to draw and did it quickly, using only one color pencil. He signed his drawing using large letters and a different color, which made him happy. This contrasted his otherwise introverted behavior. This child had a very long PICU stay following a severe trauma. He was sedated and ventilated for a significant amount of time. He particularly remembered the time when he was awake and able to be mobilized on a wheelchair.



Figure 4: Claudette (9-years-old) drew herself with a smile; wearing a hospital gown; between her 2 parents; in her room. The object in the top left corner is her hospital bed. The three bubbles refer to her thoughts, which include her cat, dog and sister (reader's left to right). The light was added as the last detail. She added many hearts, to show how much she loves her family and misses her pets. Claudette had received a transplant after being on the waiting list for a long time. She loves drawing. She spent a good deal of time on her drawing, including minute details. The drawing is colorful. It includes the people and animals that are important for her. She laughed while she was drawing.

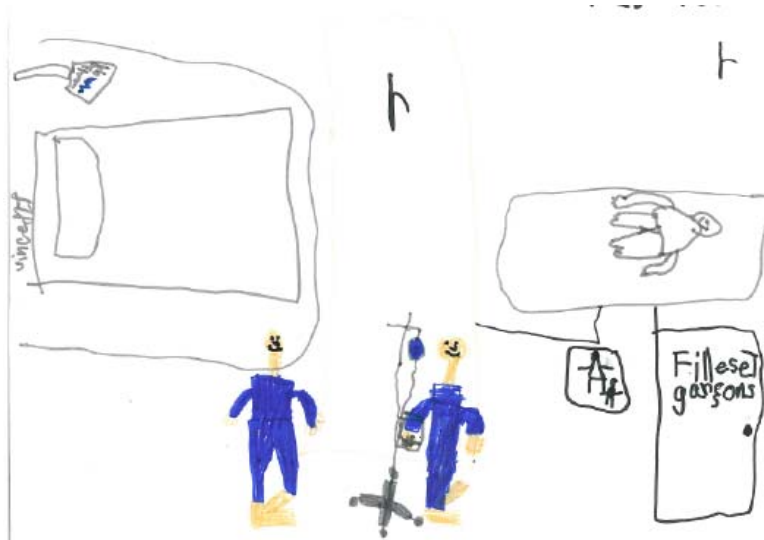


Figure 5: William (8-years-old) drew himself in a hospital gown while walking to the washroom with his IV pole; accompanied by his father. The unoccupied bed is his own, with a monitor on the side. The other bed is occupied by another patient. After his initial stay in the PICU, he had to be readmitted. This drawing was a reflection of his second time in the PICU when pain was no longer a problem and he was able to ambulate. The bed next to his was significant, as he complained about being disturbed during his sleep by babies' crying. William was proud of his drawing. He spent lot of time working on details.

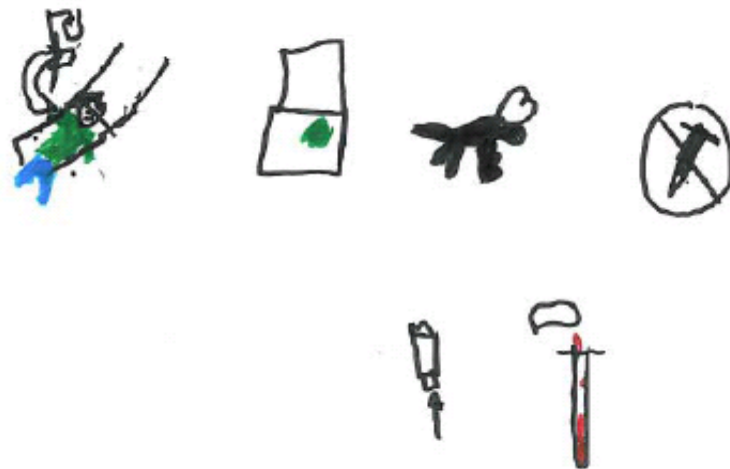


Figure 6: Francis (11-years-old) drew himself in his bed (i.e., top left corner), wearing a hospital gown and pants; he added the latter because he wished he had had pants. Other objects include an IV pole, his stuffed animal, and a sign with a line across a syringe and needle, because he disliked needles. There is also a syringe filled with blood. There is a food tray containing green purees, which look like "diarrhea". As he reported verbally, he drew everything that impacted him positively (i.e., his stuffed animal) and negatively (i.e., needles and food) among his PICU experiences.

## Conclusion

The principal study from which these drawings were obtained corroborated prior knowledge by demonstrating the psychological impact of critical illness on children, while highlighting the phenomena they regarded as discomforting or comforting. This article complements those findings by illustrating how drawings can serve as an effective means for engaging children in discussions about their experiences. Drawing should be considered as a research strategy for facilitating disclosure among critically ill children. Although not explicitly examined in this study, drawing would likely also be a helpful strategy for enhancing clinical communication with some critically ill children.

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## Instructions for Authors

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Submissions to Spotlight on PICU can be emailed directly to the column editor, Dr Bev Copnell, at [Beverley.Copnell@med.monash.edu.au](mailto:Beverley.Copnell@med.monash.edu.au)





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