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CONTENTS

Pediatric Intensive Care Nursing is now a Journal!

Franco A. Carnevale, Canada

Open Heart Surgery in Papua New Guinea – 2003

Margaret Bresnahan, Australia

Improving Nursing Care of Infants and Children Ventilated with Uncuffed Endotracheal Tubes

Sandi Evans, New Zealand

Spotlight on PICU: Starship Children's Hospital

Elaine McCall, New Zealand

Questions & Answers from PICU-Nurse-International

Edited by Karin Storm, Denmark

Report on 4th World Congress on Pediatric Intensive Care

Patricia A. Moloney-Harmon, United States

Minutes from the WFPICCS Nursing General Assembly

Upcoming Conferences

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Editorial

Pediatric Intensive Care Nursing is now a Journal!

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This is such an exciting time for pediatric intensive care nursing! We have just completed another highly successful World Congress (in Boston) with a remarkable number of nursing presentations and participants (details are provided in this issue).

Very importantly, this Congress provided an opportunity for many exciting developments. The editorial board of *Pediatric Intensive Care Nursing* held a meeting at which it was decided that this publication would no longer be a Newsletter – it is now a Journal. In fact, a nursing assembly at this Congress also decided to form The International Association of Pediatric Intensive Care Nurses – and this Journal will serve as the Association's official publication. More details are provided in the report on this meeting in this issue.

In light of these developments, this publication will function in a more formal manner. All paper submissions are now more rigorously peer reviewed by members of the International Editorial Advisory Board. We have created some permanent columns such as *Questions and Answers on PICU-Nurse-International* and *Spotlight on a PICU* that appear in this issue. We will soon add a column that will feature websites of interest to PICU nurses. We are hopeful that our journal status will encourage more nurses to submit papers to us for publication so that we can increase our number of annual issues from two to three in the short term – and eventually move to 4 issues per year. Although we will now function more formally, we still wish to serve as an 'inclusive' publication. Our Editorial Board wants to help new authors develop their ideas into a publishable form if they should desire such help. We hope that many of you will think of submitting your various ideas, clinical projects, studies or conference presentations to our Journal.

We hope you appreciate these developments. We would very much like to hear any comments that you have regarding what you think we are doing well – and any suggestions you have for how we can improve OUR Journal.

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Open Heart Surgery in Papua New Guinea – 2003

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Abstract

Each year since 1993, a group of volunteer health care workers from throughout Australasia, have traveled to Papua New Guinea (PNG) under the auspices of the Adventist Development and Relief Agency (ADRA).

A part of the "Operation Open Heart" program, the team provides cardiac surgery and on-going education in this country that does not have the funds and facilities to run its own program. In time it is hoped that local teams will have the knowledge and experience to provide their own service once the funding becomes available.

The incidence of congenital cardiac defects in PNG is estimated to be similar to world-wide figures. However it is a developing country with a small health budget, so has to prioritise its health care, and a cardio-thoracic unit is not an option at present.

The visiting team stays for only a week so many factors need to be taken into account when choosing those patients who will receive surgery. One of these is the requirement for specialist post-operative care, and as this is only available while the team is in residence, much more complex repairs are usually not planned.

Background

Eighty five percent of the population of Papua New Guinea (PNG) live in rural villages. The main cause of childhood deaths is infections and the death rate of children under 5 years of age has not decreased in the past 23 years. PNG is listed by UNICEF as being one of only four countries in the world who have failed to decrease the child mortality rate over this period (Duke, 1999; Naraq, Feling & Leeder, 2003). The healthcare system in this emerging country has not been able to keep up with the changing demands of the populace. Hence the considerable cost of setting up and performing cardiac surgery is not a priority (Tefuarani, Sleight, Williams, Vince & Hawker, 2000).

Before 1956, cardiothoracic surgery in PNG was limited, and mostly for treatment of tuberculosis. From 1956 to 1978, visiting teams from overseas made sporadic trips to the country where they performed closed heart procedures on mostly adult patients, or selected patients to be done overseas (Tefuarani, Hawker, Vince, Sleight & Williams, 2001).

Between 1978 and 1994, a visiting cardiologist began selecting suitable patients to be transferred to Sydney for cardiac surgery. This program became predominantly paediatric, with 2-20 children being selected per year. Initially selection was based on clinical examination, chest x-rays and electrocardiograms. Some centres later had the help of simple ultrasound (Tefuarani, Hawker, Vince, Sleight & Williams, 2001). Over the period of the 17 years, 230 children were selected for surgery in Australia. Of these, 170 were referred to the participating hospital in Sydney. Because of parental decision or lack of availability on the day of departure, the other sixty were unable to make the trip. 133 children were operated on, of which four were for palliation and the remainder had full repairs. There was a 6% mortality rate. Unfortunately the funding, both from charities and government agencies, dried up by 1993 and surgery for most congenital heart lesions ceased to be an option (Tefuarani, Hawker, Vince, Sleight & Williams, 2002).

Operation Open Heart

This program was initiated in 1986 by Russell Lee, an Intensive Care nurse who perceived the need to assist developing areas to achieve their own cardiac surgery program

whilst providing some surgery in the process. Teams visit a country every one to two years, performing urgent or achievable surgery while training up the local staff so that eventually they will be able to continue on their own. Countries to date include Vietnam, Nepal, China, Tonga, New Guinea, Mongolia, Myanmar (Burma), The Solomon Islands, Vanuatu and Fiji.

Visits to PNG began in 1993. Since then over 306 operations have been performed with a low mortality rate of 2%. Patients have come from all areas of the country - approximately 37% from the National Capital & Papuan District, 28% from The Highlands, 21% from the Islands and 14% from the Momase Region (Millane, Vince, Gale, Nunn, Lee & Hawker, 1997).

Surgery is usually considered only for those where a cure can be accomplished with low risk surgery and a short ICU stay. The defect may be causing cardiac de-compensation and/or failure to thrive or intervention will be required within the next 12 months. Those not considered for surgery are those with complex anatomy, with inadequate diagnostic information, or with significant non-cardiac disease (Millane, Vince, Gale, Nunn, Lee & Hawker, 1997).

Despite these restrictions, there are always more candidates for which time will allow. Precedence is therefore given to patients in whom surgery will be required to prevent further deterioration, and those in whom totally corrective surgery is possible without the need for any long term follow up therapy (Millane, Vince, Gale, Nunn, Lee & Hawker, 1997).

Surgery in Port Moresby, 2003

Though Operation Open Heart is partially funded by Australian money and companies give assistance such as free freight; some of the finance is expected to come from the country for which the service is provided. In 2002, the visit to PNG was almost cancelled due to the lack of available funds from the local government. Hospitals in the country were, and still are, struggling to maintain basic services (Bell, 2003). However, patients were already in Port Moresby (PM) awaiting surgery, having traveled from days to weeks to get to the country's capital. PM hospital then took the problem to the local private and corporate sectors, and necessary funding was raised in less than a week. Again this year health funding was not available and the public was asked to donate so that the surgery could go ahead as planned. Health funding and supply difficulties have continued to result in very little elective surgery being performed at the Port Moresby hospital. We found that none were performed there since November.

The volunteer team was comprised of 35 members from different hospitals from throughout Australia and New Zealand. Included were the co-ordinator/team leader/trouble shooter, 3 cardiac surgeons, an intensivist, 3 anaesthetists, 2 perfusionists, a physiotherapist, 2 lab technicians and nurses for theatre, anaesthetics, cardiac ward/high dependency and the intensive care unit (ICU).

During two packing days prior to departure, boxes and containers were filled with the requirements needed to fully equip 3 theatres and an intensive care and a small high dependency area. Working from a list of planned surgery prepared by local and visiting cardiologists, the co-ordinator ensured that enough stores and equipment were taken to complete all cases plus a surplus to cover unforeseen events. This amounted to 2 tonnes of freight. Everything had to be provided except for beds, trolleys, two ventilators and some syringe pumps.

Oxygen is available at the hospital, but the week of cardiac surgery usually consumes almost as much as one year's worth of the local usage, despite having oxygen concentrators attached to the two ventilators. Nasal prong oxygen was a gas saving initiative, but the saving was just as often negated when a high flow of oxygen via non-rebreathing masks was required.

Prior to the team's arrival, all current ICU patients had been moved into one of the wards, giving the cardiac patients (temporarily) the closest areas to the operating theatres. Conversion of the empty ICU to a functional one, began on Friday, the morning after we arrived. Ward 7 (their high dependency/step-down area) became the pre & post cardiac surgery ward and six beds were designated as high dependency for the post-operative PDA repairs.

This year all three theatres were prepared for surgery, as we had three visiting cardiac surgeons. The third theatre, however, continued to be prepared to take emergency cases. Operations commenced that afternoon, with the repair of a six patent ductus arteriosus (PDAs) by the combined teams. After the initial post-operative period, these patients were solely in the care of the local nurses, which was a first for them.

On Saturday morning a meeting was held to decide who of the list of patients prepared was to be offered surgery. This was a tough decision at times. Then surgery began in earnest and continued for the next six days. The surgical team that was primarily composed of local staff operated on most of the closed procedures while a combined team did the open cases. During the seven days of surgery 43 operations took place, the same number as last year, but this time there were more than double the amount of open-heart procedures.

Operations undertaken included 13 Patent Ductus Arteriosus (PDA) ligations, 5 Atrial Septal Defect repairs, 11 Ventricular Septal Defect (VSD) repairs, 7 Mitral Valotomies, 4 classical Blalock-Taussig shunts, an insertion of a permanent pacemaker, a repair of a sinus of Valsalva and one sternotomy. The youngest patient was 3 months of age the eldest 50 years and three quarters of them were young children (there were 10 adults and 33 children). This meant there were 24 open and 19 closed cases. The last child to have surgery to repair his VSD was found to also have an unusually configured total anomalous pulmonary vascular return, which was also corrected. Another patient who had his PDA repaired, had a father and two uncles whom had been sent to Sydney in their youth to have their own PDA closures. The father was a member of the theatre staff at Mt Hagen hospital. Our oldest patient this year was also a theatre staff member, but from Port Moresby hospital.



Unfortunately there were complications. The child who had a sternotomy, was thought to have a diseased pericardium from tuberculosis, causing constriction and not allowing the heart proper relaxation. Once the chest was opened, it was found that the pericardium was not the problem, but the disease process had caused infiltrates in the heart muscle. These allowed the heart to pump well, but did not allow for relaxation. The surgery weakened an already unstable situation, and the child died on the day following the surgery. Another child whose VSD was successfully repaired and had been extubated, went on to have an acute haemolytic episode due to the stress of surgery exacerbating pre-existing malaria. She developed high temperatures and haemolysis, causing the release of serum potassium eventually leading to her death.

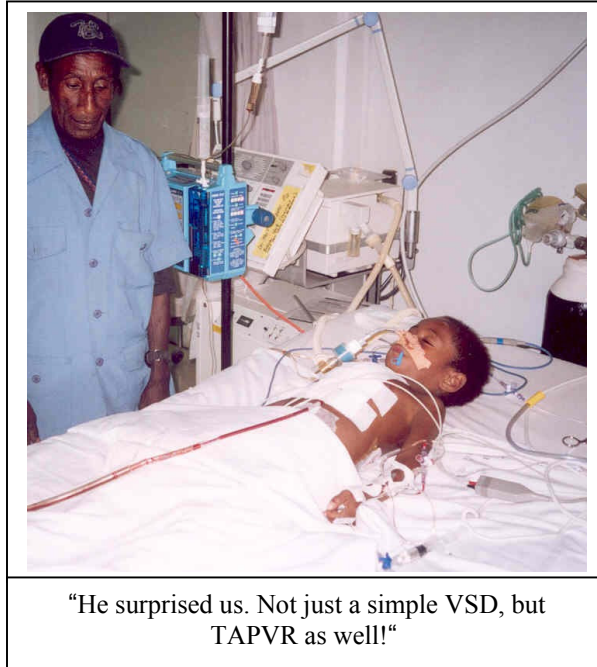
Two other patients required a return to the operating theatre. One gentleman was thought to have a bleeding focus, as it was difficult to reduce his chest drain losses. This proved not to be so, and he finally stopped bleeding and recovered well. The next day he was chatting away to us all, amazed that he had been returned to the theatre. The other return, was a child with Tetralogy of Fallot. He had had a Blalock-Taussig shunt inserted and was out in the ward area preparing to go home. It had been noted that he was restless and unsettled, and had an increased girth. He was brought into ICU in respiratory arrest that led on to cardiac arrest. After a successful resuscitation, he was taken to theatre where a bowel obstruction was found. Fortunately the bowel was still viable, and within a few days his bowel sounds had returned and he was recovering well.

The main focus of this and previous visits was to work with local staff to consolidate and continue to build on skills and knowledge obtained by them during previous trips. Newer members of the team often found the educating aspect challenging. The ICU nurse co-ordinator ensured there was at least one adult and one paediatric nurse per shift in the 6 bed ICU, and that at least one had been on a previous trip. PM's hospital is in a difficult situation where only so much can be done with limited resources and staff, but they succeed wonderfully. They were eager to access any knowledge and skills that could be provided and lectures given were well attended.

The running of the ICU differs somewhat to that which occurs in Australia. They have quite a few enrolled nurses on the staff, with the greater number working permanent night shifts. These nurses usually have at least one patient each, they do observations, attend to tracheal toilets of the ventilated patients and look after their general care. However they do not give medications or write the patient reports, and all problems are taken to the team leader of that shift. It seems that it is usual for the team leader to write the reports on all the patients in the unit at the end of the shift, though sometimes the other registered nurses might write their own. Mechanical ventilation and all changes are the responsibility of an anaesthetic registrar, who is not always constantly available. As it is not part of their care, many of the nurses do not understand the principles of ventilation or the relationship to the blood gases.

During so short a visit, it is often difficult to ascertain the education level of each person with whom we work, and how much teaching or supervision is required. Naturally more is necessary for the enrolled nurses, who, after many years experience, may have more practical knowledge than the registered nurses, but who may not have the same theoretical background. This in itself is a challenge for those who have been used to rely on their colleagues to understand the basic principles of intensive care nursing.

Visiting staff had the challenge of working without the usual plethora of equipment and supplies they may have been used to having available, of having to remember to conserve these supplies and having to learn to rely more on their own skills. There was also the challenge of forgetting the peculiarities of one's own hospital practice and amalgamating them with those from other establishments for the benefit of the patients we cared for. The experience of working with such a keen and dedicated group of colleagues is challenging, satisfying and invaluable - an experience never to be forgotten.



“He surprised us. Not just a simple VSD, but TAPVR as well!”

Conclusion

The trip was a learning experience equally for local staff, and those who took part in it. Visiting staff had less technology to rely on, and had to call on their own evaluation skills to a greater extent than is usual in their normal working lives. It was also a challenge for those who usually work with adult patients to supervise local nurses with paediatric patients and vice versa. On one trip an adult patient’s aorta ruptured during his post-operative period in ICU. He was resuscitated by a paediatric nurse at paediatric rates and he walked out of the ward to say goodbye to us five days later. These challenges can have very successful results!

Returning from a trip to PNG, some comments from participating nurses were:-
 “Getting all of those cases back in one day and seeing them - us, working to our absolute maximum capacity was very, very exciting.”
 “...you realise that you know far more than what you think.”
 “I think you get through it because you appreciate that you are only there for a week and every surgical case that you do matters. The more you do, the more people will benefit, so it doesn’t matter how hard you work, because it is only for those six days.”
 “...never before have I felt so valued as a nurse.”

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Improving Nursing Care of Infants and Children Ventilated with Uncuffed Endotracheal Tubes

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Abstract

Currently I am practising as the 'Paediatric Link Nurse' in an Intensive Care Unit (ICU) within a metropolitan area in New Zealand. This is a mixed-age ICU, caring for patients throughout their life span. The most common reason for a patient's admission to the ICU is the need for mechanical ventilation. Currently, due to ventilator availability and medical and nursing practice, the usual mode of mechanical ventilation is volume-limited with pressure breath triggering.

However, reflection within my own practice leads me to believe that the use of this mode can compromise effective ventilation of paediatric patients, due to air leaks around the uncuffed endotracheal tubes of infants and small children. This air leak makes a guaranteed tidal volume almost impossible and can cause ventilator breath stacking and volutrauma (Marraro, 2003). This can impact on the patient's comfort, sedation requirements and airway security, and affects how these patients are nursed. Thus the ventilation of these paediatric patients by the current volume-limiting mode may be not always be optimal for the infant/child.

A new ventilator is becoming available to the unit, with a pressure-controlled, flow breath-triggering mode available. I will critique the possibility of using this mode of ventilation, suggesting how this will impact on nursing practice in ICU, and of the education and knowledge that will be required. I believe this change to ventilation practice may improve comfort and safety for the intubated child/infant, through the delivery of an optimal mode of ventilation.

Key Words

Infant, child, intubated, mechanical ventilation, endotracheal air-leak, volutrauma.

Introduction

This essay shall reflect upon the nursing practice of infants/children intubated with uncuffed endotracheal tubes (ETTs) who are ventilated with synchronised intermittent mandatory ventilation (SIMV) modes. As mechanical ventilation may be required to support children in a variety of conditions, the specific ventilatory variations for treatment that different child and disease conditions require will not be discussed, nor will the ventilatory nursing practice of neonates or infants under 3kgs in weight.

Exemplar

A six-year-old child was admitted to the ICU with head injuries, following a pedestrian-versus-car accident. This child was intubated and ventilated, due to an obtunded neurological state. As the therapy for raised intracranial pressure is to maintain a normal CO₂ level (to prevent cerebral hyperaemia secondary to hypercarbia), the maintenance of adequate ventilation is of prime importance.

Being six, this child was intubated with an uncuffed ETT and was initially ventilated on the volume-limited mode (the usual mode used in this mixed-age ICU). However, the large air leak around this child's uncuffed ETT made adequate ventilation difficult. Nursing interventions to reduce an ETT air leak includes the use of head positioning, to form a pharyngeal soft tissue 'cuff'. This intervention however is contraindicated in head injuries, as keeping the head in a neutral position aids cerebral vascular drainage, which reduces cerebral oedema.

This child was changed to a pressure-controlled ventilation mode, with the pressure set at a level that ensured adequate ventilation, despite the persistence of the air leak. Ventilation of this child was no longer a 'problem', to the relief of the bedside nurses. However, nurses did express anxiety due to the lack of familiarity of this mode and of this ventilator. Entry taken from my personal journal.

This discussion shall reflect on how a change of practice (to pressure control and flow breath-triggering) will affect the processes of nursing education and skills-practice, to ensure best-practice care of the ventilated infant/child. For nursing care to optimise wellbeing, insight into the physical, emotional, spiritual and social aspects of every child is required (Durie, 1998). However, for the delivery of ICU nursing care to be holistic, insight into the scientific theories of mechanical ventilation is paramount. Thus ventilation best-practice must be included in the ICU nurse's assessments, planning, knowledge and practical skills, to ensure that safe, effective and holistic care is delivered to intubated infants and children in the ICU.

Is there an optimal ventilation mode for infants and children who are intubated with uncuffed ETT's?

To elicit the current best-practice nursing care of the intubated and ventilated paediatric patient, a search of recent literature was undertaken. Marraro (2003) discussed ventilator-related complications of pulmonary volutrauma - caused by rapid repetitive changes in lung **volume**, and barotrauma - trauma caused through rapid repetitive changes in lung **pressure**. In some diseases tidal volumes and peak pressures should be reduced to a minimum as "alveolar over-distension rather than peak inspiratory airway pressure is the primary determinant of lung injury (i.e. volutrauma rather than barotrauma)..." (Marraro, p.15).

The ventilatory tidal volume (breath size) is determined by controlling either the **volume** of gas delivered, or the inspiratory **pressure** of the gas delivered. *Volume controlled ventilation* terminates inspiration when a pre-set volume of gas has been delivered (Conner & Rosenthal-Dichter,

1997). This is the ventilation mode commonly used in my area of clinical practice, providing effective ventilation of adults or children intubated with cuffed endotracheal tubes (ETT's).

In addition to choosing a breath-size mode, a breath-triggering mode is chosen with a breath-trigger sensitivity level set. This breath-triggering mode (and sensitivity) enables the patient's spontaneous breaths to be synchronised with the ventilator-assisted breaths. The two commonly used modes of patient breath triggering are based upon the variable used to initiate a ventilator-assisted breath, and these are either a **pressure** change or an **airflow** change. Pressure breath-triggering enables the ventilator to respond with a synchronised ventilator breath, to the pressure changes generated by the patient's inspiratory respiratory drive. This pressure breath-triggering is the mode commonly used in my area of practice.

Tidal volume controlled ventilation may reduce the risk of volutrauma. However, infants and children under the age of eight years are commonly intubated with uncuffed ETTs. In practice, the air leak around this uncuffed endotracheal tube makes the set tidal volume of the volume-limited ventilation mode almost impossible to attain (Sage & Bingham, 1999). The presence of a significant ETT air leak may result in a child/infant receiving an inappropriately small tidal volume, increasing the risks of atelectasis, hypoventilation, hypercarbia and hypoxia (Ulhaq, Cheema & Ahluwalia, 2001).

Alternatively, if a pressure-limited mode is used, changes in the patient's lung mechanics can allow disproportionately large or disproportionately small tidal volumes to be delivered. For example, if lung mechanics improve and the set peak inspiratory pressure is not reduced, the resulting hyperinflation can "lead to hypocarbia with its recognised deleterious effects on cerebral blood flow" and volutrauma (Ulhaq, Cheema & Ahluwalia, 2001, p.1324).

In my experience, the use of a volume ventilation mode may prevent pulmonary hyperinflation. However, in the presence of a large ETT air leak, a volume ventilation mode may result in hypoventilation. In this situation, to ensure

adequate patient tidal volumes, a change to a pressure controlled ventilation mode may be beneficial. Thus, to achieve the best ventilatory outcome for an infant/child, a change of usual nursing ventilation practice in the ICU may be necessary.

The maintenance of optimal tidal and minute volumes in a patient with an uncuffed ETT, in either the pressure-limited or the volume-limited mode, requires skill and practice. Even if the pressure or volume ventilatory goal is attained, changes in the patient's lung resistance and lung compliance can alter tidal volumes and pressures significantly (Wensley, South, Slater & Yung, 1999). Nursing knowledge of ventilation modes will increase the understanding of patient-ventilator interactions and of subsequent nursing interventions, to enable the delivery of safe and effective ventilation for the intubated infant/child.

Is there an optimal breath triggering mode for infants and children who are intubated with uncuffed ETT's?

If the bedside nurse can optimise the patient-ventilator breath synchrony, the child's ventilation and comfort will be improved, with the potential benefits of reduced sedation requirements, length of intubation/ventilation and of ventilation-related complications (Cheifetz, 2003). Ventilator-patient breath dysynchrony may cause the infant/child to be agitated and appear to 'fight the ventilator', and the infant/child may subsequently have increased sedation requirements. This increased sedation will reduce the child's agitation but will also reduce the child's respiratory drive. However this reduced respiratory drive may make the child's efforts to breath-trigger increasingly ineffective, potentially increasing the patient-ventilator dysynchrony, delaying ventilator weaning and prolonging the duration of mechanical ventilation (Cheifetz).

Ventilator breaths that are delivered unsynchronised with the infant's respiratory effort result in patient-ventilator dysynchrony. An **inappropriately set inspiratory trigger** that does not allow the infant/child to trigger a ventilator breath, is the most common cause of ventilator dysynchrony (Cheifetz 2003). The current unit practice is the use of **pressure**

sensitivity (P_{SENS}) as the breath-triggering mode, which is typically set at 1.0 cm H₂O. Thus, when the patient's inspiratory 'pull' generates this amount of pressure change, the ventilator responds with a synchronised breath. As a small infant or a weak child will not be able to generate this 1.0 cm H₂O amount of 'pull' required to trigger a ventilator breath, he/she may need the P_{SENS} set at 0.5 cm H₂O. However, an air leak around the uncuffed ETT in the pressure-change breath-triggering mode may easily allow a 0.5 cm H₂O pressure change. This air-leak pressure change may signal the ventilator to deliver a breath, which will be delivered unsynchronised with the child's respiratory efforts. The air leak (not the child) auto-triggers these breaths, generating tidal volumes and patterns of breathing that may not be optimal (Burns, 2001).

In my practice, these unsynchronised ventilator breaths commonly autocycle in a double or triple breath pattern (breath stacking), in response to the drop in the airway pressure. This breath stacking is followed by a long compensatory pause, as the ventilator adjusts the number of delivered breaths/per/minute to comply with the operator-set breaths/per/minute. This adjustment appears as a period of 'ventilator apnoea', which may exacerbate the child's distress (such as agitation and desaturation). In addition, if the infant/child has not completely exhaled, this breath stacking has the potential for creating an inappropriately large tidal volume, resulting in a child/infant at risk of volutrauma and hypotension (from the increased intrathoracic pressure) (Cheifetz, 2003).

The unit's Puritan Bennett® 840 ventilator has a **flow sensitivity** (V_{SENS}) mode of infant/child breath triggering, which is an alternative to pressure sensitivity (P_{SENS}). This V_{SENS} mode uses ventilator sensed flow changes through an operator-set ventilator base flow. This base flow can be increased to a level that compensates for the size of an ETT air leak, thus reducing ventilator auto-triggering. This base flow can also be decreased to a level that can sense the breath-triggering efforts of small infants and weak children, thus restoring patient-ventilator breath synchrony through the prevention of ventilator auto-cycling. However, both the size of the air leak and

the child's respiratory tolerance of this air leak can vary, due to changes in the child's pulmonary, physical and emotional dynamics. Therefore, the level of the V_{SENS} base flow must be monitored by the bedside nurse, and adjusted (increased or decreased) to ensure synchronised breath triggering by the infant/child is attained/possible (Burns, 2001).

The use of the V_{SENS} breath-trigger is a change of practice in the unit, as is nurse-initiated ventilator changes, even if the latter is to ensure that the patient-ventilator synchronicity of the set SIMV mode is attained/possible. Therefore, to ensure the physical safety of the patient and the professional safety of the nurse, nursing education, nursing-skills practice, mentoring or preceptorship and paediatric ventilation guidelines need to be implemented in the unit.

Processes and outcomes, which may affect child-ventilation

This topic, 'improving ventilation thus nursing care of children with uncuffed endotracheal tubes', was chosen partly because of the level of anxiety around the paediatric-ventilation area of ICU practice. Another reason was to attempt to ascertain the optimal ventilation of paediatric patients through a literature search, as the intensivists in this area have differing opinions. In addition, I felt that staff required support and education on paediatric ventilation. In this section I shall explore and critique these areas of practice.

In a mixed child-adult ICU, the majority of the unit's admissions are adult. Therefore the experience of nursing ventilated paediatric patients is limited, and the anecdotal nursing feedback was of this creating anxiety. There is no formal research submitted around nursing anxiety of paediatric ventilation in mixed child-adult ICUs in New Zealand (NZ), thus I obtained anecdotal telephonic feedback from nurses in other South Island (NZ) ICUs. This feedback indicated that units using one type of ventilator for both paediatric and adult patients had lessened nursing anxiety, due to the familiarity of the ventilator. If those units were closely associated with an Intensive Care teaching course, the nursing anxiety levels were described as lower still. In my area of clinical practice there is no

close association with an ICU teaching course, and the unit uses three ventilators for ventilating infants and young children. Each of these ventilators is of a different model, with different purposes, limitations and modes available, and all three are different from the ventilators used for adult ventilation. Thus both the infrequent use of these three different paediatric ventilators and the infrequent experience using paediatric ventilatory modes exacerbated nursing anxiety when a child/infant was admitted.

The telephone search also found that pressure control is the common mode of ventilating infants and young children. However recent research studies, revealed through a search of the current literature (Ulhaq, Cheema & Ahluwalia, 2001), suggest that volutrauma may be more damaging to lung tissue than barotrauma, and volume controlled ventilation could reduce volutrauma. However these studies used a volume controlled mode not available to the unit, which delivers the breath at the lowest possible pressure, through ventilator-software ordered adjustments (Ulhaq, Cheema & Ahluwalia). As the literature highlights, the current unit practice of volume controlled paediatric ventilation may reduce the dangers of volutrauma. However, volume-limiting ventilation and pressure-controlled ventilation have very different benefits and complications, and this requires the application of knowledge to practice.

Paediatric ventilation is an area where there is a large "zone of proximal development" - a large distance between the level of independent problem solving and the level of problem solving attainable with the assistance of guidance or reflective practice (Vygotsky, as cited in McMillan, 1991). Through my position as Paediatric Link Nurse to the ICU, to narrow this zone I am expanding nursing knowledge of paediatric ventilation modes and practical skills, using a paediatric ventilator and a fake lung. Through small group sessions, we initially reflected on some past ventilatory problems, incorporating troubleshooting, outcomes and suggested changes.

These small group teachings are continuing, and include hands on 'play' with ventilator settings and modes, which have appeared beneficial to those participating. An ICU study day is planned, with ventilatory

skills stations, as is a paediatric ventilatory resource manual.

As the size of the ETT air leak may vary with the condition or position changes, the bedside nurse will be required to frequently re-assess and readjust this V_{SENS} base flow parameter to enable the infant/child to trigger a breath, while minimising ventilator auto-cycling and auto-triggering (Burns, 2001). This nursing parameter adjustment is a change in current practice, as current practice requires a doctor's 'order' to alter ventilatory settings. In consultation with the medical and nursing teams, I plan to introduce education and practice of breath flow-triggering into nursing ventilatory practice. If ventilator dysynchrony is minimised through the use of breath flow-triggering, safer ventilatory practice will be delivered to infants/children in the unit.

The development of reflective process has the perceived difficulties of needing a collaborative environment and time - 50 hours in one study (Moon, 1999) - to improve the care of a small proportion of the unit's patient population. For Habermas, reflection is the process of becoming aware of one's context, and of the moral, social and political effects and constraints on previously taken-for-granted practices (Habermas, cited in Glaze, 1998). For this ICU, a medical-specialist lack of consensus concerning the optimal mode of paediatric ventilation presents a possibly unsympathetic environment (Johns, cited in Greenwood, 1998) to a nurse led change of ventilatory practice. To change the culture of the unit (to resolve the differences between actual and desirable ventilatory practices) may be difficult, as this involves changes to norms, activities and policies (Greenwood). The optimisation of paediatric ventilation may require that nurses assert themselves to effect a change of current practice. However, the optimisation of paediatric ventilation could result in a change of practice that is empowering for nurses, is ethically, morally and politically appropriate, and improves the health care of the patient.

Conclusion

Until clinical trials define specifically the most suitable ventilatory mode(s), infants/children may be best ventilated through a combination of modes, in order to aid the resolution of lung pathology, and to

avoid the barotrauma and volutrauma side effects of ventilation (Marraro, 2003). In my area of clinical practice there is potential for improvement of the current ventilation of infants and small children, through the utilisation of breath flow-triggering mode and pressure-controlled ventilation mode. However changes in nursing ventilation practice will require nursing education, nursing-skills practice opportunities, mentoring or preceptorship and nursing ventilation guidelines to be implemented in the unit.

In theory, the choice of ventilation trigger and mode should be made on sound scientific knowledge, and assessment of effective ventilation. However infants and children have different physiological and developmental needs and responses, thus they may not respond in a constant or predictable way, and may not respond as adult patients in the same situation may (Advanced Paediatric Life Support, 1999). Reflective practice is therefore essential, "...as an active, dynamic, action-based and ethical set of skills, placed in real time and dealing with real, complex and difficult situations" (Moon, 1999, p.58). Reflective practice can guide nurses in the evaluation of the effectiveness and appropriateness of the ventilatory goals and care of each patient. This may lead to a more holistic, individualised and flexible plan of care, and enable the integration of theory and practice (Greenwood, 1998).

Reflective and change processes in nursing require a collaborative environment as "... people can motivate, energise, inspire, challenge, support and inform others" (Johns, 1998, p. 19). Thus a change in ventilatory nursing practice will require the development of flexible guidelines that value and allow the contribution of experience and reflective praxis. As learning from experience contributes to practical knowledge, the nurse will be empowered to make sound judgements from a base of empirical as well as intuitive knowledge.

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Come & Join PICU-Nurse-International

An Internet discussion group of the
International Pediatric Intensive Care
Nursing Network.

For more information, visit our website:
[http://groups.yahoo.com/group/PICU-Nurse-
International](http://groups.yahoo.com/group/PICU-Nurse-International)
or contact Franco Carnevale (moderator) at
frank.carnevale@muhc.mcgill.ca

Spotlight on PICU

This regular column will provide readers with an opportunity to learn about fellow PICUs in various parts of the world.

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Clinical Trials Co-ordinator, Department of Neonatology, Royal Children's Hospital & Murdoch
Childrens Research Institute, Parkville, Victoria, Australia*

Starship Children's Hospital, Auckland, New Zealand

*Elaine McCall, MN (Hons), BAN, RGN (UK), RSCN (UK), PIC Nursing Cert.
Clinical Nurse Educator, PICU, Starship Children's Hospital*

Starship Children's Hospital provides secondary, tertiary and quaternary services to children within New Zealand and the Pacific Basin and is situated in Auckland at the top of New Zealand's North Island.

New Zealand's only specialist paediatric intensive care unit opened in December 1991, following a Department of Health (1990) and Auckland Area Health Board (AAHB, 1990) report. There are currently 9 beds within the unit; 2 four-bedded bays and 1 single room, which is often pushed to maximum capacity during the southern hemisphere winter months of July, August and September. A Charge Nurse Manager and Clinical Nurse Educator lead the PICU nursing team.

Children who require cardiac surgery (approximately 600/year) are currently managed in the adult cardiovascular ICU. Many initiatives have been undertaken to enhance the care of these children; for instance, employment of paediatric nurses are employed to care only for children, and the paediatric intensivists split their time between the PICU and the adult cardiothoracic ICU to manage the children post operatively. An ECMO service is run in this unit and will transfer to the new PICU when the two paediatric intensive care services amalgamate in December of 2003.

The number of children currently admitted to the PICU has evened out at around 600 per year. Approximately 85% of the admissions are acute presentations. The average length of stay for children who

require ventilation is 4.41 days, whereas children who are admitted to the unit and don't require ventilation stay for less than 24 hours.

Children cared for in PICU range from newborn to 15 years of age. However, about half of all patients are 1 year of age or less, and nearly 75% are under six years of age. Males predominate over females and over half of the patients are Maori or Pacific peoples.

Respiratory disease, head injuries and meningococcal disease are the most common diagnostic reasons for admission to PICU. Advanced therapies managed by PICU nursing staff include continuous renal replacement and high frequency ventilation.

Family-centred care is the dominant philosophy within the unit and nursing staff care for critically ill children in partnership with the child's parents. Parents' presence at the bedside of their critically ill child is accepted as the norm, and parents are not asked to leave for any procedures ranging from insertion of intravenous lines to resuscitation (Anderson, McCall, Leversha, & Webster, 1994).

Over half of all admissions to the unit are via the PICU retrieval team, which consists of a senior nurse and PICU registrar. There are about 300 retrievals a year using either road ambulance, fixed wing or helicopter. The age range of patients and diagnosis reflect that of the unit admissions. Road transports take a mean time of just under 2 hours whereas fixed

wing and helicopter transports are generally longer with a mean time of just under 7 hours.

After years of providing care to critically ill children in two less than ideal physical environments, nursing staff are looking forward to the integration of the children's general and cardiac intensive care services. A new unit comprising 16 beds (3 four-bedded rooms and 4 single rooms) has been built for this purpose and will open in December 2003. The increase in size of the unit has resulted in a new senior nursing staff structure, including Nurse Manager, Nurse Educator, Nurse Consultant and Clinical Charge Nurses as well as an increase in registered nurse numbers. Nurses are the foundation of the PICU

service and we welcome any enquiries from PICU nurses who wish to travel and discover New Zealand.

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Contents of Previous Issue

Pediatric Intensive Care Nursing

Journal of the International Pediatric Intensive Care Nursing Network

Volume 4, Number 1, June 2003

If you have missed this past issue, as well as any other issue, you can access them at our website: <http://groups.yahoo.com/group/PICU-Nurse-International> (just click on 'Files' after you have signed in on Yahoo – top right corner)

Editorial: A letter from The Front Line

Pang Nguk Lan, Singapore

Evidence-Based Nursing in Pediatric Critical Care

Jos M. Latour, The Netherlands

Development of a Sedation Scale for the mechanically ventilated muscle relaxed pediatric critical care patient

Ivy S. Razmus, Kathy A. Clarke, & Karen Z. Naufel, United States

A Virtual PICU Orientation Program:

A Solution to Scarce Education Resources that Exceeds Expectations!

Kate Mahon, Canada

In Their Own Words:

Paediatric Intensive Care Nurses' Experiences of Withdrawal of Treatment

Colin Way, United Kingdom

Questions & Answers from PICU-Nurse-International

Editor of column: Karin Storm, RN, MSc, Educational Consultant, The School of Nursing and Radiology, Herlev, Denmark

This column features particular dialogues that unfolded on the PICU-Nurse-International egroup that were particularly pertinent, stimulating, generated significant interest, and provided particularly informative replies.

Flushing arterial lines

Question

I know we have discussed this subject before but I would like to hear from you all about the flushing of arterial lines. What is your standing polices on flushing arterial lines. Do you manually flush with a syringe and saline or do you flush from the transducer and do you know of any research that says which are the best? We have a physician who is claiming that the flushing from the transducer is causing the increase in problems that we have with our arterial lines.

Oklahoma City, United States

Answers

1. We manually flush with syringe and heparinized saline 1:1 concentration. We keep track of fluid to the 0.1cc if possible. Can't tell what is coming from the transducer.

Marshfield, United States

2. At Cook Children's Medical Center in the PICU we never encouraged flushing arterial lines from the pigtail. You can't be sure of how much fluid is being used as well as not knowing the amount of pressure. Some of these patients are 1.5 kg and we feel that the pressure may cause damage to these small arteries. On the occasion that someone from another department flushes using the pigtail, you see blanching around the insertion site. This usually is transient, but we don't take any changes. Hope this info is what you were looking for. I don't know of any specifik research on the subject.

Forth Worth, United States

3. For patients less than 10kg, our arterial line fluids are on a pump at 1cc/hr. We flush manually by means of a stopcock placed on the transducer. Patients greater than 10kg are placed on pressure bags, however they are flushed manually by the same means.

All a-lines include heparin unless it is a neuro care, ECMO, or otherwise ordered. I have noted that when receiving patients from the OR, they NEVER include heparin. We change those bags over once on the unit.

Durham, United States

4. We flush our arterial lines using a continuous flush system connected into the transducer with a 3 way tap. The solution used is heparinised saline 5µ/ml in .9 saline running at 1 ml/hr. In babies weighing less than 2.5 kgs, we use a hep/saline solution of 1µ/ml. We don't routinely manually flush, unless there is a problem with the line.

Auckland, New Zealand

Analgesia when removing chest drain

Question

What analgesia do children receive when chest drains are being removed (not from ventilated children)?

London, England

Answers

1. Our patients receive fentanyl prior to removal of CT

Dallas, United States

2. We generally give the kids a bolus of whatever analgesic infusion they are on (morphine or fentanyl) prior to removal. Adult units infuse a weak lignocaine solution for removal of pleural drains and we have tried this once or twice – It seems to work well.

Sydney, Australia

3. We use propofol for all thoracic and cardiac drains. I did a controlled trial a couple of years ago comparing Propofol to Midazolam. Propofol was the best.

Adelaide, Australia

4. We give a bolus of Morphine infusion, plus a dose of Midazolam to older kids. Even if they're not completely knocked out, they tend not to remember anything. We sometimes prefer Propofol which I prefer, but this tends to require the presence of an anaesthetic registrar, and they don't always want to be bothered.

Auckland, New Zealand

Change of intermittent IV infusion “bags”

Question

I'm wondering how often you change your intermittent IV infusion “bags”. These are infusions that only delivered q6h, or q8h and the patients are wanting to be freed of the tubing for a while. In Canada the standard is q24h although this is not adhered to.

How often are non-TPN tubings changed in your hospital? (peripheral not central).

We have just converted to a needle-free tubing system, “Clave” and are using a bag spike with a back valve to be our Normal Saline flusher bag, as we can now clean port, draw back saline , and flush IV sites, mix inhalations etc. cutting out the little N/S vials and needles. But I would like to hang the unit for 72hrs like our tubings are currently.

Any advice supporting longer bag life would be appreciated.

Owen Sound, Ontario Canada

Answers

1. We change intermittent IV infusions tubing every 24 hours. The bag/syringe is new with each infusion. As far as the Non-TPN tubings we are changing to 96 hours per the CDC guideline changes. This includes Central and peripheral tubing. TPN tubing is changed every 72 hours and Lipid tubing is changed every 24 hours. I believe this is all according to the Centers for Disease Control guidelines.

Marshfield, United States

Removal of peritoneal drains

Question

Do any of your nurses remove peritoneal drains?

London, England

Answers

1. Our nurses do not remove peritoneal drains
Dallas, United States

2. All drains and lines (including peritoneal) are removed by nurses in our unit.
Sydney, Australia

Change of mechanical ventilation circuits**Question**

Can you provide me with the mechanical ventilation circuits change in your center?
Montreal, Canada

Answers

1. We change our ventilation circuits 7 days for systems with inspiratory/expiratory heating without water trap and 48 hours for systems with water trap in expiratory part
Mainz, Germany

2. We seem only to change them when the patient leaves. Could be one reason why we're struggling with high incidence of VAP but this is only my opinion
Edmonton, Canada

3. We change circuits weekly in the PICU. In the adults units they change them monthly
Tulsa, United States

4. We change them all weekly. Our policy changed a few years ago after looking at the relevant research. There is a lot of it looking at circuit changes and VAP incidence.
Sydney, Australia

Yearly performance appraisal**Questions**

We have a problem getting people to have a yearly performance appraisal. It is a hospital mandate that this occurs.

Who is responsible for this task in your units? (I've always thought it was the individuals responsibility, however it appears I'm incorrect).

Any creative solutions out there, I'd appreciate examples if you can share.

Adelaide, South Australia

Answers

1. I have worked in public hospitals and private companies. It is interesting to note that the best place I received Yearly Performance Appraisals was in private business and my boss was an engineer.

When I worked in NICU, we had annual appraisals. The head nurse was very diligent in that the team leaders had to have this done. The nurse would do a self appraisal and then the team leader would do some. Nurses were encouraged to have a five year plan or short or long term goals to encourage career decisions and education.

The bottom line was that the head nurse (nurse leader) was very good at insisting in these being done. In private business appraisals revolved promotion. In the job I have had the last five years I have not had one appraisal at all.

Halifax, Nova Scotia

2. Great question – we have problems here having them done too – at the staff nurse level; The union objects to nurses doing a self appraisal or a peer appraisal because they don't want anyone identifying problems with themselves that could affect their job – pretty archaic and hierarchical, in my view.

Among management it has not been a problem because we are fine with doing our own and then having our supervisor comment and be involved in goals – we do them every year or at least 2 years.

I agree that it comes from the leader to be diligent in doing and expecting these and helps to enhance their relationship with nurses.

Our form is derived from the standards of our provincial association which is good because we have to do self-appraisals for registration anyway and could be audited at any time.

Vancouver, Canada

Information For Authors

Pediatric Intensive Care Nursing welcomes paper submissions for upcoming issues of this Journal. Papers may focus on any clinical or professional topic relevant to nursing the critically ill child and pertinent to an international nursing readership. Submissions should be 2-4 double-spaced pages in length.

Send your proposed papers directly to Franco Carnevale (Editor):
frank.carnevale@muhc.mcgill.ca

What are your comments?

The Editorial Board would appreciate your comments on this Journal. This can include any thoughts that you have regarding the structure as well as content. We would particularly appreciate your suggestions on topics or issues that you would like to read about in future editions.

Forward your ideas to Franco Carnevale (Editor) :
frank.carnevale@muhc.mcgill.ca

**Report on The 4th World Congress on Pediatric Intensive Care
June 8-12, 2003
Boston, Massachusetts**

*Patricia A. Moloney-Harmon, RN, MS, CCNS, CCRN, FAAN
Clinical Nurse Specialist, The Children's Hospital at Sinai, Baltimore, Maryland, USA*

The 4th World Congress on Pediatric Intensive Care was held June 8-12, 2003 in Boston, Massachusetts, USA. The Congress brought together pediatric critical care practitioners from around the globe to discuss contemporary issues in caring for critically ill infants and children. Dr. Jerry Zimmerman and Dr. Martha Curley developed the integrated program with input from international advisors. It was a program that truly offered something for everyone. The delegates that attended represented sixty-eight countries giving it a true global perspective.

Pre-congress scientific sessions included workshops on cardiac ECMO, state of the art pediatric cardiovascular ICU nursing and evidence-based pediatric critical care practice. The actual congress officially opened Sunday evening with a spectacular opening ceremony that included Irish dancers and gave the delegates a glimpse of what was to come. Keynote addresses were delivered by some of the founders of pediatric critical care and included "The State of the World's Children"; Tomorrow's Therapies: Genomics, Proteinomics, and Stem Cell Transplantation – Elements of New Age Medicine"; and "Vision for a New Healthcare System".

Each of these excellent presentations gave the delegates much to think about in terms of how far we have come yet how far we still need to go. Each day ended with a historical lecture, which included "History of Pediatric Critical Care: Back to the Future-Mechanical Ventilation; Pediatric Critical Care Nursing; and Cardiac Surgery." The program tracklines included Cardiovascular Sciences; Pulmonary Sciences; Neurosciences; Sepsis, Shock, and Organ Failure; Therapeutic Milieu; Neonatology; Managing Pain and Discomfort; Quality Management and Outcome Assessment; Transplant, Oncology, Immunology; Ethics; Hepatic, Renal and Nutrition; Infectious Disease; and Transport, Resuscitation, and Disaster

Preparedness. Within each trackline there were plenary sessions, symposia, debates, advances in nursing science and roundtables.

All of the sessions provided state of the art information as well as opportunities for interaction between the faculty and delegates. In addition to these sessions, there were meet the expert session which provided practical information by selected international experts about "how I do..." There were also free paper presentations and poster presentations (within each trackline). The poster presentations had one to two faculty that facilitated discussion among those viewing the posters. All of the sessions included both nursing and physician faculty, which reflected the true multidisciplinary nature of pediatric critical care practice.

The social program provided ample opportunity for delegates to interact on an informal basis. One highlight of the social program was the nursing reception, which was hosted by the Department of Nursing at the Boston Children's Hospital. This reception brought the nursing delegates together to greet old friends and make new ones. The friendships that were made and renewed at this Congress will certainly carry through the next few years until we meet again at the 5th World Congress.

I would like to thank Martha and Jerry and all of those involved in planning the 4th World congress for the excellent job that they did in bring us all together. In these difficult times it is good to know that we can still come together from all over the globe to discuss how to provide the best possible care to our most vulnerable patients – critically ill infants and children.

For further information about the 3rd World Congress, see: Highlights of the Fourth World Congress on Pediatric Intensive Care by Martha Curley and Jerry Zimmerman in Pediatric Critical Care Medicine, 4(4), 2003, pp 409-411

WFPICCS Nursing General Assembly
June 11, 2003, Boston, United States

Minutes

Nomination and election of new nursing members on WFPICCS Board

At the World Congress on Pediatric Intensive Care held in Boston (June 8-12, 2003) the World Federation of Pediatric Intensive and Critical Care Societies (WFPICCS) Nursing General Assembly was held on June 11th. At this meeting, the outgoing nursing members of the Board of the - Wil de Groot-Bolluijt (Netherlands), Patricia Moloney-Harmon (United States), and Franco Carnevale (Canada) presented the 3 new nursing WFPICCS Board members for ratification by the Nursing Assembly.

The 3 new nursing members on the WFPICCS Board are:

Bev Copnell (Australia)
Jos Latour (Netherlands)
Maureen Madden (United States)

These 3 were elected by the regional representatives that were present at the Boston Congress of the newly formed international body of nursing representatives nominated from each region of the world (along with the outgoing 3 nursing Board members). Nominations for these regional representatives were recruited through: (a) the PICU-Nurse-International egroup of the International Pediatric Intensive Care Nursing Network (IPICNN) and (b) calls to presidents of regional pediatric intensive care nursing societies where they existed.

This international group presently consists of:

Asia: Pang Nguk Lan (Singapore); one vacant position
Africa: Libbie Janeke (South Africa); one vacant position
Europe: Jos Latour (Netherlands), Carol Williams (UK)
Latin America: Mavilde da L.G. Pedreira (Brazil - appointed after the elections); one vacant position
North America: Maureen Madden (United States); Rosella Jefferson/Judy Rashotte (both sharing one position - Canada)
Oceania: Bev Copnell (Australia); Elaine McCall (New Zealand)

From the three newly elected Nursing Board Members - **Jos Latour was elected** as Vice-President (Nursing) to serve on the Executive Committee of the WFPICCS Board.

We wish to express our congratulations and welcome to our new WFPICCS nursing Board members and to our new international nursing representatives.

Wil de Groot-Bolluijt, Patricia Moloney-Harmon, and Franco Carnevale expressed that it has been an honor to serve on the Board as representatives for nursing and are so pleased to pass on their positions to such capable nursing leaders!

Upon completion of discussion of WFPICCS business, the agenda of the remainder of the meeting was devoted to updates from International Pediatric Intensive Care Nursing Network (summarized below).

Update from *Pediatric Intensive Care Nursing* Editorial Board

The International Editorial Board of the IPICNN (International Pediatric Intensive Care Nursing Network) Newsletter *Pediatric Intensive Care Nursing* announced that in light of (a) the steady growth in the number and quality of papers being submitted; (b) the publication's indexing in CINAHL; and (c) the absence of any pediatric intensive care nursing journal: the Newsletter will from now on be regarded as a Journal. This will continue to be the official publication of the International Pediatric Intensive Care Nursing Network.

The Editorial Board has developed a plan to create permanent features (such as Spotlight on a Specific PICU, Questions & Answers from PICU-Nurse-International, Discussion of Websites, Review of Current Research, etc.). The Board would also like to increase the frequency of publication from 2 times a year to 3-4 times a year. However, this will require an increased number of paper submissions. Presenters at the Boston World Congress or regional conferences are encouraged to submit their work to *Pediatric Intensive Care Nursing* - OUR Journal.

Update from The International Pediatric Intensive Care Nursing Network (IPICNN)

The historical evolution of IPICNN was described (created in 1996 in Rotterdam at the 2nd World Congress), leading to its creation of the PICU-Nurse-International egroup, the Journal *Pediatric Intensive Care Nursing*, and its contributions to the development of past nursing programs for the World Congress of Pediatric Intensive Care. This Network is currently highly active in all regions of the world.

A motion was put forth to convert this Network into an Association. This would enable this body to function as a political entity (that can take positions on important issues, promote significant developments) in addition to its current work in promoting professional dialogue. It was also proposed that a semi-formal structure be adopted (which would minimize the requirement for formal by-laws, etc.). It was decided efforts be made to ensure inclusion of 'disadvantaged' nursing groups around the world that may not have access to computers. Finally, it was proposed that a no-fee membership model be considered, to also facilitate inclusion of all PICU nurses (this would require that the Association functions in a manner that is not funding-dependent).

This motion was passed by consensus support of everyone present and the IPICNN was converted into The International Association of Pediatric Intensive Care Nurses (provisional name). PICU-Nurse-International will be the official egroup of the Association and *Pediatric Intensive Care Nursing* will be our official Journal.

A provisional governance plan was adopted. The international nursing representatives (listed above) will serve as an interim governing body mandated to develop recommendations for a permanent governing structure. These recommendations will be submitted for a vote to members of PICU-Nurse-International (as a provisional electorate of the Association), using the polling feature of the egroup.

Congratulations were expressed to celebrate this important creation of a vitally needed nursing association devoted to the promotion of PICU nursing around the world.

Submitted by,
Wil de Groot-Bolluijt
Patricia Moloney-Harmon
Franco Carnevale



***Pediatric Intensive Care Nursing
International Editorial Advisory Board Members
present at PIC2003 in Boston***
From left to right, back row: Elaine McCall, Beverley
Copnell, Franco Carnevale, Patricia Moloney-
Harmon, Karin Storm;
front row: Jos Latour, Ilona Weidner



WFPICCS Nursing Transitions
From left to right: Jos Latour, Maureen Madden, Beverley Copnell, Patricia Moloney-
Harmon, Wil de Groot-Bolluijt, Franco Carnevale

Upcoming Conferences

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Tassos D.Hatzis

President of the Local Organizing Committee

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Searching for a Logo: Calling for Imaginative Ideas

The International Editorial Advisory Board is searching for a Logo for this Journal. We are now 3 years old and have established an identity of our own. We would like to complete this by creating our own distinctive logo.

We therefore call on all our readers, and friends of our readers, to submit any original designs that you wish to propose - set your imaginations free!

The Board will select one such logo among the proposals that we receive. Please send your proposal to the Editor (Franco Carnevale): frank.carnevale@muhc.mcgill.ca

Pediatric Intensive Care Links

Come visit many interesting website links to various international nursing societies as well other important resources:

Go to our website: <http://groups.yahoo.com/group/PICU-Nurse-International> and click on 'Bookmarks'