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Guest Editorial

6th WFPICCS World Congress on Pediatric Critical Care

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The 6th WFPICCS World Congress on Pediatric Critical Care is rapidly approaching, and Sydney awaits you all. Our Congress theme is “One world sharing knowledge” and we look forward to welcoming colleagues from around the globe to share in the exchange of knowledge, ideas, enthusiasm that will assist in building the next decade of pediatric critical care practice around the world.

Our Congress venue is the Sydney Convention and Exhibition Centre, located right on the shores of Darling Harbour, with magnificent views of the city and only a short walk to several attractions. The Convention Centre is in handy walking distance of the CBD and hotels.

In keeping with previous Congresses, we will have a selection of optional Sunday Precongress workshops, seminars and courses for delegates to consider. These are offered in addition to the Congress program, with some being organised by our industry partners. Of particular interest to nurses is the Precongress Workshop on Advanced Practice Nursing in Pediatric Critical Care. This precongress session will be held off site at the Sydney Children’s Hospital, Randwick and will provide a full day of professional networking and education for anyone interested in this topic. This open forum will be structured to have open dialogue amongst participants focusing on topics pertinent to the Advanced Practice Nurse, including the state of pediatric critical care nursing science. All precongress sessions will conclude in time for the Congress Official Opening at 5pm, followed at 6pm by the Congress Welcome Party on Sunday evening.

Our Organising Committee and International Scientific Committee have worked hard for many months now to deliver for your educational and professional enjoyment an exciting and innovative congress program. The International Scientific Committee includes for the first time an Allied Health Subcommittee, which we hope will encourage our Allied Health colleagues to submit abstracts and to attend the Congress.

For nurses, there is a special forum scheduled on Monday evening at the conclusion of the program. All doctorally prepared pediatric and neonatal critical care nurse and current doctoral students are invited to attend this forum, which will commence at the conclusion of the program. This forum is an opportunity to engage with other nurse researchers. Ideally those attending this forum would present a 5 minute summary on their current work. At the conclusion, we plan to have dinner at a nearby restaurant to continue the discussions informally into the evening.

On Monday morning the program commences at the civilised time of 10.30, and we start out our congress with a nursing debate followed by a medical debate. After lunch, we have three streams looking at some key issues we all face, including end of life care, workforce planning and training, innovations in training such as simulation and virtual education and the long term impact of pediatric critical care on families.

Over the following days we broaden out into six to seven streams over the mornings, with free paper sessions scheduled daily from Tuesday to Thursday between morning tea and lunch. After lunch on these days we have Dogmas, Debates and Dilemmas, which consists of debates and expert panel sessions looking at the diversity of critical care practice, research and governance. The final sessions on Tuesday and Wednesday include plenary sessions, panel discussions and “How To” sessions on continuous renal replacement therapies, global nursing and medical workforce challenges, teamwork and communication, making difficult decisions, Medical Emergency Teams, outreach programs, technology and the virtual PICU.

The final afternoon sessions bring to a climax the theme of a the Congress when we review 40 years of intensive care and ask – what have we learnt? Finally the program concludes with the closing keynote address as we try to visualise the future challenges we will face in the PICU of 2020.
No Congress would be complete without a party – and the Organising Committee has a great night planned out on Sydney’s world famous harbour. Pictures really can only show so much, and when our delegates head out onto the harbour for a night of great food, good wine, fabulous company and some music for dancing you’ll be very glad you joined us. Sydney Harbour sparkles in March; the balmy breeze over the water teamed with our harbour icons – our famous bridge and opera house – provides a magnificent backdrop for an unforgettable night of fun not to be missed.

In keeping with the WFPICCS focus on creating a world-wide dialogue, conference registration fees have been kept as low as possible to maximise attendance. Our Organising Committee has also considered ways to ensure our colleagues from countries with developing economies are able to attend, and once again WFPICCS have generously offered grants for health professionals who submit abstracts from developing countries, so please apply if you are from an eligible country. A list of countries is provided on the Congress website. We are continuing to work on seeking additional funding to maximise these attendees, and of course we have a special reduced registration rate for our colleagues from developing nations as well. Please check the website for the list from the World Bank of eligible countries. By registering before December 1, the early bird registration is in effect for everyone, so please ensure you register in time to meet the deadline – it won’t be extended.

Our Congress website is updated regularly and contains practical information about visas, weather, electricity voltages, currency – important advice for all travellers to Sydney. Information about the program, speakers, precongress workshops and the social program are all available on the website – www.pcc2011.com

So it only remains to advise who our Invited Nursing Faculty are at the 6th World Congress. We are delighted to have speakers from all regions of the world, and of course we hope to have many more abstract speakers to enjoy – and we have received almost 1000 abstract submissions.

Confirmed nursing faculty as of October 5 are:

Dr Beverley Copnell
Dr Samantha Keogh
Dr Sharon Kinney
Ms Debbie Long
Ms Sophie Linton
Associate Professor Mavilde Pedreira
Ms Myriam Pettengill
Dr Janet Rennick
Ms Nguk Lan Pang
Mr Vednidhi Sharma Mudhoo
Ms Elaine McCall
Ms Isabelita Rogado
Associate Professor Minette Coetzee
Professor Anne-Sylvie Ramelet
Mr Jos Latour
Dr Monique van Dijk
Professor Jane Noyes
Dr Lyvonne Tume
Associate Professor Cynda, Rushton
Ms Lauren Sorce
Ms Susanne Matthews
Mr Frank Molloy
Ms Maureen Madden
Ms Nancy Braudis
Associate Professor Martha Curley
Ms Carolina Astoul
Ms Yuko Shiraishi
Ms Jane Booth
Mr Andrew Darbyshire
Dr Patricia Hickey
Dr Fiona Lynch
Ms Lisa Milonovich
Ms Tina Kendrick

The Australian College of Critical Care Nurses (ACCCN) and the Australian and New Zealand Intensive Care Society (ANZICS) have a long and proud 35 year history of joint national scientific meetings on intensive care. It has always been this way for our national meeting, and we are proud to host an international meeting of this calibre. We hope you can join us in Sydney as we host the WFPICCS 6th World Congress on Pediatric Critical Care in March 2011.
**Abstract**

The nursing management of children requiring long term intensive care has been an ongoing challenge for the staff in the Paediatric Intensive Care Unit (PICU) at Starship Children's Hospital, New Zealand. In the past five years, there have been six children admitted to our unit who have had stays ranging from 97 to 380 days.

The problem of managing an alert 6 year old child who needed to spend months in PICU was not one we initially responded well to. Miss J required long term ventilatory support due to Guillain Barré Syndrome with a Miller Fisher variant. Her family was Punjabi, had strong cultural and religious beliefs, and limited English. For children whose PICU stay is longer than seven days, we have had weekly multidisciplinary meetings, facilitated by the nursing shift coordinator and the duty intensivist. We have encouraged nursing staff to allocate themselves as primary nurses. Despite these measures, feedback from staff and her family suggested that Miss J was not getting the consistent care and support that she needed.

By formally establishing a primary nursing team with a senior nurse coordinator, naming a lead clinical charge nurse, having multidisciplinary team meetings facilitated consistently by the same senior nurse, and vastly improving communication between all parties, we achieved the goal of transitioning Miss J to the ward with her and her family intact. We hope that the experience we have had with Miss J and her family will result in a sturdier approach to primary nursing in PICU in the future.

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**Management of a Long Stay Child in PICU:**
**Getting It Right Eventually!**

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**Introduction**

The management of children requiring a long-term intensive care stay has been an ongoing challenge for the staff in the Paediatric Intensive Care Unit (PICU) at Starship Children’s Health (SCH), Auckland, NZ. The average length of stay in PICU is 3-4 days (Segedin L, 2009, SCH PICU Annual Report, unpublished). However, in the past five years, we have had an increase in the number of patients who stay beyond this time (Fig 1). Notably, there have been 44 children admitted to our unit who have had stays greater than 30 days, with six children staying between 97 and 380 days. Three of these six children were inpatients in 2009, which may suggest we will see more long stay patients in the future. Length of stay in the PICU is a reflection of patient severity of illness and health status, as well as PICU quality and performance (1).

(Segedin L, 2009, SCH PICU Annual Report, unpublished)

**Case Study: Miss J**

Miss J, a six year old Punjabi Indian girl, was admitted to the PICU in May 2009 for aspiration pneumonia and respiratory failure secondary to Miller Fisher variant of Guillain Barré Syndrome. Miss J became progressively weaker until blinking was her only voluntary movement. She had numerous improvements and relapses. However, she remained ventilator dependent and required an Intensive Care stay of 312 days.

**Family dynamics**

Miss J’s family consisted of her parents, a five year old sister, and grandparents who lived with the family. Although Miss J’s father had adequate English to communicate with PICU staff, her mother and grandparents, who were Miss J’s main caregivers, had very limited English.

**Management of a long stay patient in PICU**

At the time of Miss J’s admission, the usual practice was that once a child had been in PICU for 7 days, nursing staff could put their names forward to be a primary nurse. Primary nursing in the PICU setting refers to a team of nurses responsible for the implementation and administration of patient focused care where emphasis is placed on consistency and continuity of quality care (Whelan LC, 2010, Starship PICU primary nursing proposal, unpublished).

In spite of nurses putting their names forward, the named primary nurses were not consistently allocated to care for Miss J and there was poor communication between the primary nurses and the multidisciplinary team.

Another strategy used in PICU with longer term children, is weekly multidisciplinary team meetings (MDT), facilitated by the nurse coordinating for the shift, and the consultant intensivist on duty. However, at this time, the MDT’s were generally poorly attended and lacked continuity of care planning due to poor communication amongst the multidisciplinary group. There was no particular consistency of care, there was a lack of leadership and there was no formal communication between multidisciplinary team members and the senior team. The quality of communication between healthcare providers has been shown to influence patient care decisions (2).

After several months in PICU, it became apparent to her family and the nursing staff caring for Miss J that this model of care was not working for Miss J or her family.

**Barriers to the care of a long stay patient**

A number of limitations to Miss J’s model of care were identified. Discrepancies between the clinical picture and the information provided at MDT meant that decisions made were not always workable. There was also a lack of follow through of these decisions, partly due to inconsistent allocation of primary nurses and a lack of leadership in the primary team. Different perceptions of Miss J’s prognosis within the healthcare team impacted on how staff perceived her healthcare requirements. This resulted in inconsistent messages being communicated to Miss J’s family, and because they were not involved in the decision making process, the family felt disempowered. Establishing relationships with families in critical care is an essential part of high quality care (3).

**Can we fix it? Yes we did!**

Over the following weeks in an effort to address these limitations, we focussed on three strategies. First was the establishment of an effective primary nursing team with a senior nurse coordinator and a named lead Clinical Charge Nurse. Second, allocation of a primary nurse each day shift to promote timely rehabilitation, and especially on MDT day to provide consistent progress reports. Third, a particularly successful initiative was the implementation of nursing staff presenting Miss J at the morning clinical handover.

At the same time, changes to the MDT included using the same senior nurse each week to facilitate the MDT meeting, and encouraging active participation from the physiotherapist, occupational therapist, dietician, play therapist, social worker, consult liaison, schoolteacher, and a speech and language therapist. E-mail was
utilized for communication to keep the multidisciplinary team up to date with the plan of care, and documentation and updating of Miss J’s care plan and long-term needs was improved.

Communication with the family was enhanced with the instigation of weekly updates with medical staff via an interpreter. This enabled the family to express their needs and concerns and for the team to explain the goals of the week, expected outcomes and to clarify expected time frames around rehabilitation. There was also greater recognition and acknowledgement of the importance of cultural issues and the effects of having a chronically ill child on family dynamics. Miss J’s family were educated in her cares, utilising an interpreter, and discharge planning was instigated involving ward staff.

Results
As a result of these measures, the quality of life of Miss J and her family improved. Consistency of care meant that primary nurses knew Miss J well, and could therefore rehabilitate her more quickly when she was well. This also ensured changes to her plan and appropriate interventions were given promptly when she was not so well. For example, Miss J usually received monthly Intravenous Immunoglobulin (IVIG), however when she was unwell this needed to be increased to fortnightly. In addition, the primary nurses ensured that weaning of ventilation was progressed when her respiratory status was in optimum condition. Continuity of care is one of the major advantages of primary nursing (4).

Feedback from the family indicated that they felt supported and empowered. They quickly became proficient in tracheostomy cares and were able to care independently for Miss J. Funding was put in place for equipment e.g. electric wheelchair and sleep system, and regular outings occurred to places Miss J chose, such as visits home and to the Sikh Temple. These helped Miss J to reconnect with life beyond PICU.

In a few months, Miss J was discharged to the ward on nocturnal continuous positive airway pressure (CPAP) ventilation via her tracheostomy with PICU Nursing Outreach as support during the transition period. She was eventually transferred to The Wilson Centre, a specialized rehabilitation centre, where she is now walking with the aid of a walking frame.

Implications
“The current health care environment requires efficient use of hospital resources. Time spent in a hospital should be productive and cost-efficient for both the provider and the consumer, while ensuring that the quality of care is not jeopardized” (1).

The importance of identifying potential long stay patients in a timely manner and establishing a formal primary team for that child and family should ultimately result in not only a more cost effective stay, but happier and more empowered children and families. It is hoped that the learning afforded from this experience will contribute to improved outcomes for other children who require a prolonged stay in our Intensive Care Unit.

References

See following pages for Figure and Photos.
**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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University Hospital of Lund, Sweden

Ann-Christine Lussagnet  
PICU Nurse

Lund is a minor city in the south of Sweden. A new paediatric hospital was built in 2001 with the intention to centralise all paediatric care in one place, and the PICU was officially opened in January 2002. The PICU is a 9-bedded combined general and cardiac intensive care. Children are accepted into the unit from birth up to the age of 18 years. We provide care for approximately 500 critically ill children per year.

**Paediatric Cardiac Centre**

Paediatric cardiac surgery was centralised into two centres in 1993. The University Hospital of Lund was selected as one of them. The centre is a combined general and thoracic intensive care unit for children.

The development of paediatric cardiac surgery has improved during the last 15 years and today Sweden shows good results both during the postoperative phase and in the long term (five years following surgery). During 2008, 312 cardiac operations were done in Lund with a 30 day mortality of 1.6%.

Until 2002 the paediatric cardiac patients were cared for in the general thoracic intensive care unit. During the first year after opening of the PICU only four beds were open and these beds were needed for the cardiac patients. Nursing and medical staff from the general thoracic unit moved to the new PICU, thus providing a core group of knowledgeable staff, competent in the care of these children.

Gradually the need for paediatric intensive care has grown and today there are 9 beds open. Approximately 65% of admissions are cardiac patients. Other types of patients cared for include: respiratory illness, sepsis, neurological dysfunction (non-surgical), pre- and post surgical patients (for example diaphragmatic hernia, oesophageal atresia), and trauma. We offer advanced therapies such as high frequency ventilation, nitric oxide, continuous veno-venous haemofiltration and ECMO.

The PICU has a close relationship with the neonatal intensive care unit and the neurosurgical unit. Staff from all three units help the others when needed.

**The Team**

We have over 100 personnel working in our unit including the anaesthesiologists. The daily management of the PICU is carried out by an anaesthesiologist with paediatric cardiac training, the ward manager and the chief nurse. Approximately 60% of nursing staff are registered nurses and 40% are nurse-assistants. Nurses have responsibility for 1-2 children depending on the level of care required. At least two people are for the care of a child. The units have four rooms with two beds in each and two single rooms with the possibility to isolate. For each working shift a chief nurse works with the responsible anaesthesiologist in overall patient management. Nursing staff work 8 hour morning and evening shifts and 10 hours during the night shift.
Because of the variety of patients seen in the PICU staff require continuous development of skills. Every nurse has a specialist qualification in paediatrics or in intensive care, and several nurses have both. In-house training is provided, which consists of 7-8 days per year. These days include a mix of lecture courses, group discussions using case methodology, Advanced Pediatric Life Support training and so on. We also have scheduled group meetings with a psychologist during these days. These meetings are meant to be a forum to discuss problems and solutions related to various issues we may encounter, for example how to reach a shocked parent, a teenager with a terminal diagnosis and so on. We also offer debriefing sessions after critical incidents.

Recently we started to use the e-learning program TILDA for in-service education on medical equipment. The program includes information, demonstration videos and several questions enabling staff to get up to date about the technical equipment. In the unit we have four nurses with specialist roles. One works fulltime with medical technical equipment and three nurses work 25% of the time in educating new staff, and ensuring standards are maintained and new protocols are developed according to evidence-based studies. These nurses are a resource for their colleagues.

Most of the staff is involved in an area of particular interest. For example a group of nurses and nurse assistants are working on protocols for end of life care so it can be as good as possible and ensuring nothing is forgotten. This work involves other professionals and other units within the hospital.

The unit also runs an Introduction Program when we orientate new staff. All new employees work besides an experienced nurse for at least 10 weeks. The nurse acts as a mentor for them during their first year. A variety of educational opportunities are offered. That includes education about different diagnoses, treatment of cardiac problems and medical equipment. The specialist nurses have produced a compendium of protocols and procedures that are very useful to new staff.

Developing a research agenda is a priority for us. The current areas of investigation include two studies concerning nutrition of cardiac children postoperatively, and sedation with propofol. Projects concerning nutrition, sedation and pain management will commence soon.

**Caring for Families in PICU**

Working with children always includes working with the whole family. We are continuously working to improve the care of the parents. In the PICU parents are welcome to visit around the clock. However, we cannot provide a bed for them within the unit unless there are special circumstances. Parents are always able to get a room in the patient hotel or McDonald house. The McDonald house was built in 2003 and the whole family, including siblings, can stay here. Families have facilities to cook for themselves and the opportunity to meet and mix with other families. When the children are intubated we recommend the parents to get some sleep in the hotel and they usually do so.

Parents are involved in the care of their child throughout the duration of their PICU stay. It is our policy that parents are welcome to be present in most situations, even in the most acute situations. Generally, parents wait until after their children are extubated to hold them. However, if children require longer term intubation (particularly small children) we try to let the parents hold them while intubated. Because we treat cardiac children many of our children are small and sometimes the mother has not had the chance to hold her child after delivery.

More information can be found on the University Hospital of Lund website: www.skane.se
January-December 2010

Visitation Policy
Question:
I have already posted this question on the National Association of Children’s Hospitals and Related Institutions (NACHRI) list serve, but thought I might get more ideas from this forum. Would anybody be willing to share their visitation policy? We are interested in how many visitors at time do you allow, the hours of visitations, sibling/children visiting.

California, USA

Answers:
Since we all have private rooms, we just tell the family they can't go in and out during shift change. The secretaries aren't allowed to buzz people in and out during that hour either. Each nurse does report right outside the patient's room. We have not started incorporating the families in rounds yet, that is supposed to be starting soon though.

Atlanta, Georgia, USA

Our Family Centered Care Council has been working on involving parents in rounds for quite awhile now. We're still in the research and "convincing" stage. The information you sent me awhile back has been very helpful. It is taking time to get it going but I'm hopeful.

As far as our shift change time goes, we just let the parents know that we are giving report to the next shift's nurses. We explain that there are a lot of people in the halls at that time so for privacy reasons we ask that they either stay in the room for that hour, or if they need to go out, they will be asked to stay out for that hour. Of course, there are exceptions, such as an emergency situation or if a patient was just admitted. Most of the time parents and guardians are very cooperative.

Atlanta, Georgia, USA

I thought I should qualify that we don't really have a policy anymore (used to be 2 people at the bedside at a time) – this was a problem when a parent wanted to bring grandparents or children in. Now we try to think about the situation with the child and their needs, our space available, what's happening in the unit, etc. That's why it varies.

Canada

Our PICU visiting hours are from 9.00 am until 8.00 pm without any interruption. Siblings are always welcome without any restriction in numbers.

Brussels, Belgium
Our PICU is opened to parents (mum or dad) from 2:00 pm to 9:00 pm every day, one person at a time. From 6:00 pm to 7:00 pm both parents are allowed. Siblings are allowed only if they are 18 years old. No grandparents allowed however there are exceptions. Our PICU has 10 beds, 2 cubicles with 4 beds and 2 rooms with one bed as there are very little space hence both parents are present, it's difficult to walk around. If there are school-age children who are not intubated and sedated, we allow parents staying all day and night if they are in the single room.

Padua, Italy

We have a family centered visiting policy. We don't consider parents to be 'visitors', so they are able to visit anytime, day or night. The unit is locked at night and for security reasons they need to be "buzzed" in. Other visitors are welcome (including siblings), as long as the parents are present, or they have notified us who is allowed to visit when they are not with child in PICU. We don't have a hard and fast rule about numbers of visitors in the bed space. This depends on the child's illness, what else is happening in the room, and is at the discretion of the bedside nurse.

Auckland, New Zealand.

We have no formal visitation policy and have a family centered approach. Our PICU is a small unit with 10 beds i.e. 5 open, 3 single, 1 with 2 beds. Our approach is that families are allowed entry any time day or night and any age, though for security reason they are required to be buzzed in at all times. Non family members are also permitted entry at any time providing parental consent is given. Our general guide is 2 per bed space, although that is flexible depending on unit activity, patient condition etc.

Australia

We have actually just revised our policy within the last year after a staff survey and taking feedback from families as well. We have a limit of 3 at the bedside at a time, usually with at least one parent present. The unit is closed for shift change; however do allow the families to stay in the room during shift change, just no moving in and out during those hours. The families are not allowed to "walk through rounds" and they are allowed entry if they can get to their child's room without interrupting. Siblings/children are allowed to visit after they have been screened by our secretaries to be sure they aren't sick. The doors are locked 24/7 and all visitors have to be buzzed in. Hospital visiting hours are over at 8.30 pm. We are a 30-bed unit with all private rooms. We also enforce restrictions on all kids 12 and under during flu/cold season which usually runs October to April.

Atlanta, Georgia, USA

We have 24-hour parent visitation. If parents are unable to stay with patient, they may designate a parental representative to stay with the child instead. Other visitors may come from 8.00 am to 8.00 pm, and we allow a maximum of three visitors, including parents in the room at any one time. Siblings may visit if they are under the supervision of a responsible adult from families provided if they are not ill, and if patient is not in isolation. We make exceptions for DNR and withdrawing support. All visitors check in at the front desk and receive a badge, which must be worn at all times.

Bickford, Seattle, USA

Vital Sign Alarm Limits

Question:
Do any of you have a standard, policy, or guideline on how you determine your monitor alarm limits--both high and low? Do you document these as a safety check? How are exceptions handled?

Kansas City, USA

Answers:
We put our alarm limits as sharp as possible according to the age of the child.

Brussels Belgium

We determine the monitor alarm limits according to the age of the patient and to the primary condition e.g. neonates with congenital heart disease has often lower oxygen saturation than normal. Each nurse determines the monitor alarm limits for her/his patients.

Padua, Italy
We have an observation and monitoring policy and we state that alarm limits should start off 10% either way of normal for that child. On the wards this is documented on the observation chart and signed by the nurse caring for the child. On PICU this is documented every shift on our assessment sheet.
Birmingham, United Kingdom

Our alarm limits are initially ordered by the physician on admission. The nurse may discuss with the attending or the fellow if they seem to be inappropriate for the individual child or are physiologically impossible. For example, I’ve seen an order for arterial diastolic BP that cannot be achieved within the parameters for systolic and mean blood pressure.
Alberta, Canada

**Peripherally Inserted Central Catheter (PICC)**

**Question:**
How many of you use PICC lines for long-term Central Venous Line (CVL) access in your PICU?
Do you regularly change those lines?
What is the longest you leave a PICC line in?
Do you routinely draw blood from those lines?
Do you have any data on whether or not PICCs are more or less prone to Catheter-Associated Blood Stream Infection (CABSI)?
Any thoughts you have around their management are appreciated.
Vancouver, Canada

**Answer:**
We do use PICCs for long-term access. It is unknown how long a PICC can dwell – they should be monitored for signs & symptoms of infection, like any venous access device, but we’ve had children leave the PICU & go home with their PICCs. We do draw blood samples from PICCs. I have not seen the data regarding prevalence of CABSI in PICCs. Check the Infusion Nurses Society for evidence-based protocols – their website is [http://www.ins1.org/i4a/pages/index.cfm?pageid=1](http://www.ins1.org/i4a/pages/index.cfm?pageid=1).
Maine, USA

**COMFORT Scale**

**Question:**
We have used the COMFORT scale a while ago in our PICU for adjustment of sedation but have abandoned this practice, mainly because of inconsistency of using it. We are now revisiting this issue and wondering if any of you is using the comfort scale and its applications? Does it have any clinical applications and lead to any decision making for sedation?
Montreal, Canada

**Answers:**
We are currently using the State Behavioral Score (SBS) to assess for adjustment of sedation (a scale using descriptions from -3 to +2). I believe it is mostly working well when used consistently as we have an algorithm for the SBS and the Multidimensional Assessment Pain Score (MAPS) to be used together with a management protocol.
Canada

We currently use the COMFORT Scale to assess all of our sedated, intubated patients. We regulate our sedation drips to maintain comfort scores within the desired range. Comfort scores are done a minimum of every 4 hourly.
Cleveland, Ohio, USA

We were not satisfied with the currently available scale, so we have developed a new scale based on the adult Riker Sedation-Agitation Scale (SAS), called the Pediatric Sedation-Agitation Scale (PSAS) – it is now undergoing psychometric testing.
Maine, USA
We are using the COMFORT Scale in our PICU for 2 years to assess sedation of our patients. We assess each patient once per shift which is every 8 hours.

Padua, Italy

We use the COMFORT behavior scale in daily clinical practice for assessing sedation in our PICU patients for more than 7 years. We also used the COMFORT behavior scale for research application. Each patient is assessed every 8 hours (once per shift) and when there is an indication for suboptimal sedation. We integrated this assessment tool in our sedation protocol. Nurses could perform titration of the sedatives based on the scores in the hemodynamically stable patient.

Rotterdam, The Netherlands

Bedside reporting
Question:
We are trying to implement RNs doing change of shift report at the bedside and this would involve review of previous shift, medications, lines, and plan for the day etc. The family would be involved and the patient as well, if the patient is able to participate and if the family wishes. My PICU manager would like to receive feedback on the following questions.
1. How did you roll out bedside reporting?
2. Do the nurses actually do it?
3. If not, why?
4. How have you been successful in increasing compliance with bedside reporting?

Memphis, USA

Answers:
At Children’s PICU in Vancouver, we have been conducting nurse to nurse bedside handover for many years. Over the years it has morphed somewhat and today is very individual dependent rather than process dependent. Overall the intent of shift handover is as follows:
1. 7.00 am or 7.00pm (shift change) - general report in central meeting room for all to attend if they wish
2. 7.05 am or 7.05 pm - go to assigned bedside for nurse to nurse handover
3. Content of handover to include:
   • Demographics of child (age, name, weight, diagnosis, reason for PICU admission, procedures, length of stay etc).
   • Head to toe of patient based upon progress through shift (e.g., neurological status, pupil size; work of breathing, oxygen requirement, physiologic status including psychosocial/family etc).
   • Review of physician’s orders for shift and review of medications given.
   • Review of problem list for upcoming shift.
   • Any tests for upcoming shift.
4. Family/patient participation which is at the discretion of the bedside nurse based upon their comfort level. It is rare that a family is asked to leave but it has been a huge learning curve for many years to get to this point. Some families participate by virtue of how they feel about the conversation and how included they are. The kids who can will usually say something. I have found that if a patient can correspond then everyone makes an effort to include them.

New staff are oriented to this process however we are looking at doing an improvement initiative as we recognize that this is a prime time for errors to occur if incomplete or inaccurate information is handed over. The quality varies and we would like to standardize it more.

Vancouver, Canada

We do change of shift report at the bedside always. Parents are often present, and included, but are asked on admission to hold interruptions to a minimum during this time, because getting information conveyed accurately is essential to the safety of their child. We have a standard form for taking report at change of shift that goes by system, with a section for laboratory tests and a section for notes.

We start with the bedside computer open, and review patient name, medication, weight, allergies, isolation precautions, attending physician, service, and diagnosis. We review history from the chronological history sheet. We go over social/family issues, including parents’ names, where they are staying, and contact information. We do review of systems, head to toe, referencing the nursing charting. We then open labs, review results, x-ray results if any, the task list for pending tests or procedures, and anything else that might be planned for the day, including transferring. Lastly, we open the medical profile, check that there are no uncharted medications, and review ordered drips and fluids,
with one nurse reading from the Medication Administration Record and the other checking the fluids that are hanging. If there is TPN and IL hanging, we go through the entire order, each shift, making sure that it is made up correctly, and cosigning.

It doesn’t take as long as it sounds, and we can easily report on two patients in half an hour.

Seattle, USA

We do nurse to nurse bedside handover between shifts.

- 7.30 am, 3.30 pm and 11.30pm - general report in central meeting room for assistant head nurse.
- 7.30 am, 3.30 pm and 11.30 pm - bedside for nurse to nurse handover.
- Content include the same notion as explain by above colleague from Vancouver.
- Family/patient participation - The family is asked to step outside during this exchange. Sometimes, depending of the nurse some parents can stay. We are actually working on a more family centered approach involving family presence if they want to.

New staff are oriented to this process during their preceptorship. We are currently looking in a new way to make the handover reporting more uniform and to improve the quality of it.

Canada

In-line Filters

Question:
Can someone advance to the group any CLINICAL EVIDENCE on this matter, just a thought-failing any evidence... the next best thing- post to the list an estimate of the morbidity/mortality of air or particulate embolus in your practice or any evidence on in vitro studies of the size of particulate contamination or air embolus that may commonly happen in daily practice or even anecdotes would be helpful at this stage of the debate..

I am not saying this is not an issue - I am just trying to raise the debate above - "what do you all do" - peer pressure works in professional and social life - but the difference with professional forums is that we should require a higher level of debate.

I work in the PICU, but in our CICU, they use in-line filters on ALL tubing unless it's not supposed to be filtered (like amphotericin).

Atlanta, GA, USA

Answers:
We have looked at this repeatedly over the years for our cardiac surgical patients and still have not reached a conclusion. Therefore, if you find some great information could you share?

Vancouver, Canada

It is of course tempting to mimic what other pediatric intensive care units practice in the absence of any firm evidence to the contrary. Of the five or six PICUs that I have worked in over 20 years, only one mandates the use of 0.2 micron filters in central venous catheters but not in peripheral lines. A mixed specialty PICU here in Denver has a policy which states "IV filters will be used in all cardiac patients" - this policy seems not specific enough. Should we use filters in those children who have physiologically corrected anatomy? What about children who present with myocarditis? Are they classified as "cardiac" or "infectious disease"?

One place to start might be to determine whether there are adverse events related to NOT using in-line filters? Are there stories out there of children who suffered from air emboli with negative outcomes? Was an in-line filter used or not?

Denver, Colorado, USA

I have been asked by a Pediatric Cardiology Nurse Specialist colleague to ask for your assistance with the following: I am trying to find evidence that supports or refutes the use of central and peripheral IV in–line air filters in patients who have a congenital heart defect with potential for bi-directional or right to left shunting and pulmonary hypertension. I have undertaken a fairly extensive literature search regarding in-line filters, and have found very little that specifically addresses their use in the pediatric congenital cardiac population.

I am interested in hearing from other Pediatric Cardiology and Cardiothoracic Intensive care units.
regarding:
• What is your policy regarding the use of in-line air filters for pediatric congenital cardiac patients.
• Is anyone aware of any research that specifically addresses the use of in-line air filters in central and peripheral intravenous lines in the pediatric congenital cardiac patient.

I would greatly appreciate any feedback.

Auckland, New Zealand,

We do not use in line air filters

Birmingham, United Kingdom

Family Centered Rounds

Question:

We are attempting to initiate Family Centered Rounds in our PICU, after much research, and postponements. This will still take awhile to get going, as we still have quite a bit of resistance from both doctors and nurses. I would greatly appreciate it if you all would take some time to answer the following questions regarding Family Centered Rounds. The information provided will hopefully give us some support in our initiative. Please feel free to include any other comments you feel are appropriate or that may be helpful.

1. Do you allow families to participate in rounds in your PICU?
2. Where do you hold rounds (bedside, at patient room door, conference room, etc)?
3. Who is included in your rounds (attending, fellows, residents, nurse, etc)?
4. What time do your rounds begin and how long do they generally last?.
5. Do you allow teaching during rounds?
6. Are families allowed to ask questions and provide information during rounds?
7. How do you inform families that they are allowed to participate in rounds?
8. How long has your PICU been allowing families to participate in rounds?
9. Have you noticed that rounds take longer with families participating, or do they take about the same amount of time as previously?
10. What feedback do you get from families participating in rounds?
11. Do you have any information, protocols, studies, etc, that you can share regarding families participating in rounds?
12. Do your doctors still visit with families after rounds to provide info in more detail or to answer further questions?

Atlanta, Georgia, USA

Answers:

Please see below for answers
1. Yes.
2. Bedside.
3. Attending, fellows, residents, nurse (bedside and charge), pharmacy, nutrition and occ. social work
4. Usually start around 0800 am and depending on how many patients and how sick they are, can last anywhere from 4-6 hours.
5. Always.
6. Yes and are encouraged to.
7. The doctors ask them to participate in rounds if the parents are at the bedside. We do not go hunting them down to participate.
8. About 8 months.
9. No, is about the same amount of time.
10. Sometimes, but not usually.
11. I personally do not.
12. Only if requested by the family. If there needs to be more, then a conference is set up with all parties involved.

Memphis, USA

I love the opportunity to discuss this. Physicians’ wanting health care professionals only was very much the situation here in the past. We started questioning that practice and were fortunate to have pioneers be consulted like Franco Carnevale. He was very clear that family centered care and parents’ presence on rounds, etc. could be more difficult for health care professionals as you point out from your PICU in Italy. He was also very clear about looking at why we’re here and what the effects of our
actions are on the family system. Then the need to change seemed clear. I’m so glad that we did as I do feel that we have moved in the right direction, and continue to do so.

Vancouver, Canada

In our PICU we don't allow families to participate in rounds. The problem is that doctors generally don't want that someone, who isn't part of the health professional team to participate in rounds.

Padua, Italy

Please see answers below:
1. Families are asked (invited) to participate in rounds by our physicians and nurses.
2. Rounds are held at the door or in the room depending on the patient condition.
3. Family members (mom, dad, grandma or whomever parents want), attending (intensivist and cardiologist at least), fellow, residents, nursing, dietitian, pharmacist, respiratory therapist, social worker.
4. We have 24 beds usually all full so depending on acuity they go on average about 3 hours (there are 2 teams that round at the same time).
5. Yes. The families know they are in a teaching facility and we are clear to point out that there will be teaching during rounds. We also tell families that during teaching moments the information being shared may not pertain to their child.
6. Yes, they are considered part of the team and they can make suggestions and ask questions. Many of our kids are here for months at a time and the parents get to be pretty savvy.
7. They are invited to participate when they are admitted. They are told it is their choice to participate and they are told what time rounds occur each day so they can be present if they are able to be or they can designate someone to be there for them.
8. I have only been here for 8 months but I understand it has been happening for a couple of years now.
9. I am told they are about the same as before and definitely not longer due to parent involvement. Most parents don’t ask a lot of questions. They listen and are always asked at the end if they have questions but most don’t.
10. They like it. Many choose not to participate or are not present at the time of rounds but they like having the choice.
11. Not sure they did any but I can check.
12. Yes. They will go back to families that are not present or that don’t want to participate and they will go back to complex children and follow up with questions.

Massachusetts, USA

Tracheostomy teaching

Question:
Can anyone share information or materials regarding the kind of tracheostomy-care teaching you are providing to nurses or nursing assistants in your setting. Montreal, Canada

Answer:
We have a group of clinical support workers in our PICU. They receive the same training as qualified staff leading to all care of children with a tracheostomy, including changing tubes. We have all our training resources in an E-learning space which any member of staff can access at any time as long as they on site. Our staff generally get a 2-3 hour training session, followed up with completion of competency booklet which they complete as soon as they can. There is also a 4-hour hospital wide training, if staff wants to attend this as an update they can or we do it within the PICU. If you would like any of our materials please email me.

Birmingham, United Kingdom
Care of chest tubes

Question:
Can you tell me how you are doing your chest tube dressing and how often do you change them. We are routinely putting a bactigras over the skin and cover by a 2X2 then a waterproof tape and did the same for after insertion site after chest tube removal. Some of our surgeons are challenging the way we did it. I am interested to hear about different practices.
Montreal, Canada

Answer:
I recently transferred from Mayo Clinic to Seattle Children's Hospital. At Mayo, we used Xeroform petroleum gauze, wrapped around the chest tube at the site, covered with a 4x4 or 2x2 and placed foam tape to make provide an airtight seal. Here at Seattle Children's, we have been using a bacteriostatic disc for the chest tube site followed by Tegaderm dressing. There has been a change to using paper tape for covering because of concerns over skin breakdown. However seem to coincide with an increase in pneumothoraces so the skin management team is reconsidering this practice.
Seattle, USA

Infusion of breast milk via enteral pump

Question:
Could you please answer the following questions for our institution?
1. What type of pump do you use for administration of breast milk via a feeding tube?
2. Is this pump an enteral pump or IV pump?
3. If it is an IV pump, what safety measures are in place to prevent the feed from accidentally being connected to an IV?
Memphis, USA

Answers:
We use syringe pumps only for breast milk because of the way it has to be delivered. We tip the syringe in an upward position so that the “good stuff” from the milk will be delivered to the baby. Supposedly that stuff settles at the top. Anyways, we use a separate type of tubing on all feeds going by syringe pump that cannot be connected to an IV by accident. Our IV tubing and connections look very different. And then we label our syringe pumps with colored tape and try to position the feeding syringe pump on the bed pole or just somewhat separate from all the IV syringe pumps.
Atlanta, Georgia, USA

We don't use IV pumps either for the same reason. I am aware of incidences that have occurred where milk feeds have been run through syringe drivers and connected in error to IV. Our unit has a policy that milk feeds must not be administered through any IV pump. We use the Kangaroo pumps for administering feeds. I believe NICU still uses syringe drivers but use green tubing to differentiate it from anything else.
Australia

For larger volumes, we use a kangaroo pump with burette setup. For smaller volumes we use "that orange pump". No one likes it, as it is finicky to set up and run, but it uses syringes and tubing that are coded orange, and you can fill and change syringes without wasting any breast milk.
Seattle

We use Flowcare Infinity enteral pump by Nutricia. We don't use IV pumps for feeding in order to avoid accidental wrong connections. This enteral pump has different color, different connector and differ rent tubing from IV pumps, so it's very difficult to do mistake.
Padua, Italy

The tubing with the orange stripe is in no way attachable to an IV port, stopcock or central line. The connector is too large. There are specially designed syringes for the feeds as well with a connector on the end of the syringe that isn't compatible with any IV access port. The tubing also has a little pigtail on it for medication administration so that once you've jammed the connector into the feeding tube, you don't have to try and get it apart again for medications. This pigtail's connector will not allow connection of luer lock syringes either, so all enteral medications have to be drawn up into the brown oral syringes,
providing one more level of safety. I have no idea how much more this all costs, but we've been using this setup for about a year.
Alberta, Canada

We use the Kangaroo feeding pumps. It is impossible to connect the Naso-gastric (NG) feed to an IV as the connectors are not interchangeable. We had different syringes also for NG and IV which can not be connected as they are different sizes.
Birmingham, United Kingdom

We use Kangaroo feeding pumps for regular NG feeds and for smaller amount EBM feeds we use our old IV infusion pumps. When we replaced out IV infusion pumps to the Alaris Medley we kept several of the old individual type and use these only for feeds. So in terms of safety; the 'old' pumps are only use for feeds & are separate from medication pumps. For NG feeds we always use extension tubing that has an orange stripe so is identifiable as feed tubing.
Vancouver, Canada

Changing Vasoactive drug syringes
Question:
What is your practice for changing your vasoactive syringes? Do you use the "quick change" method or "double pump"?
Brunswick, New Jersey, USA

Answers:
Here we use the "double pump" in other words we prepare a second syringe line and pump and get it going before stopping the original line and then change it over. We have been using the medfusion smart pumps.
Victoria, Canada

There are a few small studies from PICU's on this topic in the literature. They suggest that haemodynamically there is not much difference between 'quick change' and 'double pumping'. By 'quick change' they actually described a method where a new syringe & line were run in a syringe pump for 30min (to take up slack in the syringe driver) then a quick change of the old line for the new line at the level of the 3 way tap. They did note the 'double pump' method takes longer and there is potential to end up on higher doses, thus recommended using the 'quick change' method described above. These studies were done on patients on single low dose inotropes. We use the 'quick change' method at our hospital (as described above, not just a simple syringe swap)
Melbourne, Australia

Minimum fluid rates for lines
Question:
Does anyone have any guidelines or standards on minimum fluid rates for PICC's or tunneled lines? My situation is a 6.8kg child going home with a Bard PowerLine 5fr on Milrinone infusing at 2.93mL/hr. What is a high enough rate? What is too low? We have done this before and were fine with it, but are there evidence it is the right thing to do? Or some sort of standards to follow for central line infusions.
Seattle, USA

Answers:
Our standard is minimum 2 ml/h of fluid to maintain the lines open. We don't have any specific policy, but our experience suggests this standard.
Padua, Italy

It depends on the patient and there is no policy in my PICU. Stable patients can certainly tolerate the 3-5 seconds it takes to do a "quick change" of a syringe. (Yes, I can do it in an average of 3 seconds or less. I've timed it.) For unstable patients? Double pump, especially if you are changing lines as well as syringes. Remember to allow drugs to infuse together for 15 minutes or more to mix in new IV tubing.
Carolina, USA
Deep Vein Thrombosis (DVT) Protocol

Question:
Does anyone have a standing DVT or Venous Thromboembolism (VTE) protocol for pediatric patients, especially those in PICU?
If so, do you mind sharing?
Memphis, USA

Answers:
We don't have one either but I would be interested as it is part of Critical Care Accreditation Canada Standards. Stollery Children's Hospital has a thrombus team which assesses their patients but when I surveyed Canada nationally through another list serve I didn't get any other responses.
Vancouver, Canada

I'm attaching the one developed here. Research has been completed for validity and reliability of the tool and I’m preparing to submit to American Journal of Critical Care. I've also attached our VTE prophylaxis order set. Please feel free to contact me with any questions.
Miami, Florida

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For more information, visit our website:
http://groups.yahoo.com/group/PICU-Nurse-International
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franco.carnevale@mcgill.ca
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- Title should be concise and informative, and typed in bold capitals.
- Names (first name, initial(s) and family names) of authors in the order in which they are to appear. Include a maximum of 4 qualifications for each author
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An abstract not exceeding 250 words is required for all submissions except those for Spotlight on PICU. For research studies, the abstract should be structured under the following headings: Background, Methodology, Results (or Findings), Conclusions.

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The list of references should only include works that are cited in the text and that have been published or accepted for publication. References such as “personal communications” or “unpublished data” cannot be included in the reference list, but can be mentioned in the text in parentheses.
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**Examples**


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All figures (graphs, photographs, diagrams) and tables should be numbered consecutively and cited in the text. Each figure and table should be on a separate page at the end of the manuscript. Tables should have a title above and, if needed, a legend at the bottom explaining any abbreviations used.

Figure legends should be typed on a separate page. They should be concise but self-sufficient explanations of the illustrations.

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**Manuscript submission**

Electronic submission is required. Manuscripts should be saved as a Word document and emailed to the editor Franco Carnevale (franco.carnevale@mcgill.ca).

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