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The journal is the official publication of Australian and New Zealand professional nursing groups caring for babies, children and their families. The four organisations represent a diversity in nursing, ranging from intensive care nursing to the community-based nursing services, found in cities and remote areas throughout Australia and New Zealand.

The journal will endeavour to reflect this diversity by its content. Neonatal, paediatric and child health nursing have many different aspects that may be relevant to more than one sector of the membership. In addition to clinically oriented material, including research, the journal also provides a forum for articles on professional aspects of nursing that apply to all nurses and in particular to nurses working with babies, children and families.

This journal has a Band 2 JET Ranking from the Australian Council of Deans. Disclaimer: Mention of products in articles or in advertisements in the NPCHN journal does not constitute endorsement by ACCYPN, ACNN, NNCA or NCYPA.
This issue includes some excellent empirical research papers. Once again we provide studies that traverse the interest of our readers from the neonate, in relation to nutrition and breastfeeding (Young et al.); to young people, transitioning from paediatric to adult services (Dickinson and Blamires). Randall et al. cast a lens on the oft-quoted, but seldom fully implemented, model of family-centred care and ask how such a framework for delivery of services can be enhanced by understanding the other contexts of care in which we work as health care professionals. Walsh and Mitchell also challenge the reader to understand the changes in workforce, particularly that of the practice nurse, and give some insight into the education and training needs of this emerging professional. As usual we have a Cochrane Review Summary that helps us make sense of the ever-expanding evidence base for health care; in this case in relation to post-hospital discharge developmental programmes.

Perhaps missed by some readers, there are two announcements reminding us of international, prestigious events fast approaching in relation to paediatric and neonatal nursing. The first is the ACCYPN Conference 2013 in association with the 4th International Congress on Paediatric Nursing to be held in Melbourne, Australia in August. The second is the 8th International Neonatal Nursing Conference to be held in Belfast, UK, in September. Both have internationally recognised invited speakers and programmes that promise to generate debate and new ways of thinking, of relevance to managers, academics and clinicians. Both have also invited the submission of abstracts on a variety of themes. Additionally, both also offer pre-conference masterclasses. As Editor, I can't help but note the masterclass by Shields and Young scheduled in Melbourne; “To publish or perish in paediatrics we can't help but note the masterclass by Shields and Young scheduled in Melbourne: Writing for publication masterclass."

Several studies have examined the publication outcomes of studies originally presented as conference abstracts. Results of many types of clinical research are summarised in abstract format and presented at professional meetings. These abstracts are usually ‘published’ in conference proceedings and are not readily accessible by the wider scientific community. Scher and co-workers, using pooled data from 11 studies across a number of fields of medicine, showed only 51% of abstracts presented at meetings were subsequently published in full. Thus, for approximately half of the studies conducted and presented in abstract form, this was the only exposure to scrutiny by peers. McCormick and Holmes reported on paediatric abstracts submitted, but not accepted, for presentation. Only 22% were eventually published in full compared with over 50% of those abstracts originally selected for presentation achieving publication. Similarly, Winslow found only 38% of 40 research abstracts presented at the American Association of Critical Care Nurses' National Teaching Institute and published in the journal Heart and Lung, were subsequently published as full journal articles. The longest time to publication was six years after the initial presentation.

A more recent analysis, by Australian academics, suggested only 7% of nurse academics publish each year, despite the contention that within the university sector, “one’s corporate worth, is, to a great extent, measured by research output, and one’s achievement to be applauded. But a failure to disseminate knowledge beyond the immediate conference audience through the medium of publication in a journal is at best a professional shortcoming, and at worst, a disservice to future evidence-based care delivery for patients and families.

References

Referencing for Neonatal, Paediatric and Child Health Nursing
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Moving on: the experience of young people with juvenile idiopathic arthritis transferring from paediatric to adult services

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Abstract

Aim To elicit adolescents' views on what facilitates or challenges transfer from paediatric to adult services.

Background At least one-third of children with juvenile idiopathic arthritis (JIA) will have active inflammation as adults, requiring transfer to an adult rheumatology service. There is an acknowledged need for adolescent transition, but even with the presence of an established transition programme there is no guarantee of successful transfer. In New Zealand, there is no formal JIA transition programme and little was known about the challenges young people with JIA face as they move from a paediatric to an adult setting.

Design Descriptive qualitative design.

Methods Data was collected via a semi-structured focus group interview with eight young people with JIA who had recently transferred from a paediatric to an adult rheumatology service. Interviews were tape-recorded and transcribed verbatim. Data was analysed using thematic analysis.

Results The study identified three themes that describe young people's experience of the transfer process. It's time to move on signalled the young person's readiness for transfer. Preparing for transfer described the process of getting ready to move and Blending in indicated their arrival and adjustment to adult services.

Conclusions Overall, the young people in this study reflected positively on their experience of transition from paediatric to adult services, which differs from most other studies in this area and may be due to the size of the rheumatology service in New Zealand.

Implications for clinical practice It is important that adult and paediatric services portray to young people confidence in each other's services and work closely together in the planning and individualised transition process for young people with JIA. It is essential that adult rheumatology services allow time for the young person to adjust and integrate into the new environment.

Keywords: Transitional programmes, adolescent, juvenile idiopathic arthritis, transfer care, focus groups.

What is known about this topic

- Successful transition from paediatric to adult services is an essential component of quality health care.
- Poorly planned transition is associated with measurable adverse consequences for young people with JIA.

What this paper adds

- Support for the use of planned individualised transition plans based on young person's readiness to transition rather than chronological age.
- The perspective that young people with JIA view transition to adult services positively as a sign of growing independence which needs support from families and health professionals.

Declarations

Competing interests The authors declare that to their knowledge there are no interests which would bias publishing of this article.

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Ethical approval Approval for the research was obtained from the Ministry of Health Ethics Committee and the Auckland District Health Board NTX/09/127/EXP.

Guarantor JB.

Contributorship

JB conceptualised the study, assisted with data collection and
analysis and made a major contribution to the preparation and composition of the manuscript.

ARD developed the research design, led data collection and analysis and the preparation and composition of the manuscript.

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Introduction

Juvenile idiopathic arthritis (JIA) is a chronic disease of childhood and is a significant cause of short- and long-term disability. At any one time in New Zealand, over 1000 children and young people under the age of 20 are affected by JIA. In the past, JIA was thought to ‘burn out’ when the child grew up and little consideration was given to the consequences of this condition in late adolescence and young adulthood. However, we now know that a quarter of cases begin in adolescence and that at least one-third will have active inflammation as adults requiring transfer to an adult rheumatology service.

It is generally agreed that transition is an essential component of high-quality health care. Transition is generally described as a planned process that assists young people in the move from paediatric to adult health services. It requires education, preparation and planning. On the other hand, transfer is a single event during the much longer process of transition and is defined as the point at which a new provider assumes the medical care of a patient. It is also recognised that poorly planned transition can be associated with a number of adverse measurable consequences in terms of morbidity, mortality and long-term prognosis. Lastly, there is an increased risk of non-adherence to treatment and potential loss of follow-up.

Background

The need for service development in transition care for young people is highlighted in a number of papers where models of care are suggested, service gaps are identified and summaries of experience are given. Most of these papers are based in large centres in the UK and USA and do not necessarily address the unique situation of a small country like New Zealand.

For young people in New Zealand there is no formal transitional care programme. However, in New Zealand, transfer to adult services generally occurs between the ages of 16 and 18 years. In 2008, the New Zealand Ministry of Health approved funding to develop a dedicated national paediatric rheumatology service. One of the key objectives was to establish a transition service for young people; however, little was known about the challenges and experiences New Zealand young people faced as they moved from the paediatric to adult services. In order to ensure that the needs of young people were central to any programme development, a study was undertaken to gain an understanding of young people's experiences of transition and the facilitators and barriers to the process.

Aims

The aims of the study were to understand young people’s experiences of transferring from paediatric to adult services and to identify factors that facilitate or challenge young people’s transfer to adult services.

Methods

A descriptive, interpretative, qualitative method was used. Data was collected through focus group interviews. The research setting, Auckland, is where the largest population of young people with JIA in New Zealand live.

Sampling and recruitment

To ensure that the participants were as close to the experience as possible, young people who had a diagnosis of JIA and who had transferred from the paediatric to adult services within the last 18 months were given an information sheet and invited to participate. Fifteen potential participants were identified, eight of whom agreed to participate in a focus group interview. Because of the small numbers and the homogeneity of the group recruited, it was decided that only one focus group would be formed.

Participants

Eight young people agreed to be part of the focus group: four males and four females, ranging in age from 16 to 21 years. One participant identified himself as Indian, one Maori, one Asian, and five as New Zealand European. Seven of the participants had been cared for within paediatric services for longer than three years, and one, a recent immigrant to New Zealand, for just over a year. One participant had been transferred to adult services in the last three months; six had transferred over six to 12 months ago, and one 18 months previous to the focus group interview. This group was representative of the JIA population in NZ in relation to gender, culture and age at transfer.

Data collection and data analysis

One 60-minute focus group interview was conducted with the young people at a neutral venue. Prior to beginning the interview, the study was explained, questions answered and written consent obtained from each participant. The interview was semi-structured and began with a general question asking participants to speak about their experience of transferring from paediatric to adult services. A question framework (Table 1) was used to guide the discussion; however, the interviewers (ARD, JB) remained open to following the issues and concerns raised by the participants. Surprisingly, given that the participants had not met before, the discussion developed quickly and flowed easily. Several of the young people commented on how good it was to have the opportunity to discuss their experiences with people of their own age who had an understanding of the experience of living with JIA. Interviews were tape-recorded and transcribed verbatim. Data was analysed using the method of thematic analysis described by Braun and Clarke. In phase one and two, each researcher (JB, ARD) worked separately and generated some of the initial codes (for example, growing up, being ready, preparing, moving on, taking responsibility, being more independent). During phases three and four they worked together to develop potential themes and a thematic framework.
map (Figure 1), finally defining and naming the three themes as It’s time to move on, Preparing for transfer and Blending in.

Table 1: Interview framework

Interview questions to guide discussion:
Tell me about your experience of moving from the paediatric to adult rheumatology service?
Did you feel ready or prepared to move from paediatric to adult services?
What were the things that made it easy for you to move from one service to the other?
What could the doctors and nurses and other health professionals have done better so that the move was easier for you?
What services and supports do you think we need to develop to help young people move from paediatric to adult services?
Do you feel like you were given enough information about your JIA and how to manage it before you moved?
What makes for a good rheumatology clinic for people your age?

Results

The study identified three themes which describe young people’s perception of the transfer process.

It’s time to move on

It’s time to move on described the growing realisation by the young people that they needed to move from paediatric to adults services and signalled the young person’s readiness for transfer. For some young people this was signalled by no longer feeling comfortable amongst children within the service. An environment that had once seemed comfortable and familiar was now a place in which they did not fit. When they were hospitalised or came to clinic they became increasingly irritated and uncomfortable by having as one participant described “little kids around you” or discovering “that you are the biggest guy there”. There was a sense that you could not be “grown up” in an environment geared to children. This realisation did not come suddenly, triggered by age, developmental milestone (for example, moving from primary to secondary school) or a particular illness episode, but came gradually as a growing discomfort with being cared for within a paediatric service. Each participant noted that they had come to this realisation at different ages and stages in their life and illness experience. This readiness was often something the participants struggled to describe and seemed to come forth as an embodied knowing captured by the words of this participant:

You kinda like already knew you were like ready to go like you did know. It felt right to be moving having that change (Sarah, 16 years)

As well as this growing discomfort of being cared for within a paediatric service, the participants described an increasing confidence in managing their condition and their need to participate more independently in decision-making and management of their condition. All participants noted that, despite the attempts made by their parents and the health professionals to increase their role in decision-making and management in the paediatric setting, parents and health professionals remained the dominant players and it required a move to the adult service for them to become fully independent.

You know I loved having a paediatric doctor but you do get to the stage where you can actually look after things for yourself. I think when you are able to take responsibility for yourself that’s when you know you can move on. (Rachel, 19 years)

All participants agreed it was not chronological age that determined that it was time to move on but it was the growing discomfort within the paediatric setting and the realisation that you were no longer a child and could manage your condition independently. All the participants reached this point somewhere between the ages of 16 and 19 and reflected the range of ages at which the young people were transferred. The young people recognised that the paediatric service might have contractual arrangements which require
movement at a certain age but cautioned about enforcing this too rigidly. Young people were particularly concerned about transfer during exacerbations of their illness, when medications were being changed or their condition had not been stabilised or before they felt confident in managing their condition independently. All of the participants in this study appreciated the individual and flexible approach taken by the service which allowed transfer to be delayed or planned taking into consideration their readiness to move on.

Preparing for transfer

Preparing for transfer described the process of getting ready to move and coincided with the growing realisation that it was time to move. This time of preparation was noted by the participants as essential to successful transfer. It was important that this process was planned and, as previously noted, coincided with a period of stability of their condition. Preparing for transfer included the opportunity to meet with the adult rheumatology team, being made aware of the differences in the service and environment, learning how to care for themselves and being confident in negotiating management with health professionals independent of parents. The time needed to undertake this process could not be predetermined, but, as the participants noted, had to be tailored to their condition, management and ability to engage independently with the adult service. The young people recognised that once they transferred over the expectation was that they would engage independently with health professionals in the adult service without the support of parents.

An important component of preparing for transfer was knowing ahead of time when transfer would occur. This allowed time for the young person to be introduced to the adult service and the environment they would be entering. Reflecting post-transfer, the young people noted that the paediatric and adults services operated quite differently. Where the paediatric service was located in one centralised location with all the associated investigative and support services close by, the adult service was spread over a number of locations, with the support services not necessarily on the same site. For some the paediatric service appeared a more friendly and informal place where participants felt “special”, whereas the adult service was more formal and impersonal.

Some of the participants were aware of these differences prior to transfer and had been formally introduced to the adult staff and the service at a pre-planned meeting; however, this had not occurred in all cases and, as one participant noted, the sudden and unexpected change in location of the adult service had been disconcerting and made him feel vulnerable, adding to the stress of transfer.

It just felt a bit weird like you go in with the expectation that I will be seen at that hospital (an adult hospital located close by the paediatric unit) I have been in there to see people. And then suddenly you get told “no you are going somewhere else” and that’s just something new. It was just like you expected something and then something else came around and that like makes you feel a little bit vulnerable. (Sanjay, 21 years)

Even the participants who had attended a pre-transfer meeting with the adult service did not feel fully informed about the differences in services. The process of introduction to the adult service was something which the participants would like to see developed with more detailed explanation in regard to the differences in the services and processes, what services were available and how to access them.

Another aspect of preparing for transfer was ensuring that they understood their condition and medications so that they could manage their condition independently. All participants felt that they were prepared well by their parents and the paediatric health care team to manage their condition independently. Less familiar, however, was the process of discussing their condition and negotiating management with health professional independent of their parents. The young people described the various ways in which they had learnt, or were learning to engage in discussions with health professionals. For some this process had been led by their parents who as the time for transfer drew close encouraged the young person to undertake their last visits at the paediatric service independently:

My Mum like stopped coming when I was told I was being transferred she like didn’t come in for the last couple of visits at the paediatric unit so I like kinda got used to it. Getting used to her not being there, like having to do the talking and answering all the questions and asking like when do I need new medication and stuff like that. (Samuel, 18 years)

While for others the process was being led by the paediatric team who encouraged the young person to engage with them independently and ask questions, it appeared that in these cases the parents were still struggling to let go of the management and allow the young person to operate independently. All the participants recognised that this was a difficult time for their parents as they gradually handed over control to the young person. For some, early in the transfer process, parents were still actively engaged in clinic visits while for others parents had relinquished control and the young person was now operating independently. During the interview participants joked about their attempts to remain independent of parents during clinic visits in the adult service; however, despite the light-hearted nature of this discussion all stressed the importance of having some preparation prior to transfer in discussing their management with health professions. The opportunity to “practise” discussing management with the paediatric team prior to transfer with the support and prompting of parents was seen as essential preparation for transfer to the adult service, where the presence of parents during visits was discouraged. The participants, however, also emphasised the importance of continued support and back-up of parents and family post-transfer.

My mum still offers to come with me! [laughter] But most of the time I prefer not to take her as it is embarrassing when she starts asking the questions. When I was [initially] there [in the adult service] she was telling me like “ask those questions on your own” and “did you ask?” … she would come in and she would monitor how I used to converse with the doctor … They are still pretty supportive and they drop me off and still say “can we come in?” [laughter]. (Sanjay, 21 years)
Being prepared was seen as an essential component of the transfer process and when this preparation was not done well the young people indicated that it was an anxious time where they often felt lost in the system with no one really understanding or knowing them.

Blending in

Once transfer had occurred to the adult service this group of young people appeared to be aiming to "blend in" with the adult service. They did not wish to be seen as a child or young person, but as an adult who could manage and negotiate management independently. The process of Blending in was facilitated by a gradual handing over by the paediatric service immediately pre- and post-transfer and by the adult service in allowing the young person time to adjust to the new structure and processes.

I remember the doctor [paediatrician] explained it was going to be a little bit different and that she actually knew the doctor [in the adult service] I was going to. It didn't suddenly cut off from here to there, you sort of blend into the other side. (Sarah, 16 years)

For many of the participants, the transparency of communication between the health professionals in the two services was important. Effective and transparent communication between the two services gave them confidence in the adult service. As described above, when a paediatrician who they had come to know and trust over many years communicated a positive and confident impression of the service she was referring them to, they felt safe and secure during the transfer process. Being introduced and handed over to the adult service in an effective and efficient way was seen as crucial in allowing the young person to "blend in" quickly and the young people were sometimes frustrated when this did not occur.

The group made a number of suggestions as to how this handover process may be improved; some suggesting that a written clinical summary which introduced them to the service would suffice while for others a face-to-face, combined paediatric/adult clinic appointment where they could be introduced and their management discussed was preferred. To "blend in", the young people recognised they needed to take the lead in consultations with the health care team. To do this they needed to establish an effective working relationship with the adult service and "let go" of their reliance on parents and the paediatric service.

To "blend in" was to look and operate and be treated like all the other adult patients attending the service. It was viewed positively by the group as an indicator that they had "grown up".

I enjoy it [the adult service] because now I can say what I want to say and what I think is important. The independence of it. It felt like you were grown up. (Kirsten, 18 years)

Somewhat contrary to this view of "blending in" as an adult, when asked to describe what their ideal health service might look like, the participants described an "adolescent clinic" specifically designed to attend to their needs. However, as the conversation progressed there was the realisation that given the small numbers of young people living in the area, the geographical spread and demands of their work and school, such a clinic would limit their accessibility to services. Continued attendance at the adult service was then seen as the only practicable way of young people getting the support they needed to manage their condition. What it appeared the young people were calling for was an opportunity, such as they had had during this focus group, to meet and be with young people who understood the experience of living with JIA.

Discussion

Overall, the young people in this study reflected positively on their experience of transition from paediatric to adult services. Their experience differs from most other studies in this area and may be due to the fact that the rheumatology service and population of young people with JIA in New Zealand is relatively small, allowing for a more individualised approach. However, despite the overall positive response, the young people did provide valuable insights in relation to how the transition process should be managed.

The participants in this study stressed how important it was that the paediatric service designs the transition programme in such a way that responds to their individual readiness for transfer. Health professionals need to be alert and respond to the growing discomfort that young people have with the paediatric environment. As noted by other researchers, this discomfort does not necessarily coincide with any predetermined chronological age range, or at the time when health professionals and or parents may determine transfer is necessary, but needs to be determined by each young person's maturity, stability of medical condition and readiness to move forward and become independent. This alludes to the very personal and individualised nature of transition and supports the assertion by Brumsfield and Lansbury10 that the transition process needs to include an individualised health care transition plan. Being alert to the young person's readiness and the planning of an individualised transition process was something that was clearly called for by the participants in our study.

Once the timing of transfer has been agreed, it is important that the young person and their family are well prepared for the transition from paediatric to adult services. From this study it appeared that the health professionals and parents had prepared the young people well in relation to understanding their condition and its management; however, ensuring they understood the new environment they were entering and how to operate within it was not given equal consideration and attention. The young people in this study echoed the concerns of others10,11 that the adult environment is very different to that of the paediatric service and learning to operate in an environment which is more formal and where you no longer "feel special" is challenging. Better preparation in regard to understanding the differences in services and how to negotiate and participate in decision-making is needed. This study suggests that this is not achieved solely by a visit to the adult service; even those who had been prepared in this way did not feel fully informed. The young people called for more regular discussions about the differences between adult and paediatric services prior to transfer. This is particularly in relation to the services available and how they operate, perhaps supported by written and web-based information.
The timing of this preparation was not clear in this study. Some young people could recall earlier conversations with their parents, and themselves to a lesser extent, about transition. Some authors suggest preparation should occur as early as at the time of diagnosis; however, it appeared in this study that the young people themselves did not engage fully until they were ready or a transfer date was determined. This study did not include the parents’ perspective. Given the importance that the young people placed on having the support of their parents during the transition process, it may well be that preparation for transfer needs to occur earlier for parents. This would enable them to assist the young person when they signal their readiness to engage with the process.

This study supports the notion that young people generally see the transfer process as a very positive indicator of their independence and the fact that they can now be considered “grown up”. Their goal was to “blend in” and to be seen as a responsible and independent adult who could independently manage and negotiate treatment. As described by Meleis15 “blending in” may, in this instance, be the outcome of transition. However, to do this, the paediatric health professionals needed to support this positive view and portray their confidence in the adult services. When the paediatric rheumatologist was positive and supportive and communicated well with her adult colleagues and their service, the young people felt confident in going forward. When the adult health professionals allowed the young person time to adjust and guided them through the changes in service delivery, their confidence grew. What this indicates is the need for both paediatric and adult services to portray to both the young person and family their support and confidence in each other. Health professionals need to be cautious of the language they use and how they use it and avoid terms that may put a negative slant on either the adult service they are going to or the paediatric service from which they have come. Both have and will make a contribution to the young person’s ability to confidently manage their condition and “blend in” and reach independence in the adult world.

Limitations
The authors acknowledge a number of limitations to this study. Although the participants were representative of the JIA population in New Zealand in regard to age, gender and ethnicity, the sample size was small and captures only the views of a small group of young people living in an urban area. We don’t know whether this would be same for young people in rural or remote New Zealand. Limitations in funding and access to participants meant that data saturation was not achieved and a larger study would provide a more in-depth description. The positive experience of these young people contrasts to other transition studies and signals the need for more research in relation to the influences on successful transition, particularly between diagnostic groups to ensure that transition programmes meet the specific needs of the population they seek to serve.

Conclusion
This study demonstrates that the transfer of young people with JIA from paediatric to adult services should not be determined solely by chronological age. Consideration should be given to the stability of their medical condition and the young person’s signalled readiness to move. Careful preparation for transfer is required to meet the individual needs for independence, including a comprehensive and positive introduction to the adult service and opportunities to practise operating independently within the paediatric setting prior to transfer. Young people view the progression to adult services positively and this needs to be supported by health professionals and families as they move on towards full independence.

Implications for clinical practice
From this study the following recommendations are made for practice:

- The process of transition should be portrayed by health professionals and family members as a positive move toward independence.
- Adult and paediatric services need to work closely together in planning the transition of young people and have confidence and understanding of each other’s service.
- Time of transfer should not be determined by chronological age but by the young person’s signalled readiness for transfer.
- An individualised transfer process should be developed for young people, ensuring that it includes familiarisation with adult services and discussion regarding the differences between services.
- Adult services need to allow young people time to adjust to the service.

References
Improving knowledge of breastfeeding management: a practice development intervention for paediatric nurses

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Abstract

Aim
The primary aim of this study was to evaluate the impact of a targeted, practical education intervention on paediatric nurses’ knowledge of appropriate breastfeeding management in an acute practice setting.

Background
Breastfeeding provides the optimal method for infant growth and nutrition, yet studies have demonstrated knowledge deficits of Australian paediatric nurses regarding the management of the mother–infant breastfeeding dyad. Limited evidence is available evaluating which educational approach is effective in the dynamic and busy acute care setting.

Design
This study was a two-phased, mixed-method design, conducted in a large, tertiary, metropolitan children's hospital in south-east Queensland, Australia.

Methods
Reference groups were conducted in Phase One to advise development of the resource kit. Phase Two was the experimental phase and included a pre-test knowledge survey, the educational intervention, and a post-test knowledge survey.

Results
Pre- and post-test response rates of 75% (n=49) and 34% (n=23) respectively were achieved from the population of 67 eligible participants. Post-intervention study results demonstrated knowledge improvement in four key breastfeeding management areas: importance of baby-led feeding; reduction in otitis media risk for breastfed infants; ongoing management of maternal milk supply when breastfeeding is interrupted; and the correct storage and management of expressed breast milk. Areas for further knowledge improvement included management of more complex breastfeeding scenarios, such as mastitis.

Conclusion
The implementation of a resource kit and brief education series has improved the knowledge of paediatric nurses in some areas of breastfeeding practice and management.

Keywords: Breastfeeding, paediatric nurse, nurse education.

What is known about this topic
- Breastfeeding is the optimal method of infant nutrition. The knowledge of paediatric nurses regarding breastfeeding has been explored in the literature, and shown to be limited. Educational support for paediatric nurses in the area of breastfeeding knowledge and skills has been identified as important.

What this paper adds
- This paper describes the development and implementation of a pragmatic, focused and practical educational series formulated to address the knowledge and practice needs of paediatric nurses in the area of breastfeeding management in the acute care setting. It demonstrated areas of knowledge improvement through the intervention, and identified areas for further research, such as the need to investigate the impact this knowledge has on child and family outcomes.
Declarations
The authors of this paper have no competing interests which would bias the publishing of this paper.

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Guarantor Please forward all correspondence to Jeanine Young.

Contributorship All authors.

Implications for clinical practice
Improved breastfeeding knowledge and practical skills of paediatric nurses will support the provision of appropriate breastfeeding management in acute care settings and promote the continuation of breastfeeding for the hospitalised infant. Given the recognised short- and long-term benefits of breast milk for infants, optimising support of breastfeeding families is essential for optimal health outcomes.

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Dr Robert Ware, Biostatistician, Queensland Children's Medical Research Institute, University of Queensland, for his contributions to the statistical analysis.

Introduction and background
Breastfeeding provides the optimal method for infant growth and nutrition, and is well recognised as the complete nutrition source during the first six months of life. The health benefits of breastfeeding are significant to mothers and infants, reducing the risk of multiple acute and chronic conditions, such as pneumonia, ear infections, Crohn's disease and childhood obesity. Breastfeeding is a key indicator of childhood health and wellbeing and has been listed as a priority area by international health agencies and governments. Breastfeeding initiation rates are high for infants in Australia (96%), although only 39% are exclusively breastfed to three months of age, with the figure falling to 15% by around six months, when complementary foods should be commenced, and has been listed as a priority area for improvement by the Australian Institute of Health and Welfare. Consistent, evidence-based breastfeeding support from health care professionals can significantly enhance a woman’s ability and confidence to breastfeed. However, many health professionals are provided minimal education to equip them to adequately support breastfeeding mothers, thus compromising their ability to help. For example, one study cited 85% of undergraduate nursing students were unaware of the recommendation to breastfeed for at least a year.

When an infant is admitted to hospital or attends an emergency department this can be a very stressful time for the family. How health care professionals manage this vital mother–baby breastfeeding dyad during this time has a crucial implication for the ongoing success of breastfeeding. Stress is known to negatively affect breastfeeding and breast milk synthesis, subsequently making this a high risk time to wean or supplement with artificial infant formulas.

McLaughlin and colleagues investigated Australian paediatric nurses’ knowledge and attitudes toward breastfeeding and found overall positive attitudes toward breastfeeding; however, significant knowledge deficits in the areas of supplemental formula feeding, immunologic properties of breast milk and duration and frequency of breastfeeding existed. This is consistent with other studies which also demonstrated positive attitudes among health care professionals, yet identified a lack of accurate knowledge and understanding around crucial aspects of breastfeeding.

Consistent and sustainable approaches in facilitating knowledge improvement of breastfeeding management are required in order to address identified knowledge deficits known to impact breastfeeding outcomes, and to increase the extent to which evidence-based breastfeeding management is incorporated into everyday care and discharge planning by paediatric nurses within acute clinical practice settings.

Research objective
The primary objective of this study was to develop and pilot a specific education intervention with the aim of improving knowledge of paediatric nurses in providing evidence-based breastfeeding management in an acute care hospital environment.

Research questions
To achieve this research objective, three specific research questions were developed:

1. Given breastfeeding knowledge deficits of paediatric nurses identified in earlier studies, and busy acute care clinical units in which they work, which method of breastfeeding education for clinicians would be most appropriate, feasible and acceptable?

2. What are the priority knowledge and practice needs of paediatric nurses caring for breastfed infants in the acute care setting?

3. What impact does a targeted educational intervention have on paediatric nurses’ knowledge of evidence-based breastfeeding management?

Methods
This study was a two-phased, mixed-method design, conducted in a large, tertiary, metropolitan children’s hospital in south-east Queensland, Australia.

Phase One
Phase One was the development phase and involved the formation of two reference groups. The aim of the reference groups was to address Research Question One, and specifically to determine the approach of breastfeeding education for paediatric nurses that would be most appropriate, feasible and acceptable in acute paediatric settings.

Sample
Reference group one comprised of representation from the hospital family advisory council, Australian Breastfeeding Association (ABA), community child health liaison nurse, hospital dietician and a Baby Friendly Hospital Initiative coordinator (the hospital Baby Liaison Nurse was also invited, but unable to attend). Reference group two comprised of the nursing directors for medical, surgical, education and research divisions. Both reference groups were presented with clinical scenarios of typical infant hospitalisation situations, designed to stimulate response, discussion and
to prioritise paediatric nursing knowledge (or educational) and practice requirements to support breastfeeding in the acute care setting. A member of the research team who had over 20 years of clinical experience supporting breastfeeding mothers in both acute and community settings facilitated both groups. These sessions affirmed the direction of the educational intervention in the second phase of the study.

Phase Two
Phase Two was the experimental phase and included a pre-test knowledge survey, the educational intervention and a post-test knowledge survey.

Sample
The sample was drawn from the population of eligible paediatric nurses (n=67) working in an acute surgical unit of a metropolitan tertiary children's hospital in south-east Queensland, Australia. Eligibility criteria included being an enrolled or registered general nurse, full-time or part-time, permanently or temporarily employed in the selected unit. Nursing staff on leave (that is, sick, maternity, recreational or long service) for more than four weeks during this time were excluded. This unit was chosen due to the high proportion of infants aged <12 months routinely admitted and the nurse unit manager's support for the project and its aims.

Intervention
The evidence-based breastfeeding management intervention included a series of five 20–30 minute educational sessions delivered in a two-week period by a nursing clinical facilitator with qualifications in child health nursing, midwifery and research.

The five sessions included:
• Breastfeeding clinical scenarios.
• Breastfeeding techniques.
• Breast milk expression (hand and mechanical) and management of expressed breast milk.
• Troubleshooting breastfeeding issues and supportive strategies for families.
• Resources and referral pathways.

Each session was repeated five to six times during the two-week period to maximise opportunity for participation by clinicians. In addition, a practical resource kit including presenter and participant objectives for each of the five sessions, a DVD (Baby-led Breastfeeding … The Mother–Baby Dance14); breast model; a Clinician's Breastfeeding Triage Tool15; and posters of baby feeding cues, were provided to each clinical area to be used for ongoing education and as a clinical resource.

Data collection
Phase one
Key words and themes were transcribed by the group facilitator (nurse researcher) from responses to the case scenario during reference group discussions. Emergent themes which reflected the concepts discussed were checked with participants during discussion and at the end of the sessions to ensure clarity and understanding16.

Phase two
Data were collected through a pre- and post-test knowledge survey with a shortened version of the knowledge and attitudes survey tool used by McLaughlin and colleagues, which had been adapted and used with permission17. The survey contained three sections: demographic information (nine questions); breastfeeding knowledge (20 questions, using a five-point Likert scale); and breastfeeding knowledge relevant to the hospitalised infant (eight questions, using a four-point Likert scale); 10 questions using a five-point Likert scale)17.

Procedure
In liaison with the nurse unit manager, the roster schedule was used to identify current staff. Participants received a survey and information sheet distributed via the internal mail system. Consent was implied by the return of a completed questionnaire via the addressed return envelope. Respondents were asked to use a unique identifier to allow matching of pre- and post-test surveys while ensuring anonymity of the individual. The same survey was administered prior to delivery of the education sessions, and then readministered during a two-week period, four weeks after the education intervention.

Ethical approval for the study was granted from the local hospital Human Research Ethics committee (approval number EC00175).

Data analysis
Phase One data analysis
The responses generated from each of the reference group discussions were recorded and thematically analysed for emergent themes16 and checked with participants at the conclusion of each session. These data were then utilised to inform the development of the education sessions and breastfeeding management resource kit.

Phase Two data analysis
Medians, interquartile ranges (IQR), frequencies and percentages were used to report the central tendency, spread and empirical distributions of categorical and non-symmetric continuous variables elicited at each survey. When continuous data were distributed symmetrically, the means and standard deviation were reported. All bivariate comparisons of categorical frequencies were undertaken using Fisher's exact test, while the Wilcoxon signed ranks test was used to detect pre-test and post-test differences based on the participant's response most consistent with the evidence. Participants completing both pre- and post-test surveys were used in a paired analysis to determine intervention effectiveness in impacting nursing knowledge of breastfeeding the hospitalised infant. Statistical computations were facilitated with the use of IBM SPSS Statistics Version 20. An alpha-level of 5% was considered statistically significant for all comparisons.

Results
Phase One
The verbatim data from both reference groups yielded four key concepts: (1) maternal support and reassurance; (2) maintenance of breast milk supply; (3) referral sources; and, (4) the development of a clinical area breastfeeding management resource kit.

When presented with the clinical scenario, group participants
stated that it was essential that the nurse provide support to the breastfeeding mother through verbal "praise and positive comments" regarding her efforts to provide breast milk for her infant. This discussion also highlighted this dialogue as an opportunistic time for the nurse to "reiterate to the parent the health benefits of breastfeeding".

The group members also discussed the importance of knowing how to maintain a mother's breast milk supply when it may be affected by the infant's illness or stress of hospitalisation. This discussion centred on what paediatric nurses needed to know to support breastfeeding mothers, which included the use of breast pumps and privacy while expressing.

Thirdly, referrals and who was best equipped to support the breastfeeding family was discussed, which included the need for clarification around community child health nursing support, and support from other agencies, such as the Australian Breastfeeding Association, when the infant was hospitalised.

There was overall consensus for the need to establish a practically based, breastfeeding management resource for the clinical area, specifically designed for the needs of paediatric nurses to complement the considerable amount of health care literature already available that supports breastfeeding knowledge and practice.

**Phase Two**

**Pre-test survey data**

Pre- and post-test response rates of 75% (n=49) and 34% (n=23) respectively were achieved from the population of 67 eligible participants.

**Demographic characteristics**

Participant demographics are provided in Table 1. The mean duration of employment in an acute paediatric clinical setting was 7.7 years (SD±7.7 years).

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>n (49)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45</td>
<td>91.8</td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>8.2</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>27</td>
<td>55.1</td>
</tr>
<tr>
<td>Part-time &lt;24 hours</td>
<td>10</td>
<td>20.4</td>
</tr>
<tr>
<td>Part-time &gt;24 hours</td>
<td>12</td>
<td>24.5</td>
</tr>
<tr>
<td>Level of practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled nurse</td>
<td>2</td>
<td>4.1</td>
</tr>
<tr>
<td>Registered nurse</td>
<td>37</td>
<td>75.5</td>
</tr>
<tr>
<td>Clinical nurse</td>
<td>10</td>
<td>20.4</td>
</tr>
<tr>
<td>Postgraduate professional qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwifery</td>
<td>7</td>
<td>14.3</td>
</tr>
<tr>
<td>Postgraduate paediatric</td>
<td>18</td>
<td>36.7</td>
</tr>
<tr>
<td>Neonatal</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Community child health</td>
<td>2</td>
<td>4.1</td>
</tr>
</tbody>
</table>

The pre-test survey also included the participants' sources of breastfeeding knowledge, with personal experience (26, 53.1%) and advice from professional colleagues (28, 57.1%) cited most often. Undergraduate nursing course (18, 36.7%); professional conferences (7, 14.3%); and professional journals (8, 16.3%) were also cited as breastfeeding knowledge sources.

**Changes in breastfeeding knowledge**

Forty-nine paediatric nurses completed the pre-intervention survey, with 23/49 (47%) also completing the post-intervention survey. Comparing those who completed the post-intervention survey against those who did not, there were no statistically significant differences found in any measured demographic variables. Table 2 presents a summary of the correct responses (most consistent with the evidence) from the general and hospitalised infant breastfeeding knowledge sections of the survey including the knowledge differences (if present) after the educational intervention.

Within the questionnaire nurses were also asked under which circumstances breastfeeding would be recommended to cease. In all of the instances the correct answer was ‘never’. Sore nipples and mastitis were knowledge areas most poorly understood with around a third to almost half of the respondents, respectively, still not aware of correct management post-intervention.

**Discussion**

The admission and treatment of an infant in hospital can cause considerable stress and concern for families. How nurses care for families, specifically in the area of breastfeeding during this time can dramatically affect the course of infant nutrition from that point forward. Informed by an earlier study that investigated the knowledge and attitudes of paediatric nurses regarding breastfeeding11, this study aimed to respond to these findings by a) developing an appropriate, feasible and acceptable strategy to meet the learning needs of paediatric nurses working in acute paediatric settings, and b) evaluating the effectiveness of this strategy.

**Development of the breastfeeding management resource kit**

One of the key aims of the study was to develop and test the impact of targeted education on paediatric nurses' knowledge of breastfeeding in a dynamic and demanding clinical setting. The reference group consultations yielded important insights into the environment where the paediatric nurses worked and their perceptions of their learning needs in the area of breastfeeding. This prompted the development of a complementary and practical resource kit, which could be immediately sourced by nurses in their clinical environments, would assist in informing effective help provided by a paediatric nurse to a breastfeeding mother–baby dyad.

Attending to infant feeding and nutrition is a fundamental role within paediatric nursing, and should be supported within the health system to ensure best practice and thus quality care for families. It is, therefore, essential that paediatric nurses be provided with accessible, evidence-based information (and in this case a practical resource kit), which can inform best practice. In the absence of timely, specialised breastfeeding support (such as an International Board Certified Lactation Consultant) within the acute paediatric environment, it is not
unreasonable that all clinical nurses working with mothers and babies be informed and supported in their role of providing effective infant nutrition care to families.

Reference groups, comprised of experienced clinicians, were in agreement that a further course on breastfeeding was not a priority as information about breastfeeding was available for paediatric nurses. What was identified as a feasible, acceptable and appropriate approach was the development of a practical resource kit that would be suitable for use in short sessions in busy clinical environments or that could be presented within a single, three-hour session by a clinical nurse (facilitator or educator), and act as a clinical resource or reference.

Knowledge of breastfeeding

Pre-survey results suggested that, overall, the cohort (n=49) was positive about breastfeeding, unanimously agreeing that ‘breast is best’ and that part of their role was to support breastfeeding mothers and infants. This finding is consistent with other studies, which also found general beliefs of paediatric nurses to be positive towards breastfeeding20. Whilst this is encouraging, it does not necessarily enable a clinician to effectively manage a challenging breastfeeding dilemma with a sick infant and concerned mother. Several studies have reported that many health professionals state they are confident in their ability to support breastfeeding mothers, yet their knowledge regarding correct management strategies is poor21,22. Formal training and/or a user-friendly educational resource on breastfeeding management produces more effective care practices and increased breastfeeding rates19,23, than positive attitudes alone.

Effectiveness of the intervention in improving breastfeeding knowledge

Post-intervention study results demonstrated knowledge improvement in four key breastfeeding management areas: importance of baby-led feeding; reduction in otitis media risk for breastfed infants; ongoing management of maternal milk supply when breastfeeding is interrupted; and the correct storage and management of expressed breast milk.

Table 2: Breastfeeding knowledge of paediatric nurses

<table>
<thead>
<tr>
<th>BREASTFEEDING KNOWLEDGE AREA</th>
<th>Correct responses Pre-test† (n=49)</th>
<th>Correct responses Pre-test (paired)‡ (n=23)</th>
<th>Correct responses Post-test (paired)‡ (n=23)</th>
<th>Difference p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>General breastfeeding knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding’s contribution to infant health and development</td>
<td>49 (100)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>0.56</td>
</tr>
<tr>
<td>Non-equivalence of breast milk to formula</td>
<td>24 (50)</td>
<td>11 (47.8)</td>
<td>13 (56.5)</td>
<td>0.49</td>
</tr>
<tr>
<td>Maternal benefits of breastfeeding</td>
<td>47 (95.9)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>0.32</td>
</tr>
<tr>
<td>Nutritional adequacy of breast milk to 6 months of age</td>
<td>42 (85.7)</td>
<td>22 (95.7)</td>
<td>22 (95.7)</td>
<td>0.68</td>
</tr>
<tr>
<td>Breastfeeding duration parameters</td>
<td>9 (18.6)</td>
<td>5 (21.7)</td>
<td>5 (21.7)</td>
<td>0.28</td>
</tr>
<tr>
<td>Importance of demand feeding or baby-led feeding</td>
<td>36 (73.5)</td>
<td>15 (65.2)</td>
<td>19 (82.6)</td>
<td>0.01</td>
</tr>
<tr>
<td>No usual need for fluids other than breast milk in the first 6 months</td>
<td>25 (51)</td>
<td>12 (52.1)</td>
<td>16 (69.6)</td>
<td>0.01</td>
</tr>
<tr>
<td>Breast milk’s influence of newborn immunity</td>
<td>49 (100)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>0.65</td>
</tr>
<tr>
<td>Breastfeeding reduces the risk of otitis media</td>
<td>23 (47)</td>
<td>9 (39.1)</td>
<td>21 (91.3)</td>
<td>0.002</td>
</tr>
<tr>
<td>Skin-to-skin contact (kangaroo care) helps to increase mother’s milk supply</td>
<td>40 (81.6)</td>
<td>20 (87)</td>
<td>22 (96.2)</td>
<td>0.02</td>
</tr>
<tr>
<td>Importance of correct attachment of the baby to the breast</td>
<td>49 (100)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>1.00</td>
</tr>
<tr>
<td>Importance of correct positioning of the baby for successful breastfeeding</td>
<td>37 (75.5)</td>
<td>19 (82.6)</td>
<td>19 (82.6)</td>
<td>0.76</td>
</tr>
<tr>
<td>Identification of the signs of effective milk transfer</td>
<td>43 (87.8)</td>
<td>20 (86.9)</td>
<td>23 (100)</td>
<td>0.13</td>
</tr>
<tr>
<td>Interference of supplemental artificial formula with breastfeeding in early weeks</td>
<td>29 (59.2)</td>
<td>18 (78.2)</td>
<td>16 (69.6)</td>
<td>0.64</td>
</tr>
<tr>
<td>Appropriate age to introduce complementary foods</td>
<td>30 (61.2)</td>
<td>14 (60.9)</td>
<td>13 (56.5)</td>
<td>0.75</td>
</tr>
<tr>
<td>Regulators of breast milk production</td>
<td>39 (79.6)</td>
<td>19 (82.6)</td>
<td>22 (95.7)</td>
<td>0.03</td>
</tr>
<tr>
<td>Breast milk changes to meet the baby’s needs, whether baby is premature, newborn or 12 months old</td>
<td>27 (55.1)</td>
<td>14 (65.5)</td>
<td>18 (78.3)</td>
<td>0.19</td>
</tr>
<tr>
<td>Hormones which influence the production of breast milk</td>
<td>35 (71.4)</td>
<td>17 (73.9)</td>
<td>16 (69.6)</td>
<td>0.06</td>
</tr>
<tr>
<td>Importance of milk removal on milk production</td>
<td>48 (98)</td>
<td>22 (95.6)</td>
<td>23 (100)</td>
<td>0.01</td>
</tr>
<tr>
<td>Hospitalised infant breastfeeding knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influence of stress on breastfeeding</td>
<td>46 (93.9)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>1.00</td>
</tr>
<tr>
<td>Importance of maintaining lactation through expressing while infant unable to directly breastfeed</td>
<td>48 (97.9)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>0.56</td>
</tr>
<tr>
<td>Expiration times of expressed breast milk</td>
<td>44 (88.9)</td>
<td>20 (87)</td>
<td>22 (95.7)</td>
<td>0.03</td>
</tr>
<tr>
<td>Importance of expressing intervals</td>
<td>14 (28.6)</td>
<td>9 (39.1)</td>
<td>8 (34.8)</td>
<td>0.18</td>
</tr>
<tr>
<td>Maternal diet and nutritional status of breast milk</td>
<td>5 (10.3)</td>
<td>2 (8.6)</td>
<td>6 (26.1)</td>
<td>0.01</td>
</tr>
<tr>
<td>Maternal fluid intake and breastfeeding</td>
<td>39 (79.6)</td>
<td>19 (82.6)</td>
<td>20 (87)</td>
<td>0.7</td>
</tr>
<tr>
<td>Effectiveness of breastfeeding as an analgesic for infants experiencing painful procedures</td>
<td>30 (61.2)</td>
<td>15 (65.2)</td>
<td>19 (82.6)</td>
<td>0.13</td>
</tr>
<tr>
<td>Appropriate storage conditions and times for breast milk</td>
<td>33 (67.3)</td>
<td>15 (65.2)</td>
<td>18 (78.2)</td>
<td>0.05</td>
</tr>
<tr>
<td>Mother’s permission should be sought before offering baby anything other than breast milk</td>
<td>49 (100)</td>
<td>23 (100)</td>
<td>23 (100)</td>
<td>1.00</td>
</tr>
<tr>
<td>Mothers of babies with established feeding should express at the time that their baby would normally feed</td>
<td>45 (91.9)</td>
<td>21 (91.3)</td>
<td>23 (100)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*p values were calculated on the change of knowledge using the Wilcoxon signed ranks test

†using all data available from pre-test respondents (n=49)
‡using data from nurses who responded to both pre- and post-test questionnaires (n=23)
Baby-led feeding is a fundamental aspect of breastfeeding and supported by significant evidence. When feeding may be interrupted by procedures, surgery or illness, baby-led feeding will assist in the re-establishment of supply. Correct attachment to the breast is also a fundamental aspect of effective breastfeeding. While the entire sample in McLaughlin et al.'s study identified that the baby should have as much as the mother's areola in their mouth as possible, only 48% of their sample were able to correctly identify that audible swallowing was also an indicator of effective milk transfer. The participants unanimously correctly answered the attachment questions in this study, which is clinically important considering the importance of this component of breastfeeding knowledge.

Similarly, maintenance of maternal milk supply is often a key issue during the acute illness phase for an infant, when maternal willingness or ability to breastfeed directly may be impaired (for example, infant nil by mouth). The improved knowledge of lactation maintenance and the use of hand or electric expression to maintain supply is a particularly important clinical practice improvement supported by the implementation of the breastfeeding management resource kit, and should secure the re-establishment of breastfeeding, if interrupted by infant illness.

Correct identification by 100% of the participants that breastfeeding assists in reducing the risk of common paediatric illnesses is a positive finding. The paired data analysis also demonstrated a statistically significant improvement in the nurses’ knowledge that breastfeeding reduces the risk specifically of otitis media, enabling paediatric nurses to convey this health promotion message to families of unwell or vulnerable infants in their care.

Knowledge improvements were also present in the management and storage of expressed breast milk. Provision of evidence-based information and practical advice to parents while their infant is unable to directly breastfeed is an important role of paediatric nurses, and will encourage ongoing breastfeeding.

**Areas for further improvement in breastfeeding knowledge**

Human breast milk differs markedly from all substitute infant feeding preparations, making it uniquely superior to alternatives. In this study, very limited improvement was demonstrated in the nurses’ understanding that infant artificial formula is not equivalent to breast milk, with only about half (56.5%) in the post-test survey identifying the correct response. This belief is held amongst many health care professionals in developed countries, with the attitude that breastfed infants are only marginally different from their artificially fed counterparts.

The duration and exclusivity of breastfeeding, in accordance with recommendations, is directly influenced by the attitudes of health care professionals working with families. Taveras and colleagues found that clinicians (both medical and nursing) did not believe that their advice to breastfeeding mothers on how long they should exclusively breastfeed their babies was very important, yet mothers were in fact influenced by the attitudes health professionals held toward aspects of infant feeding, such as artificial formula supplementation. An American study found a perceived neutral attitude from hospital staff regarding breastfeeding to be directly related to not breastfeeding beyond six weeks, particularly in mothers who had intentions while pregnant to only breastfeed for a short time. This ambivalence towards the harm of artificial feeding is influenced by the absence of lactation management education in health care professional curricula, and subsequent paucity of breastfeeding management skills among health care professionals.

On the contrary, when education, even brief, is provided to health care professionals, improvements emerge in breastfeeding rates and duration. A French randomised trial provided a short training programme for primary care practising physicians in breastfeeding management. Those mothers who attended the routine, follow-up visits for newborn health checks with physicians trained in the breastfeeding skills were more likely to report exclusive breastfeeding at four weeks and overall reported increased breastfeeding duration than the control group. Similarly, a self-paced study module, which was guided by an on-site, trained staff member was found to be a cost-effective strategy for improving nurses’ knowledge of breastfeeding, and deemed a good fit for busy work schedules.

In our study a basic education series and pragmatic resource kit was seen to improve paediatric nurses’ knowledge of breastfeeding in some areas; however, it was beyond the scope of this study to examine the impact this had on...
in-patient and discharge breastfeeding rates. This is an area identified for further research.

**Personal experience as source for breastfeeding knowledge**

In this study very few participating nurses reported having breastfeeding-related qualifications. The most often cited source of breastfeeding knowledge was personal experience (53.1%) and advice from professional colleagues (n=28, 57.1%). This finding is similar to other studies investigating where health professionals source their breastfeeding knowledge. A US study found that while paediatric nurses (n=95), had positive beliefs overall towards breastfeeding, their knowledge regarding specific management strategies was limited, with close to 75% of the cohort naming their own personal breastfeeding experience as their most valuable source of breastfeeding knowledge. Another relatively large North American study (n=405) of nurse practitioners and nurse midwives, working directly with mothers of young infants, found that nearly 73% had breastfed (or their partner), and of these 24% indicated that it was this experience which had taught them the most about breastfeeding. General practitioners in an Australian study also identified personal (or partner) experience as their most useful source of breastfeeding knowledge, with other international studies finding personal experience as the number one source of breastfeeding knowledge. Whilst personal experience is one valid way of knowing in health care, it is not necessarily the best or most comprehensive source from which to draw, when specific or complex breastfeeding management strategies are required. This is demonstrated in the knowledge areas incorrectly answered by the participants in this study, specifically in the areas of supportive advice, such as mastitis management and care of sore and damaged nipples.

**Strengths and limitations**

This study has reported the development of an acceptable and feasible resource kit of educational tools to support paediatric nurses developing practical skills to sustain breastfeeding of infants in an acute care setting. The pilot implementation of the resource kit was successful, and kits were made available in all hospital in-patient settings in collaboration with the nurse education team. Changes in the knowledge of the paediatric nurses was conservative, with significant improvements identified in only eight of the 29 knowledge areas. Further evaluation is required following implementation across the institution, and assessment of any effect on in-patient and discharge breastfeeding rates.

**Conclusion**

An important aspect of everyday nursing care in paediatric acute care facilities is the support and care of breastfeeding families. This paper has described the implementation and effectiveness of a pilot breastfeeding education series and resource kit for paediatric nurses working in a large, metropolitan, tertiary children's hospital. While improvements in aspects of breastfeeding knowledge and management were identified, areas for ongoing education and knowledge development were also identified, such as knowledge of the harms of not breastfeeding.

**Implications for clinical practice**

The improved breastfeeding knowledge and practical skills of paediatric nurses will promote the continuation of breastfeeding of the hospitalised infant. Given the recognised short- and long-term benefits of breast milk for infants, optimising this education and support to nurses who provide care to breastfeeding families is essential. A hospital-wide implementation of the breastfeeding resource kits has occurred based on these pilot outcomes. A statewide breastfeeding policy and practice standard is also now available to all nursing staff, with strong links promoting the continuum of care between acute and community services. Evaluation of this targeted education series and resource kit is required to fully optimise paediatric nursing support for breastfeeding mothers of sick infants.

**Acknowledgements**

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**References**

22. Finneman B, Murphy K. Breast is best for GPs — or is it? Breastfeeding attitudes and practice of general practitioners in the Mid-West of Ireland. Ir Med J. 2004;97(9):268–70.
Next steps: towards child-focused nursing

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What is known about this topic

- Family-centred care (FCC) is a widely acknowledged professional concept but evidence that nurses enact it in practice has been difficult to substantiate. The philosophy of FCC has been the focus of much of the literature rather than evidence of its effects on care or health outcomes. FCC has been developed in a social and cultural vacuum, implying that it applies irrespective of cultures, societies and history.

What this paper adds

- Cultural safety and ethical symmetry are discussed as starting places to critically examine how nurses interact with children. Considering cultural aspects and the sociology of childhood can allow nurses to take account of cultural, social and temporal differences in the childhoods and the effect these differences have on the child's health.

- A critical approach is suggested, recognising the potential challenges to these approaches and suggesting the rigour of empirical research is required to see if cultural safety and ethical symmetry are useful adjuncts to FCC.

Declarations

Competing interests Nil known.

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Guarantor DR.

Contributionship Conception of idea, supporting funding, drafted paper — DR; developed ideas, found supporting literature, helped draft paper — AM; helped development of ideas, drafting paper, funding support — LS. All authors were responsible for the final writing and editing of the manuscript.

Acknowledgements

This work was supported by a 2008–09 Channel 7 Telethon Fellowship (Western Australia) and made possible by a Universitas 21 travel fellowship from the University of Birmingham.

Introduction

Family-centred care (FCC) is ubiquitous in health services around the world. At its centre is the concept that parents and family members are the centre of the child’s life, and that care should be planned around the whole family, not just the ill child. However, this model is untested by rigorous research, while qualitative studies are highlighting increasing concerns with it.

This paper discusses FCC and its problems, while presenting two other models, cultural safety and ethical symmetry. These may not be replacements for FCC, but could provide us with ways to critically examine FCC and rethink our ways of caring for children and their families, taking account of the cultures in which they live and understanding of children and childhoods derived from the sociology of childhood.

Background

Research into delivery of FCC in various geographical and psychosocial environments has demonstrated that...
its successful implementation has been impacted upon by differing parental and nursing staff expectations and perceptions of care, parental social demographics and cultural backgrounds. FCC is integral to many hospitals’ policies and practices, designed to plan care around the whole family, not just the individual child, while recognising that all family members are recipients of care. The concept of physical and emotional safety is explored by Leape et al., where all members of the family are deemed to be part of the health care process, not merely visitors to the patient. However, further commentary and research has demonstrated a lack of evidence about whether or not FCC works, or if it can be shown to be an effective model of nursing care, which can accommodate the social and cultural contexts of children’s lives, along with a child-focused approach. Children’s feelings of wellbeing in hospital are directly related to their capacity to feel engaged, and for their needs and their family’s needs to be anticipated and supported. The literature, and rhetoric, of FCC seems to have largely neglected how care delivered by nurses might be underpinned by ideas and concepts that engage children by relating to the cultural and social context of their lives. FCC has been developed in a cultural and social vacuum; the assumptions and values are portrayed as socially neutral. FCC, it is assumed, applies to all families, in all cultures and communities.

This paper explains the current state of play of FCC as a model of care, and proposes two models which, if not replacements, could possibly provide frameworks for improvements in its implementation. These are cultural safety and ethical symmetry.

Family-centred care

Throughout the literature, the descriptive nature of FCC has highlighted its philosophical rather than its evidence base, which brings into question its efficacy. Shields has supported Darbyshire’s emphasis on the importance of nurses and hospital management need to be aware that FCC is, in principle, the optimum ideal, but one that is almost impossible to implement, thus indicating the need to review new ways of delivering care to children. Effective client-centred care is essential in order to not only deliver high-quality clinical care but to encourage a partnership approach in developing health literacy and self-care skills. While any child-focused health professional might intuitively think that FCC provides such a model, qualitative research over the last decade demonstrates that all is not well with it.

Much research is being done in a variety of countries, so this cannot be said to be a model that is applicable to only Western, wealthy nations. However, there is a misconception held by many in the West, that hospitals in the majority world nations are “very good at FCC, because the parents always accompany their child to hospital”. It is true that parents and family commonly accompany their children to hospital, but this is most often a necessity rather than a conscious hospital policy — in countries with few resources and limited nursing staff, hospital patients are cared for by their family.

That aside, several themes arise from qualitative research about FCC over the last five years, from a range of countries. In the UK and Ireland, reports of parents being punished when they do not fit nurses’ stereotypes of ‘good’ parental behaviour, and were expected to behave to fit the nurses’ perceptions of what constituted good behaviour. Chinese parents found they had to demand to be allowed to stay with their child during a painful or stressful procedure, while American parents of children with cancer felt they had no choice but to trust their physician. Similarly to Shields et al., concepts of ownership of the child influenced communication between parents and health professionals in this study. Problems with FCC emerged early in the Nordic countries, where parents had to use strategies to have their needs met.

In an Iranian hospital, parents felt they had no choice but to undertake much of the nursing care, and their communication with nurses was suboptimal, while nurses felt they had little choice but to delegate both basic and complex tasks to parents because of low staffing levels. Poor working conditions and staffing levels were found to affect communication between parents and staff in a Tanzanian study of an intervention to facilitate parental involvement. This was also influenced by lack of support from hospital management and perceptions that nurses were of lower status than other staff members in the hospital.

Canadian health professionals are concerned about the shifting of responsibility of care and care management from staff to parents, similarly to Shields’ call for a re-examination of FCC as a model of care. Problems with FCC are not restricted to paediatric environments and hospitals. Parents in a community, non-specialist hospital in Australia felt hostility towards the nurses because of their (the parents) perception of powerlessness when their child was hospitalised, echoing Darbyshire’s exhortation that FCC is a wonderful ideal, but difficult to implement because the parents feel they are “parenting in public”, that is, in front of nurses, while the nurses (giving care before parents) feel they are “nursing in public”. It is this dilemma which is at the core of the problems of effective implementation of FCC, a model which, with its injunction that the family remain at the core of care for children, is, instinctively, necessary.

Coyne and Cowley have argued in a similar vein that the social worlds of children, parents and nurses come together in the social world of “the ward”. They also call for more consideration of cultural and social aspects of nursing children. In this paper we use the concepts of cultural safety and ethical symmetry to do, as Coyne and Cowley suggest, and attempt to integrate these concepts with that of FCC.

Cultural safety

The concept of cultural safety was first developed by Ramsden, who reviewed the ability of nurses in New Zealand to deliver improved health outcomes for Maori people through culturally responsive nursing care. This has since been expanded by researchers and health practitioners who have reviewed the meaning of cultural security in differing hospital and community environments worldwide. It is widely accepted as being an essential component of health services, with developmental steps towards cultural security needing to be explored prior to incorporation into any health environment.
Cultural awareness is the first step, where health professionals are able to learn about other cultures and cultural diversity. Secondly, an understanding of cultural sensitivity is reached, necessitating reflection on self-knowledge and clinical practice. Cultural safety is the highest attainment level and is based on individuals and families feeling safe in health care interactions. It is the most challenging to achieve and involves respect, trust, negotiation and a partnership approach to care. The ability to engage with individuals, families and communities is strengthened by reflective practice, recognising personal values, communication styles and professional respect. A strengths-based approach is needed, along with an understanding that achievement of cultural awareness, security and safety in clinical environments is an ongoing process.

Support for the health and wellbeing of children and their families is linked with the availability of culturally appropriate models of clinical care. The issues of social justice and cultural consensus in health care delivery are integral to ongoing relevance of care in all population sectors, with cultural safety and security being integral to positive health outcomes for individuals, families and communities. This is highlighted in the impact of culture on people’s health beliefs, attitudes, behaviours, motivation and decision making. Culture also influences the social construction of children, childhoods and parenting; thus cultural safety relates to how nurses deliver care to children and their parents. Eckerman et al. stipulated that cultural conflict can occur when understanding and decision making are not based on mutually agreed belief systems. This is particularly relevant when various population groups consider that the definitions and meanings attributed to health and wellbeing are too narrow or deficient within their scope of cultural or ecological considerations.

The World Health Organization considers the definition of health as being “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” This concept of viewing health beyond a biomedical model is supported by Talbot and Verrinder, highlighting the need to consider issues such as power and control, socioeconomic status, ethnicity, gender and the environment. Cultural beliefs are central to the meaning of health, and are reflected in the beliefs of many differing ethnic groups, such as the approach to achieving health taken by Australian Aboriginal peoples. The National Aboriginal Health Working Party describes health as not just the physical wellbeing of the individual, but the social, emotional and cultural wellbeing of the whole community, incorporating a whole of life view. Health, therefore, needs to be understood from a total social model of health perspectives, accommodating individual, family and community belief systems.

Cultural safety is viewed as an important health protective factor, which strengthens the debate around the need for cultural competence for health professionals, particularly for nurses caring for children and their families. Critical examination of FCC in children’s health care is needed, with a view to incorporating a culturally secure paradigm, in order to fully engage in the complexities of children’s lives and the communities in which they live. This will also assist in facilitating an appropriately constructed partnership in care. Cultural safety is viewed as an important health protective factor, which strengthens the debate around the need for cultural competence for health professionals, particularly for nurses caring for children and their families.

Ethical symmetry

Between cultures, and within cultures, sociologists point to the asymmetries which exist in and between societies. “Asymmetries” refers to how people are treated differently in communities; where there is no symmetry in the life chances they enjoy, this can be presented as a social gradient. Although health care professionals might aspire to treat everyone equally, and often espouse this aspiration, people are not treated equally and this affects their health. Children receiving health care are also subject to these social asymmetries. To address these asymmetries or inequalities and to promote more equal treatment of children, it is proposed the concept of ethical symmetry can be applied to FCC.
Ethical symmetry is a concept which was proposed as a response to the ethical complexity of researching with children by Christensen and Prout\textsuperscript{38}. They noted that new theoretical perspectives emerging from the sociology of childhood had changed how researchers understood children's abilities to participate in research, and in health care, how professionals' understanding about children as "users" of health care has been influenced by the public, patient involvement agenda\textsuperscript{39} and arguably by the same shifts in the sociology of childhood\textsuperscript{40}. This new view of children as active social agents poses ethical difficulties as much for the researcher as it does for health care professionals. Christensen and Prout\textsuperscript{38} recognised that the relationships between children and adults are changing and developing all the time. Ethical symmetry as an approach is then a set of values, or principles upon which to base reflexive practices, not a recipe to be followed to the letter.

Christensen and Prout\textsuperscript{38} draw on the ideas of Bauman\textsuperscript{41} and apply them to children. Bauman\textsuperscript{41} suggests a central aspect of postmodern ethics is how individuals take responsibility for "the other", or marginalised groups while Christensen and Prout\textsuperscript{38} suggest children can be seen as an example of "the other". Bauman\textsuperscript{41} makes a distinction between taking responsibility away from minority groups and taking responsibility for such groups, and Christensen and Prout\textsuperscript{38} suggest that taking responsibility away from children characterises a paternalistic relationship. Such paternalism is often found in the relationships between health care professionals and children\textsuperscript{42}. In contrast, taking responsibility for children reflects an ethical symmetry between the treatment of adults and that of children.

Christensen and Prout\textsuperscript{38} argue that Bauman's\textsuperscript{41} work on "the other" is of particular interest because he points out that the other, in this case children, should not be treated as the same as the majority (adults), nor can one reduce children to a set of general characteristic, such as age-related developmental cognitive abilities. Rather Christensen and Prout\textsuperscript{38} suggest that taking responsibility for children involves "... entering a dialogue that recognizes commonality but also honours difference"\textsuperscript{38}, p. 440. Thus, ethical symmetry needs to be understood as a contextual, ongoing relationship between practitioners, children and the communities or social networks in which children live. There are two principles which can guide this ongoing relationship between health care workers and children.

The first requires a critical examination of the assumptions that health care workers themselves may hold about children and childhood. Health care workers, children, their parents and other carers will all have views on what being a child means and what children at different ages are capable of; these views are socially constructed and temporal\textsuperscript{29}. Childhood is a part of the structure of communities, but childhood also changes over time (temporality). Consequently, for health care workers, their own childhood experience will be different from that of the next generation, who they are looking after. They need to understand about how childhood is being experienced by children now. This principle could be compared to the stage in cultural safety of self-awareness (see above) as nurses' understanding of children and childhood is influenced by the cultures in which they live and to which they are exposed.

Most of the assumptions made about children's abilities are premised on psychological models of development. However, many of these models have been challenged\textsuperscript{43} as has the concept of a universal developmental psychology\textsuperscript{30}. A critical stance pertaining to their own assumptions and those expressed by others involved in delivering and receiving care would allow health care workers to focus on the abilities of individual children. By challenging assumptions, a space can be opened in which practitioners take their cue from the child, listening and observing the child and adapting their interventions to suit the individual child. Although this may suggest an individualistic approach, the quote above from Christensen and Prout\textsuperscript{38} should be borne in mind. It is also useful to consider Christensen's work on "culture of communication"\textsuperscript{44}. Health care workers can take their cue from the child and also have a range of strategies which they have developed over time and which have proven useful, honouring the diversity of children's communication while recognising common ways in which children communicate.

Secondly, there should be symmetry to the way in which health care workers treat children and the way they treat adults. However, ethical symmetry is not ethical parity; children are not the same as adults. Christensen and Prout\textsuperscript{38} recognise this and suggest that when justifying the differences between the treatment of children and that of adults, the social, cultural and political context of children's lives need to be considered. This aspect of ethical symmetry has parallels with cultural sensitivity and safety. Nurses need not only to be sensitive to the cultural context of children's lives and the meanings of illness, but also take account of the cultural expectation of children, parents, families and communities.

A starting question could be: "Would I treat an adult in this way?" This question applied to clinical situations normally gives rise to a number of arguments as to why children should be treated differently. However, starting with this question can lead to a critical approach which questions why children are treated differently, and whether ethically or morally they should be treated differently. Arguing that children should be treated differently may be fully justified. There are often good physical, social, cultural and political reasons for treating children differently to adults. The power difference between children and adults may mean that to treat children the same as adults could place children at risk of harm. For example, health care workers might advise an adult with mental health problems which are exacerbated by a difficult relationship within their household, to move out. A child's options for moving out of the household may be very limited, and the alternatives, such as living on the street, are fraught with danger.

It is less certain that children should be treated differently based on cognitive abilities or age-related developmental rationale. Again taking the cue from the abilities of children rather than having set responses based on age would seem to be a safer approach. The rationale of treating children differently because, say, for argument's sake, "six-year-olds would not understand" is difficult to defend. Some six-year-olds may be able to understand the concepts very well. If one
is taking one's cue from the child the question is “can this child understand these concepts?”.

The ethical symmetry approach could be used to critically examine other asymmetries that apply to children living with illness. Similar arguments as those advanced above for the asymmetrical treatment of children and adults could be applied to the symmetry between health and illness, poor and rich, ethnic minorities and majorities. Assumptions are often made by health care workers in these areas too, and the asymmetrical treatment of children along these lines is also socially constructed and to some extent temporal. The question “would I treat a well, rich child from the majority community in this way?” would be as valid. Critically examining these reasons for treating children differently and the assumptions which inform them would be equally useful.

Ethical symmetry provides a principled approach to the critical evaluation of the symmetries and asymmetries of relationships between children and health care workers. These relationships do not occur in a social, cultural or political vacuum; rather ethical symmetry requires clinicians to engage in the complexities of the lives of children as they are lived within family and community contexts.

Conclusion
We present here the idea that FCC, while ubiquitous in health systems around the world, is untested, problematic and may be an ideal too difficult to reach. We question the ethics of continuing to pursue it as a model of care for children using health services. However, it is difficult to argue that a model which has, at its core, the parents and family as the centre of the child's life, is possibly flawed, unless we can suggest viable, appropriate alternatives. These are difficult to find.

Cultural safety, a concept devised by nurses in New Zealand, is now widely used across all government entities in New Zealand. It may provide a way of viewing the family as a whole during a child's hospital admission, while at the same time ensuring that the power relationships within the hospital encounter are safe for parents and child, and that their needs — emotional, social and physical — are all met in a fashion that supports them and helps them feel secure.

Ethical symmetry is a concept that sees the child at the centre of every interaction with health professionals, and similarly to cultural safety, addresses the power relationships inherent in any health care interaction. By learning to ask questions about one's interactions with children, one can learn to ensure the relationship has a symmetry which will ensure the child's human needs are met.

Both of these models are not without their detractions as alternatives to FCC. Firstly, any model with a catchy title, be it “family-centred care”, “cultural safety” or “ethical symmetry” stands in danger of becoming a sacred cow. Health care delivery is awash with such sacred cows, many as untested as FCC. It would be unwise to replace FCC with something equally unproven.

Cultural safety has its own inherent problems. Any model buttressed by cultural differences brings into relief the concept of cultural relativism. Respecting cultural constructs in all societies is all very well, but a degree of common sense and reflection about the ethics of cultural constructs is required. If a family in a hospital comes from a culture in which cannibalism is the norm, it is highly unlikely that such dietary requirements will be respected by the food services department. Or to furnish a less flippant example, female genital mutilation, which is accepted by some societies, but not in most, in a family health service, is unacceptable, and often illegal, as it violates young women's rights.

For ethical symmetry similar but different dilemmas exist. The empowerment of children through the critical approach used in ethical symmetry may be seen as desirable by health care workers, but this view may not be shared by the communities in which children live. Further, it is unclear how health care workers who “take responsibility” for children ensure that they avoid imposing their own cultural or social values on children and their families. Ethical symmetry focuses on the relationship between children and health care workers, what needs further consideration is how this dyad of child–nurse relates to other important relationship in children's lives, such as those with their parents or other family members.

None of the approaches discussed in this paper take account of children's health status. Illness as a factor and its effect on the care of children, the relationships and ethical and moral dynamics in health care is absent. This would seem to be a major oversight and one which should be rectified in future work to develop the approaches of cultural safety and ethical symmetry.

While neither cultural safety nor ethical symmetry may be replacements for FCC, they are potential adjuncts. It is only by implementing and evaluating these approaches will we know which works and which does not. As even FCC itself remains untested by rigorous research, much work has to be done to devise, evaluate and promote the best way of caring for children and their families during an encounter with a health service.

References


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A pilot study exploring Australian general practice nurses' roles, responsibilities and professional development needs in well and sick child care

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Abstract
Aim Explore practice nurses' (PNs) role in child health and development, and advising parents about child health issues.
Background Introduction of the four-year-old child health check into general practice in 2008 placed additional responsibilities on PNs in child health and wellness. This study explores their readiness to expand their practice into this area.
Design Integrated mixed method design, self-report survey.
Method A purpose-developed questionnaire explored demographics, child health roles and responsibilities, difficulties encountered, professional development needs, barriers and facilitators, and professional development activities undertaken in the past year. Surveys were posted to 218 PNs in one rural Division of General Practice (DGP) in Queensland, Australia; 29 responded.
Results PNs reported a significant role in well and sick child care (93.1%) though few had a paediatric/child health background (14.3%). Roles included immunisations (92.3%), child health checks (65.4%), general child health and development (26.9%), asthma (23.1%), feeding (15.4%), fever (11.5%), settling/sleeping (11.5%). PNs were interested in learning more about (81.5%) and incorporating more child health into their practice (81.5%). Professional development in childhood growth and development (80.0%), health and illness (60.0%) and advising new mothers (20.0%) was needed.
Conclusions PNs play a substantial role in child health, are unprepared for the complexities of this role and have preferred methods for undertaking professional development to address knowledge deficits.
Implications for practice PNs are unprepared for an advanced role in child health and wellness. Significant gaps in their knowledge to support this role were identified. This ever-expanding role requires close monitoring to ensure knowledge precedes expectations to practice.
Keywords: Primary health care, professional development, nurses' professional role, child health.

What is known about this topic
- Government priorities and geographical setting determine roles and responsibilities of nurses in general practice.

What this paper adds
- Identification of the need to ensure all PNs are upskilled prior to implementation of Medicare items related to their practice in general practice settings.
- PNs are interested in expanding their child health and development role.
- PNs have significant knowledge deficits in childhood growth and development, child health and illness and in advising parents.
- PNs' current care of children in the general practice setting.

Declarations
Competing interests None.
Funding Funded by a Research Seeding grant from the Queensland University of Technology School of Nursing.
Ethical approval Permission to conduct the research was granted by the Queensland University of Technology (QUT Human Research Ethics Committee (approval number 080000618) in September 2008.

Guarantor AMW.
Contributorship Concept of study, data collection, data analysis, interpretation, manuscript preparation — AMW; assistance with data analysis and interpretation, manuscript preparation — AEM.
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instrument and to the PNs who participated in the study. This research was funded by a Research Seeding grant from the Queensland University of Technology School of Nursing.

**Introduction**

Improving equitable access to health care services in rural and remote areas in Australia was the impetus for expanding and defining the role of nurses employed in general practice settings, a previously unrecognised nursing speciality. Shortages in the general practitioner (GP) workforce, increasing numbers of people living with chronic conditions, and patient expectations influenced this movement. This paper reports findings from a pilot study exploring the expanding role of practice nurses (PNs) into child health and development (CH&D) following the introduction of the The Healthy Kids Check initiative in 2008, where the basic four-year-old child health checks, previously undertaken by child health nurses, were to be undertaken by nurses in general practice settings.

**Background**

The National Nursing in General Practice (NiGP) initiative, a four-year program, began in 2001 to improve access to medical services in rural and remote areas of Australia through the employment of nurses to assist in chronic disease management. Incorporated in the initiative were significant financial incentives for rural/remote GPs to employ PNs. Necessary funding for professional development and skill training was provided to ensure PNs were competent in their new and/or expanded role. The Australian Practice Nurses Association (APNA) professional organisation was founded that same year, and practice nursing became recognised as a distinct nursing specialty; it is now acknowledged as an essential component of Australian primary health care. The NiGP initiative was so successful it was expanded to provincial and finally metropolitan areas.

In 2004, four distinct core roles for PNs were identified: clinical care (for example, assessing sick patients, pulmonary assessments), clinical organisation (for example, chronic disease management, triage), administration (stock management, receptionist duties), and integration (liaising with other services) similarly to other studies. Most Australian PN research focuses on demographics, roles and activities, and describing the collaborative work between PNs and GPs. However, PN roles vary with patient demographics; for example, with mostly older patients they may focus more on chronic disease management; with high proportions of young families they may focus more on immunisation and CH&D issues.

An Australian Government-commissioned study in 2005 confirmed the efficacy of PNs in chronic disease management. Employment of PNs improved the quality, access and affordability of primary health care, and correlated positively with improved patient throughput and reduced waiting times. Further government initiatives supported the expansion of PNs’ roles. For example, the MedicarePlus Package (2004) extended employment incentives of the NiGP initiative to metropolitan areas. Further extension of the NiGP initiative (2005) for training to identify and respond to domestic violence in rural and remote areas; and the release of Medicare Benefit Schedule item numbers (2004) for PNs to provide, on behalf of GPs, immunisations and wound care. In 2005 Pap smears and chronic disease management were included; and, in 2008, through The Healthy Kids Check initiative, the basic four-year-old child health checks that were previously undertaken by child health nurses. There is a potential for all PNs in general practice settings to conduct this check depending on their practice guidelines.

There are now nearly 9000 PNs Australia-wide, with an anticipated increase per year by 500. The proportion of GP−patient encounters involving PNs doubled between 2005 and 2006 (4.2%) and 2008 and 2009 (9.0%), with PNs now involved in 10.5 million encounters annually. Approximately 60% of general practices now employ a PN.

**Child health role**

Prior to 2008, Australian PN’s role targeted mostly adult patients, with immunisation their main role in child health. Introduction of the four-year-old child health check required PNs to be knowledgeable about the health and development of children — an area traditionally undertaken by child health nurses in state-funded community clinics. Some child health knowledge may have been presumed, as several Australian PN core activities target areas of child health — namely, wound care management, immunisation recall and management, patient counselling, asthma education, lactation support, and child health assessments. Many PNs who work in areas with young families include immunisation and child health issues in their role.

In Australia, children under the age of five years account for 68.4% of the total allocated health expenditure for Australian children (younger than 15 years of age), representing a significant proportion of Australian health care costs. Increases in dual-income and single-parent families influence parents’ access to traditional CH&D assistance through state-funded child health clinics. In 2009–10, 63% of both parents and 62% of parents in single-parent families with children under 15 years of age were in paid employment; both parents were employed in 49% of Australian families with a child 0–4 years of age. Also affecting parents’ access to child health services is the reduction and redistribution of child health resources to focus on families “at risk” from factors identified as predicting poor childhood outcomes such as learning difficulties and delinquency. These changes raise questions about child health nurses ability to, with their limited resources, provide necessary assistance to “low risk” families, despite new models of care such as “drop in” and “open plan” clinics currently being evaluated. Changes in child health nursing’s focus, and increases in working parents, reduce access to health professionals for CH&D advice. PNs in general practice settings are ideally placed to assist many families in the area of CH&D, especially in areas with high proportions of young families.

Development of the PN role in Australia has been successful. Changes in Australia’s social structure, and economic environment and the needs of Australian parents indicated the timeliness for another expansion of the PN’s role into child health. The introduction of the four-year-old health check evidenced the need to offer an accessible alternative service to child health clinics. Most recently, plans to redesign...
the four-year-old health check as a three-year-old check including assessment of the child’s emotional wellbeing15 further highlights the need for PNs to be able to adapt to, and meet the demands of, their evolving CH&D role.

Methods
An integrated, mixed method design was used for this exploratory, cross-sectional study. As this is an area with no previous research and the authors were interested in reaching all PNs in a Division of General Practice (DGP) with a large geographical base, a qualitative study may not have been appropriate. Therefore, a mixed method instrument was designed to gain both qualitative and quantitative data, enabling triangulation of data16. Qualitative data were collected where no previous knowledge of the item of interest existed; for example, PNs’ role in child health and wellbeing. Quantitative data were collected relating to demographics, interest in further developing a child health role, and satisfaction in their role.

Aims
The aims of this pilot study were to explore the role of PNs in child health and development, and their role in advising parents about child health issues. Key aims were to identify: (i) roles and responsibilities of PNs in advising parents about well and sick child health care in, for example, breastfeeding, immunisation, fever management, and medication dosage and administration; (ii) professional development needs; (iii) barriers or facilitators to PNs’ professional development; and (iv) role satisfaction.

Ethics
Ethical approval was obtained from the Queensland University of Technology, University Human Research Ethics Committee (approval number 0800000618).

Participants
All 218 PNs employed within a DGP in a regional area of Queensland, Australia, were eligible to participate in this study. This DGP covered diverse economic and social groups, with a large geographic area, approximately 7000 km², encompassing Rural, Remote and Metropolitan Areas (RRMA)17 classification areas 3 to 5 (rural). Questionnaires, study information and reply-paid envelopes were mailed from the DGP to all eligible participants at their place of employment. Return of a completed questionnaire was considered consent to participate. Completed questionnaires were returned by 29 PNs, representing a response rate of 13.2%, comparable to that seen in previous research with nurses18. Geographical location of respondents, according to the RRMA classification was 3.4% from a capital city (1), 15.6% from a large rural centre (3), 34.5% from a...
small rural centre (4), 44.8% from other rural centre (5). Most (72.4%, 21) had undertaken at least one course related to CH&D. Immunisation (62.1%, 18) was most frequently reported along with maternal and child health (31.0%, 9), asthma (6.9%, 2), diabetes education (3.4%, 1), and wound care (3.4%, 1).

Table 1: Participants' clinical and educational backgrounds n=29

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<th>Clinical background †</th>
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†n=28 (1 missing response)

Child health and development roles and responsibilities

Nearly all had a significant role in well and sick child care (93.1%, 27), were interested in learning more about CH&D (81.5%, 22) and incorporating more child health activities into their practice (81.5%, 22). Respondents engaged in many roles related to CH&D in the previous week (Table 2). Many were for immunisations or child health checks. Others were for general health advice, asthma care, infant feeding, fever management, settling or sleeping problems, and adolescent mental health counselling. In these roles, PNs had a wide range of responsibilities (Table 2). These responsibilities included well and sick childcare, educating, advising, and counselling. Figure 2 displays in-depth PNs' responsibilities related to child immunisation, which is their main role.

Professional development needed

Most identified a need for professional development in growth and development (80.0%, 12), child health and illnesses (60.0%, 9) and advising new mothers on feeding, sleeping and settling (20.0%, 3). Antenatal care (13.3%, 2), nutrition and lifestyle choices (13.3%, 2), school-aged child and adolescent health care (13.3%, 2), immunisation (13.3%, 2), and child behavioural problems (6.7%, 1) were also identified.

Nurses identified a need to keep up to date with current information, that there was a gap in the timely sharing of patient information between tertiary and primary care, making it difficult to care for children recently released from hospital. Other PNs found it difficult to answer growth and development queries and trying to find the time to attend child health meetings and courses (Table 3).

Professional development previous year

Professional development activities attended during the previous year favoured adult health; 71.4% (20) had attended at least one adult health activity in the previous year (2.1±2.1). Fewer (58.6%, 17) had attended activities targeting CH&D (1.0±1.1), with immunisation reported most frequently (60.7%, 17). One-third, 41.4% (12) were contemplating a child health/development-related course.

Barriers and facilitators to attending professional development

Most PNs (72.4%, 21) reported barriers to attending professional development that aligned with well-documented barriers24,25: lack of time (37.9%, 11), family commitments (37.9%, 11), travelling distance required (17.2%, 5) and financial constraints (13.8%, 4).

Many (68.2%, 15) identified factors facilitating professional development. For example, employers encouraged continuing education (54.5%, 12). Some had access to local (27.3%, 6), reasonably priced (4.5%, 1) courses; internet (13.6%, 3) and library (4.5%, 1) access; and workload relief (4.5%, 1).

Attendance at professional development

Of note is that PNs attended professional development in their own personal time. PNs attended both child and adult health professional development in their own time, not in work time. This was the case for both child (65.4%, 17) and adult health (71.2%, 37) professional development activities. Personal funds were used. Half partially or wholly funded child (48.0%, 12) and adult health (53.4%, 31) activities; employers funded one-third of child (28.0%, 7) and adult/general health (32.1%, 18), and external sources provided funding for one-quarter of the child (24%, 6) and adult/general professional development activities (12.5%, 7). External sources included scholarships from professional organisations (for example, Australian Practice Nurse Association, Divisions of General Practice) and other organisations (for example, Lifeline).

Membership in professional organisations provided useful child health information (85.2%, 23), addressing some professional development and continuing education needs (82.6%, 19). Those with access to professional literature in their workplace found this useful (87.5%, 14). Of concern is...
that half the PNs (53.6%, 15) had no access to professional journals or newsletters in their general practice setting.

**Preferred modes of professional development**

Modes of professional development preferred by PNs were workshops (66.7%, 18), seminars (51.9%, 14), conferences (48.1%, 13), continuing education articles (48.1%, 13), online, self-paced modules (37.0%, 10), small group updates (33.3%, 9), distance education (29.6%, 8), and short, self-paced courses (22.2%, 6). Interestingly, university courses were the least preferred mode of continuing education (3.7%, 1).

Most (66.7%, 18) expressed interest in online professional development. Additionally, to promote their child health role, PNs identified a need for GPs to become aware of their registration requirements relating to continuing education (36.4%). Other suggestions were access to state updates and education (18.2%), videos on educating parents (18.2%) and child health courses (15.5%).

**Role satisfaction**

Respondents rated their satisfaction with various aspects of their PN role. They were least satisfied with remuneration, potential to expand their scope of practice, opportunities for professional development, and encouragement to undertake continuing education (Table 4).

**Table 4: Satisfaction with various aspects of the PN role n=29**

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships with co-workers</td>
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<td>0.9</td>
</tr>
<tr>
<td>Flexibility of working hours</td>
<td>5.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Quality of supervision/assistance available</td>
<td>5.3</td>
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<td>Current position†</td>
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<tr>
<td>Work</td>
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<tr>
<td>Security the position provides</td>
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</tr>
<tr>
<td>Encouragement to undertake continuing education</td>
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<td>1.8</td>
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<tr>
<td>Opportunity for professional development</td>
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<td>Potential to expand scope of practice</td>
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<td>Remuneration</td>
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†n=28 (1 missing response).

**Discussion**

PNs have an extensive role in the primary health care of children and families, covering well and sick child care as well as advising, educating and counselling parents on CH&D issues from birth through to adolescence. Although significant proportions of PNs’ work time was related to CH&D, the quality of care provided by PNs is largely contingent upon the education, training and ongoing professional development opportunities available to them to support their roles. It is concerning, given the limited preparation for the CH&D role reported in this survey, and that professional development activities undertaken by the PNs may be inadequate to support evidence-based practice in this area.

Although keen to expand their role in CH&D, PNs identified a need for additional education and professional development.
across many areas. While barriers to accessing professional development were congruent with those reported in previous research, it is notable that these PNs were working in predominantly rural areas. Half the PN workforce in Australia practise in regional, rural or remote areas. Barriers such as isolation and travelling long distances to access professional development are highly relevant. It is essential that strategies to improve access to continuing CH&D education are designed to limit the impact of geographical and professional isolation on practice.

Online courses, and internet and library resources may support PNs in maintaining current CH&D knowledge on which to base their practice. However, difficulties with computer access, limited broadband access and lack of information technology skills are significant barriers to rural PNs accessing online educational resources. Barriers of family and work commitments highlight the importance of offering professional development activities in easily accessible modes. Existing resources, such as DVDs of paediatric and child health conference presentations, could be made available at minimal cost to PNs who are unable to attend professional development activities in person, and may provide an alternative to those with limited computer or internet access.

Finally, employers who encouraged professional development were considered important facilitators of ongoing professional development. Unfortunately, PNs reported low satisfaction with and lack of encouragement to undertake continuing education/development, and potentially expand their scope of practice. While the initial cost of providing development opportunities to PNs in terms of time and resources could be significant, practices need to recognise the clear benefit that up-to-date, skilled PNs offer their organisation and their patients. Encouraging and assisting PNs to seek external funding (for example, scholarships) to pursue professional development opportunities is essential.

**Strengths and limitations**
The sample, though small, was from an area comparable to many of the Australian Divisions of General Practice, validating the use of an integrated, mixed method approach. PNs who responded may have a specific interest in child health or work in a setting with many young families. Findings highlight the need for further exploration of this area.

**Implications for clinical practice**
As primary health care practitioners, PNs are ideally placed to assist new parents to adapt to their new role, providing CH&D support to those unable to access traditional government-provided child health services. The introduction of the four-year-old health check has the potential to bring PNs into contact with more parents and young children, possibly a new cohort. These checks offer an ideal opportunity to explore parents’ health and developmental concerns, answer questions and refer to other health practitioners when necessary. Access to evidence-based child health information is essential to fulfil this role. General practice managers/practitioners need to be aware of the important benefits from ensuring PNs access to continuing professional development but also that it is now an essential part of their ongoing registration. Those working in government hospitals receive a professional development allowance — it is now time for primary health care nurses to receive similar support.

**Conclusion**
PNs are unprepared for their role in CH&D and need substantial additional support to provide high-quality, evidence-based care to children and families. Much of their professional/continuing education is self-funded and undertaken in personal time. This survey identifies the need for further exploration of this area. It identified PNs’ role in CH&D and provides the grounding to develop an instrument to explore Australian PNs’ roles in well and sick child care. Due to their lack of preparation for, and predicted expansion of this role, with the three-year-old child health check in 2012–2013, further exploration of and identification of appropriate and timely modes of education are essential. This ever-expanding role requires close monitoring to ensure knowledge precedes expectations to practice.

**References**
**Clinical context**

Although the survival rates of preterm and low birthweight infants has increased, problems with cognitive and motor delay may develop and extend into adulthood and present a significant problem for these infants.

Developmental programs include in-hospital and post-discharge interventions. Developmental care focuses on reducing the stress of infants while they are in hospital. Post-discharge interventions generally focus on the parent–infant relationship, the development of the infant, or both. An intervention may be preventative, or treatment-focused, if a specific dysfunction has been identified.

The aim of this Cochrane Review was to determine the effect of post-hospital discharge developmental programmes on cognitive and motor development.

**Methods**

**Inclusion criteria**

**Studies**

Randomised, or quasi-randomised controlled trials.

**Participants**

Preterm infants (<37 weeks’ gestation). Studies that did not report outcomes for preterm infants separately from term infants were excluded.

**Intervention**

Early developmental programmes post-hospital discharge that aimed to improve cognitive or motor outcomes (the intervention could commence while an in-patient but had to be continued post-discharge).

**Outcomes**

Cognitive outcomes using an age-appropriate validated scale (infant age, pre- and school age, and adult). Motor outcomes using an age-appropriate validated scale (infant age, pre- and school age and rate of cerebral palsy).

Pre-specified subgroup analyses included the effect of gestational age, birthweight or periventricular leukomalacia/intraventricular haemorrhage on cognitive and motor outcomes, and the effect of timing of interventions (in-patient or post-hospital discharge).

Sensitivity analysis: Effect within high-quality randomised controlled trials (RCTs) on cognitive and motor impairment.

**Results**

Twenty-one trials with 3133 infants were included in the
review. Twenty trials aimed to compare cognitive or motor outcomes with standard follow-up. One trial used a placebo treatment group. The programmes were implemented by doctors, physiotherapists, nurses, intervention therapists, education professionals, psychologists, occupational therapists and/or speech pathologists. Interventions included teaching parents about infant development and milestones (nine trials), understanding behavioural cues (11 trials), infant stimulation (four trials), physiotherapy (10 trials), occupational therapy (one trial), early educational intervention (two trials), and enhancement of the parent–infant relationship (12 trials). Some trials used a combination of these interventions.

The frequency and duration of the programmes varied from four sessions over around one month to weekly for 12 months and followed by biweekly sessions for a further two years. Most interventions began post-discharge from hospital. Six studies began when the infant was an in-patient.

Risk of bias
Seventeen trials were randomised, and four were quasi-RCTs. The methodological quality of the trials was variable. Only six trials had adequate allocation concealment and greater than 85% follow-up. Most of the trials had high or unclear risk of selection and performance bias.

Effects of intervention (meta-analysis)
Meta-analysis demonstrated significantly higher cognitive outcomes for infants [Standardised Mean Difference (SMD) 0.31 Standard Deviation (SD) (95% Confidence Intervals (CI) 0.13 to 0.50); 13 studies], P<0.001 and pre-school age children [SMD 0.45 SD (95% CI 0.34 to 0.57); six studies], P<0.001 who received early developmental interventions compared to standard follow-up. However, there was significant heterogeneity reflecting the diversity of the early development programmes. There was no difference for school-age children (four studies). Cognitive outcome scores were significantly higher for in-patient, and post-hospital discharge programmes for infants and pre-school age, but not school-age children.

Motor outcome scores were significantly higher for infants who received early developmental intervention compared to standard follow-up [SMD 0.10 SD (95% CI 0.00 to 0.19); 10 studies], P=0.04 but not for pre-school age (three trials) and school-age children (three trials). Motor scores were significantly higher for in-patient, but not post-hospital discharge programmes.

Authors’ conclusions
Implications for practice
The authors concluded that early developmental interventions post-hospital discharge for preterm infants resulted in improved cognitive development at infant and pre-school age and a small improvement in motor development at infant age. The heterogeneity due to programme content, focus and intensity limited the strength of the conclusions.

Implications for research
There is a need for more high-quality RCTs to identify specific, effective components of successful early developmental interventions for preterm infants. Research examining more long-term follow-up of motor and cognitive outcomes is needed. Other outcomes not included in the review such as behaviour, parental outcomes, function, activity levels or participation may also be affected by early developmental interventions.

Summarised from:

Publication status and date: New search for studies and content updated (conclusions changed). Review content assessed as up to date: 1 October 2012.

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