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ORIGINAL RESEARCH

Pediatricians' Perspectives on Introducing Transitional Care into Handover Between Pediatric Intensive Care Units and General Wards

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Background: Despite the availability of a considerable number of studies on transitional care, few qualitative studies have synthesized physicians' perspectives on PICU-to-ward transition to develop a comprehensive transitional care curriculum. The aim of this study is to explore physicians' perceptions and management of the transition of critically ill children from the PICU to the general ward, with the aim of providing an evidence-based curriculum.

Methods: A qualitative study was conducted between July and August 2022. The study involved semi-structured interviews with 11 participants, and data analysis was carried out using NVivo 12.0 software through thematic analysis method.

Results: Based on the data analysis, three main themes were identified: recognition of professional roles during transition, difficulties during implementation transitional care and suggestions for improving transitional care.

Conclusion: The insights of doctors can be valuable in improving transitional care for critically ill children during PICU-to-Ward transition and in developing relevant curricula. It is essential to introduce standardized clinical pathways and strengthen curricula on critical elements, including communication and follow-up.

Keywords: pediatric intensive care unit, pediatricians, transitional care, qualitative study

Introduction

The Pediatric Intensive Care Unit (PICU) is a critical component in the management of children who are severely ill. A recent epidemiological survey conducted in the United States revealed that 230,000 children are admitted to the PICU every year.[1] Additionally, there is a rising trend in the number of children with chronic ailments and those with complex medical needs requiring long-term care in PICU.[2,3] Unfortunately, hospitals face bed shortages and overcrowding issues.[4] In modern medicine, it is a common practice to transfer critically ill children between PICUs and general wards. This includes transferring professional responsibilities and obligations towards patients from one doctor to another.[5,6] Chaboyer et al[7] referred to this period as ICU transitional care, which involves a series of interventions provided by ICU nurses and other medical staff before, during, and after the transfer to ensure continuity and coordination of care.

Transitioning critically ill children from PICU to general wards remains a complex process that necessitates the cooperation and involvement of physicians, nurses, and parents. As such, it is vital to comprehend the perceptions of all stakeholders involved. Numerous national and international studies have evaluated how parents and nurses manage the transition of critically ill children.[8–12] Although the 2009 Transitions of Care Consensus highlighted the crucial role of doctors,[13] there has been limited exploration of doctors' perceptions regarding the care transitions of critically ill children. Additionally, doctors are crucial in ensuring the transfer of information and care responsibility during this

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period.[14,15] However, only 76% of the information is handed over before a patient is admitted to the general ward.[16] In addition, inadequate transitions manifest in very serious ways—medical errors and increased recidivism.[17,18] Consequently, the doctors' handoff process should consider important details, such as the timing and efficient communication of key information.

Doctors often lack formal education in improving patient care transitions, which contributes to medical errors.[19] As such, learning to manage transitions is an essential skill for doctors to master. Previous interventions have taught transitions from hospital to home to a range of learners, from preclinical medical students to attending physicians and allied health professionals.[18,20–22] Most of them found that a clinically oriented curriculum for medical students improved their interdisciplinary collaboration and transitional care knowledge.[21,22] However, there have been few curricular on how to transition critically ill children from PICU to wards. Thus, it is crucial to implement educational interventions that educate doctors about their role in an interdisciplinary team and their duty to ensure safe transition. Existing research on improving doctors' practice during this sensitive period has focused on documentation, reliability, and timeliness of handovers.[16,23–25] However, lack of qualitative studies explored deeply about their perceptions of PICU-to-Ward transition. Therefore, this study aims to provide insight into doctors' perceptions and practices regarding transitional care between PICU and general wards, as well as how this care can be effectively delivered, which also provide practical suggestions for a novel and effective educational intervention.

Methods

Design

In this qualitative study, doctors' perceptions of transitional care and strategies to enhance patient care transitions from the PICU to general wards were described using thematic analysis. Data were collected through semi-structured interviews with PICU and ward doctors. To ensure the rigor and transparency of our study, we adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ).

Participants and Setting

The study was conducted in a specialized pediatric hospital in Shanghai that has 15 departments. To ensure the maximum number of respondents and a wide range of responses, a purposive sampling method was used. The study's purpose was first explained over the phone to department leaders, including those in the PICU and departments corresponding to the most treated diseases in the PICU. These leaders then emailed doctors to gauge their interest in participating. The researcher then determined the time and place of each interview with the participants who met the inclusion and exclusion criteria.

Participant Eligibility

Doctors meeting the following criteria were eligible to participate: (1) PICU or ward doctors with at least 5 years relevant clinical experience; (2) being an attending doctor or higher in rank; (3) having at least 2 years' experience in PICU; and (4) voluntarily agreeing to participate in the study by signing an informed consent form. Doctors who were still undergoing training or were trainees were not eligible for participation.

Data Collection

In July and August 2022, we conducted face-to-face semi-structured interviews with doctors to explore their perceptions of transitional care and suggestions for improvement. To guide the interviews, we used a structured interview guide that was developed based on a review of relevant literature[26,27] and clinical experience. Prior to the formal interviews, three doctors were pre-interviewed to refine the semi-structured interview outline. The team continually revised the outline based on data analysis. The interview guidelines are presented in Figure 1.

The interviews were conducted in Chinese by the first author. Before the interview, participants were briefed on the study's purpose and focus. They provided written informed consent, agreeing to audio recordings and the publication of their anonymized responses. Participants were assured that their participation was voluntary and that their information

Interview questions
1. What are the roles of PICU doctors and nurses in the transition from the PICU to the general ward?
2. What are the essential elements that medical staff should include in their handover during transfers of patients to and from PICU?
3. How do you communicate with patients and their families during the transition from and to PICU?
4. Do you think it's necessary to follow up on patients who have been transferred to the ward?
5. Is there anything the PICU staff can do to help patients and families adjust to the ward?
6. Can you share your thoughts and emotions regarding this transition? Have you encountered any challenges during the process of transitioning?
7. Do you have any additional perspectives regarding the advancement of transitional care in PICU?

Figure 1 Interview guide.
Abbreviation: PICU, pediatric intensive care unit.

would be kept confidential. Appointments for interviews of different participants were made and the researcher used the interview guide during the interview sessions. The interviews took place in a private room at the pediatric unit, with a duration of approximately 30 to 45 minutes. Recordings of the interviews were transcribed verbatim, and doctors' body language, non-verbal expressions, and thoughts and reflections related to the interviews were documented in field notes. Data collection stopped after the 11th participant because the saturation point was reached, and no new viewpoints were found in subsequent interviews.

Data Analysis

The interviews were transcribed within 24 hours. All audio recordings were transcribed verbatim in Chinese and imported into NVivo version 12. Subsequently, the author group consulted closely with English professional reviewers, and conducted translations and back-translations to ensure accuracy.

The transcripts were analyzed systematically using a thematic analysis.[28] It involved five steps. Firstly, the first and second authors conducted independent inductive coding to gain a deeper understanding of the overall content by repeatedly reading through the transcripts. Secondly, researchers extracted and coded interview data by writing notes and codes in the margins of analyzed text. Thirdly, different codes were sorted into potential themes using NVivo software. Fourthly, identified themes were reviewed, modified, and developed. Fifthly, these themes were further discussed and revised until a consensus was reached among team members consisting of the first and second authors, two nursing graduate students, and a professor with research experience in critical care and qualitative methods. This iterative process involved reusing data multiple times until no new insights emerged.

Ethics Approval and Consent to Participate

Ethical approval was granted in advance by the Children's Hospital of Shanghai (Ref: 2021R098-E01). Implied consent to participate was indicated when participants provided responses to interview and there was no identifiable information in the transcripts.

Results

Description of Participants

A total of 11 doctors were interviewed and characteristics of the participants are presented in Table 1.

Theme 1: Recognition of Professional Roles

During the implementation of transitional care, doctors and nurses take on distinct roles. Doctors mainly serve as assessors and decision-makers, while bedside nurses are more likely to take charge of transitional care.

Strengthening the Role of Nurses

Nurses play a vital role of facilitator during the traction period. On the one hand, nursing staff is the most direct observer of the critical illness child's condition and dominates transitional care.

It is difficult for doctors to keep track of critically ill children. However, nurses continuously attend the patients and possess inclusive comprehension of the child's fundamental condition (Doctor 3).

Nurses played a significant role during the transitional care period. Their responsibility included safeguarding children during patient transfers. Furthermore, nurses assisted parents in developing caregiving skills and provided psychological support (Doctor 7).

The transfer of a patient from the PICU to a general ward is a crucial stage in the transition process. Both PICU and ward doctors suggest that the perspective of nurses on transferring critically ill children from the ICU to the wards is also crucial.

To determine if a child needs to be transferred, I usually also consult with nurses, who will provide me with information about the child's general condition and any special circumstances that may apply (Doctor 6).

The nursing staff is in the best position to assess the general condition of the patient, so if a nurse, especially one with clinical experience and seniority, considers a patient ineligible for transfer, we will certainly take this advice into account (Doctor 3).

On the other hand, nurses are required to collaborate with multiple stakeholders. Consequently, it is crucial to improve their competencies, which should possess not only strong foundational knowledge and clinical skills, but also excellent communication skills.

Transition nurses should have excellent professional skills and rich experience. Additionally, they must be able to communicate effectively with doctors and parents (Doctor 8).

Nursing staff play crucial roles in patient care, which makes it essential for transition nurses to possess excellent critical thinking skills and decision-making abilities that can be applied in any situation (Doctor 3).

The transitional nurse should know what changes the child may experience within a few hours of being transferred out, and how to detect various unexpected situations in time and notify the attending doctor. In an emergency situation, nurses should be able to work with the attending doctor as quickly as possible (Doctor 6).

Table 1 Characteristics of Professionals

ID	Age	Gender	Technical Title	Current Department	Working Experience in PICU (Years)	Working Years
D1	41	Male	Attending doctor	PICU	16	17
D2	41	Female	Attending doctor	PICU	12	13
D3	34	Male	Attending doctor	PICU	6	6
D4	49	Female	Attending doctor	PICU	25	27
D5	39	Female	Attending doctor	Respiratory medicine	5	16
D6	48	Male	Chief doctor	Neurosurgery	8	25
D7	35	Female	Attending doctor	Hematology	3	13
D8	33	Female	Attending doctor	Gastroenterology	2	8
D9	34	Male	Attending doctor	General surgery	4	10
D10	37	Female	Attending doctor	Gastroenterology	3	12
D11	47	Female	Chief doctor	Neurology	5	23

Collaboration Between PICU and Ward Doctors

Shared decision making is utilized to determine whether critically ill children should be transferred from the PICU. This process involves a comprehensive assessment of the child's condition by both the ICU and ward doctors, which entails exploring potential treatment options, their accompanying side effects and inherent risks.

When deciding whether to discharge a child, a thorough evaluation is carried out taking into account the following factors: bone marrow condition, laboratory indicators, objective stability of the child's condition, shock and bleeding control, and parental involvement in treatment (Doctor 10).

Once the patient's concerns have been assessed by both the PICU and specialist, and a mutual agreement has been reached, the patient will be transferred from the PICU to the ward based on a joint decision. (Doctor 7).

Theme 2: Difficulties During Implementation Transitional Care

Transitional care involves multiple processes before, during, and after transfer. Professional staff often encounter several challenges during this period.

Deficiencies in Communication

Family members play a crucial role in advocating on behalf of critically ill children. However, doctors often prioritize communication with parents and sometimes overlook the child's emotions and perspectives.

In general, younger children are often not communicated directly because they are considered incapable of thinking or making decisions for themselves. However, these children may have concerns about death (Doctor 3).

A significant amount of time is spent communicating with the mother once the patient is transferred to the ward. The aim is to involve parents early on in their child's care and alleviate any anxiety they may have (Doctor 9).

Communication problems often arise during the transition period from PICU, which can have a negative impact on patient safety. Some doctors have reported that there was inconsistent communication between PICU and ward doctors during this time.

Doctors with higher education but limited clinical experience may lack effective communication skills. This deficit can negatively affect their ability to communicate with colleagues and parents, leading parents to perceive them as unreliable communicators (Doctor 4).

The lack of communication between doctors in the PICU and those on the general wards persists. Additionally, some parents reported that they received conflicting information from doctors who worked in both units (Doctor 6).

Inconsistency in Conducting Post-PICU Follow-Up

Doctors had varying opinions about post-PICU transfer follow-up. Ward doctors believed that follow-up facilitates the transfer of information but also it should be tailored to the needs of individual children.

After a period of stay in the PICU, children may develop some emotional and behavioral abnormalities, and some parents may wonder about the reasons for these abnormalities. Post-PICU follow-up, led by a PICU doctor, can provide parents with answers to these questions (Doctor 10).

Post-PICU follow-up is sometimes necessary in exceptional circumstances. A comprehensive assessment of the patient's risk factors is used to determine whether a child needs follow-up (Doctor 7).

However, PICU doctors have identified certain limitations associated with post-PICU follow-up, which may hinder its effective implementation in a clinical setting.

On the one hand, the PICU does not always have the time for this kind of follow-up. On the other hand, it is possible that a child may have a negative experience when seeing the PICU staff during ward treatment, which can be detrimental to their mood (Doctor 1).

Follow-up after discharge from the PICU is not prescribed, so it is difficult to implement (Doctor 2).

Moreover, doctors from both the ward and PICU have suggested that pre-transition PICU visits led by ward doctors would be more beneficial and clinically appropriate considering these considerations.

When the ward doctor is informed of the child's transfer time, he or she can visit the PICU in advance to discuss the family's concerns and needs regarding the post-treatment period (Doctor 1).

In many cases, ward doctors prefer to visit the PICU personally to assess the child's condition before deciding whether to transfer the child out of the PICU in order to make an informed decision (Doctor 5).

Theme 3: Improving Transitional Care

Improving transitional care involves enhancing the process of transitioning patients from one healthcare setting to another. This can be achieved by improving communication skills, promoting a patient-centered approach, and ensuring seamless continuity of care.

Improved Communication During Patient Transfers

Effective transitional care necessitates enhanced communication between healthcare professionals and parents. When communicating with parents, it is important to provide comprehensive and objective information while also considering their emotional response. For instance, parents should be informed about a comprehensive explanation of what the transfer entails, medical status, potential consequences and given time to prepare themselves mentally.

Nurses usually inform parents about intravenous access, drains, medications, and adverse reactions. Meanwhile, doctors concentrate on treating and explaining long-term prognoses (Doctor 1).

To ensure effective communication with parents during the transition from PICU to general ward, it is recommended that doctors engage in face-to-face conversations instead of relying on phone communication. In addition to providing essential information, doctors should inform parents about any potential complications that may arise, preparing them for any potential deterioration in their child's condition (Doctor 3).

When it comes to the communication between PICU and ward doctors, this should include patient's medical history, current condition, treatment provided in the PICU, ongoing medications and the specific care requirements that need to be continued in the ward.

The communication between PICU and ward doctors primarily revolves around the child's current state in the PICU, medication protocols with an emphasis on sedatives, the treatment approach, and jointly deliberating the next steps for the treatment plan (Doctor 6).

In addition, doctors advocate for increased communication between the healthcare team and families, while ensuring consistency in communication with the child's family.

In certain cases, language differences can sometimes cause misunderstandings between doctors and parents. The use of professional or colloquial language may give the impression that different information is being conveyed, which can lead to conflicts. To avoid this, timely and effective communication with parents is essential to reduce the likelihood of conflict (Doctor 1).

Doctors may have varying perspectives on the same medical condition, which can result in inconsistency in communication with families. To avoid potential conflicts, we strive to maintain consistency in the explanations of illness provided to families (Doctor 9).

Furthermore, doctors should enhance their communication skills by managing their emotions during disagreements, communicating calmly with the child's family, and engaging in collaborative discussions that involve multiple stakeholders.

Inevitably there will be some challenging situations. In these situations, be careful not to be overly emotional with your language (Doctor 7).

Whenever the situation is complex, a joint meeting with the child's family may reduce the risk of medical conflicts (Doctor 9).

Promoting Humanistic Care

During a stay in the PICU, children who suffer from diseases also experience negative emotions such as panic, and anxiety caused by the unfamiliar environment and medical staff. As such, psychological support must be strengthened during this period and the children's psychological state must be identified.

During the transition period, there is a lack of professional psychological support. I believe that psychologists should be involved in this phase to provide their expertise. It is extremely important that children who are removed from the PICU will be able to receive counseling (Doctor 9).

The psychological needs of children may sometimes be overlooked. Children especially the older are fully emotional beings and experience anxiety easily. Therefore, it is essential to pay attention to and strengthen the psychological aspect of care for children (Doctor 10).

Sleep deprivation is becoming an increasingly prevalent issue. Several doctors suggested that children with sleep problems should be helped preemptively, thereby enhancing humanistic management practices.

The PICU is a 24-hour facility, which has a stimulating effect on the child. Their sleeping patterns and hormone production are disrupted because of the PICU environment. I think it is still vital to focus on the sleep disturbance during transitional care (Doctor 1).

Given the current situation, addressing sleep disorders may be challenging. However, it may be possible to enhance transition healthcare by differentiating patients and providing a conducive sleep environment for relatively stable patients through measures such as dimming lights and drawing curtains (Doctor 9).

Ensuring Continuity of Care

Supporting parents in the care of their children whenever possible and encouraging the active involvement of parents during certain therapeutic operations are also important elements of transitional care.

An ostomy bag can be difficult to handle for most parents initially. It may require multiple sessions with the doctor to become comfortable with the process. Doctors should guide parents through each step of changing the pouch and encourage them to observe closely. Parents should also practice doing it themselves under supervision until they are confident enough to do it independently without assistance from doctors (Doctor 6).

Some doctors advocate for extending the transition period for critically ill children who have been discharged from the PICU. It is crucial to broaden the scope of transitional nursing beyond hospitalization and include transitioning from hospital to family. This will ensure a seamless transfer of care and uninterrupted nursing support.

Most illnesses do not fully heal right after being discharged from the hospital, and some chronic conditions may require ongoing medical guidance. To assist in their recovery, we can create a specialized WeChat group that provides prompt answers to questions and support for these children (Doctor 4).

A child with a congenital heart condition who has been inactive since undergoing surgery three years ago may experience inadequate management of chronic conditions due to the lack of close monitoring of their health (Doctor 6).

Discussion

Examining different viewpoints on the challenges and facilitators can unveil novel insights into enhancing the PICU-to-ward transition, which ultimately leads to better patient care.[27] In previous studies,[8–11,29] while previous research has explored parents' and nurses' perspectives on transitional care, doctors' views have not been thoroughly investigated. The aim of this research is to identify shortcomings in the delivery of transition care by understanding the perspectives of doctors, which will then have implications for the provision of appropriate training curriculum.

Effective communication is critical for all staff involved in transitional care. Several doctors in the present study reported that decisions about transferring children are made jointly by nurses and doctors based on their condition. However, a preliminary study found that nurses were rarely be able to take part in the decision-making process for transfer,[9] which aligns with findings from other studies.[26,30,31] Regarding shared decision-making, there is currently a lack of awareness among doctors. However, involving nurses in the decision-making process not only enhances nurse-doctor collaboration satisfaction but also ensures that patient and family needs and suffering are prioritized, resulting in comprehensive and holistic care for the patient.[32] Kon et al[33] suggested that the scientific implementation of shared decision-making in ICU settings could reduce decision-making pressure, solve dilemmas, and ensure decision consistency. The input of nurses, particularly those with significant clinical experience, should be appreciated in the decision-making process in the PICU. Additionally, there appears to be a disparity between the viewpoints of patients and doctors regarding this facet of information sharing. Most doctors in the present study indicated that they would provide

comprehensive and objective information. In contrast, another study exploring the experiences of parents found that doctors failed to inform parents about post-treatment plans and transition details during discharge.[8] Mueller et al[34] found that shared electronic health records and clear communication chains were considered possible solutions to improve information exchange fidelity. At the same time, shared decision-making helps patients to understand information about the treatment process and can reduce information asymmetry between doctors and patients.[35] To summarize, shared decision-making crucial in ensuring smooth PICU-to-ward transfers and maintaining the quality of care during this vulnerable time. In future curriculum development for transitional care, teaching strategy on communication boards should focus on effective intergroup communication while promoting the practical application of shared decision making in clinics, and that curriculum interventions should be developed for a mixed audience of nurses and physicians. Tripartite meetings should be promptly arranged in clinical practice and should provide essential details regarding parental concerns, such as the child's ailment, forthcoming treatment plan and prognosis.

However, the preliminary study showed that nursing staff and parents of critically ill children prioritized post-PICU follow-up more than doctors did. Hence, follow-up plans should be individualized to cater to the specific needs of each child.[8,9] Several PICU doctors in the present study believed that the post-PICU follow-up was impractical due to clinical practice, feasibility, and resources available, while some ward doctors perceived that a comprehensive assessment of the child's high-risk factors could determine whether follow-up is needed after the PICU stay. Several studies have shown that follow-up visit has a positive impact both on patient outcomes and on the ability of healthcare professionals to improve their transitional care skill.[22,36] Therefore, integration of training for post-PICU follow-up visits into the curricula of medical student internships and residencies could increase awareness of safe transitions.

In this study, most doctors recognized the importance of nursing staff during the transition period. As such, nurses could take the responsibility to conduct post-PICU follow-up. Caffin et al[37] also found that the introduction of PICU LNs in transitional care not only allows for follow-up of complex patients after PICU discharge, but also provides support and advanced nursing consultancy. Thus, high-quality follow-up visits should be conducted by clinically experienced LNs, and doctors trained to assist children and their parents in this phase's adaptation.

Doctors in our study also provided clinical recommendations for enhancing the quality of transition care. Therefore, efforts could be made to establish a more comprehensive and standardized pathway for transitional care. A pre-transition visit can improve resource utilization and prepare children and families for the transition process.[38] Although pre-transition visits are commonly used in transitioning patients from pediatric to adult care, doctors in this study expressed a desire for ward doctors to conduct these visits as well. This approach can enhance parents' trust in the transfer process and help them make informed decisions. Further, there is now an increasing clinical focus on transitional care and recommendations for providing a continuum of care for patients, with in-hospital transitions extended to transitions from hospital to home and extended hospital care services to facilitate their recovery from illness.[39] Doctors in the present study recommended that follow-up services should continue after hospital discharge, to allow for better tracking of patients' long-term recovery. In the preliminary study, parents of critically ill children also expressed a strong desire to keep in touch with health care professionals.[8] Overall, there should be regular follow-ups with the child's family after discharge from the hospital via WeChat, which also helps healthcare professionals keep track of the child's recovery and complications after discharge, so treatment and care can be adjusted accordingly.

Limitations

As with many qualitative studies, the present findings may not be generalizable. Since all participants were from Shanghai Children's Hospital, the study's utility may be limited to local hospitals. In addition, this study only described the views of doctors, which would also limit the generalization of the findings.

Conclusion

The findings of this study are prospective for the construction of training programs in transitional care. Collaboration and shared decision-making among stakeholders are essential to ensure a safe transition between the PICU and the ward. Therefore, future training should focus on intergroup communication and effectively promote shared decision-making in practice. Proper training related to follow-up should also be embedded in the pre-service training of doctors in training

and relevant trainees. Furthermore, the establishment of specialized implementation pathways in clinical practice is essential to improve the quality of care.

Abbreviations

ICU: Intensive Care Unit; PICU: Pediatric Intensive Care Unit.

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Author Contributions

Jianlin Ji and Liling Yang contributed equally to this work and should be considered co-first authors.

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

All authors declare no conflicts of interest in this work.

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