

Protocol

Caregiver-supported nursing intervention for smoothing the transition from pediatric intensive care units to ward: protocol for a pre-post interventional study

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Received: 30 January 2025

Revised: 04 March 2025

Accepted: 05 March 2025

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ABSTRACT

Background: Transitioning patients from pediatric intensive care units (ICUs) to general wards involves high risk for adverse events, highlighting the need for structured, patient-centered transition protocols. Currently, informal transfer processes often compromise patient safety and care quality, underscoring the value of a formalized model to guide this critical phase.

Methods: This pre-post interventional study will involve caregivers of pediatric patients preparing for ICU discharge. The intervention includes a structured transition model, with targeted training and support provided to caregivers to enhance their engagement and readiness. Data on caregiver satisfaction, understanding, and quality of care metrics will be collected pre- and post-intervention to evaluate outcomes.

Conclusions: The structured intervention is anticipated to enhance caregivers' comprehension and satisfaction with the transition process, while promoting improved care quality and safety during the critical shift from ICU to ward

Trial registration: The study protocol is registered in CTRI/2023/07/054787.

Keywords: Transition, Children, Caregivers

INTRODUCTION

The transfer of patients from the ICU often signifies an improvement in their clinical condition; however, this process can also introduce vulnerabilities that place patients at considerable risk.¹ ICU readmissions are associated with increased mortality and prolonged hospital stays. Effective transfer planning is crucial and should ideally begin well in advance of the actual transition. Various factors, including a shortage of ICU beds, the admission of more critically ill patients, and limitations in staffing and resources, can complicate this process.²

During transitions, families often experience significant challenges and anxiety due to changes in the patient's environment and the introduction of a new healthcare team

in the general ward.³ Caregivers are typically faced with the daunting task of managing their loved ones' care at home, which can be particularly overwhelming, as patients often rely heavily on nursing staff for daily activities in the ICU. Additionally, medication management during transfer is a critical concern, as certain medications may be discontinued when patients are moved to the ward.⁴

This transition usually occurs when patients are clinically recovering but still require ongoing acute inpatient care. Delayed or night-time discharges can further exacerbate inconsistencies in the transfer process. Patients with chronic illnesses, particularly those who become dependent on new technologies after discharge, are at heightened risk for medical errors, extended hospitalizations, and ICU readmissions.⁵

Discharge planning is defined as the systematic preparation of both the patient and their family for a successful transition to home care. This process involves identifying existing and future needs, making informed decisions to address those needs, and coordinating follow-up care.⁶ A comprehensive discharge planning program is essential for enhancing care quality and ensuring continuity of services. Effective discharge planners—who may include nurses, social workers, attending physicians, or case managers—engage in early identification and assessment of patients requiring assistance, collaborate with families and multidisciplinary teams, and connect patients with community resources.^{7,8}

Currently, our institution lacks a standardized model for transition care during ICU discharges. Implementing a structured transition model could significantly improve caregivers' understanding of their loved ones' medical needs, medication requirements, and necessary follow-up care after discharge. This study aims to develop a comprehensive transfer model that addresses the diverse challenges associated with patient transitions. We hypothesize that a well-designed structured model will enhance caregiver engagement and learning, increase family satisfaction, and serve as a valuable reference document for future transitions.

Objectives

Primary objectives were to develop a model of caregiver supported nursing intervention and to implement the transition model in day-to-day transfer.

Secondary objectives were to assess the effectiveness of transition model in improvement of quality of transfer

METHODS

Study design was Quasi experimental study design.

Inclusion criteria

Caregivers of patients admitted to the PICU for at least 48 hours, caregivers who are willing to participate and provide informed consent and patients with a diagnosis of a chronic or critical illness requiring ongoing care were included in study.

Exclusion criteria

Caregivers of patients with a diagnosis of a terminal illness or those who are not expected to survive, caregivers who are not fluent in the local language and patients who are discharged to another healthcare facility or hospital were excluded.

Baseline data on common challenges during patient transfers will inform the development of a structured transition care model (TCM), built through collaborative sessions with clinicians, nursing staff, and caregivers.

Participants will be divided into two groups:

Control group

Caregivers in this group will receive routine PICU discharge care as per standard hospital practice.

Intervention group

Caregivers in this group will receive the structured TCM, which includes additional support, education, and follow-up (Figure 1).

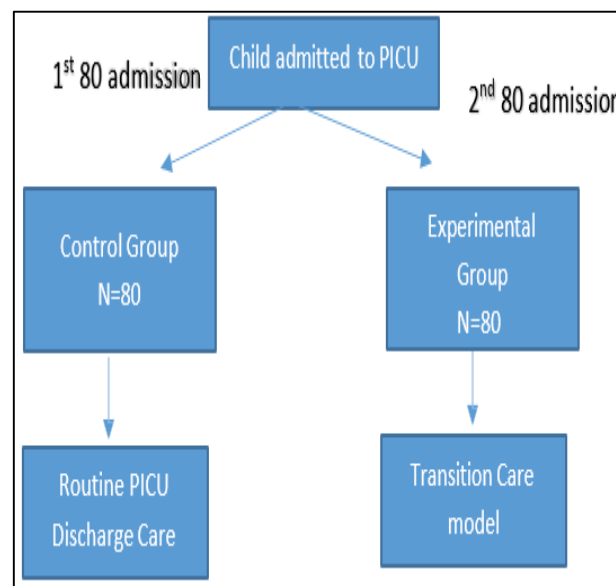


Figure 1: Data collection methodology.

Key components of the TCM intervention will include: Discharge assessment, care planning, effective provider communication, preparation of the patient and caregiver, medication reconciliation, community follow-up and self-management education

Baseline data collection will be performed at PICU admission, covering medical and nursing diagnoses, patient functional and dependability status, vital signs, illness duration, ICU history, and financial and social aspects. This data will be documented on a standardized form with the assistance of duty doctors and nurses.

The intervention includes twice-daily visits by the nursing team to the PICU to monitor patient status and update the discharge plan. An educational intervention will be conducted in four steps:

Pre-assessment: Evaluation of caregiver knowledge and challenges.

Orientation sessions: Two sessions in the local language using visual aids, video demonstrations, and hands-on explanations of patient care procedures.

Caregiver preparation: Training tailored to patient dependability status, addressing practical challenges during and after hospitalization.

Post-intervention evaluation: A questionnaire assessing knowledge gains.

Follow-up will occur every 15 days post-discharge via phone to track health changes and adjust care with input from the healthcare team.

A sample size of 160 patient transfers (80 in the control group and 80 in the intervention group) was calculated based on 80% power from previous studies.

Statistical analysis

Demographic data of the respondents will be summarized using descriptive statistics, including mean, median, standard deviation, and frequency distributions. Continuous variables, such as age and duration of illness, will be presented as means and standard deviations, while categorical variables, such as gender and diagnosis, will be expressed as counts and percentages.

Surveys containing at least one response will be included in the analysis to ensure comprehensive evaluation. The effectiveness of the educational intervention will be assessed by comparing pre-and post-intervention questionnaire responses. A chi-square test will be used to determine statistically significant differences in caregiver knowledge and confidence regarding patient care after the implementation of the transition model. A p value of less than 0.05 will be considered statistically significant, indicating that the observed changes are unlikely to have occurred by chance.

Additionally, paired t-tests will be conducted for continuous variables to assess improvements in caregiver understanding and satisfaction levels. The effect size will be calculated to quantify the magnitude of the intervention's impact.

DISCUSSION

This study protocol outlines the development and implementation of a caregiver-supported nursing intervention model aimed at enhancing the transition of pediatric patients from the ICU to the general ward. The transition from high-acuity care settings to lower-acuity environments pose significant challenges, not only for patients but also for their caregivers. By addressing these challenges through a structured intervention, we aim to improve the quality of transition care during this critical period.⁹

The need for a standardized transition model is underscored by the variability in discharge practices across institutions and the potential risks associated with informal transfer processes. Evidence suggests that inadequate

discharge planning can lead to increased readmission rates, medical errors, and caregiver distress.¹⁰ Our study seeks to fill this gap by providing caregivers with the necessary education and resources to manage their loved ones' care effectively post-discharge. This intervention is expected to enhance caregiver confidence, improve patient safety, and ultimately lead to better health outcomes.

Expected outcomes

The anticipated outcomes of this study include improved caregiver knowledge and satisfaction related to the transition process. By evaluating these outcomes through pre- and post-intervention assessments, we will gain valuable insights into the effectiveness of our intervention model. Additionally, we expect to see a reduction in adverse events associated with patient transfers, thus contributing to safer transitions from critical care.

CONCLUSION

In summary, this study protocol presents a structured approach to improving the transition of pediatric patients from ICU to general ward settings through a caregiver-supported nursing intervention model. By equipping caregivers with essential knowledge and skills, we aim to enhance the quality of care during this vulnerable phase. The findings from this study have the potential to inform best practices in discharge planning and caregiver education, ultimately contributing to improved patient outcomes and satisfaction.

ACKNOWLEDGEMENTS

Authors would like to thank to nursing staff, caregivers, and healthcare professionals at AIIMS, Bhubaneswar.

Funding: Funding sources by Indian council of medical research

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee approval number: IEC/AIIMS BBSR/Nursing/2022-23/03]).

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Cite this article as: Panda SR, Shetty AP, Dwibedi B. Caregiver-supported nursing intervention for smoothing the transition from pediatric intensive care units to ward: protocol for a pre-post interventional study. *Int J Res Med Sci* 2025;13:1606-9.