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Consensus-based recommendations to support implementation of early mobilisation in the paediatric intensive care unit: an ESPNIC position statement

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Abstract

Immobilisation in the paediatric intensive care unit (PICU) may contribute to Post-Intensive Care Syndrome in Paediatrics (PICS-p). Although early mobilisation is safe and feasible in critically ill children, its implementation remains limited. Less than 15% of European PICUs utilize a formal protocol, largely due to safety concerns and lack of standardized guidance. This ESPNIC position statement provides evidence-informed, consensus-based recommendations to support the implementation of early mobilisation in routine PICU practice. A literature review was conducted to identify characteristics of early mobilisation, as well as barriers and facilitators to its implementation in PICU settings. These findings informed a Delphi study to establish consensus among ESPNIC PICU experts, including physicians, nurses, physiotherapists, occupational therapists, and nurse practitioners. Participants rated the importance of each recommendation on a 9-point Likert scale and consensus was defined as ≥80% agreement. Twenty-one studies informed the development of 39 recommendations spanning six domains: definition, risk assessment, exclusion criteria, mobility activities, progression, and implementation strategies. Twenty-nine PICU professionals from six countries participated in the Delphi study. All recommendations achieved consensus in the first round. Key recommendations include a shared definition of early mobilisation, structured safety assessment, developmentally appropriate mobility activities, daily multidisciplinary goal-setting, and implementation strategies. This ESPNIC position statement offers practical, consensus-based recommendations to support the safe, developmentally appropriate, and sustainable implementation of early mobilisation in critically ill children. These recommendations aim to standardize practice, address implementation barriers, and facilitate wider uptake of early mobilisation in PICUs.

Keywords Implementation · Early mobilisation · Delphi study · PICU · PICS-P

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Introduction

Admission to the Paediatric Intensive Care Unit (PICU) exposes children to a highly stressful environment. To ensure comfort, safety, and physiological stability, children are often sedated and restricted to bed, resulting in prolonged periods of immobilisation [1, 2]. Immobilisation is associated with muscle weakness, pressure ulcers, and venous thromboembolism, and may contribute to prolonged length of PICU stay [3].

Survivors of paediatric critical illness may also experience persistent physical, emotional, cognitive and social impairments, collectively referred to as Post-Intensive Care Syndrome in paediatrics (PICS-p) [4]. Early mobilisation, defined as developmentally-appropriate rehabilitation initiated within 48–72 hours after PICU admission [5], has been proposed as a strategy to mitigate these complications and potentially improve patient outcomes [6–8]. In critically ill adults, early mobilisation is safe and effective, reducing muscle weakness, delirium, duration of mechanical ventilation, length of stay, and healthcare costs [9, 10]. In critically ill children, it has also been shown to be safe and feasible [11–13], with potential benefits for patients, families and healthcare professionals [14, 15].

Early mobilisation is recommended within the Pain, Agitation, Neuromuscular Blockade, Delirium and Early Mobilisation (PANDEM) guideline in infants and critically ill children [6]. Despite these recommendations, implementation remains limited. A European point prevalence study reported that 25% of critically ill children hospitalized for more than 48 hours were completely immobile [1], and less than 15% of European PICUs have an established early mobilisation protocol [16]. Reported barriers include safety concerns, limited staffing and equipment, competing clinical priorities, and insufficient awareness and training [17–19]. Early mobilisation in the PICU represents a complex intervention requiring coordinated interdisciplinary practice and clear operational guidance. In the absence of standardized, paediatric-specific recommendations, clinicians may lack confidence in patient selection, safety thresholds, and progression of mobilisation activities. Structured protocols have therefore been advocated to support consistent, safe, and sustainable implementation in clinical practice [6]. Given the heterogenous evidence available to guide early mobilisation in critically ill children, a consensus-based approach was considered appropriate to integrate the available evidence with the expertise of an interdisciplinary group of PICU professionals and to establish practical recommendations where evidence alone was insufficient.

The aim of this ESPNIC position statement is to provide practical, evidence-informed, and consensus-based recommendations to support the implementation of early mobilisation in critically ill children. These recommendations are intended to guide multidisciplinary PICU teams in integrating early mobilisation safely and consistently into routine clinical care.

Methods

This position statement was developed using a structured, multi-step process combining a literature review with a Delphi study. Three groups were involved in different stages of the development process: a steering group, an expert panel, and the participants of the Delphi study.

The multidisciplinary steering group ($n=8$) led and conducted the development process, including the literature review, development of the Delphi survey, analysis and interpretation of the results, and preparation of the position statement. The steering group comprised eight healthcare professionals and researchers with expertise in early mobilisation in paediatric critical care, including nurses, physical therapists, occupational therapists, researchers, and an implementation scientist. Steering group members were recruited from the European Society of Paediatric and Neonatal Intensive Care (ESPNIC) and are listed as authors of this position statement. Steering group members were not part of the expert panel or the Delphi participant group.

A separate multidisciplinary expert panel ($n=14$) was convened to advise on the development of the consensus process. Prior to the Delphi study, the expert panel participated in a meeting to discuss the scope and design of

the Delphi study. Following completion of the Delphi study, the expert panel participated in a consensus meeting to discuss the findings and confirm the acceptability and clarity of the final recommendations. Expert panel members were also eligible to participate in the Delphi study. Consequently, the expert panel and Delphi participants groups were not mutually exclusive. All 14 expert panel members are acknowledged as members of the "Early Mobilisation Expert Panel (Author Group)". Expert panel members were recruited via multiple ESPNIC sections, including nursing and allied healthcare professionals, cardiac critical care, neurocritical care, respiratory critical care, metabolism, endocrinology and nutrition, and health services research, representing all relevant stakeholders for early mobilisation. The timeline of the development of this ESPNIC position statement is summarized in Fig. 1.

The development process comprised of two phases: (1) a literature review to inform the content of the recommendations and (2) a Delphi consensus study to establish agreement on their importance and relevance for clinical practice. Reporting of the consensus process was reviewed against the ACCORD (ACcurate COnsensus Reporting Document) [20] recommendations to enhance transparency and completeness. The protocol for the development of this position statement and the associated consensus exercise was not prospectively registered.

Literature review

Objectives

The literature review was conducted to inform the development of the Delphi survey and to identify barriers and facilitators relevant to the implementation of early mobilisation in PICU settings.

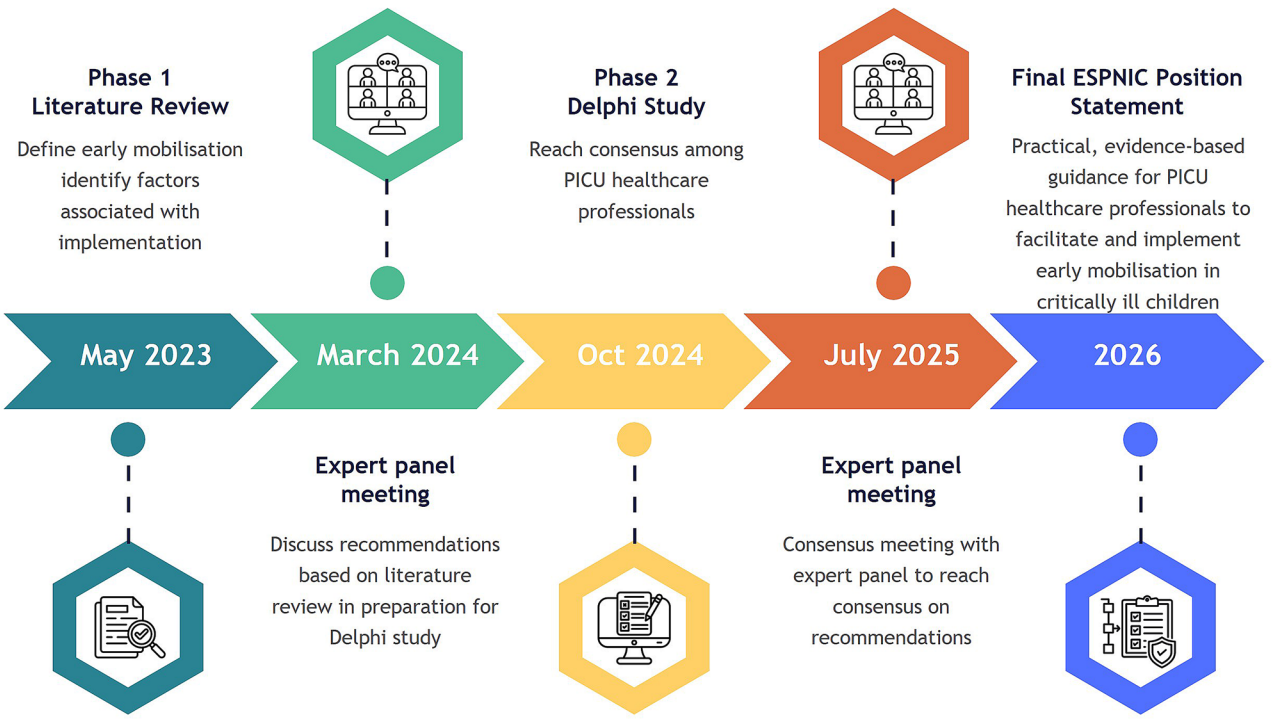

Fig. 1 Timeline of the development of this ESPNIC position statement

Eligibility criteria

Studies were eligible for inclusion if they described characteristics of early mobilisation programs or care models (e.g. definition, eligibility criteria), or examined implementation-related aspects, including barriers and facilitators and strategies aimed at promoting the uptake of early mobilisation programs or interventions in critically ill children aged 0–18 years old. Both quantitative and qualitative studies were eligible for inclusion. Studies solely describing equipment or devices without addressing early mobilisation practices or implementation were excluded. Only full-text publications in English were eligible for inclusion; when the full text of a potentially eligible publication was not available, the authors were contacted.

Information sources and search strategy

The following databases were searched on May 4, 2023: Medline, Embase, Scopus, Web of Science, Cochrane Library, and CINAHL, with support of a clinical librarian. The search was limited to studies published in English and covered the period from 2010 until May 2023. The full search strategy is provided in Supplementary table A.

Selection process

Two reviewers (BMG and RLS) independently screened titles and abstracts for eligibility. Full-text articles were retrieved for studies that met the inclusion criteria or when eligibility was unclear. Discrepancies were resolved through discussion; when consensus could not be reached, a third reviewer (EI) was consulted. The selection process was managed using Rayyan, a web-based systematic review tool [21].

Data charting process

Data were extracted using a structured, pilot-tested data extraction form. Extraction was performed independently by the two reviewers (BMG and RLS), with studies divided between them. Extracted data included study characteristics, features of early mobilisation interventions, and reported barriers and facilitators to implementation. Barriers and facilitators were categorized using the Consolidated Framework for Implementation Research (CFIR) domains: innovation, outer setting, inner setting, and characteristics of individuals [22]. After extraction, reviewers cross-checked each other's data for completeness and accuracy. Disagreements were resolved through discussion or consultation with a third author (EI).

Risk of bias assessment

A formal risk of bias assessment was not conducted, as the purpose of the literature review was to map existing evidence to inform consensus development rather than to evaluate the effectiveness of specific interventions.

Delphi study

Participants

Participants were eligible to participate in the Delphi study when they were members of ESPNIC. They were recruited via the ESPNIC sections. Section representatives distributed the invitation to their members within the section. Participation was voluntary, and no financial compensation, reimbursement, or other incentives were provided for participation in the Delphi study.

The a priori target sample size was a minimum of 20 participants, which has been suggested as sufficient to ensure stability of Delphi results [23]. No restrictions were applied regarding country of practice.

Survey development

Findings from the literature review informed the development of the Delphi survey. The steering group drafted recommendations across six predefined domains: (1) definition of early mobilisation; (2) risk assessment and safety considerations; (3) exclusion criteria; (4) mobility activities; (5) progression of mobilisation; and (6) implementation strategies. The preliminary survey comprised 39 recommendations.

The survey was piloted by members of the expert panel to assess clarity and comprehensibility. Minor revisions to wording were made prior to dissemination. A copy of the survey can be found in Supplemental Table B.

Delphi procedure

A Delphi study using the RAND/UCLA Appropriateness Method was performed [24]. In the first round, participants were asked to rate the importance of each recommendation on a 9-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). The threshold for consensus for inclusion was predefined ≥ 80% of participants rating a recommendation as 7, 8, or 9. Free-text comment fields were provided for each recommendation to allow participants to suggest modifications or raise concerns. Demographic data collected included profession, years of PICU experience, and country of practice. The survey was distributed electronically via email to eligible ESPNIC members through section representatives. One reminder was sent. Responses were collected anonymously using LimeSurvey. Although a two-round Delphi process was planned, all recommendations achieved the predefined consensus threshold of an ≥80% agreement in the first round. A second survey round was therefore not conducted.

Consensus meeting

Following completion of the first Delphi round, free-text comments were reviewed by the steering group, and recommendations were refined where appropriate without altering their substantive content. These refinements were subsequently discussed during a consensus meeting with members of the steering group and the expert panel to confirm acceptability and clarity of the final recommendations.

Ethical considerations

Participation in the Delphi was voluntary, however, all participants provided electronic informed consent prior to participation in the Delphi study. The Medical Ethics Review Committee of Erasmus MC determined that the study was not subject to the Dutch Medical Research Involving Human Subjects Act (WMO). Further, the study was applied in accordance with the Declaration of Helsinki.

Results

Literature review

Study selection

The initial search in the six databases yielded 2067 titles. After the removal of 663 duplicates, 1404 unique titles remained. The 1404 titles and abstracts were screened for eligibility, which resulted in 1329 excluded titles. After assessing full texts of the remaining 75 titles, 21 titles were included in this literature review [17, 19, 25–43]. Figure 2 summarizes the selection process. There was no disagreement between the two reviewers which could not be resolved with discussion. Also, a consensus meeting was held with the three reviewers (BMG, RLS, EI).

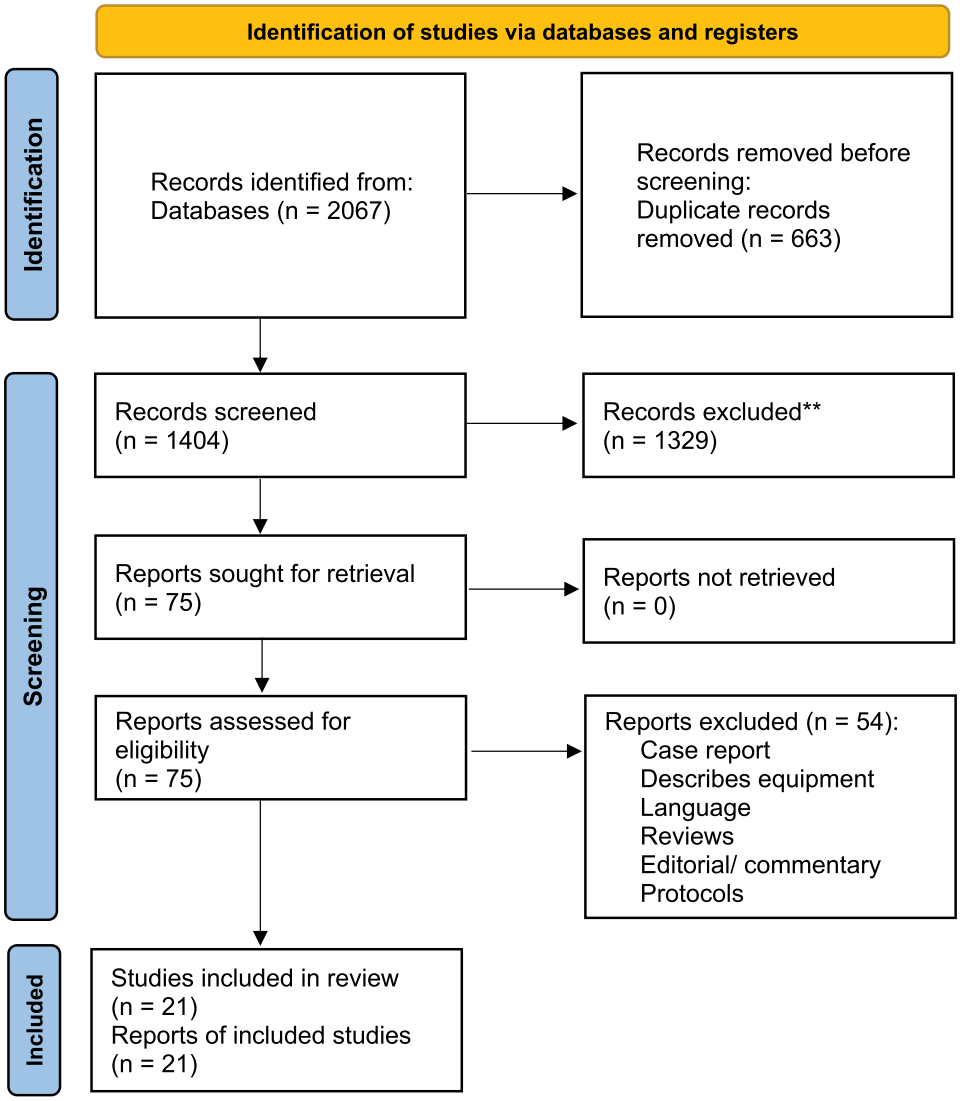

Fig. 2 Flow diagram of study selection process

Study characteristics

Of the 21 included studies, 13 (61.9%) were conducted in North-America (United States of America and Canada) [17, 19, 26, 28, 29, 32–35, 37, 39, 42, 43], four (19%) in Europe (the Netherlands, Italy and the United Kingdom) [25, 30, 31, 38], three (14.3%) in Asia (Japan and Thailand) [27, 40, 41], and one (4.8%) in Oceania (Australia) [36].

Most studies focused on the implementation of an early mobilisation protocol ($n=13$, 61.9%) [19, 25–30, 32–34, 40–42], seven studies (33.3%) assessed barriers and facilitators of early mobilisation, and one (4.8%) evaluated the implementation of an early mobilisation checklist.

In all studies addressing the implementation of an early mobilisation protocol or screening checklist, a multidisciplinary team was involved, typically including nurses, physiotherapists, occupational therapists, and physicians. All included studies were conducted in a PICU setting. Study characteristics are summarized in Supplemental table C.

Barriers and facilitators to early mobilisation in PICU

Across the included studies, 33 unique barriers and facilitators were identified. An overview of these factors, and strategies to address them, is provided in Table 1. Barriers related to the innovation included the absence of a protocol or early mobilisation plan, whereas the availability of such a protocol acted as a facilitator. In the outer setting, the lack of early mobilisation-specific guidelines was identified as a barrier, while institutional support functioned as an important facilitator.

Most barriers and facilitators were found within the inner setting and individual domains. Inner setting factors included limited resources, inadequate coordination and interdisciplinary collaboration, time constraints, and negative attitudes, as well as positive organizational culture and strong leadership. At the individual level, factors included safety concerns, lack of training and experience, family engagement, and improved patient satisfaction.

Delphi study

Participants

A total of 29 PICU healthcare professionals responded to the Delphi survey. Participant demographics are displayed in Table 2. The majority of participants were female (72.4%, 21/29) and physicians were the most frequent professionals who completed the survey (37.9%, 11/29). Participants represented six countries and demonstrated wide PICU experience. A response rate could not be calculated because the invitation was distributed through ESPNIC sections representatives, and the exact number of members who received the invitation was unknown.

Table 1 Overview of barriers, facilitators and strategies

	Barriers	Facilitators	Strategies
Innovation	Inconsistency of EM plans [17] Lack of protocol [18]	Safe and feasible [36,42] Availability of a protocol [19,40-42]	Protocol with cleary defined safety criteria
Outer setting	Competing institutional mandates [28] Lack of guidelines [28,39]	Institutional support [28]	Communicate with institution about support and funding
Inner setting	Negative attitude [28,30] Lack of staff resources [17,18,30,32,34,39,42] Lack of equipment [17,18,34,39,42] Lack of physical therapy resources [43] Lack of prioritisation [19,32,39,42] Inefficient documentation mechanisms [28] Lack of coordination [18,28,34] Lack of referrals [19] Time constraint [25]	Trust in importance EM in the healthcare team [17,28,34,43] Strong leadership [28] Identification of patients ready for EM [27,34,40-42] Collaborative team engagement [17,19,30,41,43] Accessible resources [28,34,40-42] Nurses' essentials to sustain EM [19,30] Culture [28]	Interprofessional collaboration, local opinion leader/champion, available resources, create an orderset for timely involvement of a PT, team communication, address resources, identify disciplines roles and responsibilities, use safety checklist to assess patient readiness and dicuss during team rounds
Professionals/ individuals	Lack of training/education [18,28,34] Patient characteristics (e.g. discomfort, sedation level, hemodynamic instability, no motivation, age)[17,18,29-31,34-37,39,43] Increased workload [35] Safety concerns [18,28,32,33,35,43] Lack of patient and family involvement [34] Lack of experience [43]	Family engagement [17,19,28,30,37,43] Dedicated professionals [28,40,41,43] Regular and continuing education [19,26-29,40-42] Improve patient satisfaction [34]	Educational multidisciplinary training, instruction tool, reminders, pocket cards, family leaflet, make staff feel safe by having the process to monitor vital signs and collaborate with healthcare team for preventing adverse events

Abbreviations: EM early mobilisation, PT physical therapist

Table 2 Participant demographics

Demographics	N	%
Gender		
Female	21	72.4
Male	8	27.6
Professions		
Physician	11	37.9
Nurse	10	34.5
Physio/Occupational therapist	7	24.1
Nurse Practitioner	1	3.4
Years of experience		
1–10	6	20.7
11–20	14	48.3
>20	9	31.0
Country		
United Kingdom	14	48.4
Netherlands	7	24.1
Italy	4	13.8
Spain	2	6.9
Denmark	1	3.4
Austria	1	3.4

Round 1

All recommendations demonstrated agreement in Round 1, with ≥80% agreement with a group median of 7.0–9.0 (Supplemental table B). Free text comments were provided by participants for each of the six domains, which included specific content suggestions, re-phrasing and general comments. Due to the complete agreement achieved in Round 1 of the Delphi, it was determined a second round was not required.

Consensus meeting

The results of the Delphi study were reviewed, and free-text comments were analysed by the steering group, recommendations were refined accordingly. These revisions were subsequently discussed with the expert panel during a consensus meeting, where further consensus was reached.

Definition of early mobilisation

Based on the literature review, key components of early mobilisation were identified and subsequently validated through the Delphi study and consensus meeting. Accordingly, early mobilisation in critically ill children is defined as the initiation of individualized, developmentally appropriate rehabilitation activities as soon as clinically feasible after PICU admission, delivered within a multidisciplinary and family-integrated approach, with daily assessment of eligibility and progression.

Recommendations for early mobilisation

Figure 3 provides a thematic summary of the consensus-based recommendations. The complete wording of all 39 recommendations, together with their item-level Delphi ratings, is provided in Supplemental Table B. These recommendations provide practical guidance for safely initiating, progressing, and sustainably implementing early mobilisation in PICU settings. The recommendations are organized into key domains, including the definition and core principles of early mobilisation, aspects of risk assessment and safety profile, exclusion criteria, types of mobility activities, and progression of early mobilisation. These domains reflect elements considered

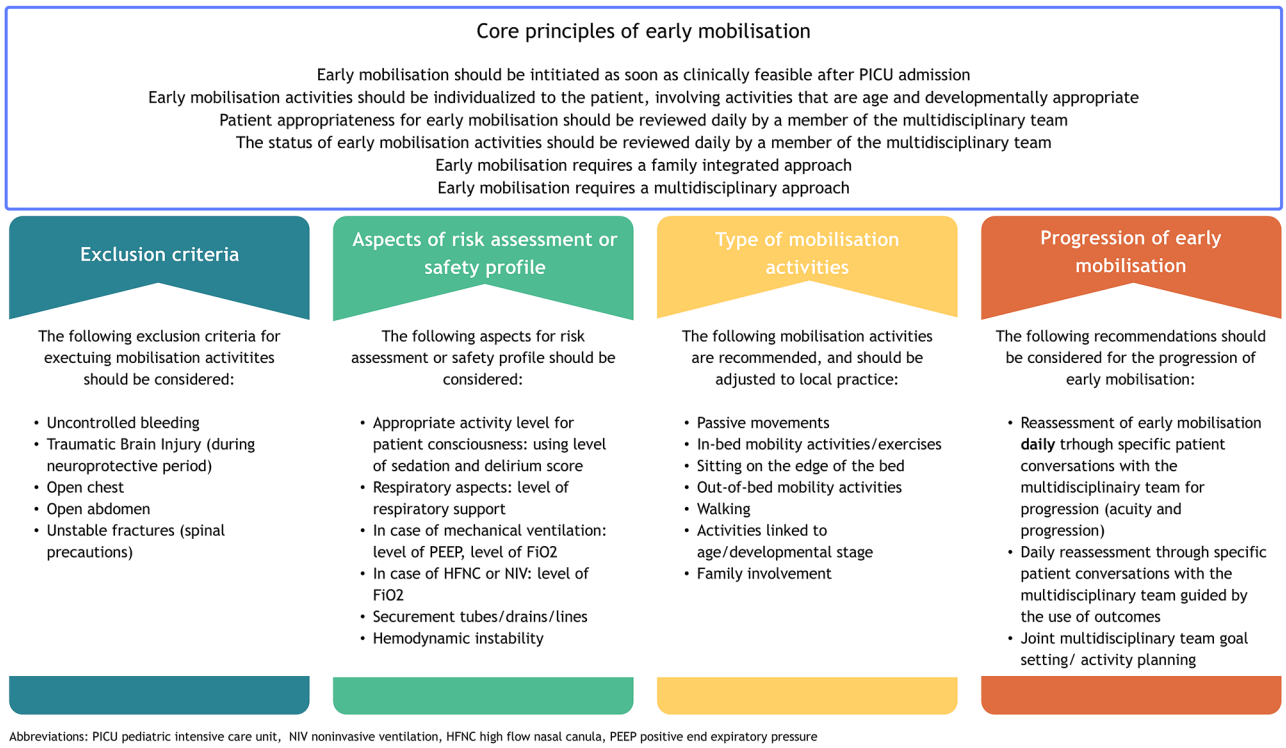

Fig. 3 Thematic summary of the consensus-based recommendations

essential by the expert panel and are intended to adapt to local contexts while maintaining core principles, such as developmental appropriateness, patient safety, daily reassessment, multidisciplinary collaboration, and family involvement.

The recommendations are not intended to function as a uniform, prescriptive protocol with fixed cutoff values applicable to all units or patient populations. Instead, they offer a structured framework that PICU teams can adapt into local policies, care pathways, and ultimately, practical bedside protocols. The components of the risk assessment or safety profile can be operationalized into explicit agreements in a protocol that detail when and how specific mobilisation activities may be initiated, continued, progressed, modified, or stopped.

For instance, local teams may define the level of sedation or consciousness that permits passive range-of-motion exercises, active-assisted in-bed activities, sitting on the edge of the bed, out-of-bed mobilisation, or walking. Similarly, they may develop unit-specific criteria for respiratory support parameters, such as FiO_2, PEEP, high-flow nasal cannula, and non-invasive ventilation settings, as well as for hemodynamic stability, airway security, and the securement of lines and drains. These locally agreed-upon thresholds and decision rules can help translate the broader risk profile into concrete, shared expectations for the multidisciplinary PICU team.

In this way, the recommendations support standardization while allowing for clinical judgment. The recommendations provide a common foundation for multidisciplinary discussions, daily goal setting, and family-integrated care. At the same time, they allow each PICU to account for differences in staffing, expertise, equipment, patient case mix, and existing workflows. Therefore, the development of a local early mobilisation protocol should include clear descriptions of clinical assessments, mobility levels linked to specific activities, safety and stop criteria, staff roles and responsibilities, and strategies for education, training, and implementation.

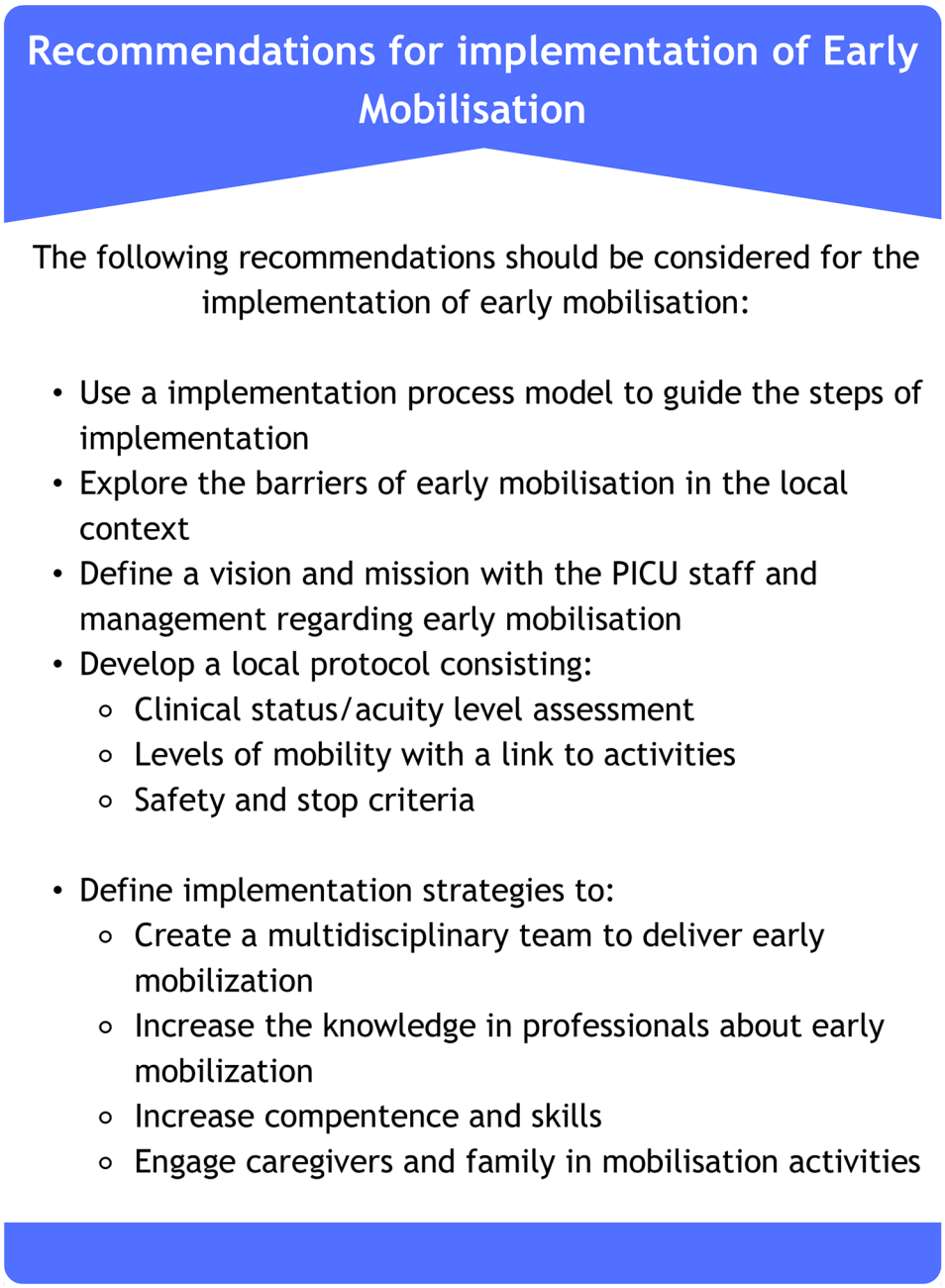

Fig. 4 Recommendations for the implementation of early mobilisation

Recommendations for implementation of early mobilisation

The recommendations regarding implementation of early mobilisation in the PICU setting highlight several key elements that should be addressed (Fig. 4). First, PICU teams should use a structured implementation approach, starting with an exploration of local barriers and facilitators, such as sedation practices, safety concerns, staff confidence, availability of equipment, team culture, and existing workflows. A structured approach is essential for the successful and sustainable implementation of early mobilisation [44]. In line with these frameworks and the consensus recommendations, implementation generally involves four key steps: 1) defining the aim of change for implementation based on the available recommendation and evidence, and local priorities; 2) identifying barriers and facilitators among all relevant stakeholders, including nurses, physicians, physiotherapists, allied

health professionals, management, patients, and families; 3) establishing tailored strategies for change, such as appointing local champions, providing education and competency-based training, developing audit and feedback systems, and improving access to equipment; and 4) ensuring that all eligible patients are systematically considered for early mobilisation and that the implementation process is evaluated over time. Process models such as the Knowledge-to-Action framework, the Implementation of Change Model, and the Translating Evidence into Practice Model provide guidance for translating evidence into practice [45–48]. These models support context analysis, strategy development, implementation planning, and outcome monitoring, thereby increasing the likelihood that early mobilisation becomes embedded in daily practice. Second, implementation should be supported by a shared vision among PICU staff and management, ensuring that early mobilisation is recognized as a multidisciplinary priority rather than the responsibility of a single professional group. Third, the recommendations emphasize the need to develop a local early mobilisation protocol that translates the minimum set of consensus-based recommendations into practical bedside guidance. This protocol should include assessment of clinical status and acuity, mobility levels linked to specific activities, safety and stop criteria, and clear agreements about multidisciplinary roles and responsibilities. Fourth, Implementation strategies represent the practical "how to" of integrating early mobilisation into routine care. These may range from single-component approaches, such as the dissemination of educational materials, to multifaceted interventions targeting different professional groups and organizational levels. Several taxonomies classify these strategies, e.g. the Expert Recommendations for Implementation Change (ERIC) [49]. Figure 3 shows examples of implementation strategies related to barriers across the four CIFR domains education, training, and competency development are essential to ensure that professionals have the knowledge, skills, and confidence to deliver early mobilisation safely and consistently. Finally, implementation should include the development of a multidisciplinary team capable of delivering early mobilisation as part of daily care, with regular reassessment, shared goal setting, and integration into routine PICU processes.

Family involvement should be considered an integral component of implementation rather than an optional addition. Caregivers and family members can be engaged by including them in daily goal setting, explaining the rationale and safety considerations of early mobilisation, and identifying developmentally appropriate activities that are meaningful for the child. Depending on the child's clinical condition and the family's preferences, caregivers may support comfort, positioning, play-based activities, encouragement during mobilisation, or participation in simple in-bed or developmental activities under professional guidance. Involving families can also help tailor mobilisation to the child's age, developmental stage, routines, preferences, and coping strategies, thereby strengthening the family-integrated care approach that was identified as a core principle of early mobilisation.

Discussion

This ESPNIC position statement provides structured, consensus-based recommendations to support the implementation of early mobilisation in critically ill children. Building on a systematic synthesis of the literature and international expert consensus, this work addresses a recognized gap between evidence supporting early mobilisation and its inconsistent application in PICU practice.

The literature review identified substantial heterogeneity in how early mobilisation is defined and implemented in PICUs, alongside persistent barriers related to safety concerns, staffing constraints, limited resources, and interdisciplinary coordination. These findings are consistent with previous research reporting low uptake of early mobilisation protocols despite favourable safety and feasibility data [11, 12, 50]. By explicitly mapping these barriers and facilitators using an implementation science framework, the present work ensured that the Delphi recommendations were grounded in real-world clinical and organizational challenges rather than theoretical considerations alone.

This position statement adds several novel contributions. First, it provides a consensus-based definition of early mobilisation tailored to critically ill children. Although early mobilisation is increasingly recognized as an

important component of PICU care, heterogeneity in reported outcomes has limited comparability across studies [13, 51, 52], and hindered implementation in practice [31]. A clear and clinically applicable definition may therefore support greater consistency in both research and clinical application. Second, these recommendations offer a pragmatic framework to support implementation. As the evidence in paediatric populations continues to evolve, with additional studies published since the completion of the literature search supporting our findings and the growing attention to this field [53–56]. These recommendations aim to bridge the gap between current knowledge and clinical practice by providing structured guidance. Finally, this position statement explicitly incorporates family-integrated care principles into early mobilisation. Engaging families as active partners in care is likely to enhance both the feasibility and acceptability of early mobilisation interventions [54]. Involving caregivers may not only support the child's comfort and participation but also contribute to improved family experiences during PICU admission [57].

Consensus was reached on all recommendations in the first Delphi round, indicating a high level of agreement among the participating professionals on the core components required for early mobilisation in paediatric critical care. However, this finding should be interpreted with caution. Invited participants were ESPNIC members and may have a greater familiarity with, interest in, or a more favourable attitude towards early mobilisation than the broader PICU community. Therefore, the high level of consensus in the first round should not necessarily be interpreted as uniform agreement across the wider PICU community. Nevertheless, the findings suggest substantial alignment among the participating professionals on the key principles of early mobilisation. The resulting recommendations therefore prioritize clarity, safety, and feasibility, while allowing flexibility to accommodate differences in patient populations, resources, and institutional context. Taken together, these recommendations aim to bridge the gap between evidence and routine practice, supporting the safe, developmentally appropriate, and sustainable integration of early mobilisation into routine daily care in the PICU.

Future research

Future research is needed to evaluate the effectiveness of early mobilisation using standardized outcomes. A Core Outcome Set for early mobilisation research has recently been developed (unpublished work) to promote consistency in outcome reporting and facilitate comparison across studies. Its use may support future evidence synthesis and further refinement of clinical practice. In addition, studies should determine the optimal timing, type and dose of early mobilisation interventions in critically ill children.

Strengths and limitations

This ESPNIC position statement has several strengths. First, it was developed by clinicals and researchers, including physiotherapists, nurses and physicians, ensuring that the recommendations reflect diverse professional perspectives relevant to early mobilisation in the PICU practice. In addition, multiple scientific sections within ESPNIC were represented, and the process was supported by ESPNIC, strengthening the clinical relevance and international scope of the recommendations. The use of a systematic literature review combined with a structured Delphi study further enhances the methodological rigor and credibility of the findings.

This study also has limitations. First, the perspective of caregivers was not directly included in the development of this position statement, which is an important consideration given the central role of caregivers in early mobilisation interventions. Second, the geographic distribution of Delphi participants across Europe was uneven, with most experts based in the United Kingdom and the Netherlands, and no representatives from low- and middle-income countries (LMICs), which limits the generalizability of the recommendations. Third, the literature search was conducted in May 2023, and was not systematically updated prior to publication. Relevant studies published subsequently were incorporated narratively to contextualize the findings and recommendations. As a result, more recent evidence may not have been fully captured. Finally, although the size of the expert panel and

Delphi participants was relatively small, it was sufficient to reach consensus and is consistent with methodological standards for Delphi studies[59].

Conclusion

The implementation of early mobilisation in critically ill children remains inconsistent, despite growing evidence supporting its safety and feasibility. This ESPNIC position statement addresses this gap by providing practical, consensus-based recommendations specifically tailored to paediatric critical care, developed through a systematic literature review and a rigorous Delphi process with international experts. By offering a clear definition and a pragmatic implementation framework, these recommendations aim to standardize practice, address key implementation barriers, and support the safe, developmentally appropriate, and sustainable integration of early mobilisation into routine PICU care. Ongoing research will further refine optimal strategies and strengthen the evidence base.

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Authors contributions EI and JM conceived the study. All authors contributed to the design, literature review, and manuscript drafting. All authors critically revised the manuscript and approved the final version. Members of the Early Mobilisation expert panel (author group) participated in the panel meetings and approved the final version of the manuscript.

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Data availability The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Code availability Not applicable.

Declarations

Conflicts of interest The authors declare that they have no competing interests.

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