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Supporting fathers' involvement in neonatal care

A systems-based investigation

Ezra Kneebone

Kabe Redfern

Thom Nevill

Lynne Millar

Gayatri Athalye-Jape

Amy Finlay-Jones

Trevor Mazzucchelli

Francis Mitrou

Tobias Strunk

Vincent Mancini

The Australian Research Council Centre of Excellence
for Children and Families over the Life Course

Phone +61 7 3346 7477 **Email** lcc@uq.edu.au

lifecoursecentre.org.au



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Research Summary

Why was the research done?

Contemporary models of neonatal care recognise the importance of involving both birthing and non-birthing parents equally in their infant's care. However, this has not yet become routine practice, and fathers are often left peripheral to care delivery. Previous studies have identified individual barriers and tested interventions within neonatal units, but they have not taken a systems approach to understand how the many factors influencing father involvement interact or how broader social and structural conditions shape fathers' capacity to engage. Using a systems thinking approach, this study aimed to understand these connections and draw on the perspectives of fathers, their partners, and healthcare providers to identify ways to better support fathers in neonatal care.

What were the key findings?

Parents described fathers' involvement in neonatal care as influenced by a range of interconnected factors at the individual, family, healthcare provider, and hospital levels. Parents identified several priority areas for improving involvement, including better communication between staff and fathers, greater access to the hospital, emotional and practical support from staff, and support to help fathers manage responsibilities outside the hospital. While the highest-priority strategies were either outside the scope of neonatal staff (e.g., neonatal-specific paid parental leave) or considered difficult to implement because of resource constraints (e.g., accommodation for families within the neonatal unit), other strategies – such as father peer support and staff training – were considered feasible by staff.

What does this mean for policy and practice?

While some low-cost strategies (e.g., peer support) could be implemented by individual neonatal units to better support fathers, meaningful and widespread improvements are likely to require broader structural reforms, including increased hospital resources and neonatal-specific paid parental leave. Together, these top-down policy changes and bottom-up, local initiatives offer complementary ways to improve father involvement and support better outcomes for infants, parents, and families.

Citation

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The authors

Ezra Kneebone

The Kids Research Institute Australia

Email: ezra.kneebone@thekids.org.au

Kabe Redfern

The Kids Research Institute Australia

Email: Kabe.Redfern@thekids.org.au

Thom Nevill

The Kids Research Institute Australia

Email: Thom.Nevill@thekids.org.au

Lynne Millar

Murdoch Children's Research Institute

Email: lynne.millar@mcri.edu.au

Gayatri Athalye-Jape

King Edward Memorial Hospital

Email: gayatri.jape@health.wa.gov.au

Amy Finlay-Jones

The Kids Research Institute Australia

Email: Amy.Finlay-Jones@thekids.org.au

Trevor Mazzucchelli

Curtin University

Email: trevor.mazzucchelli@curtin.edu.au

Francis Mitrou

The Kids Research Institute Australia

The University of Western Australia

Email: Francis.Mitrou@thekids.org.au

Tobias Strunk

King Edward Memorial Hospital

Email: tobias.strunk@health.wa.gov.au

Vincent Mancini

The Kids Research Institute Australia

The University of Western Australia

Email: Vincent.Mancini@thekids.org.au

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We acknowledge the Traditional Custodians of the lands on which we work and live across Australia.
We pay our respects to Elders past and present and recognise their continued connections
to land, sea and community.

1. Background

Parental involvement is widely regarded as a hallmark of high-quality neonatal care. It encompasses a range of activities, including physical presence in the unit, engagement in skin-to-skin contact, participation in routine infant caregiving tasks, and involvement in medical decision-making (Craig et al. 2015; North et al. 2022; Ding et al. 2019). These practices are underpinned by the philosophy of family-centered care, which aims to facilitate early and active collaboration between an infant's parents and their healthcare providers in recognition of the central role that families – and particularly parents – play in a child's health and wellbeing (Johnson 2000).

A variety of care models underpinned by family-centered care have been developed to facilitate parental involvement in neonatal care. These models differ in both the degree and nature of participation. Two of the most widely studied models are Kangaroo Mother Care, and family integrated care (Franck & O'Brien 2019). Kangaroo Mother Care, first developed in the 1980's, involves exclusive breastmilk feeding and prolonged maternal skin-to-skin contact (Whitelaw & Sleath 1985). Family integrated care is a more recent approach where parents assume primary caregiving responsibilities for their infant, except for tasks requiring clinical expertise, such as administering medications or intravenous therapies (Waddington et al. 2021). Across these models, additional supports are often facilitated by healthcare professionals to enable parental involvement, including psychoeducation interventions, strategies to strengthen parent–staff communication, and modifications to the physical environment of the neonatal unit (Franck & O'Brien 2019).

The benefits of parental involvement in neonatal care are well established. Systematic reviews of family-centered care models consistently demonstrate improved infant outcomes, including higher breastfeeding rates, improved weight gain, and reduced readmission rates (Liu et al. 2018; Ding et al. 2019; North et al. 2022; Reiter et al. 2022; Hodgson et al. 2025). Positive effects for parents have also been widely reported, including improved care experiences, greater satisfaction, and better mental health outcomes (Liu et al. 2018; Ding et al. 2019; Segers et al. 2018; North et al. 2022; Hodgson et al. 2025). Although much of this evidence is derived from

studies of birthing parents, similar benefits have been observed among both birthing and non-birthing parents (Filippa et al. 2021).

Despite this evidence, non-birthing parents, the vast majority of whom are fathers, have not benefited equally from efforts to promote parental involvement in neonatal care. Evidence from intervention research highlights these gendered asymmetries. For example, a recent systematic review of interventions to enhance family-centered care in neonatal intensive care units found that fathers were included in only 12 of the 22 studies involving families, whereas mothers participated in all but one (Yeomans et al. 2026). This imbalance is also reflected in qualitative research, where fathers frequently describe feelings of isolation and exclusion, often linked to a clinical focus on maternal communication and involvement (Sisson et al. 2015; Alsaç & Coşkun 2026; Gahagan et al. 2026). Taken together, these findings suggest that, although family-centered care is framed as inclusive of all caregivers, it has, in practice, inadvertently continued to prioritise maternal–infant relationships. This can often render fathers peripheral in both care delivery and research, thereby restricting opportunities for the infant and their family to benefit from having involved and supported parents.

Barriers to paternal involvement in neonatal care exist across multiple levels. At the organisational level, institutional practices and healthcare provider roles often reflect traditional gender norms, positioning mothers as primary caregivers (Deeney et al. 2012). Neonatal care is frequently embedded within maternity services that are historically and structurally oriented toward maternal–infant care. As a result, access and participation may be uneven; for example, some units permit continuous maternal presence while restricting fathers to designated visiting hours (Mirlashari et al. 2019). Although many neonatal staff now recognise the importance of fathers’ involvement for infant development and family functioning (Rubinstein et al. 2024), their ability to engage fathers may be constrained by training and care models that prioritise mothers and by competing clinical responsibilities (Buek et al. 2021).

At the interpersonal and individual levels, traditional gender roles continue to shape patterns of involvement. Fathers often assume greater responsibility for employment and household duties, particularly when mothers remain in the unit to support breastfeeding, limiting their physical presence in neonatal settings (Noergaard et al. 2024; Raiskila et al. 2016). In

addition, relational dynamics such as maternal gatekeeping may further influence opportunities for engagement (Clarkson & Gilmer 2019). The interaction between these systems may further constrain opportunities for paternal involvement. For example, neonatal staff who are ill-equipped (or not required) to consider the role of fathers may lead fathers who are present in the neonatal unit to believe that their input is neither required nor desired. Together, these factors contribute to systematic differences in how mothers and fathers participate in neonatal care.

Enhancing fathers' involvement is now recognised as an important international priority across infant health research and practice, including within the neonatal care setting (Fisher et al. 2018). This focus does not seek to diminish the role of the birthing parent, but instead to achieve the *additional* benefits that can be realised when fathers are actively supported in their infant's care. Beyond the well-established benefits of parental involvement for infant outcomes, paternal engagement has been linked to broader family-level gains (Mancini 2023), including reduced postpartum depression among mothers (Kim et al. 2020). At the same time, fathers are also vulnerable to stress, anxiety, and depression associated with the hospitalisation of a preterm or unwell infant (Dressler et al. 2024), underscoring the need for inclusive models of care.

Several targeted interventions have been developed to facilitate greater father involvement in neonatal care. These include staff training (Le Duff et al. 2021), male peer-support groups (Thomson-Salo et al. 2017; Lægteskov et al. 2023), educational materials (Bernardo et al. 2025), and multi-component interventions that incorporate these approaches alongside counselling and greater staff support to engage fathers (Lee et al. 2012; Özdemir & Alemdar 2016; Noergaard et al. 2018; Chen et al. 2019). Evaluations of these interventions have generally reported positive outcomes, including greater paternal confidence in infant care (Özdemir & Alemdar 2016; Bernardo et al. 2025), engagement in skin-to-skin contact (Noergaard et al. 2018), parenting ability (Lee et al. 2012; Chen et al. 2019) and coping (Lægteskov et al. 2023). However, comparison across studies remains challenging due to heterogeneity in intervention components, evaluation methods, outcome measures, and the cultural and healthcare system contexts in which they are implemented (Morris et al. 2026). Consequently, there is limited clarity regarding which approaches are most effective in facilitating father involvement. Moreover, this also varies across jurisdictions that have different cultural or social structures related to men's involvement in the lives of their babies.

88 Importantly, most existing interventions focus on modifying practices within the neonatal
89 unit itself, with comparatively less attention to the broader social and structural conditions that
90 shape fathers' capacity to engage. This limitation is significant, as external factors may constrain
91 father's involvement even in otherwise supportive clinical environments. For example, a Danish
92 study evaluating a "father-friendly" neonatal unit found that increased expectations for paternal
93 involvement were inadvertently associated with higher levels of stress (Noergaard et al. 2018).
94 The authors suggested that this may reflect a mismatch between increased expectations within
95 the unit and unchanged responsibilities outside it. This highlights the need to better understand
96 how different contextual factors are interlinked.

97 A systems-based perspective provides a useful framework for addressing this complexity.
98 Systems thinking takes a holistic approach to problem-solving, focusing not only on how
99 individual factors influence an outcome (linear thinking), but also on how these factors interlink
100 and affect one another (McGlacken-Byrne et al. 2022). There are many different methodological
101 approaches that employ systems thinking, but fundamentally, each aims to create models (i.e.
102 simplified visual representations) of the system of interest (Khalil & Lakhani 2022). These
103 models can then be used to locate points within the system where targeted change may produce
104 the greatest impact, often referred to as "leverage points" (McGlacken-Byrne et al. 2022).

105 Systems thinking has its origins in disciplines such as engineering and biology but is
106 being increasingly applied to healthcare (Clarkson et al. 2018). This reflects growing recognition
107 of the complexity of health systems and health behaviours, which are shaped by multiple
108 interacting factors across different levels (Khalil & Lakhani 2022; McGlacken-Byrne et al.
109 2022). In the current context, the barriers and facilitators to paternal involvement within the
110 neonatal care setting are rarely attributed to a single mechanism. Rather, it is the interactions
111 among these different systems that may help or hinder their involvement. Prior research on the
112 paternal experience of neonatal care has hinted at some of these interactions, such as how a
113 father's employment may shape their ability to present within a neonatal unit. However, no
114 single study has deliberately and collaboratively used a systems approach to comprehensively
115 map the barriers and facilitators to fathers' involvement in neonatal care.

This gap is significant for two-reasons. First, systems thinking appear particularly well-suited to understanding father involvement, which is shaped not only by clinical practices within neonatal units but also by broader social structures, such as gender norms and family dynamics. Second, despite momentum toward more expansive and inclusive models of neonatal care that seek to involve fathers, scalable and sustainable changes in clinical practice have not yet been established.

This study, therefore, seeks to address this gap by applying systems thinking to examine father involvement in neonatal care and to identify ways to better support it.

1.1 Current Study

Our study addresses this knowledge gap using Group Model Building. This method is a systems-based approach that brings stakeholders together to develop a shared model of the problem of interest, identify potential leverage points, and generate possible solutions (Siokou et al. 2014). This process is conducted through a series of facilitated, structured workshops with relevant stakeholders. Group Model Building was selected for this study due to its participatory nature, which enables the integration of diverse perspectives. Fathers' involvement is shaped by interacting factors across multiple levels, including family dynamics and hospital systems, and therefore benefits from input across stakeholder groups. This includes fathers and their partners, who can articulate their preferences and ensure that proposed strategies are responsive to their needs, as well as healthcare providers, who can assess the feasibility of these strategies within existing clinical and organisational constraints.

The objectives of this study are:

1. construct a systems model of the factors shaping fathers' involvement in neonatal care from the perspectives of fathers and families;
2. identify strategies to improve father involvement; and
3. assess the feasibility of these strategies within the current clinical constraints.

2. Methods

Ethical approval was granted from the Government of Western Australia's Child and Adolescent Health Service (RGS0000007288) prior to commencement.

2.1 Setting

This project was based in Perth, Western Australia. Western Australia is the largest state in Australia, spanning 2.6 million km². Perth is home to the only neonatal units in Western Australia that are equipped to provide acute neonatal intensive care. Consequently, those living outside Perth may be required to travel great distances from home if their baby is admitted to a neonatal unit to receive acute care.

2.2 Participants

Parents were eligible to participate if they were 18 years or older and had a child admitted to a neonatal unit in Australia. No timeframes of admission or discharge were applied, nor was it a requirement for their infant to have been admitted to KEMH or PCH. Multiple recruitment strategies were used: paid social media advertising; flyers in the neonatal units at KEMH and PCH; social media posts from neonatal and/or preterm birth support organisations; and snowballing. Social media advertising was conducted via Meta using the research institute account of the lead author.

Healthcare providers were eligible to participate if they provided care to babies and their families in the neonatal units at KEMH or PCH. Recruitment occurred via flyers in the neonatal units and hospital staff e-mailing lists.

All participants who expressed interest in the study were provided with a study information sheet and were invited to participate. Parents were compensated \$50 per hour in the form of gift cards, while healthcare providers were not compensated as they participated in a professional capacity. All participants provided written consent to participate in the study.

2.3 Modelling

Group Model Building uses a qualitative modelling tool known as a Casual Loop Diagram (Siokou et al. 2014). It comprises three core components: (1) variables (the factors driving the system); (2) connections (the causal relationships between variables); and (3)

feedback loops (circular chains of variables) (Barbrook-Johnson & Penn 2022). Feedback loops may be reinforcing or balancing. A reinforcing feedback loop occurs when a variable has an amplifying effect on itself over time. In contrast, a balancing feedback loop occurs when a variable constrains itself over time.

An example of a Causal Loop Diagram is presented in Figure 1. In the diagram, positive connections are indicated by solid lines, while negative connections are indicated by dotted lines. Reinforcing feedback loops are denoted by ‘R’, and balancing feedback loops by ‘B’.

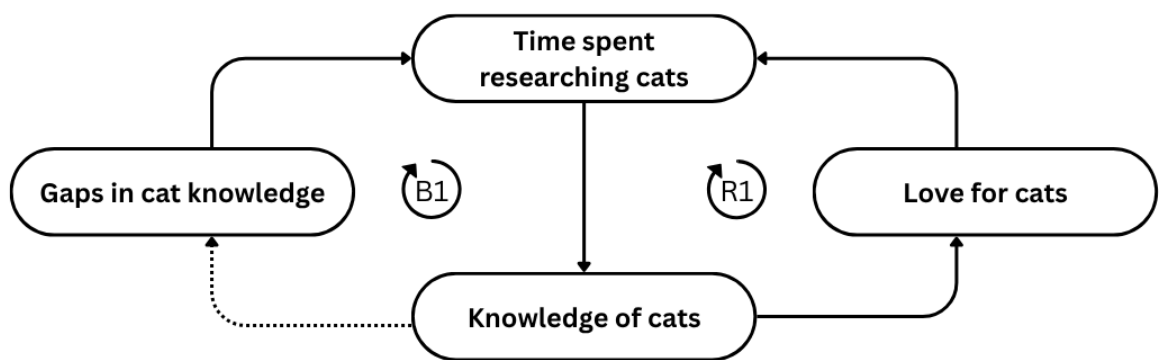


Figure 1. Example Casual Loop Diagram.

2.4 Data Collection and analysis

Group Model Building workshops were conducted in two phases between January and October 2025. The phases are summarised in Table 1 and described in detail below. All workshops were audio recorded and transcribed.

Table 1. Overview of Group Model Building workshops.

	Phase One (Fathers and Families)		Phase Two (Healthcare Professionals)
	Session One	Session Two	
# of workshops	Two	Two	Six
Participants	All-parents or fathers-only	All-parents or fathers-only	Healthcare providers at KEMH or PCH
Duration	~2 hours	~2 hours	~1 hour

Outcomes	Casual Loop Diagram depicting the system shaping involvement	Strategies supporting greater involvement	Feasibility of the proposed strategies generated from Phase One.
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2.4.1 Phase One

Parents attended two two-hour workshops, held two weeks apart, at the lead author's research institute located at PCH. Each workshop was conducted twice: once for parents of any gender (including couples) and once exclusively for fathers. This dual approach allowed fathers to choose whether to attend with their partner or in a father-only setting, depending on their preference. Including a mixed-gender group also enabled the collection of insights into fathers' experiences to be collected through their partners, particularly for those who may not yet feel willing or ready to share them directly.

In the first session, parents were asked to propose factors that influence father involvement. The factors were shared with the group, after which they took turns proposing and discussing the causal connections between them. As this discussion unfolded, one of the investigators constructed the Causal Loop Diagram in real time using the systems mapping software STICKE (Systems Thinking in Community Knowledge Exchange), enabling participants to visualise and refine the emerging model collaboratively.

Following the first session, the Casual Loop Diagrams generated by the two participant groups (all-parents and fathers-only) were combined into one. Transcripts were analysed to identify any additional variables or connections not captured during the session, and to produce a textual description of the map, including exemplary quotes.

At the beginning of the second session, the combined Causal Loop Diagram was presented to participants for feedback. Participants were then asked to identify the variables that, if changed, could have the greatest impact on involvement and to propose strategies targeting these high-impact factors. The proposed strategies were shared with the group, and each parent was asked to vote on those they considered most important to implement. Each parent was given five votes, which they could allocate however they chose. For example, all five votes to one strategy or one vote each to five different strategies.

Following the second session, the researchers grouped the proposed strategies into categories according to the variables they were intended to influence and aggregated the votes within each category. The Causal Loop Diagram then underwent further revision in two stages. First, participant feedback provided during the second session was incorporated. Second, the diagram was condensed by the research team to improve clarity and readability for publication. This revision process was led by the lead author in consultation with a father who participated in the study and is employed on the broader project as a lived-experience consumer advisor. The aim was to develop a simplified diagram that remained faithful to the original model while being more accessible to readers. Revisions were undertaken iteratively, with the consumer advisor reviewing the diagram at multiple time points. Workshop transcripts were also re-examined throughout the process to ensure that the revised diagram accurately reflected participants' contributions.

2.4.2 Phase Two

Workshops were held at KEMH and PCH to explore the feasibility of the proposed strategies from a healthcare provider perspective. Providers were invited to participate in a single session and due to the unpredictability and demands of hospital shifts, the session was held three times at each location to maximise participation. This also included evening sessions to accommodate night staff.

At the beginning of the workshops, healthcare providers were given information about the strategies. For strategies that directly impacted their role, they were asked to rank how feasible each strategy would be to implement, using a scale from less feasible to more feasible. After the workshops, the rankings were simplified into two categories – 'less feasible' and 'more feasible' – and combined across sessions. Transcripts were also analysed to produce a textual description of the healthcare providers' perspectives on the barriers and enablers to strategy implementation.

3. Results

3.1 Participant characteristics

Twenty-one parents participated in Phase One: 13 fathers and eight mothers. Two thirds of parents were born in Australia (67%, n = 14), and the remaining were born in the United Kingdom (n = 3), Netherlands (n = 1), Mauritius (n = 1), South Africa (n = 1), Zimbabwe (n = 1). At the time of admission, most parents were living in Perth, Western Australia (81%, n = 17). Three lived in regional Western Australia and one lived in the capital city of a different state. Most parents had a preterm birth (81%, n = 17), and the length of hospital stay varied from nine days to eight and a half months (Table 2). No participants were Aboriginal or Torres Strait Islander. The remaining demographic information, such as age and highest level of education, is reported in Table 2.

Table 2. Characteristics of the parents (n = 21). * Some percentages may not equal 100% due to rounding errors

Parent characteristics	n (%) *
Age	
24-29	2 (10%)
30-39	10 (48%)
40-49	7 (33%)
50-55	2 (10%)
Number of children	
One	8 (38%)
Two	8 (38%)
Three	3 (14%)
Four	2 (10%)
Highest level of education	
University degree or higher	13 (62%)
Trade or other TAFE education	5 (24%)
Completed Year 12 or equivalent	1 (5%)
Did not finish high school	1 (5%)
Not reported	1 (5%)
Length of hospital stay	
< 2 weeks	4 (19%)
2 weeks to < 1 month	5 (24%)
1 month to < 3 months	6 (29%)
3 months to < 6 months	5 (24%)

6 months to < 9 months	1 (5%)
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Fifty-four healthcare providers participated in Phase Two. Most providers were women (96%, n = 52) and only two were men (4%). The ages and roles of the healthcare providers, as well as the years spent working in neonatal care, are reported in Table 3.

Table 3. Characteristics of healthcare providers (n = 54). * Some percentages may not equal 100% due to rounding errors. # One worked a dual role as a nurse and midwife.

Healthcare provider characteristics	n (%)
Age	
21-29	17 (31%)
30-39	16 (30%)
40-49	8 (15%)
50-56	12 (22%)
Not reported	1 (2%)
Role [#]	
Nurse	38 (70%)
Social worker	5 (9%)
Doctor	5 (9%)
Occupational Therapist	3 (6%)
Midwife	2 (4%)
Dietitian	1 (2%)
Physiotherapist	1 (2%)
Years working in NICU	
< 1 year	10 (19%)
1 year < 5 years	15 (28%)
5 years < 10 years	9 (17%)
10 years < 20 years	14 (26%)
20 – 30 years	6 (11%)

3.2 Casual Loop Diagram

The Causal Loop Diagram comprises 23 variables, nine of which form four feedback loops: three reinforcing loops (R1–R3) and one balancing loop (B1) (Figure 2). The remaining fourteen variables influence one or more of these loops but do not themselves constitute closed feedback structures.

The feedback loops are described first, followed by the remaining variables (hereafter referred to as “surrounding variables”). For clarity, these are grouped into (i) individual and family factors and (ii) hospital and staffing factors. Variable names are italicised throughout the text.

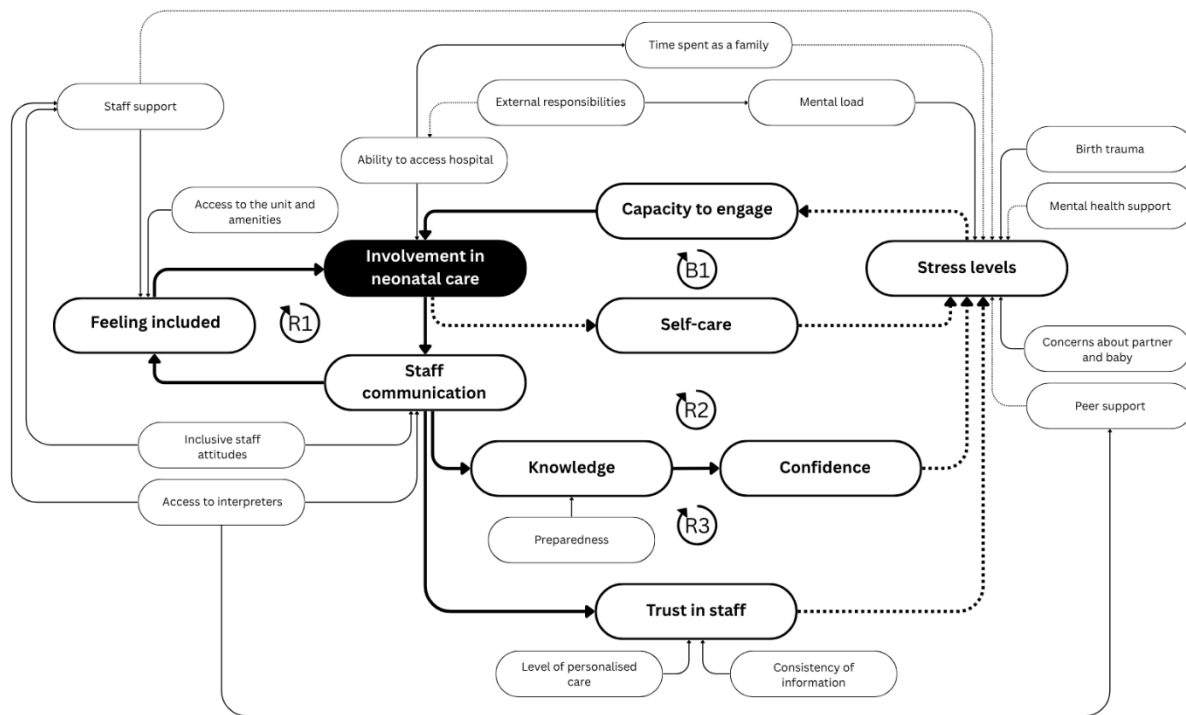


Figure 2. Casual Loop Diagram depicting the system shaping father's involvement in neonatal care.

3.2.1 Feedback loops

B1 depicts how father *involvement in neonatal care* can constrain involvement over time through its relationship with *self-care*. Participants described how the more fathers were involved in their baby's neonatal care, the less opportunities there were to attend to their physical and mental health. According to participants, “you don't have your routine that you would normally have” and “you've got no time because you have to be present”. This erosion of *self-care* was described as increasing *stress levels*, which in turn constrained future involvement by

reducing fathers' emotional *capacity for being engaged* and emotionally present in the neonatal unit.

R1-3 illustrates the amplifying effect that father *involvement in neonatal care* can have on involvement over time through its impact on *staff communication*. Participants explained that the more fathers were involved in their baby's neonatal care, the more opportunities they had to communicate directly with staff about their baby's health and care plans. Fathers noted that being fully informed helped them *feel included* in their baby's care, which in turn encouraged even greater involvement (R1).

Staff communication can further promote involvement through its mitigating effect on *stress levels* (R2/3). Communication increased fathers' *knowledge* of neonatal care and, in turn, their *confidence* in caring for their infant (R2). As one father noted, "it was my first child in the NICU, and they're very tiny and therefore I had no idea how to do a nappy, but the nurses were really supportive and helpful".

Communication also fostered greater *trust in the staff* caring for their infant, as fathers had a better understanding of what was happening with their child (R3). When fathers reported *trust in staff* and *confidence* in their own skills, this was associated with reduced *stress levels* (R2/R3). As one parent recalled, "trust with medical professionals links to mental health because both of us, at that time, were very concerned about our baby and whether they would live". Lower stress, in turn, enhanced fathers' emotional *capacity* for involvement, further reinforcing their involvement in their infant's care.

3.2.2 Surrounding variables: Individual and family factors

A father's *involvement in neonatal care* was shaped by his *ability to access the hospital*. Participants explained that this was influenced by how far they lived from the hospital and whether they could access and afford hospital parking. Some participants who lived in regional areas were able to use hospital accommodation during their infant's stay: "It wasn't until they found us a room [at the hospital] that [my husband and my] stress levels were able to reduce".

Fathers also reported that their *ability to access the hospital* was influenced by the number of *external responsibilities* they had while their infant was admitted. Responsibilities

such as work and caring for other children limited the time they could spend at the hospital, adding to their *mental load* and increasing *stress levels*. Fathers noted that these pressures could be alleviated through parental leave, flexible work arrangements, childcare, and community support (“my mum was amazing”). However, those living in regional areas often could not access the same level of community support in Perth as they could in their hometowns: “You don’t have a hub – someone can’t just drop in a lasagna and a bag of salad”.

Fathers noted that the *financial pressures* imposed by the hospital stay and the responsibility of *acting as a conduit of information* to friends and family increased their *mental load*, and in turn their *stress*. They described being constantly contacted by concerned relatives and friends seeking updates about their partner’s and infant’s health. As one father explained, “They’re trying to be helpful, but it’s not necessarily helpful,” because it required him to recount his “shit day – to what end?”.

Stress levels were further impacted when fathers witnessed a *traumatic birth* (“I don’t even want to have another kid because of what I watched”) or *held concerns about their partner’s and baby’s wellbeing*. Conversely, stress was reported to be mitigated *by mental health support, peer support, and spending time together as a family*. As one participant stated, “the thing that increases your mental wellbeing is connection and connection with other people”. For some fathers, their partner was hospitalized at the same time their baby was receiving care, adding an additional challenge to spending time as a family unit. In addition, some fathers described difficulties accessing mental health services through the hospital, either because these services were available only to birthing parents or because they were offered at times that conflicted with work commitments.

3.2.3 Surrounding variables: Hospital and staffing factors

Fathers also described facing additional barriers *to accessing the unit and its amenities* compared to their partners. For example, some noted the lack of male toilets in the neonatal unit: “there’s nothing that makes you feel like you’re so outside when you have to leave and walk a long way away from mum and your kid when there’s no toilets for dads”. During the height of the COVID-19 pandemic, only the birthing parent was able to access the neonatal unit

24/7, while the non-birthing parent was limited to “visiting hours.” These restrictions often left fathers feeling less included in their infant’s care.

Support from staff helped fathers feel included in their infant’s care. Fathers described positive experiences when staff provided emotional support and encouraged their involvement. One father recounted how he “nearly started crying” when a staff member asked him how he was doing: “She said, ‘It’s really important. How are you doing, Dad?’”. Conversely, staff could have a negative impact when they judged fathers. As one father explained: “Everything I tried to do, it was belittled in a way”.

Support from staff depended on their *attitudes* toward father involvement in neonatal care, which also affected communication. Some parents reported that fathers were often treated as the “second parent.” One mother explained, “I watched the same pattern happen a lot where it was always about the mum doing it, and then the dads have to either push their way in or really put themselves forward”. Fathers noted that when staff held positive views of father involvement, they made a deliberate effort to communicate directly with them, rather than assuming they received all information through their partner.

Participants described that a father’s level of *trust in the staff* caring for their infant was influenced by the level of *personalised care* and the *consistency of information* received. Some participants reported experiencing inconsistencies in the information provided by staff and in the practices they observed– both between staff from different disciplines and between day and night shifts within the same discipline. As one father explained, “the longer you’re here, the more you hear different things from people and you start to think “oh, maybe we shouldn't necessarily be trusting the first thing that we hear””. Trust was strengthened when healthcare providers offered *personalised care*, considering the unique needs of the infant and the perspectives of the family. As one father described: “If the doctors not really taking an approach to understand the family and what they have to offer in response to the child’s care, it can lead to trust issues”.

3.3 Parent-generated strategies

In total, 28 strategies were proposed by parents. Nine were identified by both the all-fathers and parents-only groups, while each group generated an additional 10 unique strategies.

Nineteen strategies received at least one vote (Table 4), the majority of which received three or fewer votes (n = 14/19). Five strategies received five or more votes, and these are described below as they represent those most strongly endorsed by participants.

Table 4. Strategies proposed by parents to support father involvement in neonatal care.

Affected variable	Strategy	Votes (all- parents)	Votes (fathers- only)
Communication with staff	Written summary of baby's progress and care plans (via an app or AI notetaker)	11	7
Ability to get to the hospital	Accommodation for families within the neonatal unit	13	1
	Free parking	1	-
External responsibilities	Additional paid parental leave	5	5
	Support payment	0	1
	Accessible childcare	1	0
	Meals for parents	1	-
Staff support	Staff support while partner is giving birth	8	0
	Staff check-ins about father wellbeing and needs	0	6
	Involving fathers in daily cares	2	0
Inclusive staff attitudes	Disability and CALD awareness training for staff	-	3
	Staff training on the role of fathers in neonatal care	-	2
Access to interpreters	On-demand interpreting services	-	3
Peer support	Fathers group	-	3
Consistency of information	Hospital review into staff to parent communication	-	2
Time spent as a family	Maternity ward within/adjoining the neonatal unit	2	-
	No restrictions on parental visits to the unit	2	-
	Staff assisting mum to visit neonatal unit from maternity ward	-	1
Mental health support	Eligibility for mental health support (e.g. psychology services, post-partum depression screening) extended to fathers	-	2

The strategy that received the most votes overall was for parents to receive a written summary of their baby's health and care plans (all-parents = 11, fathers-only = 7). Participants suggested this could be achieved either through staff completing updates in an app or via an AI cot-side tool that recaps ward rounds and other conversations into an easy-to-read summary for

parents. This strategy was intended to strengthen fathers' *communication with staff* and, in turn, enhance *trust in medical professionals* and *knowledge of neonatal care*.

Among the all-parents group, the most popular suggestion was the provision of family accommodation within the neonatal unit (n = 13). This included single-family NICU rooms with space for parents to stay, as well as on-site facilities such as a kitchen, co-working space, laundry, and family lounge. This strategy was intended to improve *access to the hospital* and *increase time spent together as a family*.

The all-parents participant group allocated eight votes to the suggestion of having a dedicated staff member or volunteer present with fathers during and immediately after an emergency birth. This person's role would be to provide emotional support and practical guidance (e.g., outlining next steps, parking, and accommodation options), and enhancing *support from staff* – particularly at a point of heightened distress and uncertainty.

A proposal for additional paid parental leave received equal support from both participant groups (all-parents = 5, fathers-only = 5). This referred to government-funded parental leave that could be used in addition to existing leave entitlements. The strategy aims to reduce work commitments and, consequently, *external responsibilities*.

The fathers-only participant group gave six votes to a proposal similar to that of the dedicated birth support role. Rather than focusing on the birth itself, this suggestion involved someone meeting with fathers soon after admission to discuss what the neonatal care experience may involve, the supports and resources available within the hospital and through external organisations, and fathers' own health and wellbeing. This strategy was also intended to enhance *staff support for fathers*.

3.4 Feasibility assessment

Of the strategies that directly impacted healthcare providers (n = 9/19), five were voted by most groups as “more feasible”, three were voted by most as “less feasible”, and one received a mix of votes (Table 5). The participants' reasoning for considering a strategy more or less feasible is described below.

Table 5. Healthcare provider groups' (n = 6) votes on the feasibility of parent-generated strategies.

Feasibility category	Strategy	Votes (n)		
		Less feasible	Split	More feasible
Less feasible	Written summary of baby's progress and care plans	4	1	1
	Accommodation for families within the neonatal unit	6	0	0
	Staff support while partner is giving birth	6	0	0
Split	Eligibility for mental health support extended to fathers	3	1	2
More feasible	Disability and CALD awareness training for staff	1	0	5
	Staff training on the role of fathers in neonatal care	0	1	5
	Staff check-ins about father wellbeing and needs	1	1	4
	Peer group	0	2	4
	No restrictions on parental visits to the unit	0	0	6

3.4.1 More feasible

Staff provided two main justifications for viewing a strategy as “more feasible”: either it was already implemented or it could be easily implemented within existing hospital resourcing. Staff explained that 24/7 parental access to the unit was permitted, and that checking in with fathers formed part of routine care: “We already do that job when the baby is admitted. You talk to the dad, you explain, you show them where everything is. You say what's happening”. However, they highlighted variability in how consistently this occurred across staff members, attributing this to differences in confidence and individual practice, with some noting that it depended on whether “you’ve got a good staff member”.

Staff training and peer groups were deemed “easy to implement”. These were considered to require minimal additional funding (“It wasn’t going to cost money”), and staff noted that space was available to support their implementation.

3.4.2 Less feasible

Staff provided three main justifications for viewing a strategy as “less feasible”: insufficient hospital resources; potential for risk; and doubts over benefits (Table 6).

Table 6. Staff justifications for viewing a strategy as “less feasible”.

Category (subcategory)	Applicable strategies
Insufficient hospital resources (staffing/ funding/ space)	• Eligibility for mental health support extended to fathers • Staff support while partner is giving birth • Written summary of baby’s progress and care plans • Accommodation for families within the neonatal unit
Potential for risk (miscommunication/ privacy)	• Written summary of baby’s progress and care plans • Staff support while partner is giving birth
Doubts over benefits (fathers not interested/ fathers not present)	• Fathers group • Staff check-ins about father wellbeing and needs • Staff training on the role of fathers in neonatal care

3.4.2.1 Hospital resources

Staff explained that several strategies were considered less feasible due to limitations in existing hospital resources. Limited funding (“there’s not enough money to pay for most things”) and persistent staffing shortages (“we struggle with staffing all the time”) meant strategies requiring additional workload or personnel – such as providing written summaries of a baby’s progress or assigning a dedicated support person for fathers during and immediately after birth – were viewed as impractical. The proposal to expand access to hospital-based mental health services to include fathers was also deemed “less feasible” for similar reasons. Space constraints were also highlighted, with staff explaining that hospitals do not have “enough room for patients, let alone family”, making it difficult to establish on-ward accommodation for parents.

3.4.2.2 Potential for risk

Some staff raised concerns about the potential risks associated with certain proposed strategies. Concerns were expressed regarding the provision of written summaries of a baby’s progress to parents. Staff noted that parents might misinterpret or not fully understand the information and, if offsite, would have limited opportunity to seek clarification or ask questions. In addition, where summaries were generated using an AI notetaker, concerns were raised about staff and patient privacy: “The nursery is an open space. So if it's recording your conversation, it could pick up on conversations [about] other babies”.

Staff also raised concerns about the proposal to designate a support person for fathers during and immediately after an emergency birth, particularly if this role were to be filled by a volunteer. Concerns centered on whether such individuals would have the appropriate training to communicate effectively with fathers during a distressing and medically complex situation: “being a volunteer, like you run the risk of being, without them meaning to, overly reassuring of the situation that's perhaps more negative than their understanding is. There just isn't quite the sensitivity without them having the training”.

3.4.2.3 Doubts over benefits

For some strategies that were, overall, considered feasible, doubts were nevertheless raised about the extent to which they would benefit fathers. Staff explained that previous attempts at peer support groups had “never really taken off”, which they attributed to two key factors. First, some fathers were described as having too many competing demands and insufficient time to attend: “Dads are working, they're juggling so much other stuff and when they're here, they want to be with their baby”. Second, some fathers were perceived as being uninterested in support groups, either because they were not “social people”, they did not believe they would benefit from participation, or they did not acknowledge the need for support given they did not give birth: “I remember one or two dads seeing [the group flyer] on the end of the cot and then being like, “oh no, no, I don't need that. Like who am I to... I'm not the one who's had the baby”.

Staff raised similar concerns regarding staff training initiatives and efforts to proactively check in with fathers. Some participants noted that, regardless of staff efforts, certain fathers may not be interested in receiving emotional support or becoming more involved in their infant's care. This was attributed to factors including “cultural things”, beliefs about needing to remain “strong, stoic” while “supporting the mum”, and concerns about hurting the baby: “I find that more often than not, when we do teach dads how to change nappies and stuff, they aren't too keen. They're always like, “oh my God, so fragile. I don't want to touch””. Participants also highlighted the practical challenges of engaging fathers due to their more limited presence in the neonatal unit, noting that “it's not as easy to check in with them”.

4. Discussion

This study is the first to apply a systems-based approach to examine fathers' involvement in neonatal care. Working in collaboration with fathers and families, a visual model of the system shaping father's involvement was developed in the form of a Causal Loop Diagram. The model conceptualises father involvement as emerging from a system of interrelated individual, family, healthcare provider and hospital-level factors. Although many of these factors have been identified in prior research on barriers and enablers of father involvement (Kaur et al. 2025), the present study extends this literature by visually illustrating how these factors interact over time through reinforcing and constraining feedback processes. In doing so, the findings highlight not only direct relationships between factors, but also indirect pathways where the influence of one factor is mediated through others – interactions that have not been clearly captured in prior research.

In addition, the study identifies parent-generated and prioritised strategies that target key leverage points within the system. These findings suggest that opportunities to enhance greater involvement in neonatal care likely requires interventions across multiple levels, including external commitments, communication with staff, staff attitudes, access to peer support, interpreting services (where necessary), and mental health support. When triangulated with the perspectives of healthcare providers, it became apparent that the strategies highly prioritised by parents were often considered less feasible within current clinical constraints or were outside providers' scope of practice. This indicates that addressing the most pressing needs of fathers will require broader structural change that extends beyond interventions targeting individual behaviour.

An example of such structural change, as proposed by parents in this study, is the introduction of paid parental leave specific to neonatal care. This is supported by a community organisation-led survey of 349 Australian parents, in which 99% endorsed extending paid parental leave (Miracle Babies n.d; Spittle et al. 2021). In Australia, while parents may access employer-funded or government-funded paid parental leave, no additional leave is currently provided to those whose infants require neonatal care. Evidence highlights the financial impact of this gap: a 2022 survey found that 21% of respondents (n = 231; 97% female) took unpaid leave during their infant's admission, and three-quarters reported a moderate to very large financial impact, with 64% indicating an unexpected loss of income (Eeles et al. 2022). In

recognition of these pressures, several countries, including the United Kingdom and New Zealand, have recently introduced neonatal-specific payments and paid parental leave (Employment New Zealand n.d.; GOV.UK n.d.).

In Australia, advocacy efforts are underway to introduce a similar policy. The Neonatal Critical Care Alliance has proposed that primary carers receive one week extra for every week their infant is in hospital, up to 12 weeks, and an additional two weeks for the secondary partner (Miracle Babies 2026), mirroring the approach adopted in the United Kingdom. However, differentiating entitlements between ‘primary’ and ‘secondary’ carers raises important gender equity considerations (Goodman & Dumet 2023). Although these categories are not explicitly gendered, men accounted for only 20% of primary carer leave taken in Australia in 2024-25 (WGEA 2025, p. 66). From an equity perspective, equal leave entitlements may be needed to avoid reinforcing norms that position fathers as secondary caregivers (Baird et al. 2021). The current study did not examine fathers’ preferred duration of leave or whether participants viewed entitlements differently for primary and secondary carers. However, these represent important areas for future research and could contribute to broader policy discussions, both within Australia and internationally.

This study also identified greater hospital resourcing as a key structural requirement for implementing the most highly valued parent-generated strategies. While this barrier was identified in response to strategies specifically designed to address the needs of fathers, it also impacts parental involvement more broadly. Across diverse cultural and healthcare contexts, neonatal staff commonly report structural barriers to the implementation of family-centred care initiatives that foster parental involvement, like those identified in this study, including limited physical space, heavy workloads, and inadequate staffing levels (Leake et al. 2025). This consistency is perhaps unsurprising, given that parental involvement represents a marked departure from traditional neonatal care, in which medical professionals retained primary control of infant care and parental presence was often restricted due to concerns such as infection risk (Reid et al. 2021). As such, the introduction of meaningful parental involvement represents a significant cultural shift in neonatal care that requires adequate hospital resourcing and institutional support, without which the involvement of *any* parent may be constrained. For example, policy or cultural changes that push for neonatal healthcare providers to make a

514 concerted effort to genuinely embed fathers as part of the caregiving team will struggle to be
515 sustainably implemented without the necessary time and resources to make this possible.

516 While inadequate hospital resourcing represents a structural barrier that can affect all
517 parents, it does not necessarily impact all parents in the same way. A systems thinking approach
518 highlights how interacting factors can produce different outcomes depending on individual
519 circumstances. For example, a father who faces barriers to attending the hospital may experience
520 further limitations in communication with staff, particularly in settings where staffing constraints
521 reduce opportunities for engagement. In contrast, their partner who can spend more time in the
522 hospital is better positioned to maintain communication with staff, even within the same
523 resourcing environment. In this way, fathers are disproportionately affected by resourcing
524 constraints that limit parental involvement, highlighting the need for targeted strategies, such as
525 those identified in this study, to support fathers at greater risk of exclusion.

526 The removal of structural barriers to father involvement in neonatal care may, at first
527 glance, appear beyond the direct scope of healthcare providers and researchers. However,
528 research such as this, which demonstrates the impact of structural factors on neonatal clinical
529 outcomes such as parent involvement, can help build the case for change. Economic evaluations
530 are also needed to strengthen the business case for hospitals and governments to invest in
531 supporting father involvement in neonatal care (Franck et al. 2022). To the best of our
532 knowledge, no such evaluations have been conducted, and even within the broader parental
533 involvement literature, only three studies have been published, all focusing on single-family
534 room designs (Shepley et al. 2014; Holmes et al. 2016; Sadatsafavi et al. 2017). Addressing this
535 gap should be considered a priority for future research to inform evidence-based funding
536 decisions.

537 Although the study's findings highlight the importance of structural reform in
538 strengthening father involvement within neonatal units, this should not detract from continued
539 investment in grassroots initiatives. Outside the academic literature, there are numerous
540 examples of clinician-led efforts within neonatal units that respond to the unmet support needs of
541 fathers, not-for-profit organisations providing direct support to families, and fathers with lived
542 experience who, following their baby's discharge, are motivated to give back by helping to

reduce the distress experienced by others (e.g., Dads of the NICU Podcast). While robust evidence on outcomes in neonatal settings is still emerging, broader literature on fathers' experiences in health services suggests that such initiatives can have meaningful positive effects (Wynter et al. 2024). As such, there is value in combining 'top-down' structural reforms with 'bottom-up' community-led approaches. Together, these strategies offer distinct but complementary opportunities to enhance father involvement and, ultimately, improve outcomes for individual family members and the family unit as a whole.

As identified in this study, fathers' peer support groups represent a relatively low-resource intervention that may assist neonatal units in enhancing father involvement. Studies describing support groups for fathers in neonatal care have been published from Australia (Thomson-Salo et al. 2017), the United Kingdom (Archibald 2017; Scott and Archibald 2021), and Denmark (Lægteskov et al. 2023). However, a key difference between the group proposed in this study and those described in the literature is the suggestion that the group be facilitated by a "veteran" father – that is, a father with lived experience of neonatal care – rather than by clinical staff such as neonatologists or psychologists. This finding aligns with broader research on peer support in neonatal care, in which parents have recommended that groups be conducted in the absence of healthcare providers, while still having clinicians available as a backup if needed, as this allows parents to speak more openly and freely (Dahan et al. 2020; Pascual et al. 2025).

Support groups are just one mode of peer support that can be provided to fathers in neonatal care. Other forms of peer support developed for mothers or parents more broadly within neonatal care include online support groups and one-on-one support delivered in person or via telephone (Hall et al. 2015; Pascual et al. 2024). Systematic reviews have concluded that peer support programs can improve parental wellbeing, confidence, and self-efficacy (Hunt et al. 2019), as well as post-discharge outcomes for infants (Wegman et al. 2025). However, these reviews also note that the evidence base remains limited, particularly the availability of high-quality trial data. In addition, there is considerable heterogeneity in how peer support programs operate, including differences in their size, funding models, training and supervision arrangements, and level of integration within the clinical environment, making it difficult to determine which program components are most effective (Thomson & Balaam 2019).

In this study, staff reported that previous attempts to run evening fathers' groups had not been sustained due to difficulties securing consistent attendance from fathers. The current literature on neonatal peer support highlights the diverse needs, preferences, and competing demands experienced by parents and, consequently, recommends flexible and multimodal approaches when implementing peer support programs. For example, Pascual et al. (2025) describe a framework for implementing peer support in neonatal care that was co-designed with parents and healthcare providers. The framework recommends offering both group-based and one-on-one approaches, alongside flexible modes of engagement such as online group participation, telephone-based peer support, and daytime sessions, to improve accessibility and accommodate differing parental circumstances.

4.1 Limitations

The study has several limitations. First, the findings may not be representative of the full spectrum of neonatal care experiences. The perspectives of culturally and linguistically diverse and First Nations fathers were not specifically represented in this study and remain underrepresented within the broader literature. Emerging evidence suggests that these groups have distinct support needs which require targeted interventions and policies (Trajkovski et al. 2024; Bennet et al. 2025). In addition, the study did not consider experiences relating to palliative and bereavement care. These omissions were not deliberate but rather reflected the experiences and characteristics of participants who self-selected to participate in the study.

Second, the findings may be influenced by the composition of the participant sample, which was overwhelmingly female. This was largely due to the inclusion of a large healthcare provider sample, the majority of whom were women, reflecting the demographics of the Australian healthcare workforce (Australian Institute of Health and Welfare n.d). Despite this gender imbalance, fathers constituted the majority of parent participants and participated in longer workshops (two hours), which facilitated more in-depth discussion than the healthcare provider workshops.

Lastly, it should be noted that some findings reflect the local context and may not be broadly applicable. For example, the recommendation for unrestricted parental access to the unit arose from experiences during the COVID-19 pandemic; unrestricted access has since been

implemented at both study sites. However, the leverage points targeted by these strategies reflect fathers' needs more generally and extend beyond the local context.

5. Conclusion

This study advances understanding of fathers' involvement in neonatal care by conceptualising it as a system shaped by interrelated individual, family, healthcare provider, and hospital-level factors. Through the development of a Causal Loop Diagram with parents, the findings extend beyond prior linear models to demonstrate how reinforcing and constraining feedback processes influence fathers' engagement over time. The identification of parent-prioritised strategies highlights that meaningful improvements in father involvement will require structural reform, including neonatal-specific paid parental leave and enhanced hospital resourcing, to address systemic constraints that limit fathers' participation. At the same time, the combination of these "top-down" reforms with "bottom-up" peer-led and community-driven initiatives provides a complementary and pragmatic pathway for change. Together, these approaches have the potential to embed fathers as active partners in neonatal care and improve outcomes for infants and their families.

6. References

Adama, Esther Abena, et al. "Support Needs of Parents in Neonatal Intensive Care Unit: An Integrative Review." *Journal of Clinical Nursing*, vol. 31, nos. 5–6, Mar. 2022, pp. 532–47. <https://doi.org/10.1111/jocn.15972>.

Aljawad, Bayan, et al. "Family-Centered Care in Neonatal and Pediatric Critical Care Units: A Scoping Review of Interventions, Barriers, and Facilitators." *BMC Pediatrics*, vol. 25, no. 1, Apr. 2025, p. 291. <https://doi.org/10.1186/s12887-025-05620-w>.

Alsaç, Selda Yüzer, and Adnan Batuhan Coşkun. "A Qualitative Exploration of Fathers' Perceived Roles and Emotional Experiences during Their Infant's Hospitalization in the Neonatal Intensive Care Unit." *Journal of Pediatric Nursing*, vol. 86, Jan. 2026, pp. 27–34. <https://doi.org/10.1016/j.pedn.2025.10.026>.

Archibald, Sarah-Jane. “What about Fathers? A Review of a Fathers’ Peer Support Group on a Neonatal Intensive Care Unit.” *Journal of Neonatal Nursing*, vol. 25, no. 6, Dec. 2019, pp. 272–76. <https://doi.org/10.1016/j.jnn.2019.05.003>.

Baird, Marian, et al. “Gender Equality and Paid Parental Leave in Australia: A Decade of Giant Leaps or Baby Steps?” *Journal of Industrial Relations*, vol. 63, no. 4, Sept. 2021, pp. 546–67. <https://doi.org/10.1177/00221856211008219>.

Beattie, Eibhlin Burns, et al. “A Scoping Review of Satisfaction of Parents of Babies in NICU Units.” *Journal of Neonatal Nursing*, vol. 31, no. 1, Feb. 2025, pp. 68–81. <https://doi.org/10.1016/j.jnn.2024.10.005>.

Bennett, Jessica, et al. “Winanga-Li (I Hear You): Privileging Voices and Experiences of Aboriginal Parents’ Journey with Their Gaaynggal (Baby) Through a Neonatal Intensive Care Unit.” *International Journal of Environmental Research and Public Health*, vol. 22, no. 4, Apr. 2025, p. 554. <https://doi.org/10.3390/ijerph22040554>.

Bernardo, Janine, et al. “A Video-Based Intervention Supporting Spanish-Speaking Fathers of Infants in the Neonatal Intensive Care Unit: Open-Label Pilot Study.” *JMIR Formative Research*, vol. 9, Dec. 2025, pp. e72520–e72520. <https://doi.org/10.2196/72520>.

Buek, Katharine W., et al. “NICU and Postpartum Nurse Perspectives on Involving Fathers in Newborn Care: A Qualitative Study.” *BMC Nursing*, vol. 20, no. 1, Dec. 2021, p. 35. <https://doi.org/10.1186/s12912-021-00553-y>.

Chen, Yi-Ling, et al. “The Effectiveness of an Intervention Program for Fathers of Hospitalized Preterm Infants on Paternal Support and Attachment 1 Month After Discharge.” *Journal of Perinatal & Neonatal Nursing*, vol. 33, no. 2, Apr. 2019, pp. 160–69. <https://doi.org/10.1097/JPN.0000000000000406>.

Clarkson, Gina, and Mary Jo Gilmer. "Factors Affecting Time NICU Nurses Spend With Fathers: Results From a Larger Study." *Advances in Neonatal Care*, vol. 19, no. 5, Oct. 2019, pp. E16–25. <https://doi.org/10.1097/ANC.0000000000000646>.

Clarkson, John, et al. "A Systems Approach to Healthcare: From Thinking to - practice." *Future Healthcare Journal*, vol. 5, no. 3, Oct. 2018, pp. 151–55. <https://doi.org/10.7861/futurehosp.5-3-151>.

Craig, J. W., et al. "Recommendations for Involving the Family in Developmental Care of the NICU Baby." *Journal of Perinatology*, vol. 35, no. S1, Dec. 2015, pp. S5–8. <https://doi.org/10.1038/jp.2015.142>.

Dahan, Sonia, et al. "Peer Support Groups for Families in Neonatology: Why and How to Get Started?" *Acta Paediatrica*, vol. 109, no. 12, Dec. 2020, pp. 2525–31. <https://doi.org/10.1111/apa.15312>.

Deeney, Kathleen, et al. "Experiences of Fathering a Baby Admitted to Neonatal Intensive Care: A Critical Gender Analysis." *Social Science & Medicine*, vol. 75, no. 6, Sept. 2012, pp. 1106–13. <https://doi.org/10.1016/j.socscimed.2012.04.018>.

Ding, Xiang, et al. "Effects of Family-Centred Care Interventions on Preterm Infants and Parents in Neonatal Intensive Care Units: A Systematic Review and Meta-Analysis of Randomised Controlled Trials." *Australian Critical Care*, vol. 32, no. 1, Jan. 2019, pp. 63–75. <https://doi.org/10.1016/j.aucc.2018.10.007>.

Dressler, Caitlin. "The Psychological Implications of Having an Infant in the NICU for Mothers and Fathers." *Journal of Neonatal Nursing*, vol. 30, no. 5, Oct. 2024, pp. 467–69. <https://doi.org/10.1016/j.jnn.2024.01.005>.

Eeles, Abbey L., et al. “Impact of Current Australian Paid Parental Leave on Families of Preterm and Sick Infants.” *Journal of Paediatrics and Child Health*, vol. 58, no. 11, Nov. 2022, pp. 2068–75. <https://doi.org/10.1111/jpc.16170>.

Filippa, Manuela, et al. “Systematic Review Shows the Benefits of Involving the Fathers of Preterm Infants in Early Interventions in Neonatal Intensive Care Units.” *Acta Paediatrica*, vol. 110, no. 9, Sept. 2021, pp. 2509–20. <https://doi.org/10.1111/apa.15961>.

Fisher, Duncan, et al. “Fathers in Neonatal Units: Improving Infant Health by Supporting the Baby-Father Bond and Mother-Father Coparenting.” *Journal of Neonatal Nursing*, vol. 24, no. 6, Dec. 2018, pp. 306–12. <https://doi.org/10.1016/j.jnn.2018.08.007>.

Franck, Linda S., et al. “Improving Family-Centered Care for Infants in Neonatal Intensive Care Units: Recommendations From Frontline Healthcare Professionals.” *Advances in Neonatal Care*, vol. 22, no. 1, Feb. 2022, pp. 79–86. <https://doi.org/10.1097/ANC.0000000000000854>.

Franck, Linda S., and Karel O’Brien. “The Evolution of Family-centered Care: From Supporting Parent-delivered Interventions to a Model of Family Integrated Care.” *Birth Defects Research*, vol. 111, no. 15, Sept. 2019, pp. 1044–59. <https://doi.org/10.1002/bdr2.1521>.

Gahagan, Kayleigh, et al. “Not Forgetting the Fathers: A Qualitative Narrative Review Exploring the Involvement and Psychological Well-Being of Fathers in the Neonatal Intensive Care Unit.” *Journal of Neonatal Nursing*, vol. 32, no. 2, Apr. 2026, p. 101770. <https://doi.org/10.1016/j.jnn.2026.101770>.

Goodman, Julia M., and Lisset D. Dumet. “Paid Parental Leave and Mental Health: The Importance of Equitable Policy Design.” *The Lancet Public Health*, vol. 8, no. 1, Jan. 2023, pp. e2–3. [https://doi.org/10.1016/S2468-2667\(22\)00319-X](https://doi.org/10.1016/S2468-2667(22)00319-X).

Hall, S. L., et al. “Recommendations for Peer-to-Peer Support for NICU Parents.” *Journal of Perinatology*, vol. 35, no. 1, Dec. 2015, pp. S9–13. www.nature.com, <https://doi.org/10.1038/jp.2015.143>.

Health workforce - Australian Institute of Health and Welfare.
<https://www.aihw.gov.au/reports/workforce/health-workforce>. Accessed 16 Jul. 2026.

Hodgson, Christine R., et al. “Infant and Family Outcomes and Experiences Related to Family-Centered Care Interventions in the NICU: A Systematic Review.” *Children*, vol. 12, no. 3, Feb. 2025, p. 290. <https://doi.org/10.3390/children12030290>.

Holmes, A. V., et al. “Rooming-In to Treat Neonatal Abstinence Syndrome: Improved Family-Centered Care at Lower Cost.” *PEDIATRICS*, vol. 137, no. 6, June 2016, pp. e20152929–e20152929. <https://doi.org/10.1542/peds.2015-2929>.

Hunt, Harriet, et al. “‘They’ve Walked the Walk’: A Systematic Review of Quantitative and Qualitative Evidence for Parent-to-Parent Support for Parents of Babies in Neonatal Care.” *Journal of Neonatal Nursing*, vol. 25, no. 4, Aug. 2019, pp. 166–76. <https://doi.org/10.1016/j.jnn.2019.03.011>.

Impact of Current Paid Parental Leave Scheme - Miracle Babies.
<https://www.miraclebabies.org.au/gncd88>. Accessed 30 Apr. 2026.

Johnson, Beverley H. “Family-Centered Care: Four Decades of Progress.” *Families, Systems, & Health*, vol. 18, no. 2, 2000, pp. 137–56. <https://doi.org/10.1037/h0091843>.

Kardaş Özdemir, Funda, and Dilek Küçük Alemdar. “Supporting of the Fathers to Visit Their Infants in Neonatal Intensive Care Unit Decreases Their Stress Level: A Pretest–Posttest Quasi-Experimental Study.” *Community Mental Health Journal*, vol. 53, no. 4, May 2017, pp. 490–95. <https://doi.org/10.1007/s10597-016-0066-7>.

Kaur, Karanbir, et al. “Fathers’ Involvement in a Surgical Neonatal Intensive Care Unit: A Prospective Cohort Study.” *Journal of Paediatrics and Child Health*, vol. 61, no. 5, May 2025, pp. 747–58. <https://doi.org/10.1111/jpc.70017>.

Khalil, Hanan, and Ali Lakhani. “Using Systems Thinking Methodologies to Address Health Care Complexities and Evidence Implementation.” *JBIM Evidence Implementation*, vol. 20, no. 1, Mar. 2022, pp. 3–9. <https://doi.org/10.1097/XEB.0000000000000303>.

Kim, Theresa H. M., et al. “Effect of Fathers’ Presence and Involvement in Newborn Care in the NICU on Mothers’ Symptoms of Postpartum Depression.” *Journal of Obstetric, Gynecologic & Neonatal Nursing*, vol. 49, no. 5, Sept. 2020, pp. 452–63. <https://doi.org/10.1016/j.jogn.2020.05.007>.

Lægteskov, Tascha Ravn, et al. “Father Groups in the Neonatal Intensive Care Unit: A Supportive Intervention.” *Advances in Neonatal Care*, vol. 23, no. 5, Oct. 2023, pp. 478–86. <https://doi.org/10.1097/ANC.0000000000001092>.

Leake, Nadia, et al. “Facilitators and Barriers to the Practice of Neonatal Family Integrated Care from the Perspective of Healthcare Professionals: A Systematic Review.” *Archives of Disease in Childhood - Fetal and Neonatal Edition*, vol. 110, no. 6, Nov. 2025, pp. 549–55. <https://doi.org/10.1136/archdischild-2024-327770>.

LeDuff, Lawrence D., et al. "NICU Fathers: Improving the Quality of Paternal Support in the NICU." *Advances in Neonatal Care*, vol. 21, no. 5, Oct. 2021, pp. 387–98. <https://doi.org/10.1097/ANC.0000000000000796>.

Lee, Tzu-Ying, et al. "The Effectiveness of Early Intervention on Paternal Stress for Fathers of Premature Infants Admitted to a Neonatal Intensive Care Unit." *Journal of Advanced Nursing*, vol. 69, no. 5, May 2013, pp. 1085–95. <https://doi.org/10.1111/j.1365-2648.2012.06097.x>.

Liu, Ting-Ting, et al. "Effects of Parental Involvement in Infant Care in Neonatal Intensive Care Units: A Meta-Analysis." *Frontiers of Nursing*, vol. 5, no. 3, Oct. 2018, pp. 207–15. <https://doi.org/10.1515/fon-2018-0028>.

Mancini, Vincent O. "The Role of Fathers in Supporting the Development of Their NICU Infant." *Journal of Neonatal Nursing*, vol. 29, no. 5, Oct. 2023, pp. 714–19. <https://doi.org/10.1016/j.jnn.2023.02.008>.

Marie, Anais, et al. "Factors Influencing Parental Presence in Neonatal Units: A Systematic Review." *World Journal of Clinical Pediatrics*, vol. 14, no. 4, Dec. 2025. <https://doi.org/10.5409/wjcp.v14.i4.107552>.

McGlacken-Byrne, Domhnall, et al. "An Introduction to Systems Thinking." *Systems Thinking for Global Health*, edited by Frédérique Vallières et al., 1st ed., Oxford University PressOxford, 2022, pp. 1–17. <https://doi.org/10.1093/oso/9780198799498.003.0001>.

Mirlashari, Jila, et al. "Nurses' and Physicians' Experiences of the NIDCAP Model Implementation in Neonatal Intensive Care Units in Iran." *Journal of Pediatric Nursing*, vol. 45, Mar. 2019, pp. e79–88. <https://doi.org/10.1016/j.pedn.2018.12.014>.

Morris, Alyssa R., et al. “Current Evidence and Considerations for Psychological Support Interventions for Fathers in the Neonatal Intensive Care Unit.” *International Journal of Environmental Research and Public Health*, vol. 23, no. 2, Jan. 2026, p. 144. <https://doi.org/10.3390/ijerph23020144>.

Neonatal Care Pay and Leave – GOV.UK. <https://www.gov.uk/neonatal-care-pay-leave>. Accessed 16 Jul. 2026.

Noergaard, Betty, et al. “Factors Contributing to Implementation of a Father-Friendly Neonatal Intensive Care Unit in Denmark.” *PEC Innovation*, vol. 5, Dec. 2024, p. 100353. <https://doi.org/10.1016/j.pecinn.2024.100353>.

North, Krysten, et al. “Family Involvement in the Routine Care of Hospitalized Preterm or Low Birth Weight Infants: A Systematic Review and Meta-Analysis.” *Pediatrics*, vol. 150, no. Supplement 1, Aug. 2022, p. e2022057092O. <https://doi.org/10.1542/peds.2022-057092O>.

Parental leave payments – Employment New Zealand. <https://www.employment.govt.nz/pay-and-hours/pay-and-wages/leave-and-holiday-pay/parental-leave-payments#scroll-to-10>. Accessed 16 July. 2026.

Pascual, A., J. M. Wielenga, K. Ruhe, A. H. Van Kaam, and J. M. Maaskant. “Co-Designing a Peer Support Program for NICU Parents Using a Participatory Action Research Approach.” *Acta Paediatrica*, vol. 115, no. 3, Mar. 2026, pp. 602–11. <https://doi.org/10.1111/apa.70364>.

Pascual, A., J. M. Wielenga, K. Ruhe, A. H. Van Kaam, N. P. Denswil, et al. “The Fundamentals of a Parental Peer-to-Peer Support Program in the NICU: A Scoping

Review.” *Maternal Health, Neonatology and Perinatology*, vol. 10, no. 1, Oct. 2024, p. 19.
<https://doi.org/10.1186/s40748-024-00190-8>.

Raiskila, Simo, et al. “Parent and Nurse Perceptions on the Quality of Family-Centred Care in 11 European NICUs.” *Australian Critical Care*, vol. 29, no. 4, Nov. 2016, pp. 201–09. <https://doi.org/10.1016/j.aucc.2016.09.003>.

Reid, Shelley, et al. “The Evolution of Neonatal Family Centred Care.” *Journal of Neonatal Nursing*, vol. 27, no. 5, Oct. 2021, pp. 327–33.
<https://doi.org/10.1016/j.jnn.2021.03.002>.

Reiter, Anna, et al. “Parental Participation in the Care of Hospitalized Neonates in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis.” *Frontiers in Pediatrics*, vol. 10, Aug. 2022, p. 987228. <https://doi.org/10.3389/fped.2022.987228>.

Rubinstein, Rupa, et al. “Investigating Father or Partner Involvement in Family Integrated Care in Neonatal Units: Protocol for a Prospective, Multicenter, Multiphase Study.” *JMIR Research Protocols*, vol. 13, Mar. 2024, p. e53160.
<https://doi.org/10.2196/53160>.

Sadatsafavi, Hessam, et al. “Probabilistic Return-on-Investment Analysis of Single-Family Versus Open-Bay Rooms in Neonatal Intensive Care Units—Synthesis and Evaluation of Early Evidence on Nosocomial Infections, Length of Stay, and Direct Cost of Care.” *Journal of Intensive Care Medicine*, vol. 34, no. 2, Feb. 2019, pp. 115–25.
<https://doi.org/10.1177/0885066616689774>.

Scott, Zoe, and Sarah-Jane Archibald. “A Service Evaluation of the Fathers’ Peer Support Group on a Neonatal Intensive Care Unit (NICU).” *Journal of Neonatal Nursing*, vol. 27, no. 4, Aug. 2021, pp. 269–72. <https://doi.org/10.1016/j.jnn.2020.10.001>.

Segers, Elisabeth, et al. "The Impact of Family Centred Care Interventions in a Neonatal or Paediatric Intensive Care Unit on Parents' Satisfaction and Length of Stay: A Systematic Review." *Intensive and Critical Care Nursing*, vol. 50, Feb. 2019, pp. 63–70. <https://doi.org/10.1016/j.iccn.2018.08.008>.

Shepley, M. M., et al. "The Business Case for Building Better Neonatal Intensive Care Units." *Journal of Perinatology*, vol. 34, no. 11, Nov. 2014, pp. 811–15. <https://doi.org/10.1038/jp.2014.174>.

Siokou, Christine, et al. "Group Model Building: A Participatory Approach to Understanding and Acting on Systems." *Public Health Research and Practice*, vol. 25, no. 1, Nov. 2014, p. e2511404. <https://doi.org/10.17061/phrp2511404>.

Sisson, Helen, et al. "Metaethnographic Synthesis of Fathers' Experiences of the Neonatal Intensive Care Unit Environment During Hospitalization of Their Premature Infants." *Journal of Obstetric, Gynecologic & Neonatal Nursing*, vol. 44, no. 4, July 2015, pp. 471–80. <https://doi.org/10.1111/1552-6909.12662>.

Spittle, Alicia J., et al. "Missing out on Precious Time: Extending Paid Parental Leave for Parents of Babies Admitted to Neonatal Intensive or Special Care Units for Prolonged Periods." *Journal of Paediatrics and Child Health*, vol. 58, no. 3, Mar. 2022, pp. 376–81. <https://doi.org/10.1111/jpc.15836>.

Thomson, Gill, and Marie-Clare Balaam. "International Insights into Peer Support in a Neonatal Context: A Mixed-Methods Study." *PLOS ONE*, edited by Shelina Visram, vol. 14, no. 7, July 2019, p. e0219743. <https://doi.org/10.1371/journal.pone.0219743>.

Thomson-Salo, Frances, et al. "A Fathers' Group in NICU: Recognising and Responding to Paternal Stress, Utilising Peer Support." *Journal of Neonatal Nursing*, vol. 23, no. 6, Dec. 2017, pp. 294–98. <https://doi.org/10.1016/j.jnn.2017.04.001>.

Trajkovski, Suza, et al. "Immigrant and Minority Parents' Experiences in a Neonatal Intensive Care Unit: A Meta-ethnography Review." *Journal of Clinical Nursing*, vol. 34, no. 3, Mar. 2025, pp. 737–53. <https://doi.org/10.1111/jocn.17402>.

Waddington, Chandra, et al. "Family Integrated Care: Supporting Parents as Primary Caregivers in the Neonatal Intensive Care Unit." *Pediatric Investigation*, vol. 5, no. 2, June 2021, pp. 148–54. <https://doi.org/10.1002/ped4.12277>.

Wegman, Sarah, et al. "Efficacy of Peer Support on Caregiver Well-Being and Patient Outcomes in the Neonatal Intensive Care Unit: A Systematic Review." *Advances in Neonatal Care*, vol. 25, no. 4, Aug. 2025, pp. 346–52. <https://doi.org/10.1097/ANC.0000000000001273>.

Whitelaw, Andrew, and Katharine Sleath. "MYTH OF THE MARSUPIAL MOTHER: HOME CARE OF VERY LOW BIRTH WEIGHT BABIES IN BOGOTA, COLOMBIA." *The Lancet*, vol. 325, no. 8439, May 1985, pp. 1206–08. [https://doi.org/10.1016/S0140-6736\(85\)92877-6](https://doi.org/10.1016/S0140-6736(85)92877-6).

Yeomans, Emma, et al. "Interventions to Enhance Family Centred Care in the Neonatal Intensive Care Unit: A Scoping Review." *Intensive and Critical Care Nursing*, vol. 93, Apr. 2026, p. 104313. <https://doi.org/10.1016/j.iccn.2025.104313>.