# Providing safety equity in the management of deterioration: A Realist Review and Evaluation of Hospital at Home for Children

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**Background:** Hospital at Home (HaH) for children relocates the delivery of acute care out of the hospital and into the domestic environment (NHS England 2024). This relocation of care aligns with, and operationalises, healthcare's broader shift toward community-based care (Department for Health and Social Care 2025). However, understanding how social determinants of health (SDOH) influence safety risks in paediatric HaH, especially within complex multi-pathway models (technology/outreach), remains critically limited. This gap exposes children and families to potential safety inequities, compounded by children's rapid deterioration risk (Kalisch et al., 2009) and families' new safety responsibilities

**Objectives:** The aim of this study is to explore how, why and in what circumstances safety equity is provided to children and families receiving HaH care. The safe management of deterioration is used as a proxy outcome measure to explore specific contexts and mechanisms.

**Methods:** A rapid realist review generated Initial Programme Theories (IPT) from multiple stakeholder conversations about how HaH works to provide safety equity. Sections of the refined ITP were prioritised with the help of a small group of parents with lived experience of HaH. These research priorities will be further tested in a dual-sited case study set within two of the 10% most deprived areas of the UK (Office for National Statistics 2024). Site 1 (Established): hospital trust-based service, delivering face-to-face focused outreach. Site 2 (New): community trust-based, reaching into hospitals and delivering technology and remote monitoring focused services. Data collection will include ethnographic observations, realist interviews, document analysis and clinical data (admission/repatriation/readmission) supplemented by family demographics. Framework analysis will be used to further test, refute or refine the IPTs.

**Results:** Early ITPs identify three broad themes including service design, shared decisions and empowerment which encompass ten more specific constructs. The IPT are currently being tested against empirical research evidence to test, refine or refute them. Searches of CINHAL, EMBASE, MEDLINE and Web of Science were undertaken. The initial search returned few results, and so further key words were added. This second search retrieved 5338 citations and after removing duplicates 4096 abstracts were screened, 98 full texts considered for inclusion and 17 studies put forward for data extraction. A further literature search is currently underway to delve deeper into the theme of empowerment and support further testing and refining of specific areas of the IPT.

**Conclusion:** Findings from this realist evaluation will provide evidence on how to design and deliver equitable and safe paediatric HaH services to children. This will directly inform NHS trusts, integrated care boards (ICBs), and policymakers to tailor service models, resource allocation, and safety protocols to mitigate risks linked to social determinants of health. This will improve the ability to support all families and deliver safety in acute hospital-level home care.

# Exploring Safety Equity in Deterioration Management: Hospital at Home for Children

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## Introduction

Hospital at Home (HaH) for children relocates acute care out of the hospital and into the domestic environment (NHSE, 2024). This model operationalises healthcare's broader shift toward community-based care (DHSC, 2025). HaH is often called a virtual ward and operates as either home-based visits, technology operated by parents or a hybrid of these.

Acute HaH admits children who are clinically stable. However, all illnesses have the potential to deteriorate, and even in hospitals, deterioration management remains suboptimal (Gawronski et al., 2018). Hospitals are professionally staffed and operate in highly regulated care provision environments, whereas family homes encapsulate the diversity of society in terms of both environment and carers. Our understanding of how the social determinants of health may influence safety risks in paediatric HaH—especially within complex multi-pathway models (technology/outreach)—remains limited (Detollenaere, 2023).

**This gap in knowledge may expose children and families to potential safety inequities, compounded by children's more rapid deterioration risk (Kalisch, et al., 2009) and families' new safety responsibilities.**

## Aims and Objectives

We will explore:
1. Mechanisms that enable the delivery of safety equity
2. Contextual factors that determine mechanism success
3. Factors that constrain or enable equitable outcomes

## Methods

We are conducting a realist review to identify patterns of context–mechanism–outcome (CMO) configurations that explain how, for whom, and under what circumstances paediatric Hospital at Home (HaH) achieves safe and equitable outcomes when children deteriorate.

The initial programme theory was developed through clinical stakeholder consultations and analysis of grey literature. Mechanism articulation was informed by Antonovsky's (1996) Salutogenic Theory, which frames mechanisms enabling equitable and safe deterioration management as those that strengthen families' "sense of coherence" by making care comprehensible, manageable, and meaningful.

To test, refine, and, where necessary, refute the initial programme theory, we conducted three targeted literature searches.

## Results:

### Theory generation

Eight broad themes were identified during the initial theory-building phase, each comprising CMO configurations that explain "what works, for whom, and in which circumstances."

Themes were mapped to the salutogenic domains of comprehensibility, manageability, and meaningfulness to show how each supports safe, equitable HaH care.,

The PPI group contributed to the analysis of these themes and prioritised Themes 2 and 8 for empirical testing in practice.

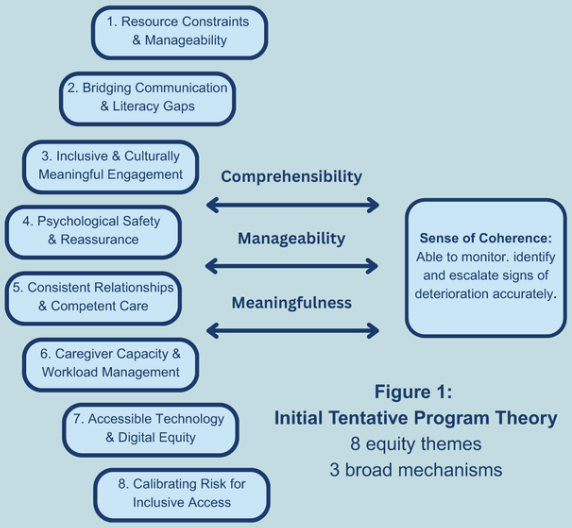
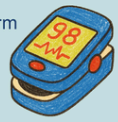



**Figure 1:**
**Initial Tentative Program Theory**
8 equity themes
3 broad mechanisms

### Example of a CMO from the theory generation stage

**CONTEXT** +

When diverse families are asked to perform hospital-level monitoring at home...




**MECHANISM** »

...those provided with
1. clear information in a format that suits their needs
2. practical 24 hr back-up
3. reassurance **feel in control and enabled...**

**OUTCOME**

...to monitor their child's condition, recognise symptoms accurately and act on them in a timely manner.


## Results: Theory testing

**Search 1**: 'Safety Equity' 'Hospital at Home' 'Paediatrics'. Results = 0

**Search 2**: 'Safety' **OR** 'Equity' 'Hospital at Home' 'Paediatrics'. Results = 16

**Search 3**: 'Deterioration' 'Paediatrics' 'Carers'. Results = 27

## Next Stage: Dual-Site Realist Evaluation

We will evaluate two innovative HaH models:

- High-Tech: Parents use clinical equipment and digital tools to send data directly to the hospital.
- High-Touch: Specialist paediatric nurses provide in-home support and physical examinations.

Both serve highly diverse populations, offering a unique opportunity to test our theories in real-world settings.

We developed a suite of two minute recruitment videos in three languages to support recruitment of a diverse population.

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