

Hospital Readmissions and In-Home Skilled Nursing

What the Clinical Research Actually Shows About Children With Medical Complexity, Not Just Home Health Care in General

Prepared by Prestige Health Partners | Loganville, Georgia & Statewide GAPP Services

Data Sources: Sobotka et al., Pediatric Pulmonology (PubMed) | Journal of Perinatology, Nature Publishing Group | NIH/NICHD-Funded Clinical Trials (ICOLLAB, NYU Langone) | ScienceDirect Multi-Hospital Home Health Study

70.1 Days

the median time one study found it took to identify and secure home nursing for medically complex infants leaving the NICU, with a range up to 428 days

Primary Driver

published research identifies lack of home nursing as one of the primary drivers of hospital readmission for children with medical technology dependence

Mixed

evidence on general home health visits reducing readmissions across broad adult populations, a genuinely different finding than the pediatric-specific research

2

distinct mechanisms the research identifies: filling a medical-expertise gap in the home, and relieving the parental exhaustion that itself drives readmissions

BOTTOM LINE

The relationship between in-home skilled nursing and hospital readmissions is more specific, and more interesting, than a simple "more nursing visits equals fewer hospital visits" claim. Research looking at general home health care across broad adult populations has actually found mixed results, with one multi-hospital U.S. study finding no significant reduction in readmissions at all. But research focused specifically on children with medical complexity and medical technology dependence tells a different, more precise story. A study published in Pediatric Pulmonology identified lack of home nursing as one of the primary drivers of hospital readmission for this specific population, operating through two distinct mechanisms: parental exhaustion and a genuine gap in medical expertise available in the home. A separate study tracking infants transitioning from the NICU found the median wait to actually secure home nursing was over two months, with some families waiting more than a year. The evidence doesn't say home visits in general prevent hospital readmission. It says something more specific: for medically complex children, consistent skilled nursing fills a gap that, when absent, is directly tied to why these children end up back in the hospital.

Executive Summary

Understanding whether in-home skilled nursing actually reduces hospital readmissions requires being precise about which population and which kind of care the research is actually describing. This report draws on peer-reviewed pediatric research, clinical trial documentation from major children's hospitals, and, for honest contrast, research on general home health care in broader populations, to give an accurate, nuanced picture rather than a simplified claim that doesn't hold up under scrutiny.

This report walks through why the general home health care evidence is genuinely mixed, what pediatric-specific research on children with medical technology dependence actually identifies as a primary readmission driver, what a detailed study of NICU-to-home transitions reveals about the real-world timeline families face, active clinical research currently studying how to make this support more effective, and why the mechanism behind this relationship matters as much as the outcome itself. It closes with what this means for families of medically complex children navigating the transition from hospital to home.

Finding 1 | This Isn't a Simple "More Nursing, Fewer Hospital Visits" Story

It's important to start with an honest acknowledgment: research on general home health care, visits from a nurse or therapist to patients across a broad range of clinical conditions, has produced genuinely mixed results. A multi-hospital U.S. study published in a peer-reviewed journal, examining a matched sample of patients across a wide range of conditions, found no statistically significant reduction in readmissions or emergency department visits associated with home health care, and in several comparisons, found adjusted readmission rates for home health care patients were consistently higher, by up to 1.5 percentage points, than for comparable patients without it.

A multi-hospital U.S. study found home health care patients had readmission rates up to 1.5 percentage points higher, not lower, than comparable patients

This finding matters because it means the case for in-home skilled nursing specifically for medically complex children can't simply rest on "research shows home nursing reduces readmissions" as a blanket statement. That claim doesn't hold up reliably across general populations. What does hold up, and what the rest of this report focuses on, is research specifically examining a different, much more targeted population and a different type of nursing support entirely.

Finding 2 | For Children With Medical Technology Dependence, the Research Points to a Specific Mechanism

A study published in Pediatric Pulmonology by Sobotka and colleagues examined hospital readmission specifically among children with medical technology dependence, children relying on equipment like ventilators or feeding tubes to survive at home, through structured interviews about the environmental and family factors driving those readmissions. The study's central finding is specific and directly relevant: researchers found that lack of home nursing was one of the primary drivers of readmission, operating through two distinct and separately identifiable mechanisms, parental exhaustion from constant, uninterrupted caregiving, and a genuine gap in available medical expertise in the home when a complication arose that a parent, however devoted, wasn't trained to manage alone.

Lack of home nursing was described as a primary driver of readmission, operating through parental exhaustion and a genuine expertise gap

The study's own conclusion states this directly: hospital readmission is an expected occurrence for children with medical technology dependence, yet may be substantially reduced through consistent, quality home health nursing that both bolsters family capacity and allows for genuine respite from constant caregiving. This is a meaningfully different, more precise claim than the general home health research in Finding 1: it isn't about whether any home visit helps. It's about whether sustained, skilled nursing presence addresses the two specific gaps, exhaustion and expertise, that this population's own readmission data traces back to.

Finding 3 | The NICU-to-Home Transition Shows Exactly Why Timing Matters

A study published in the Journal of Perinatology examined quality improvement efforts across five neonatology units, tracking 421 medically complex infants discharged home with a tracheostomy or gastrostomy tube, specifically measuring how long it took families to actually secure home nursing after that need was identified. The median time was 70.1 days, with a documented range stretching from just 2 days in the fastest cases to 428 days, well over a year, in the slowest. The study's own conclusion is direct about what this gap costs: despite broader quality improvement efforts, a lack of skilled home nursing specifically precluded improving transitions from the NICU to home for these medically complex infants, even as other readmission-prevention measures showed real

Median time to identify home nursing: 70.1 days. Range: 2 to 428 days.

progress.

This finding adds an important dimension to Finding 2: the mechanism connecting home nursing to readmission risk isn't just about whether a family eventually receives support. It's about how long they go without it during what is often the most medically unstable period immediately following a complex hospital discharge, a gap this specific research found could stretch well over a year in the most difficult cases.

Finding 4 | Researchers Are Actively Studying How to Make This Work Better, Not Just Whether It Works

The research base on this topic is actively growing. An ongoing randomized clinical trial at Brenner Children's Hospital, registered with the National Institutes of Health, is specifically testing a model called Interagency Collaboration, designed to maintain structured communication between a child's home health nurse, primary care provider, and the hospital's complex care team. The study is recruiting 110 children with medical complexity discharged home on private-duty nursing, and its specifically defined outcome measures include hospitalization rates, emergency department visit rates, days to readmission, and, notably, caregiver burden and caregiver satisfaction with home health care, measured alongside the clinical outcomes.

An NIH-affiliated randomized trial at Brenner Children's Hospital is specifically testing coordination between home nurses, primary care, and hospital complex care teams

A separate, related study at NYU Langone Health, funded through the Eunice Kennedy Shriver National Institute of Child Health and Human Development, is specifically examining what makes hospital-to-home transitions difficult for families of medically complex children, and testing a tool designed to improve parent understanding of discharge instructions, with post-discharge morbidity including readmissions and ED visits as a primary measured outcome. The existence of this active research base reflects a meaningful shift in how this question is being studied: not simply whether home nursing matters, which the research in Findings 2 and 3 already supports, but specifically how to structure that support, and the communication surrounding it, to work as effectively as possible.

Finding 5 | Why the General Evidence and the Pediatric-Complex Evidence Tell Different Stories

Read together, Findings 1 through 4 point toward a specific, defensible conclusion rather than a sweeping one. General home health care, typically periodic visits addressing a broad range of adult clinical conditions, has not reliably demonstrated a readmission reduction in rigorous multi-hospital research. Skilled, consistent private-duty nursing specifically for children with medical complexity and technology dependence is tied, in dedicated pediatric research, to a specific and identifiable readmission-prevention mechanism: relieving the parental exhaustion and filling the medical-expertise gap that this population's own data shows directly drives hospital returns.

The mechanism, not just the presence of a nurse, appears to be what actually matters

This distinction matters for how families, referring physicians, and case managers should think about this kind of care. The evidence doesn't support a generic claim that "home nursing prevents hospital visits." It supports a more specific, more useful one: for medically complex and technology-dependent children specifically, the kind of sustained, skilled nursing presence that addresses caregiver capacity and in-home medical expertise is tied to a documented, researched mechanism for reducing the readmissions this population is otherwise expected to experience.

What This Means for Families of Medically Complex Children

- 1

Start the conversation about home nursing as early as possible, ideally before discharge.
- Given the documented median wait of over two months to secure home nursing, and the real possibility of waits well beyond a year, beginning this process as early as a care team allows is directly supported by what the research shows about timing and readmission risk.
- 2

Understand that skilled nursing addresses two separate needs, not just one.
- Given the two distinct mechanisms identified in the research, parental exhaustion and medical expertise, evaluating a home nursing plan against both of these specifically, not just "does someone come to the house," reflects what the evidence actually shows matters.
- 3

Don't be discouraged by general home health care statistics that don't apply to your child's specific situation.
- Given how different the evidence is for broad adult home health care versus skilled pediatric private-duty nursing for medical complexity, families researching this topic should specifically seek out pediatric-complexity-focused research rather than general home health statistics that measure a genuinely different kind of care.
- 4

Ask how care coordination between your child's nurse, pediatrician, and any specialists actually works.
- Given that current research is specifically testing structured communication models as a way to improve outcomes further, asking a prospective home nursing provider how they coordinate with your child's broader care team is a reasonable, evidence-informed question.

The Data: In-Home Nursing and Readmission Reference

Data Point	Figure	Source
Readmission rate difference, general home health care vs. none (adult, multi-condition)	No significant reduction; up to 1.5 pts. higher in some comparisons	ScienceDirect, multi-hospital US study
Primary driver of readmission identified for children with medical technology dependence	Lack of home nursing	Sobotka et al., Pediatric Pulmonology (PubMed)
Mechanisms identified connecting home nursing absence to readmission	Parental exhaustion; gap in home medical expertise	Sobotka et al., Pediatric Pulmonology (PubMed)
Infants tracked in NICU-to-home transition study	421	Journal of Perinatology
Median time to identify/secure home nursing post-NICU	70.1 days	Journal of Perinatology
Range of time to identify/secure home nursing post-NICU	2 to 428 days	Journal of Perinatology
Children enrolled in active Interagency Collaboration (ICOLLAB) trial	110 (planned enrollment)	ClinicalTrials.gov, NCT03978468, Brenner Children's Hospital
Outcome measures in ICOLLAB trial	Hospitalization rate, ED visits, days to readmission, caregiver burden	ClinicalTrials.gov, NCT03978468
Related active trial on hospital-to-home transitions for medical complexity	NYU Langone Health / NICHD-funded	ClinicalTrials.gov, NCT04867395

Figures reflect published peer-reviewed research and active clinical trial documentation; individual outcomes vary by child, condition, and care circumstances. This report does not constitute medical advice or a guarantee of outcomes for any individual child.

About Prestige Health Partners

Prestige Health Partners provides GAPP (Georgia Pediatric Program) skilled nursing services for medically fragile and medically complex children, serving families across Georgia from Atlanta and Savannah to Augusta, Columbus, Macon, and smaller rural communities. We're committed to supporting the kind of consistent, skilled in-home nursing presence this research identifies as central to keeping medically complex children healthy and at home with their families.

Methodology, Limitations & Sources

This report is based on peer-reviewed research published in Pediatric Pulmonology and the Journal of Perinatology, active clinical trial documentation from the National Institutes of Health's ClinicalTrials.gov registry (Brenner Children's Hospital and NYU Langone Health), and a separate multi-hospital study on general home health care outcomes, included specifically to provide honest contrast rather than to be excluded as an inconvenient finding. This report deliberately distinguishes between research on general home health care across broad adult populations and research specific to children with medical complexity and technology dependence, since these represent genuinely different interventions and populations; readers should not generalize findings from one to the other. This report does not constitute medical advice or a guarantee of outcomes for any individual child; families should discuss their specific situation with their child's care team.

Sobotka, S.A. et al. "Readmission drivers for children with medical complexity: Home nursing shortages cause health crises." Pediatric Pulmonology, via PubMed. pubmed.ncbi.nlm.nih.gov/32212321

"Transitioning medically complex infants home: lessons learned from quality improvement efforts." Journal of Perinatology, Nature Publishing Group. [nature.com](https://www.nature.com)

ICOLLAB for Children With Medical Complexity. Clinical trial registration, Brenner Children's Hospital. [ClinicalTrials.gov](https://clinicaltrials.gov), NCT03978468.

A Multi-Phase Study Examining Hospital to Home Transitions for Children With Medical Complexity. NYU Langone Health / NICHD. [ClinicalTrials.gov](https://clinicaltrials.gov), NCT04867395.

"Effectiveness of home health care in reducing return to hospital: Evidence from a multi-hospital study in the US." ScienceDirect. [sciencedirect.com](https://www.sciencedirect.com)

Hospital to Home Outcomes. Clinical trial protocol documentation. [ClinicalTrials.gov](https://clinicaltrials.gov), NCT02081846 and NCT03224130.