

Weight of Complexity

The Prevalence, Causes, & Solutions to Malnutrition in Complex Chronic Illness

- Jennifer Tisdale, MBA-HM, BSN, RN, CPN
- University of Mississippi Medical Center
- Children's of Mississippi
- Center for Telehealth

Co-Authors

Jennifer Tisdale, MBA, BSN, RN ^a

Kaitlyn Barber, B.S. ^g

Joy B. Johnson, B.S. PM Cert ^b

Regina QaDan, DNP, FNP-BC ^{a,d,e}

Yunxi Zhang, PhD ^c

J. Michael Swint, PhD ^f

Rokibul Hasan, MS ^b

Lindsey B. Kuiper, PhD^b

Lincy Lal, PhD ^f

**Chris Collado, DHA, NP-C, CPNP-
Dual ^{a,e}**

Jenna L. Dear, MD ^{a,d,e}

^a Center for Children with Medical Complexity, Children's of Mississippi, University of Mississippi Medical Center, Jackson, MS, USA

^b Center for Telehealth, University of Mississippi Medical Center, Jackson, MS, USA

^c Department of Data Science, University of Mississippi Medical Center, Jackson, MS USA

^d Division of Complex Care and Palliative Medicine, Children's of Mississippi, University of Mississippi Medical Center, Jackson MS, USA

^e Division of Medicine, University of Mississippi Medical Center, Jackson, MS, USA

^f School of Public Health, University of Texas, Houston, TX, USA

^g School of Medicine, University of Mississippi Medical Center, Jackson, MS USA

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BACKGROUND & SIGNIFICANCE



Center for Telehealth



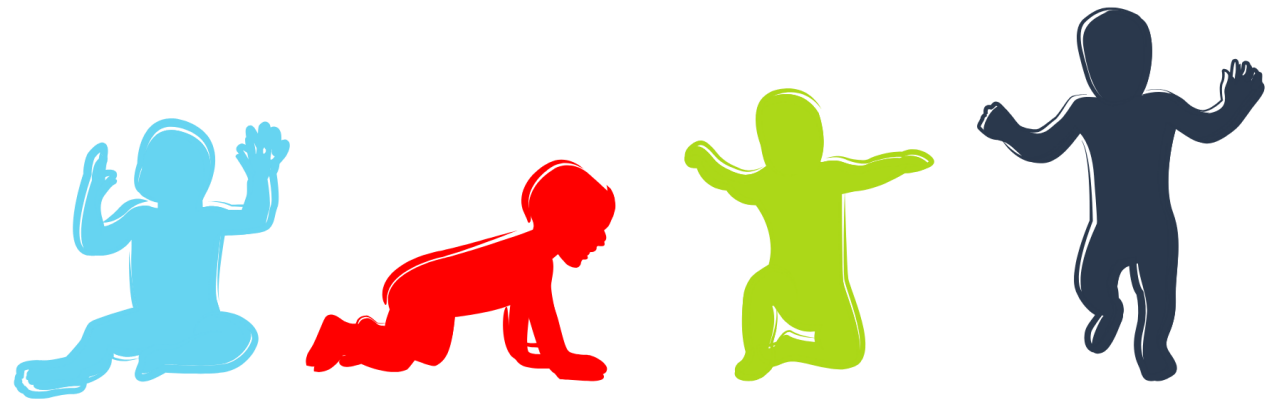
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Failure to Thrive (FTT)

- Inadequate weight gain
- Poor growth
- 10% of outpatient visits
- 5% of hospitalized children



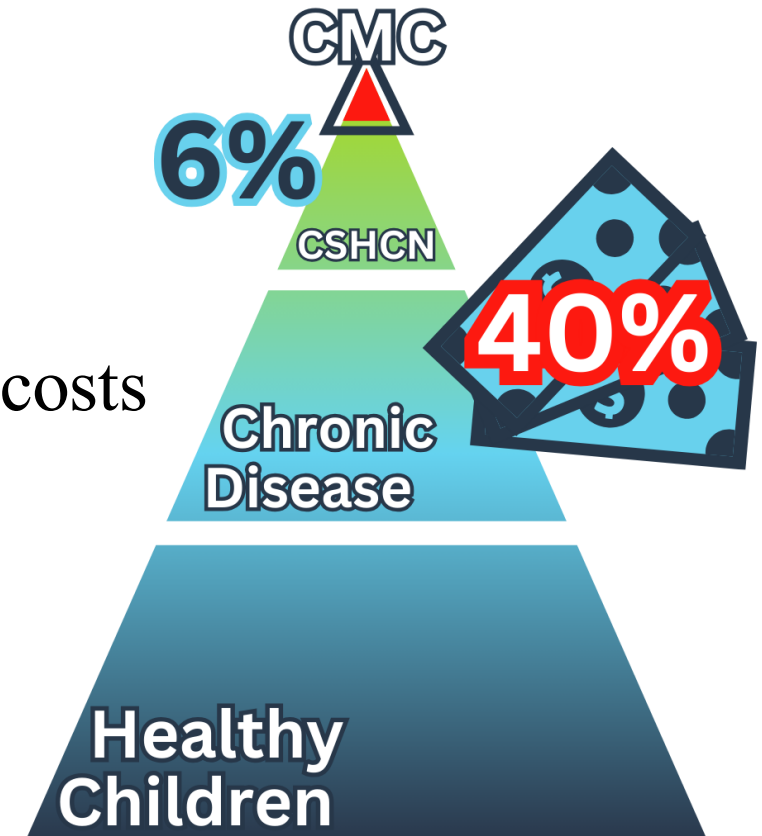
Children with Medical Complexity (CMC)

- High risk and high cost
- Traditional care includes frequent in-person visits
- Increased caregiver burden



Why This Matters

- CMC = 6% of Medicaid population
- Account for approximately 40% of healthcare costs
- FTT worsens outcomes & resource utilization
- Effective management can reduce ED visits & hospitalizations



Gap in Knowledge

- Limited research on Remote Patient Monitoring (RPM) for pediatric FTT
- Barriers to early intervention & caregiver engagement
- Lack of cost-effectiveness evidence in CMC population



STUDY OBJECTIVES

Study Objectives



Evaluate RPM
& Caregiver
Education for FTT



Improve
Weight Trends



Reduce
Hospitalizations



Lower
Healthcare
Costs

METHODS

Methods Overview

- IRB Approved – September 16, 2023 (Expedited)
- Quasi-experimental cohort study
 - Goal of 30 participants (15 enrolled)
 - Ages 1-10
 - Must receive tube feeds



Methods Overview

- 3 Phases (6 month intervals):
 - Pre-Intervention
 - Intervention
 - Post-Intervention
- Weekly RPM weight-ins via Bluetooth enabled scales
- Caregiver education integrated into follow-ups



Weekly Check-in

- Any concerns
- Any challenges
- Number of feeds each day
- Other health-related concerns
- Any questions

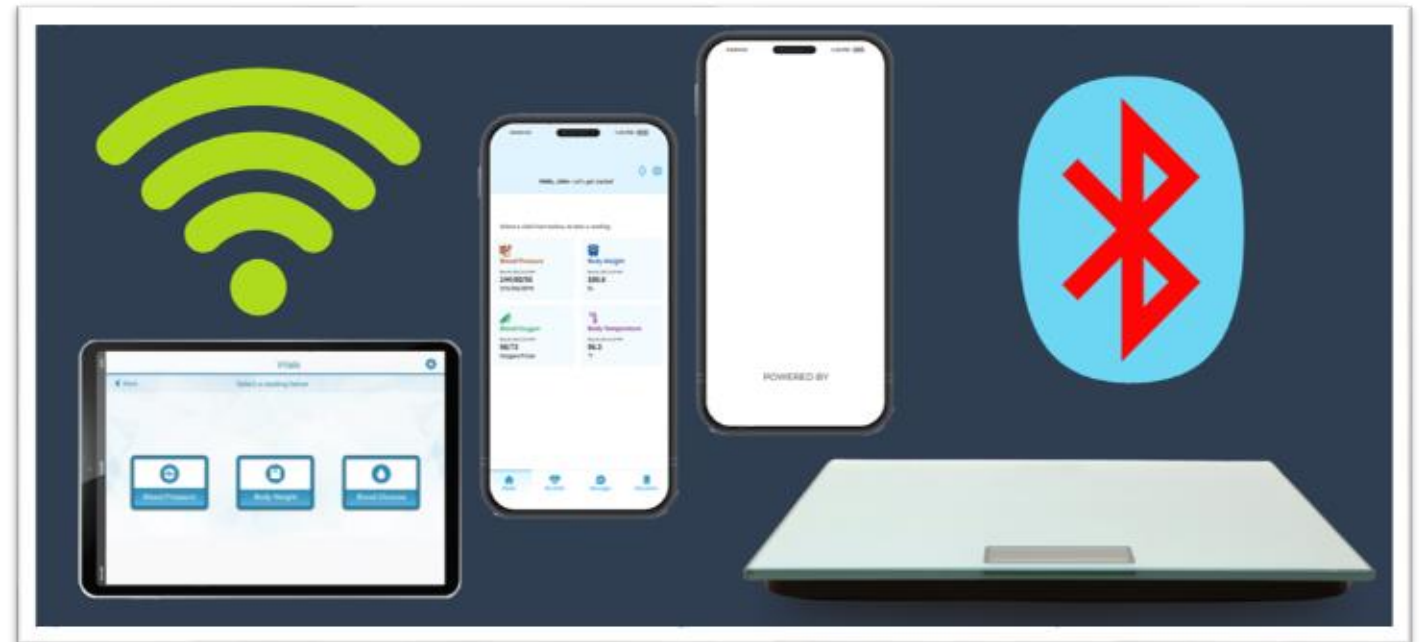


EDUCATIONAL *moment*

Don't forget to take your child to their regular check-ups with their main doctor. These visits help us see how your child is growing and if they're healthy. We want to make sure your child is getting the right food and care.

Participants & RPM Process

- Inclusion Criteria:
 - Age 1-10
 - FTT Diagnosis
 - Feeding Tube
- Exclusion Criteria:
 - Age <1 or >10
 - No internet access
 - No feeding tube



RESULTS

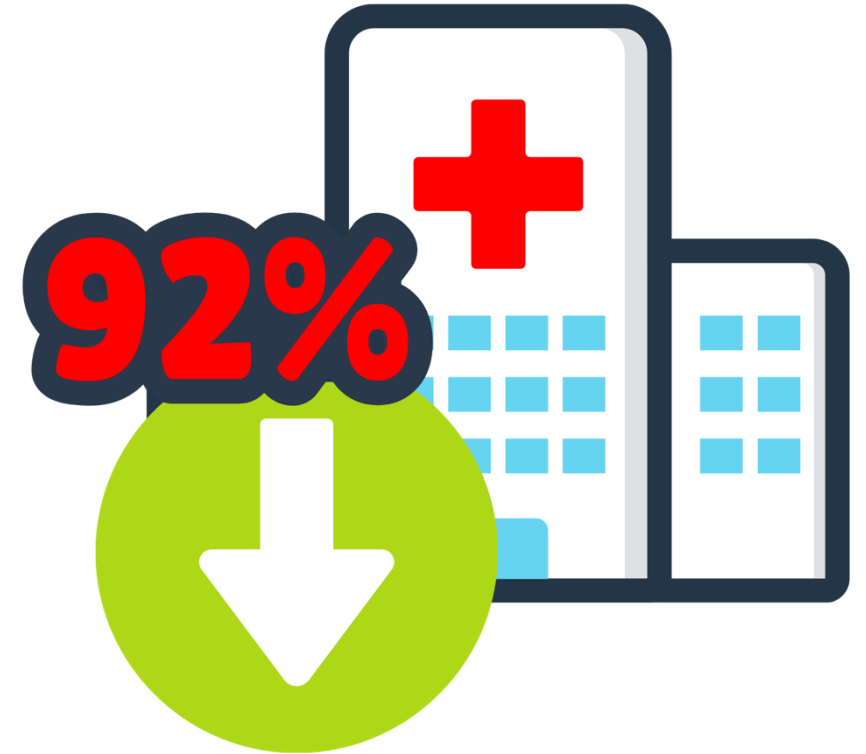
Results – Weight Trends

- 42% improved weight trends
- 50% maintained stable weights
- 8% experienced weight declines



Results – Hospitalizations

- Pre: 24 hospitalizations
- During: 16 (-33%)
- Post: 2 (-92%)
- Sustained benefit after intervention

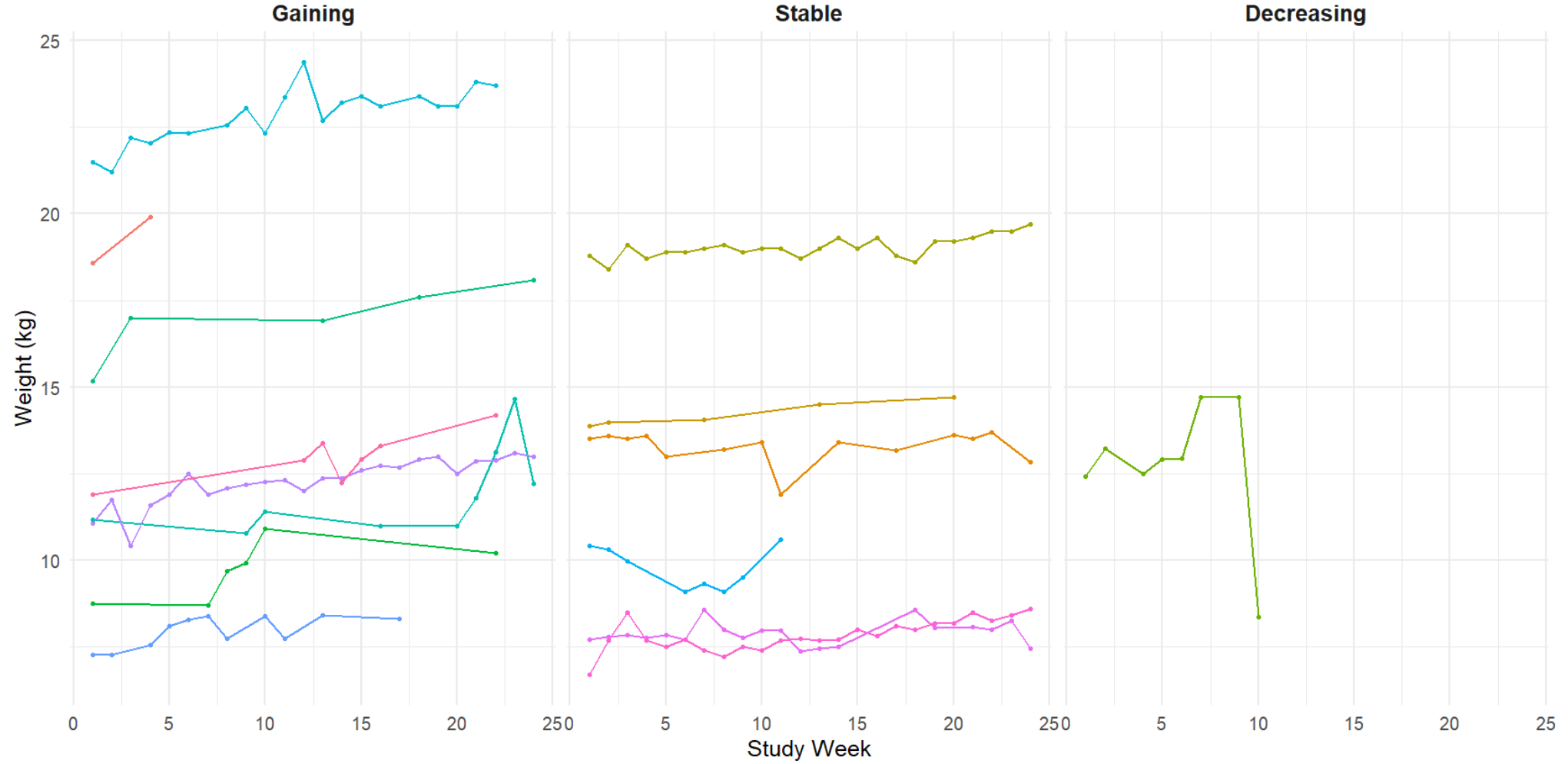


Results – Cost Impact

- Pre: \$77,871 (healthcare cost to payer)
- During: \$120,710 (includes RPM costs)
- Post: \$20,489
- Significant long-term savings



Patient Weight Trends by Group (Gaining, Stable, and Decreasing)



Results – Caregiver Feedback

- High ease of use
- Strong willingness to recommend RPM
- Reduced logistical barriers to care
- Noncompliance due to socioeconomic and tech issues



DISCUSSION

Discussion

- RPM shifted care from reactive → proactive
- Enabled early detection of weight loss trends
- Improved care coordination & caregiver engagement
- Potential scalable, cost-effective model for CMC



Limitations

- Small cohort size (n=15)
- Caregiver compliance barriers
- Tech access issues
- Limited generalizability – need larger studies



Future Directions

- Expand to larger, diverse cohorts
- Initiate RPM at hospital discharge (i.e. initial diagnosis)
- Enhance caregiver support & training (i.e. at bedside)



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