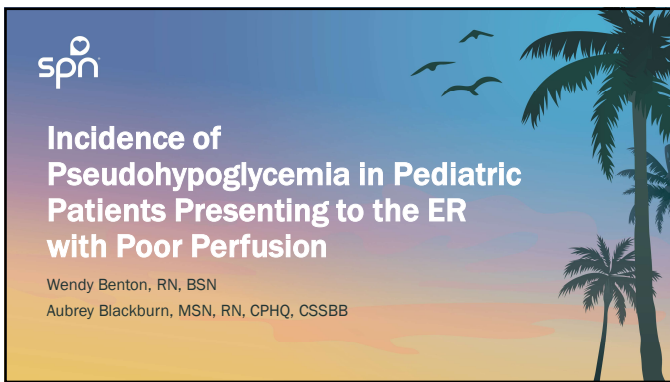
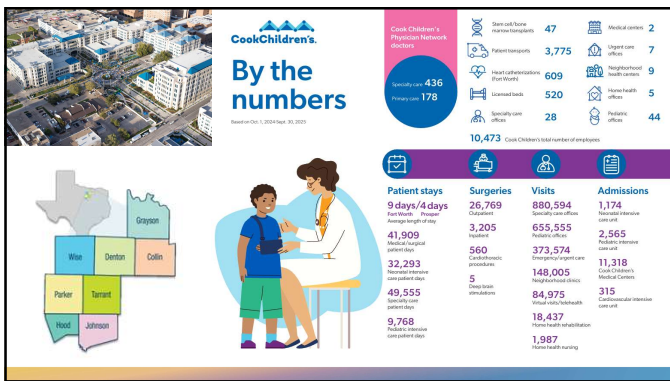





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Introduction

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Introduction



Capillary blood glucose collection in triage is standard practice

Recently, during a severe norovirus season, nurses observed many children presenting with low glucose values within the hypoglycemia range on glucometers.


However, when labs were drawn, venous glucose levels were often normal, creating a clinically significant discrepancy, known as **pseudohypoglycemia**.



Attempts at troubleshooting (recalibration, warming the site, retesting from venous blood) reinforced that glucose level differences were due to perfusion status, not machine error.

5

Introduction



What is pseudohypoglycemia?

falsely low glucose level in normoglycemic patients, frequently linked to poor perfusion (e.g., dehydration, mottled or cool skin)


What does the literature say?

Literature suggests the issue exists in adults, but no pediatric-specific studies have quantified incidence in the ED setting.

What are the risks of not identifying pseudohypoglycemia?


- Clinical impact: unnecessary IV dextrose, additional labs, and delayed accurate diagnosis/treatment.
- System impact: added costs of hypoglycemia protocol labs and interventions based on potentially erroneous glucometer results, cost of subsequent admissions.
- Knowledge gap: true incidence of pseudohypoglycemia in children and the predictive value of perfusion assessment findings.

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Introduction 

Purpose

In January 2025, a retrospective chart review study began with the purpose of determining the incidence of pseudohypoglycemia in pediatric patients admitted to the Emergency Department





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Methods


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Methods 

 **Design:** Retrospective observational chart review, Cook Children's ED patients from 2018-2024.

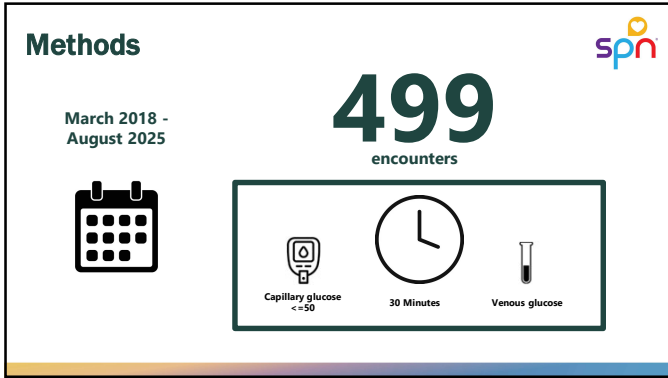
 **Population:**

- Patients ages 0-21 meeting hypoglycemia protocol criteria (capillary blood glucose of ≤ 50 mg/dL).
- Must have had both capillary and venous glucose levels documented.

 **Statistical Analysis:**

- Compare capillary blood glucose vs venous glucose (paired t test, Bland-Altman).
- Assess incidence of pseudohypoglycemia.
- Logistic regression models to evaluate the association between signs of poor perfusion (capillary refill, skin color/temp, vital signs) to pseudohypoglycemia occurrence.

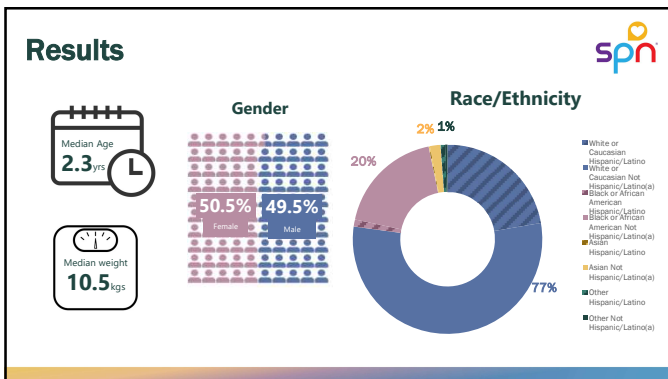
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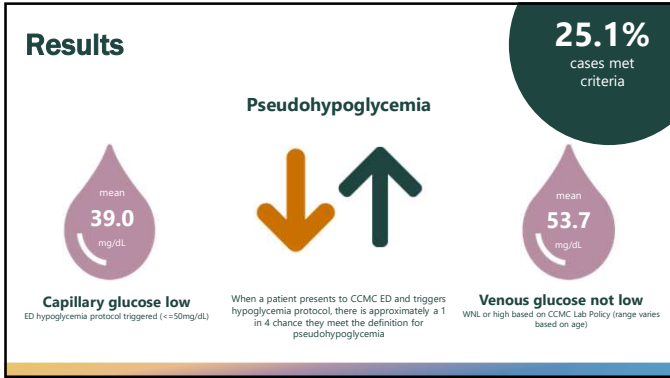
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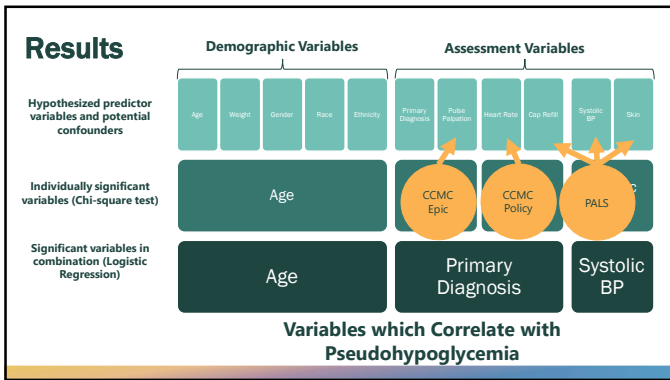
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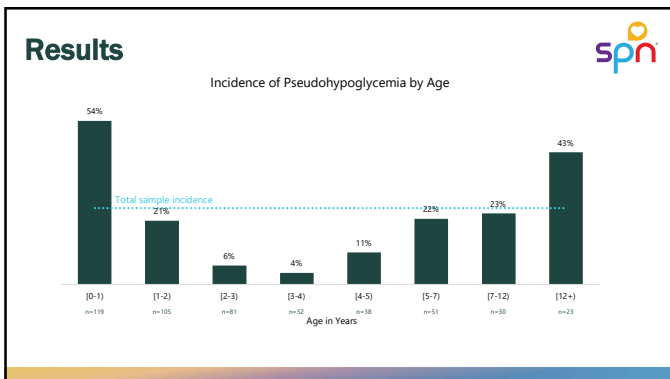
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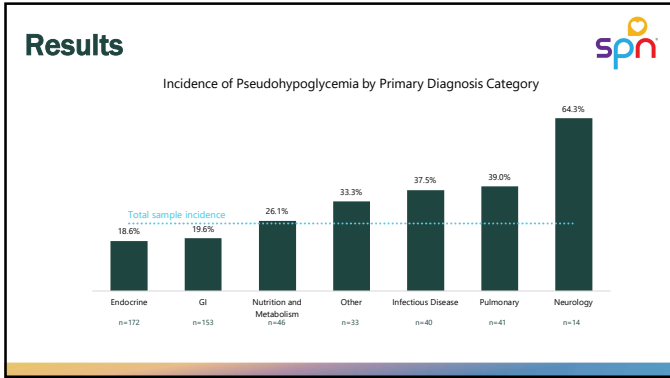
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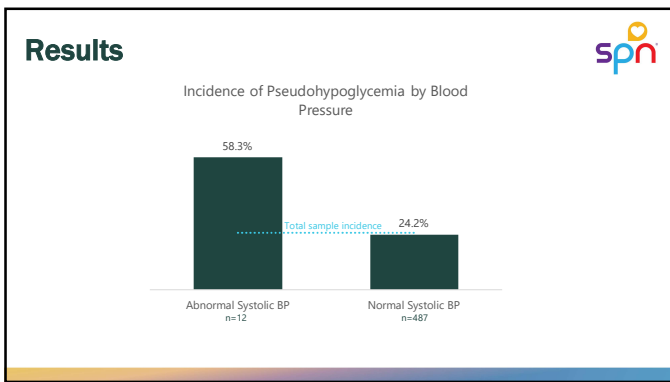
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Discussion


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Discussion 

Standardized Approach to Management versus Predictive Algorithm

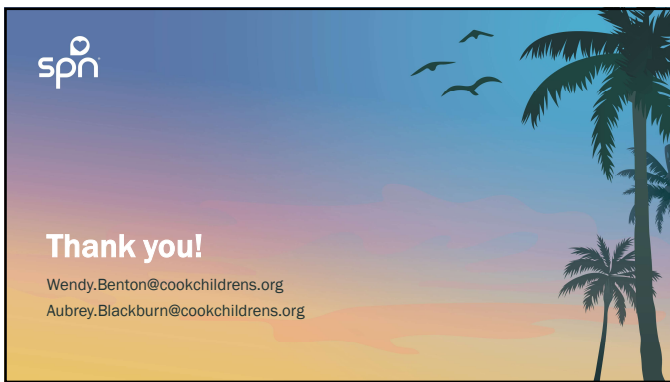
- 1 WARM, WASH, WAIT method
- 2 Confirmatory sampling
- 3 Considerations for special populations

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Thank you!

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