

# Findings from CCS Administrative Data

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CCS Redesign Stakeholder Advisory Board

# Analytic Guidance for CCS Program Reform

To use data to help protect the health of children with serious chronic illness.

1. To provide CCS and its stakeholders with data-driven analytic guidance to improve the quality and efficiency of care for children served by the CCS program.
2. To implement a coordinated strategy that bridges the gap between analytic activities and innovative care strategies in CCS subspecialty care centers.



# Essential Questions

**How do we protect the health and well-being of a large population of children with serious chronic illness?**

1. How do these children **use** health care services?
2. What is the **quality** (or appropriateness) of care received by this population?
3. What is the distribution of **costs** for that care?

# Analytic Design

Retrospective, population-based analysis of all paid claims for the CCS Program (2007-2012)

Total capture of all care episodes

Inpatient bed days

Outpatient visits (primary, subspecialty, non-MD)

ED visits

Home health and Durable Medical Equipment (DME)

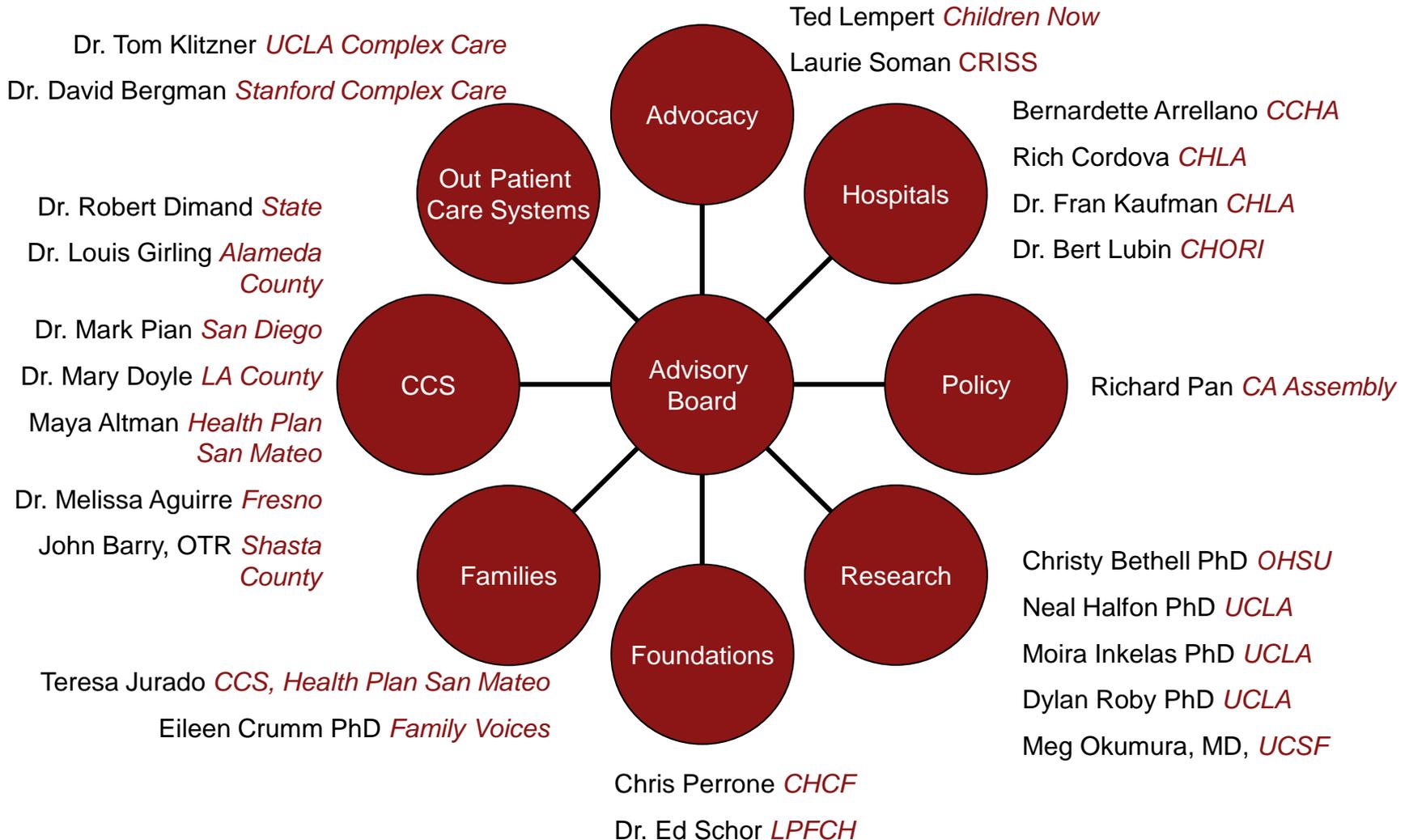
Residential care

Pharmacy

Total capture of all CCS-related costs

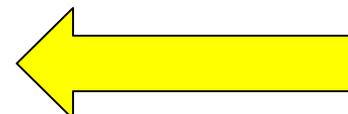
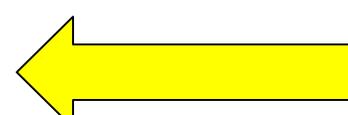
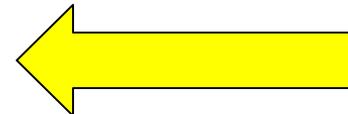
Partial capture of non-CCS-related costs (FFS)

# Stanford CPOP CCS Analytics Advisory Board



# CCS-enrolled Children: Social and Clinical Characteristics

		%
Age – mean (SD)	7.3 (6.5) years	
<b>Sex - Female</b>		43.0
<b>Race/Ethnicity</b>		
White		16.6
Black		8.7
Hispanic		56.4
<b>Insurance</b>		
Medicaid Managed care		47.6
Medicaid Fee for Service		19.6
CHIP		7.5
Mixed / Other		25.3
<b>Medical complexity</b>		
Complex Chronic		51.4
Non-complex Chronic		25.3
Non-Chronic		23.3
<b>Diagnostic category</b>		
Neurology		14.6
Cardiology		12.6
ENT / Hearing Loss		11.6
Trauma / Injury		10.8
Endocrine		6.8



**> 2 organ systems, or progressive**

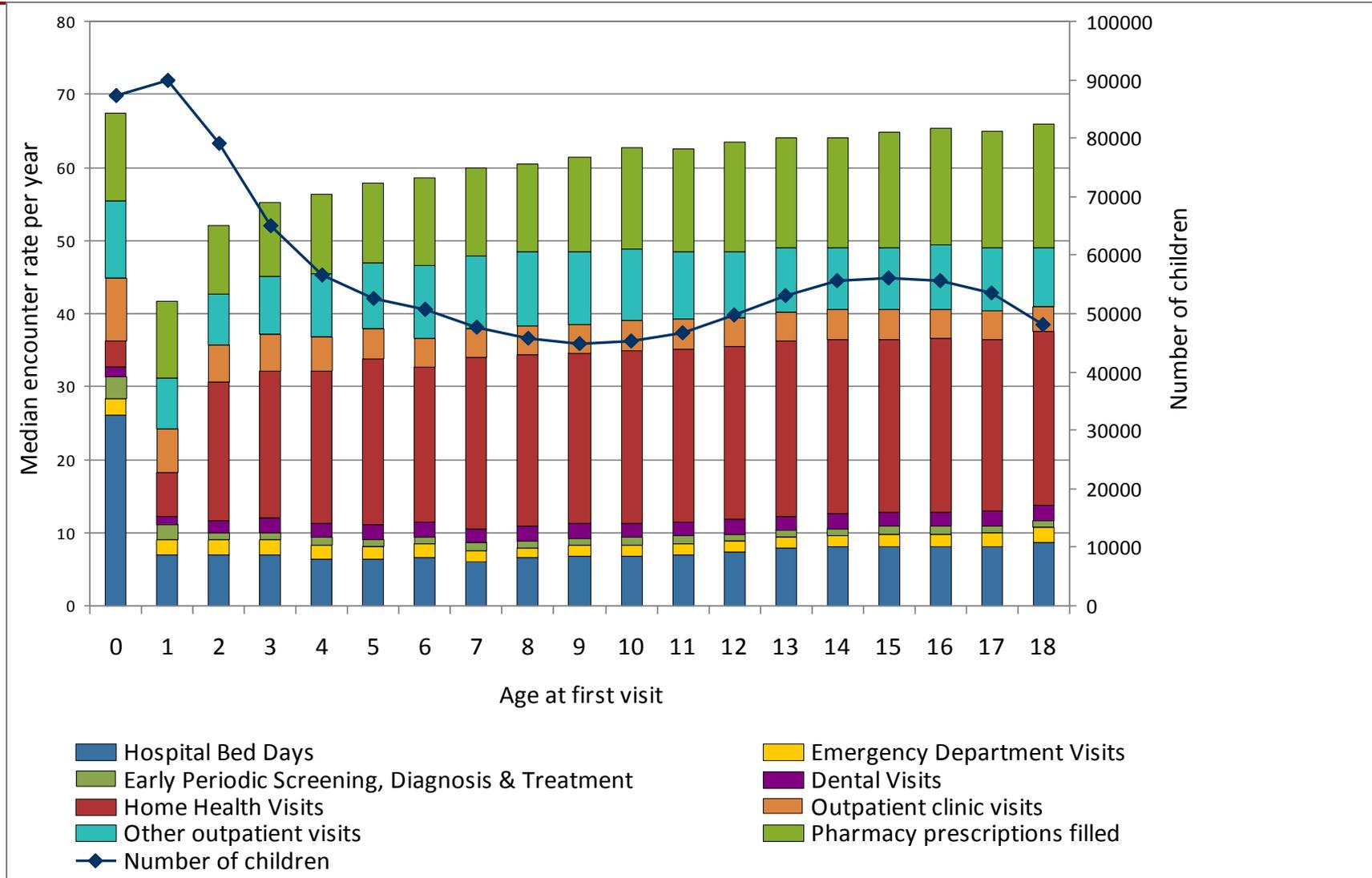
\* Simons TD, et al. Pediatric Medical Complexity Algorithm (PMCA), Pediatrics 2014

# Patterns of Care

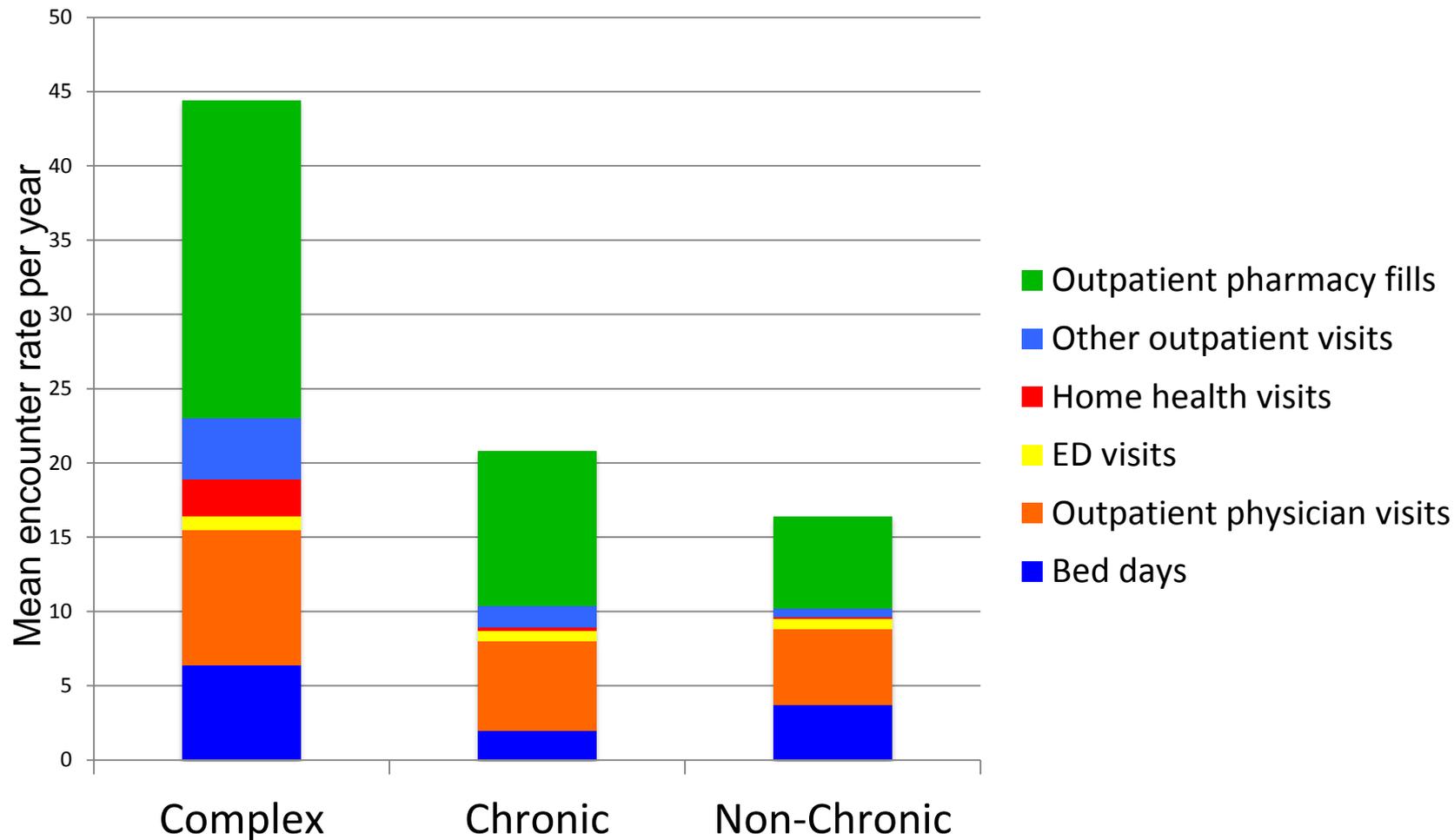
## Visits per child per year

	Children with $\geq 1$ visit per year	Visits per child per year Mean (SD)
Outpatient Visits (MD)	94%	7.6 (8.6)
Outpatient Pharmacy Visits	87%	18.7 (28.7)
ED Visits	49%	1.6 (1.8)
Hospitalizations (Bed Days)	31%	14.8 (30.5)
Outpatient visits (Non-MD)	29%	10.2 (13.7)
Home health visits	16%	5.8 (13.3)

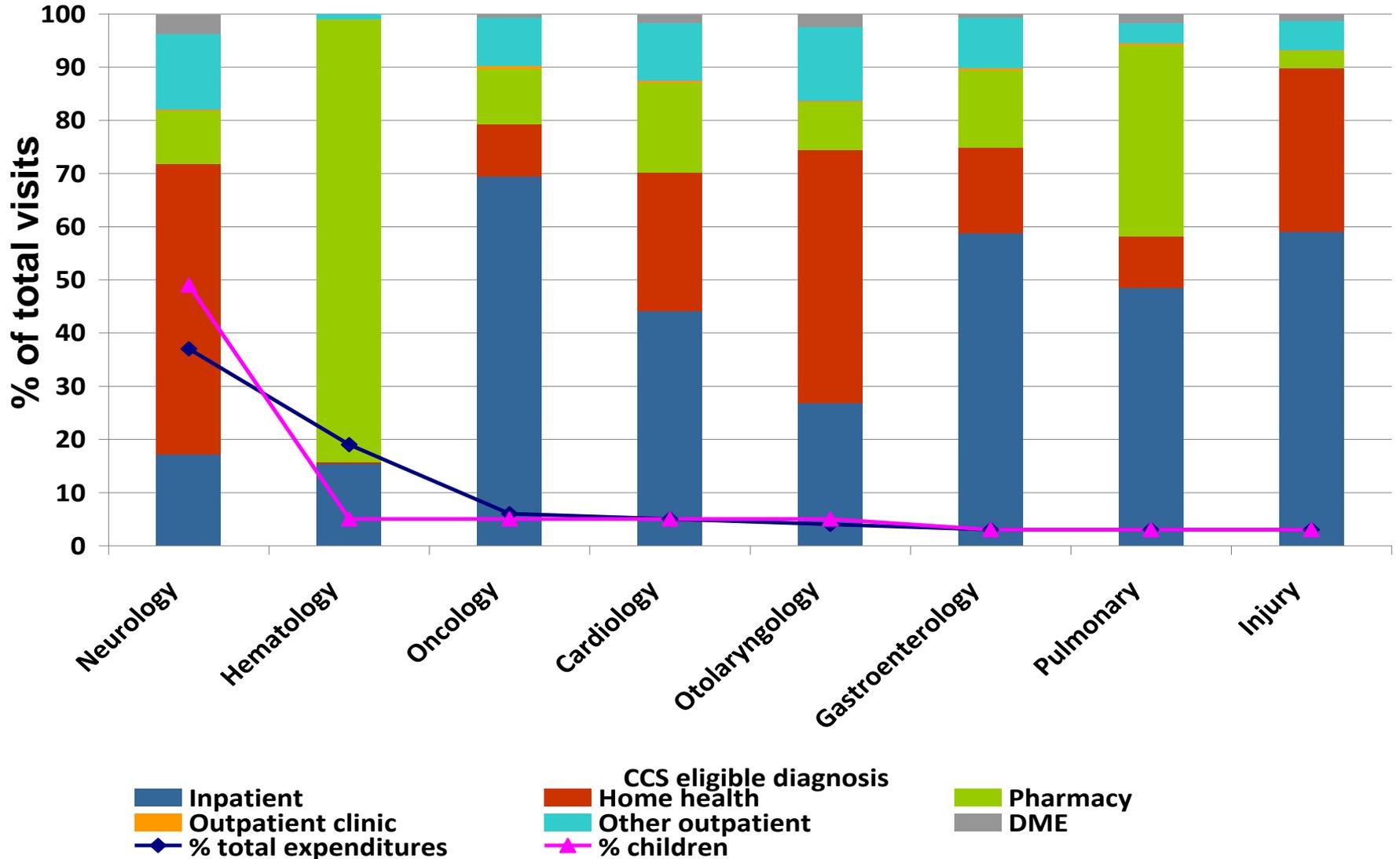
# Patterns of Care by Age



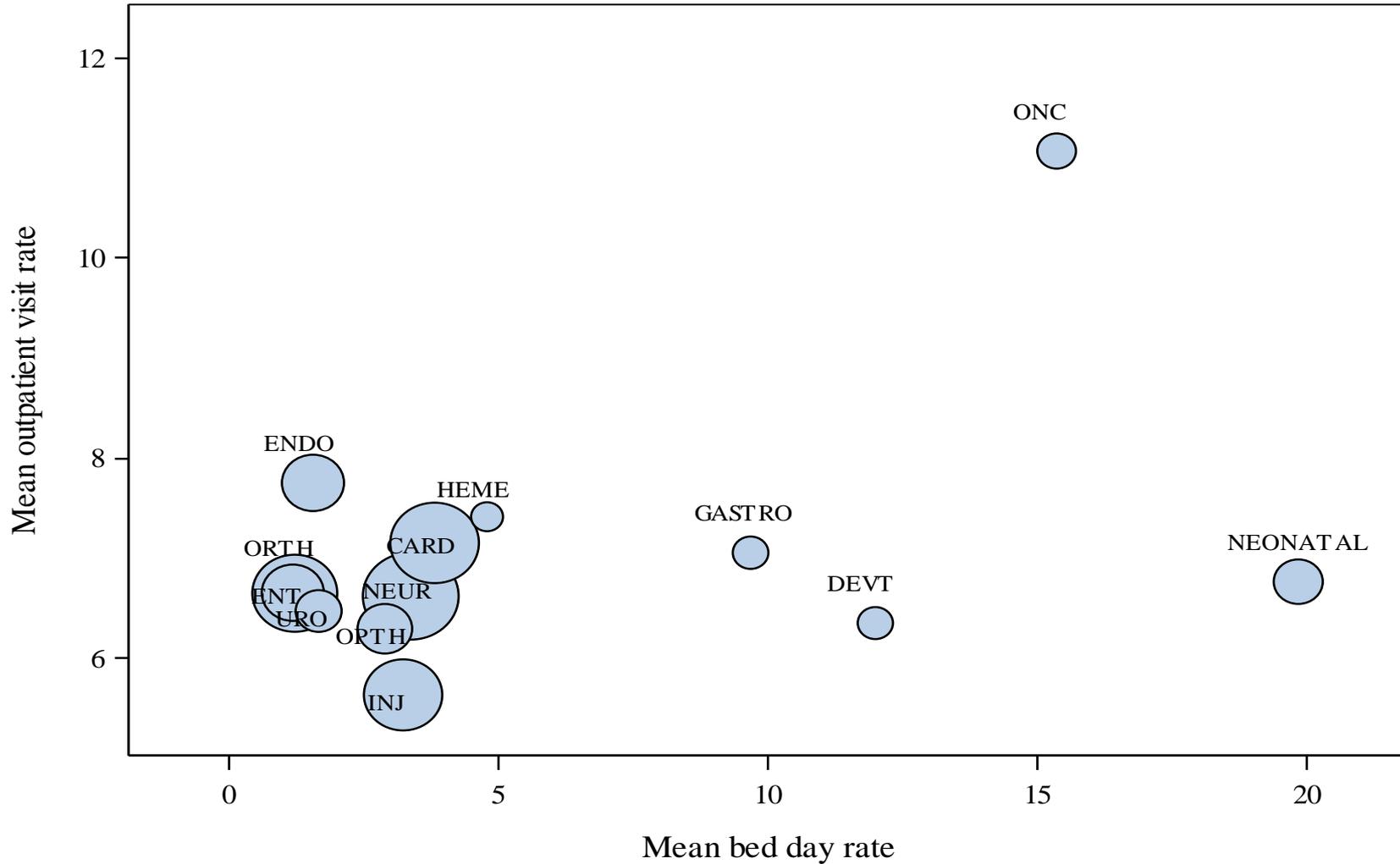
# Patterns of Care by Medical Complexity



# Patterns of Care by Diagnostic Category



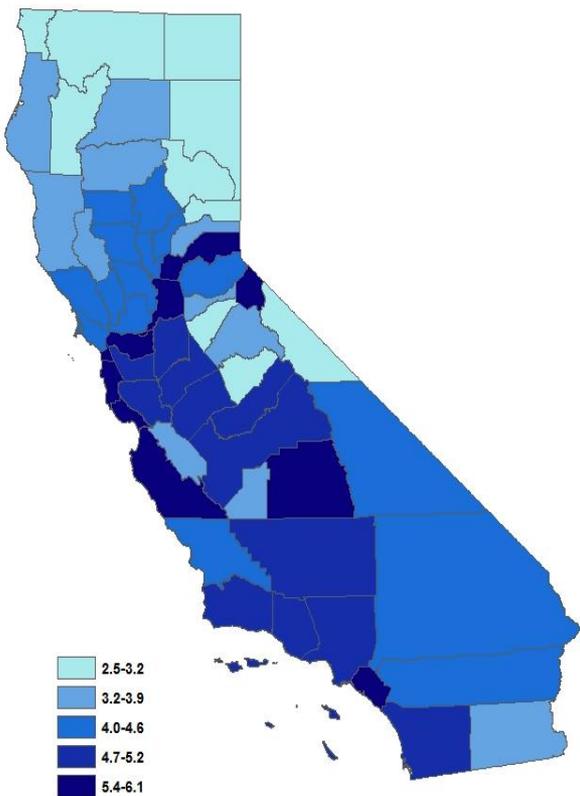
# Outpatient: Inpatient Patterns by Diagnostic Category



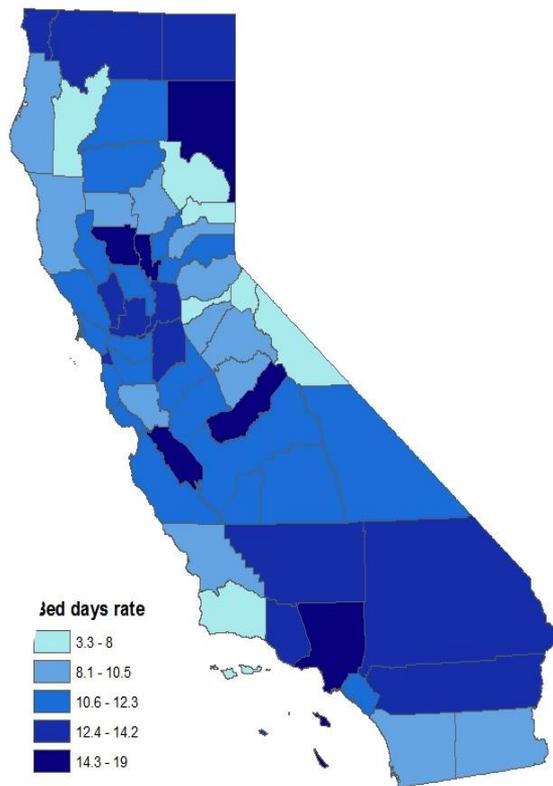
# Patterns of Care

## Regional Variability

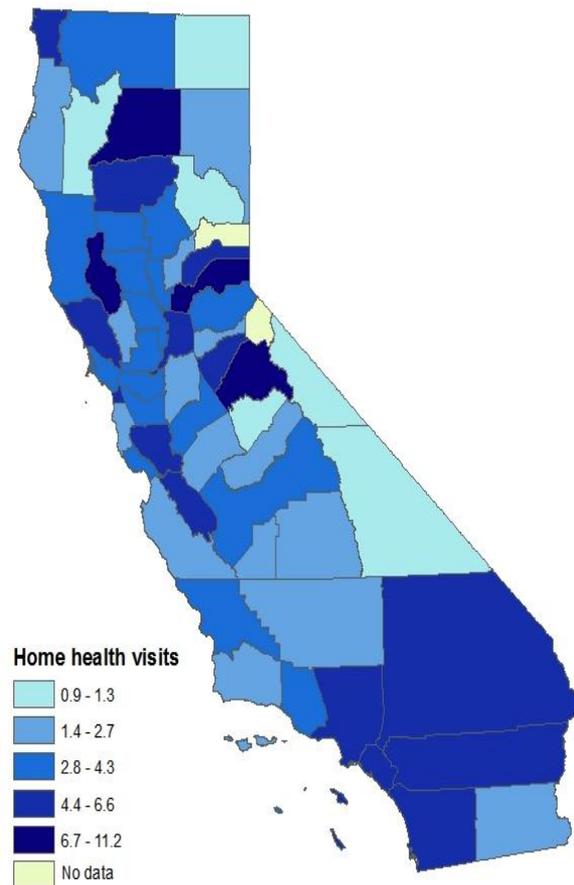
Annualized mean MD visit rate per child



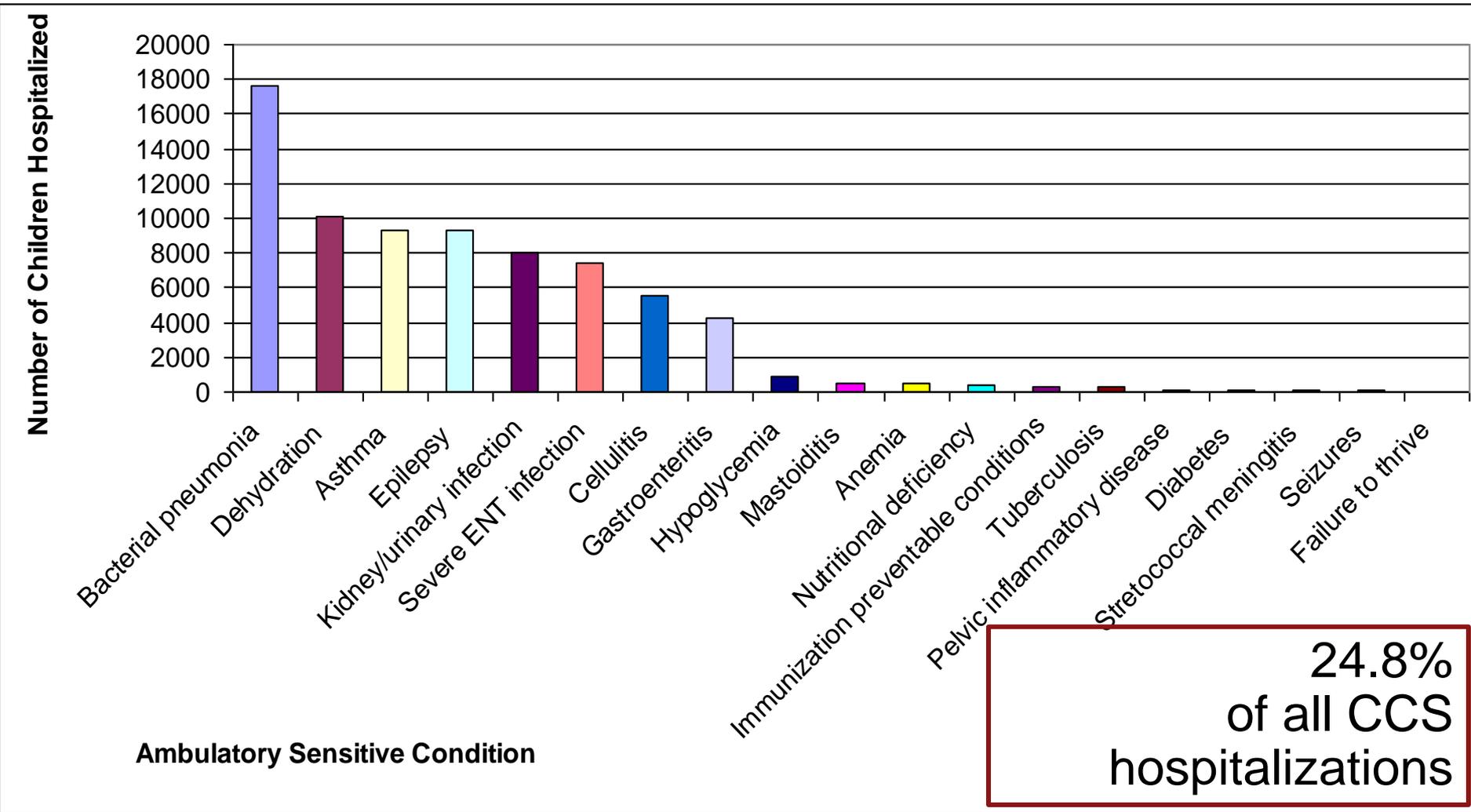
Annualized mean bed days per child



Annualized mean home health visit rate

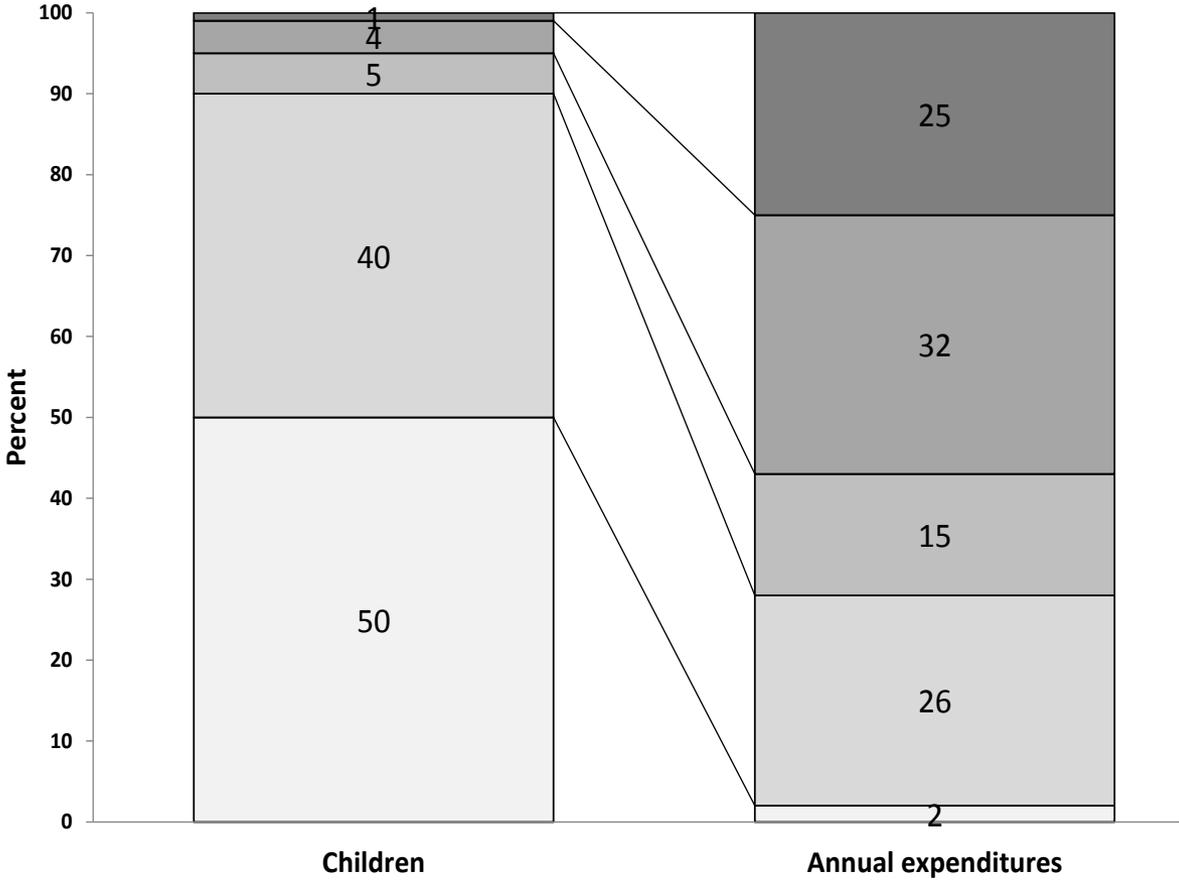


# Quality of Care: Potentially Preventable Hospitalizations



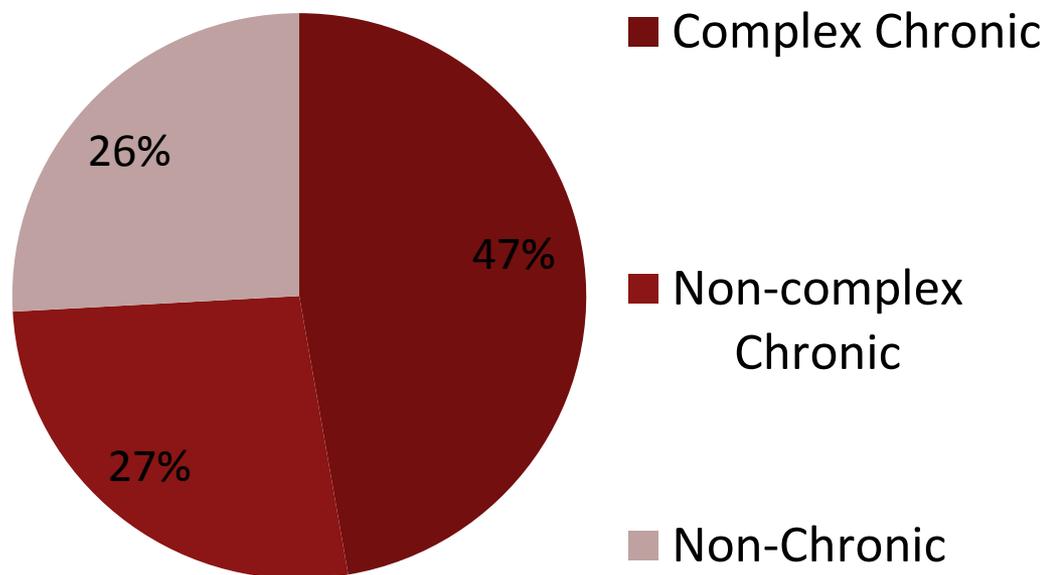


# Cost Distribution By Child

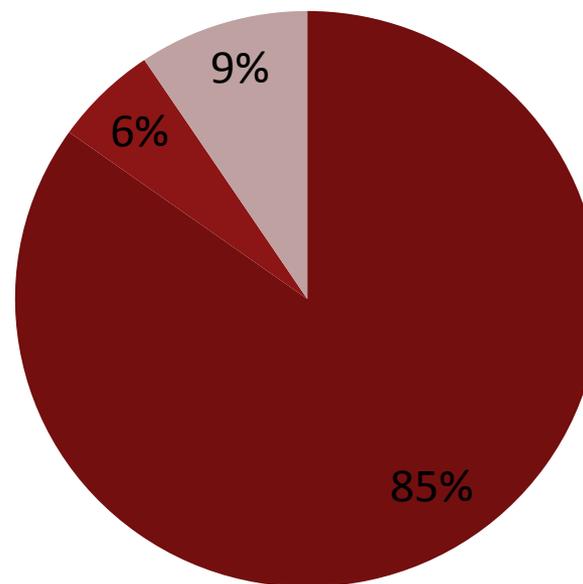


# Cost Distribution By Medical Complexity

Among All CCS Enrollees



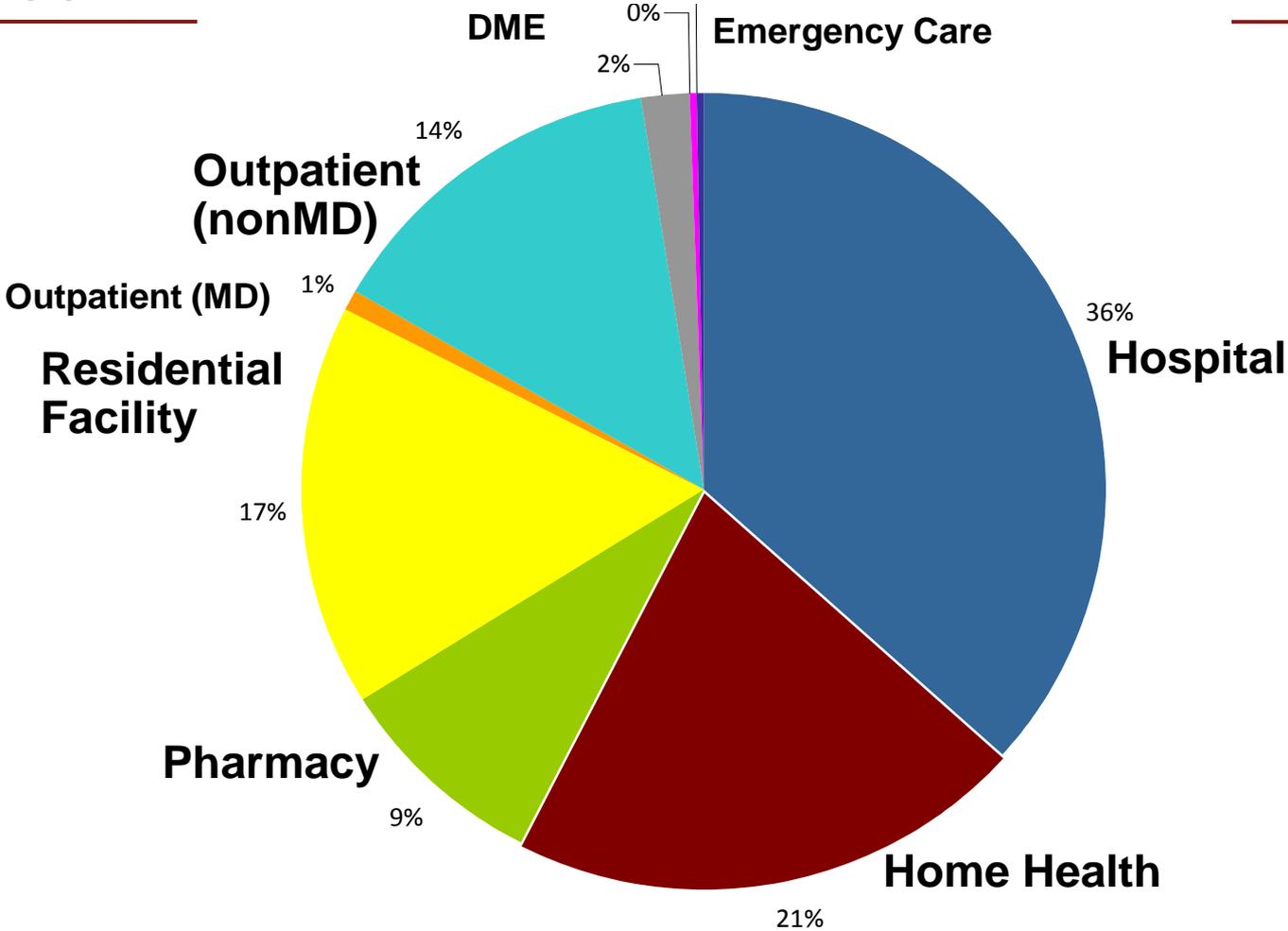
Among "High Cost" Children\*



\*Top 10% of annual expenses

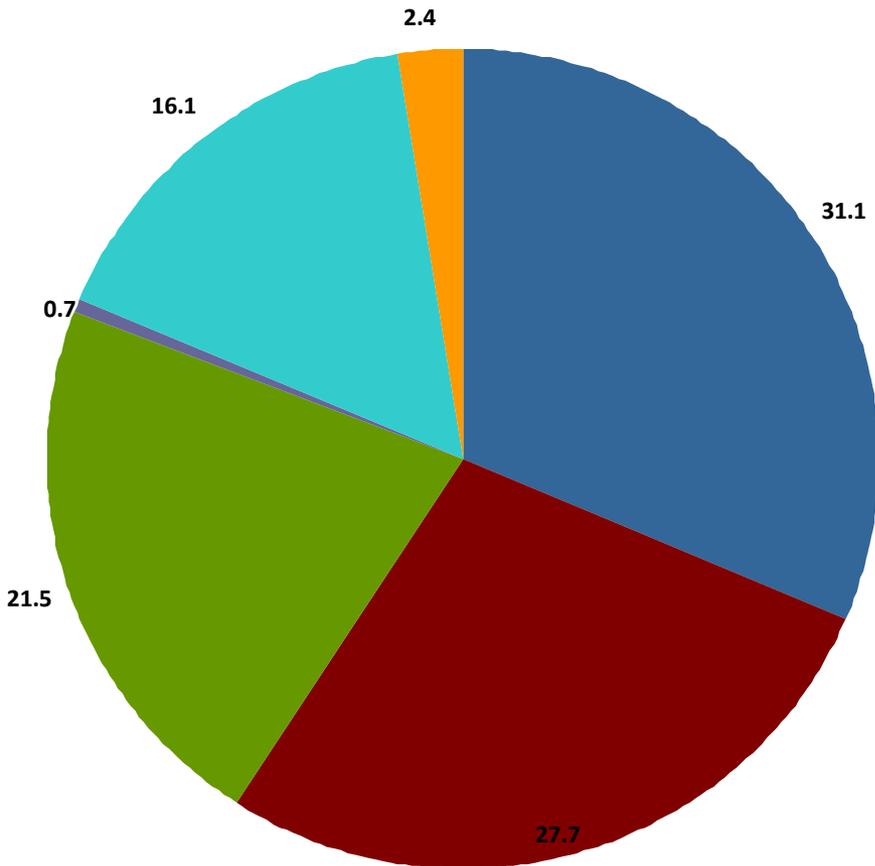
\*\*Pediatric Medical Complexity Algorithm (PMCA), Mangione-Smith R. 2014

# Cost Distribution By Type of Care

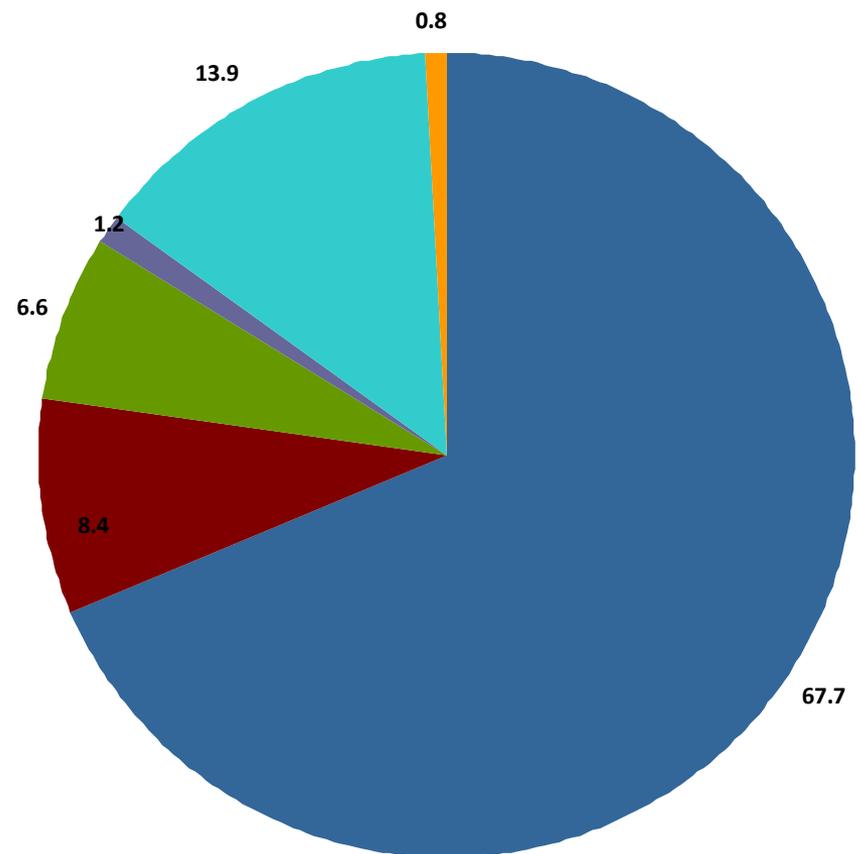


# Cost Distribution, by Medical Complexity

## Complex Chronic

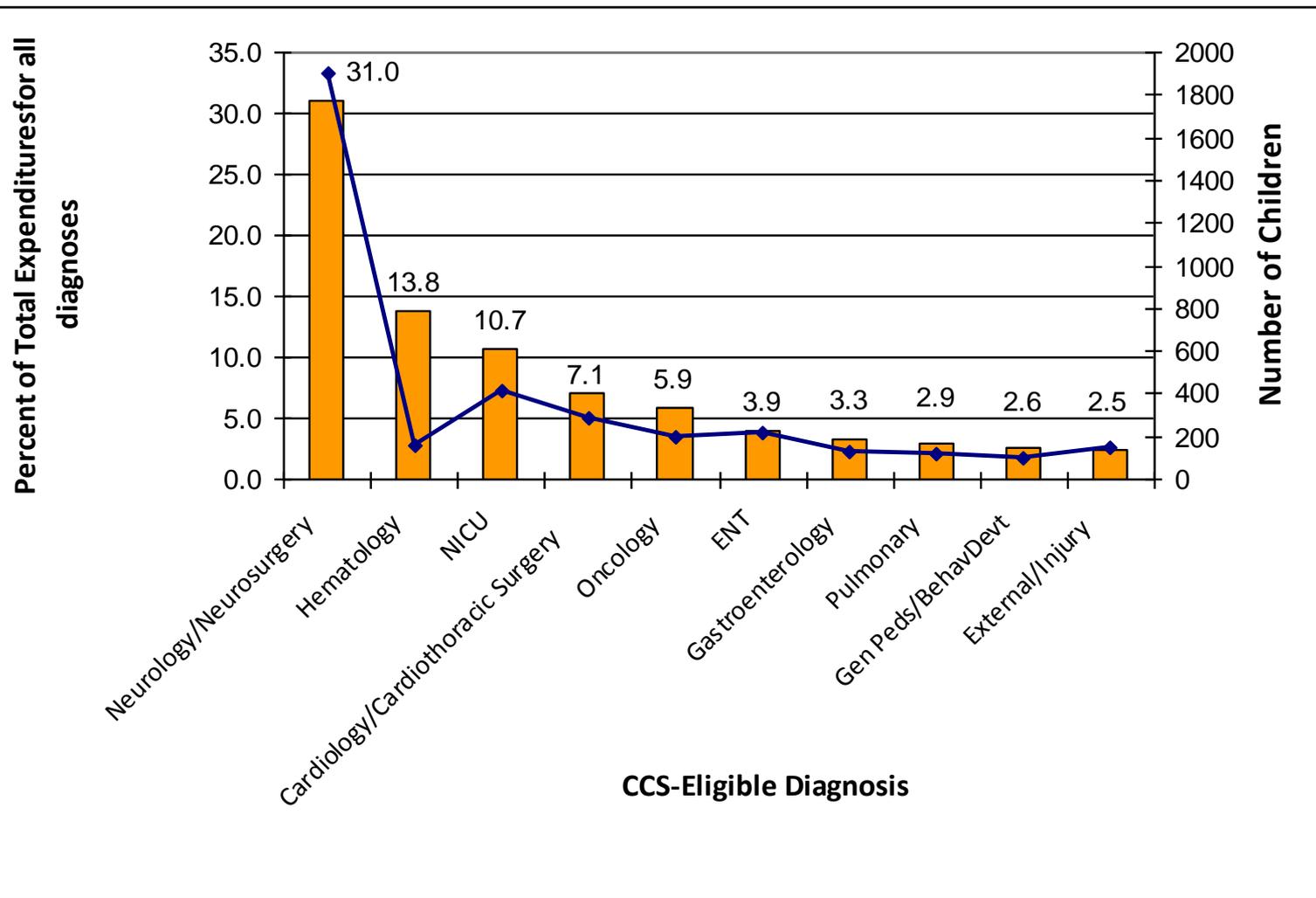


## Non-complex/non-chronic

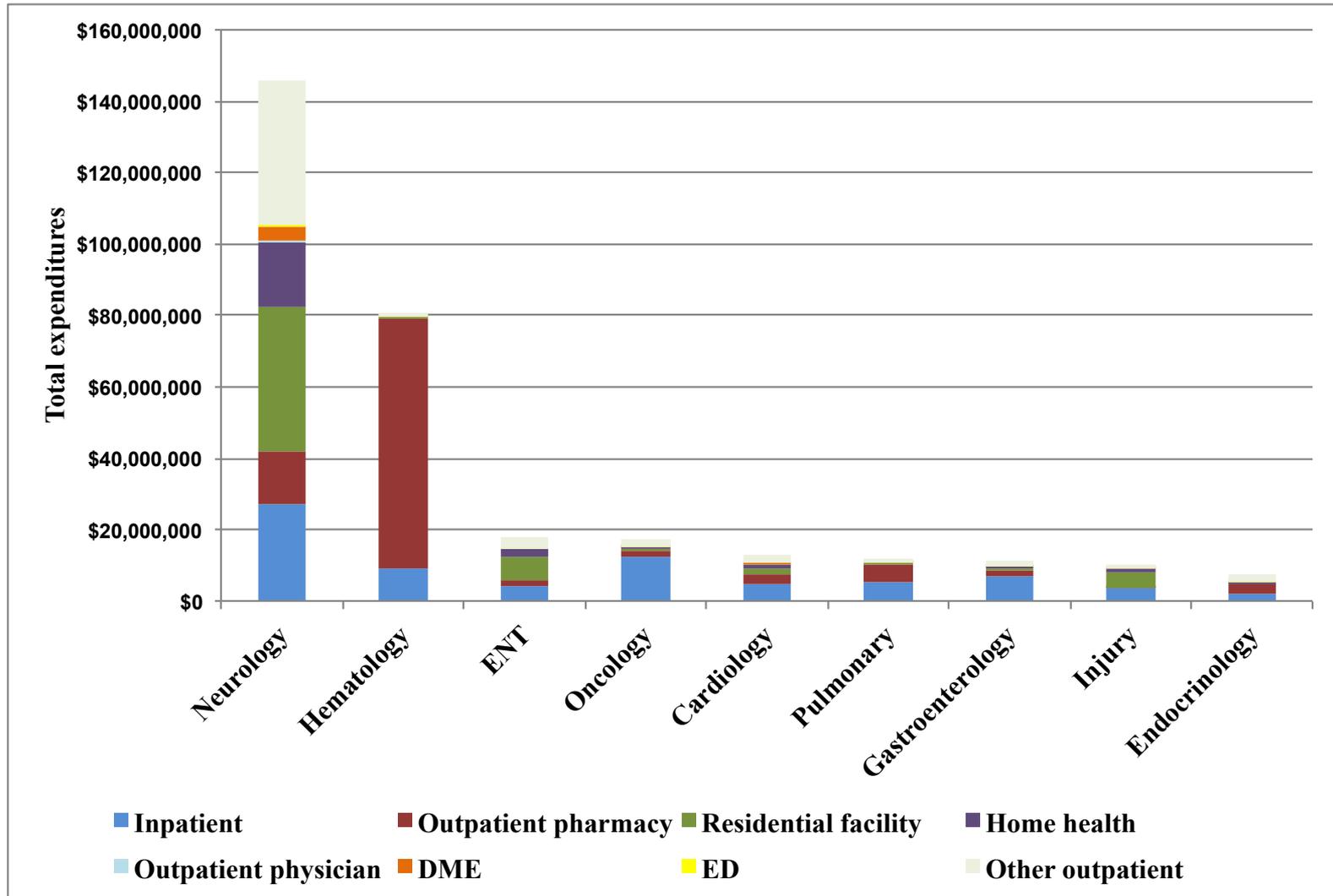


■ Inpatient ■ Home health ■ Pharmacy ■ Outpatient clinic ■ Other outpatient ■ DME

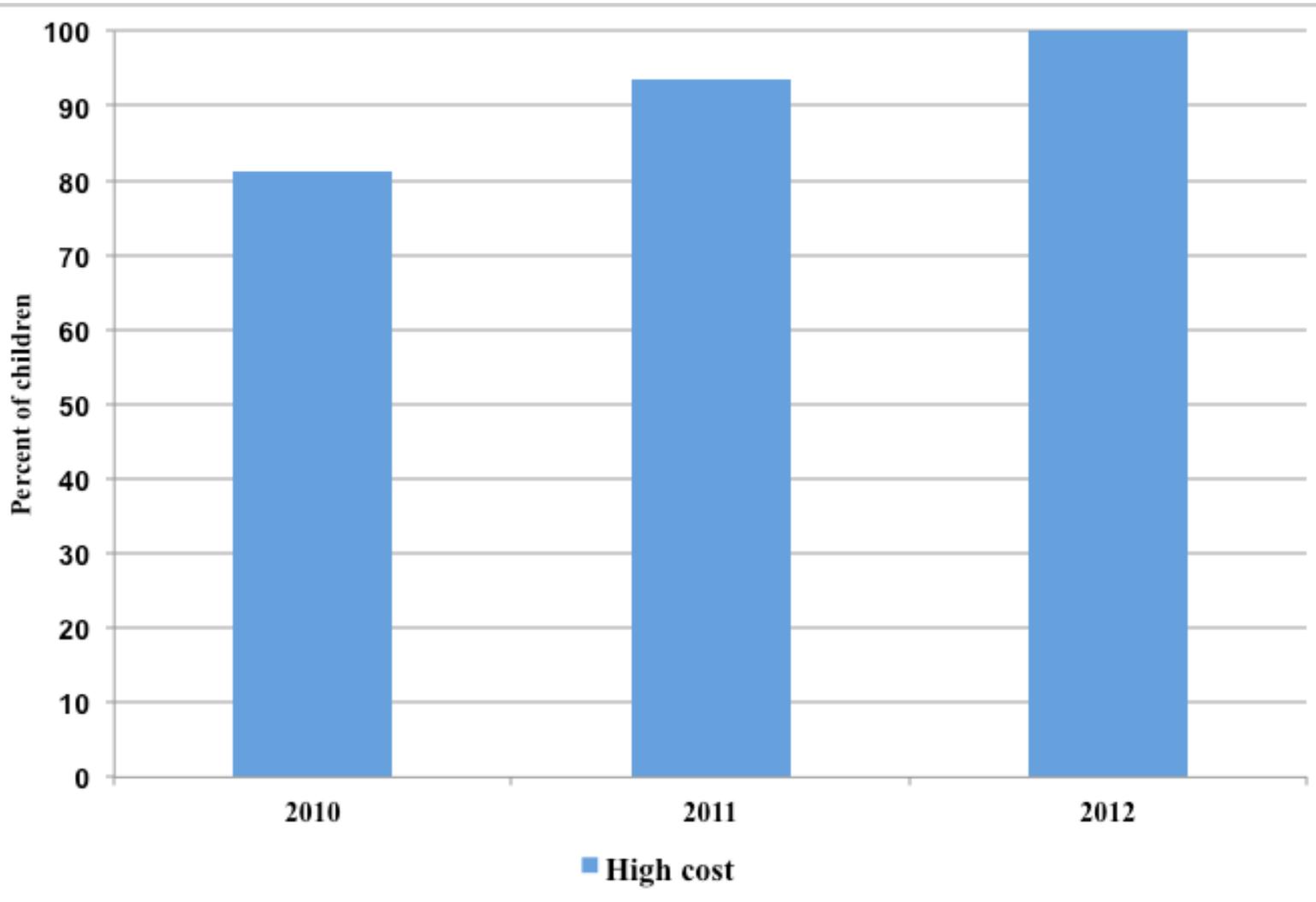
# Cost Distribution by Diagnostic Category



# Costs Distribution by Diagnostic Category

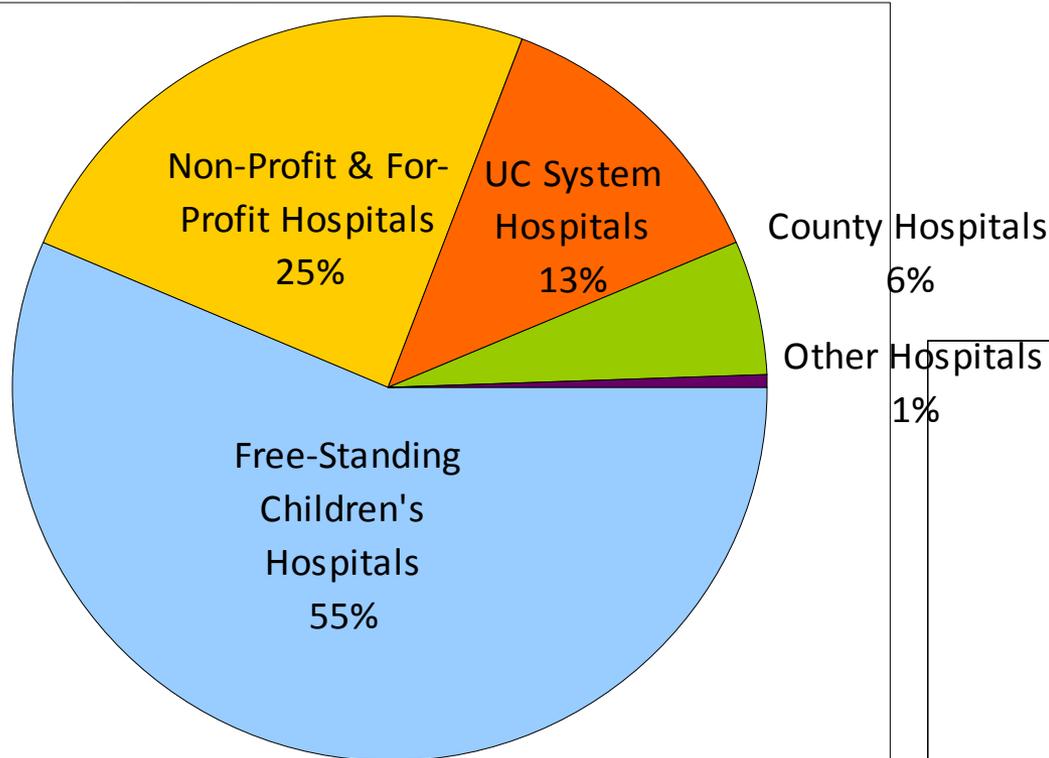


# “High Cost Children” Over Time

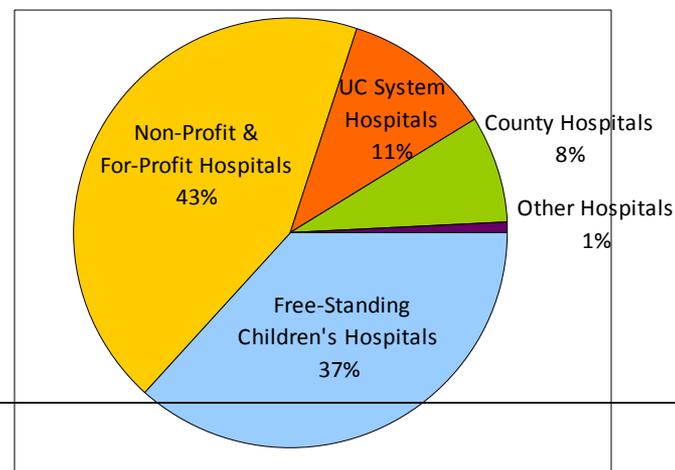


# Cost Distribution by Hospital Type

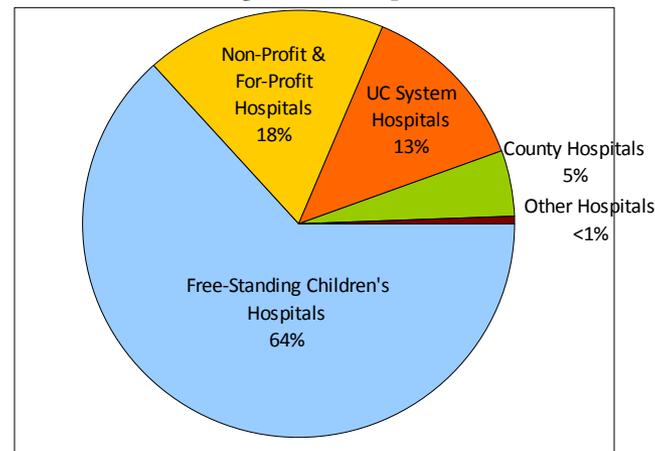
## All Children



## Infants (< 12 months)



## Medically Complex Children



# Summary

- Distinct patterns of care use – particularly by age and medical complexity.
- Wide variability in care patterns, particularly before and after hospitalization.
- Costs are highly skewed, driven by inpatient and residential care, and persistent over time.

# Implications for CCS Program Reform

- **Care System Innovation**
  - Redesign Outpatient Systems to reduce Inpatient Care
  - Enhance Regionalized Subspecialty and Primary Care
- **Population Health Management**
  - Tier Care Coordination by Clinical Complexity
  - Build Regional Learning Collaboratives
- **Public Policy and Payment Reform**
  - Establish Risk Pools for Skewed Cost Distribution
  - Monitor and Evaluate Impact of Reforms

# CPOP Policy Briefs

<https://cpopstanford.wordpress.com/our-work/state/>

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## Center for Policy, Outcomes & Prevention



### Center Analytic Team

The Center Analytic Team for the Center for Policy Outcomes and Prevention (CPOP) includes expert pediatric clinicians from across the subspecialties, dedicated data analysts, experts in health service research, biostatistics, epidemiology, economic and the social sciences. Working with state-level stakeholders and community-based partnership team seeks to provide real-world analytic guidance to policy efforts to improve the health and health of all children, with a particular focus on children's health care needs (CSHCN).

### Analytic Guidance for the California Children's Services (CCS) Program

Funded in part by the California HealthCare Foundation (CHCF), CPOP is applying rigorous analytic population-data to provide policy-relevant

information for the reform of the California Children's Services (CCS), the nation's largest Title V program for more than 150,000 children per year through county- and state-based case management services. The project is led by **Paul H. Wise, MD, MPH** and **Lee M. Sanders, MD, MPH**, faculty at CPOP. **Lisa Chamberlain, MD, MPH**, Assistant Professor of Pediatrics at Stanford University, leads the policy bridging activities, and **Yandana Sundaram, MPH**, leads the data analyses.

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## Health Policy Facts

March 2014, Issue 8

### Quality of Care: Outpatient Care Before Hospitalization

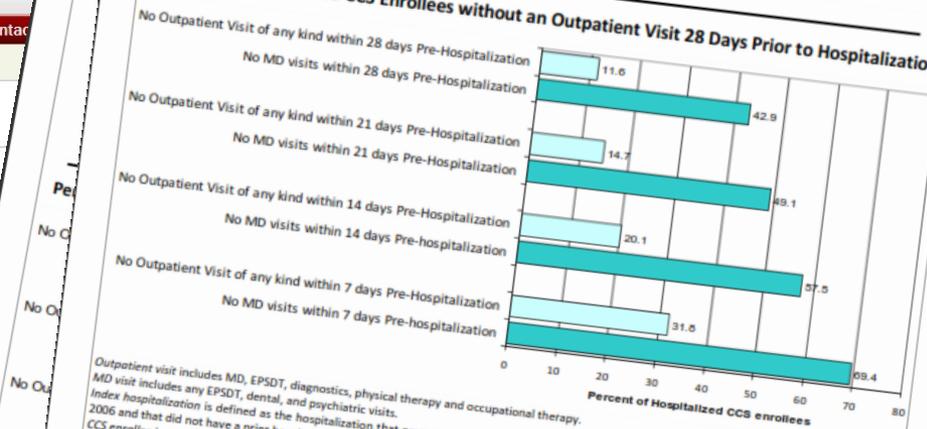
#### THE FINDINGS

- 12% of CCS enrollees had no outpatient care during the 28 days prior to hospital admission.
- 42% of CCS enrollees had no MD clinic visits during the 28 days prior to hospital admission.
- Those in the following categories had higher-than-average rates of "no visits in 28 days:"
  - Ages 13-21 years
  - Non-complex chronic conditions (e.g., Diabetes, Inflammatory Bowel Disease, Sickle Cell Disease, Hemophilia)<sup>1</sup>

#### POLICY IMPLICATIONS

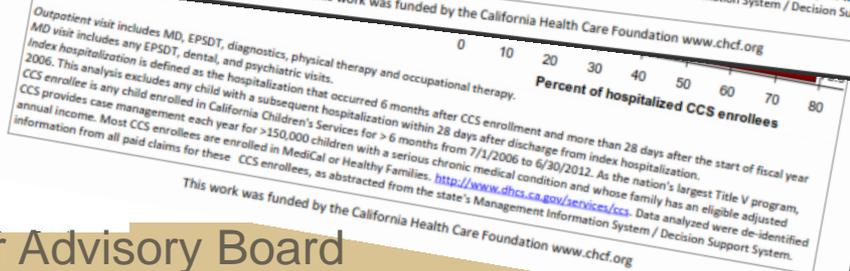
- "Outpatient care before hospitalization" may be a useful quality indicator for some CSHCN. This may be particularly true for children with specific, non-complex chronic conditions.
- Systems of care may be able to reduce some preventable hospitalizations, by identifying and improving outpatient-care delivery to children most at risk for "no outpatient care before hospitalization."

### Percent of Hospitalized CCS Enrollees without an Outpatient Visit 28 Days Prior to Hospitalization



Outpatient visit includes MD, EPSDT, diagnostics, physical therapy and occupational therapy. MD visit includes any EPSDT, dental, and psychiatric visits. Index hospitalization is defined as the hospitalization that occurred 6 months after CCS enrollment and more than 28 days after the start of fiscal year 2006 and that did not have a prior hospitalization within 28 days prior. CCS enrollee is any child enrolled in California Children's Services for > 6 months from 7/1/2006 to 6/30/2012. As the nation's largest Title V program, CCS provides case management each year for >150,000 children with a serious chronic medical condition and whose family has an eligible adjusted annual income. Most CCS enrollees are enrolled in MediCal or Healthy Families. <http://www.dhcs.ca.gov/services/ccs>. Data analyzed were de-identified information from all paid claims for these CCS enrollees, as abstracted from the state's Management Information System / Decision Support System. \*Mangione-Smith, in press

This work was funded by the California Health Care Foundation [www.chcf.org](http://www.chcf.org)



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This work was funded by the California Health Care Foundation [www.chcf.org](http://www.chcf.org)

## CCS Redesign Stakeholder Advisory Board

# Thank You



## CCS and DHCS

### California Stakeholders

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