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?

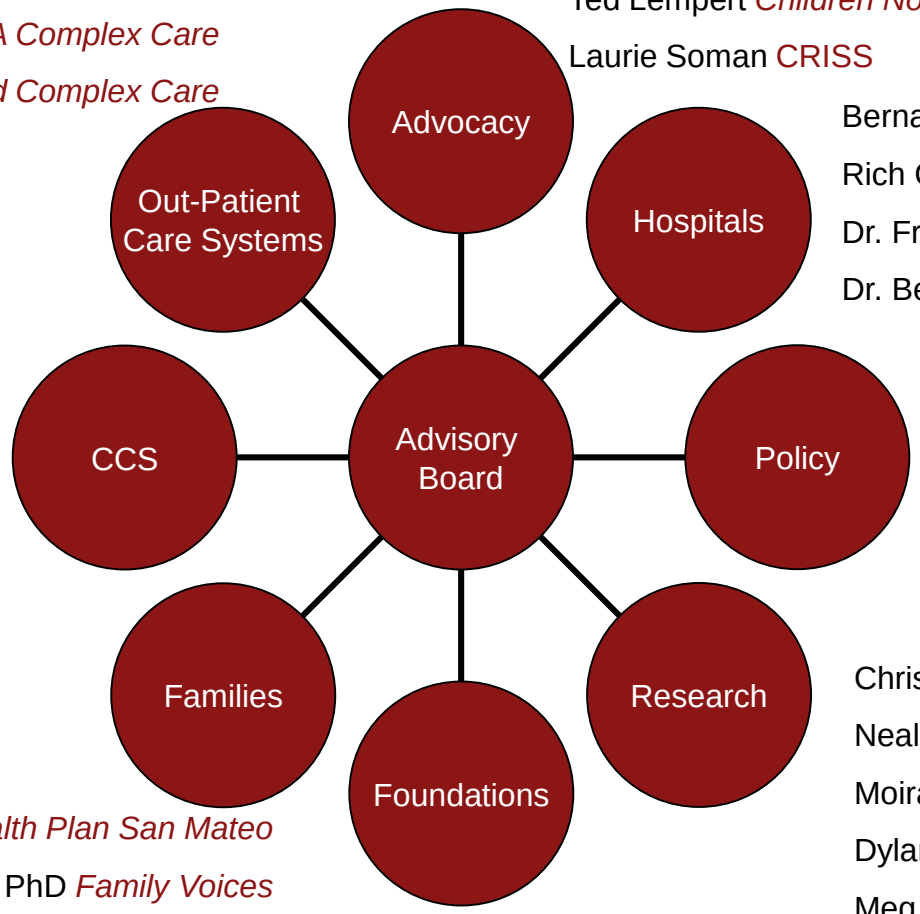
Analytic Design

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)

N = 323,922 children

Stanford CPOP
CCS Analytics Advisory Board



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Moira Inkelas PhD *UCLA*

Dylan Roby PhD *UCLA*

Meg Okumura, MD, *UCSF*

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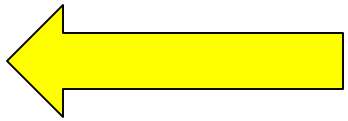
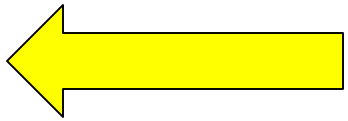
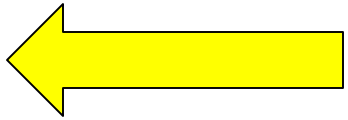
CCS-enrolled Children:
Social and Clinical Characteristics

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





> 2 organ systems, or progressive

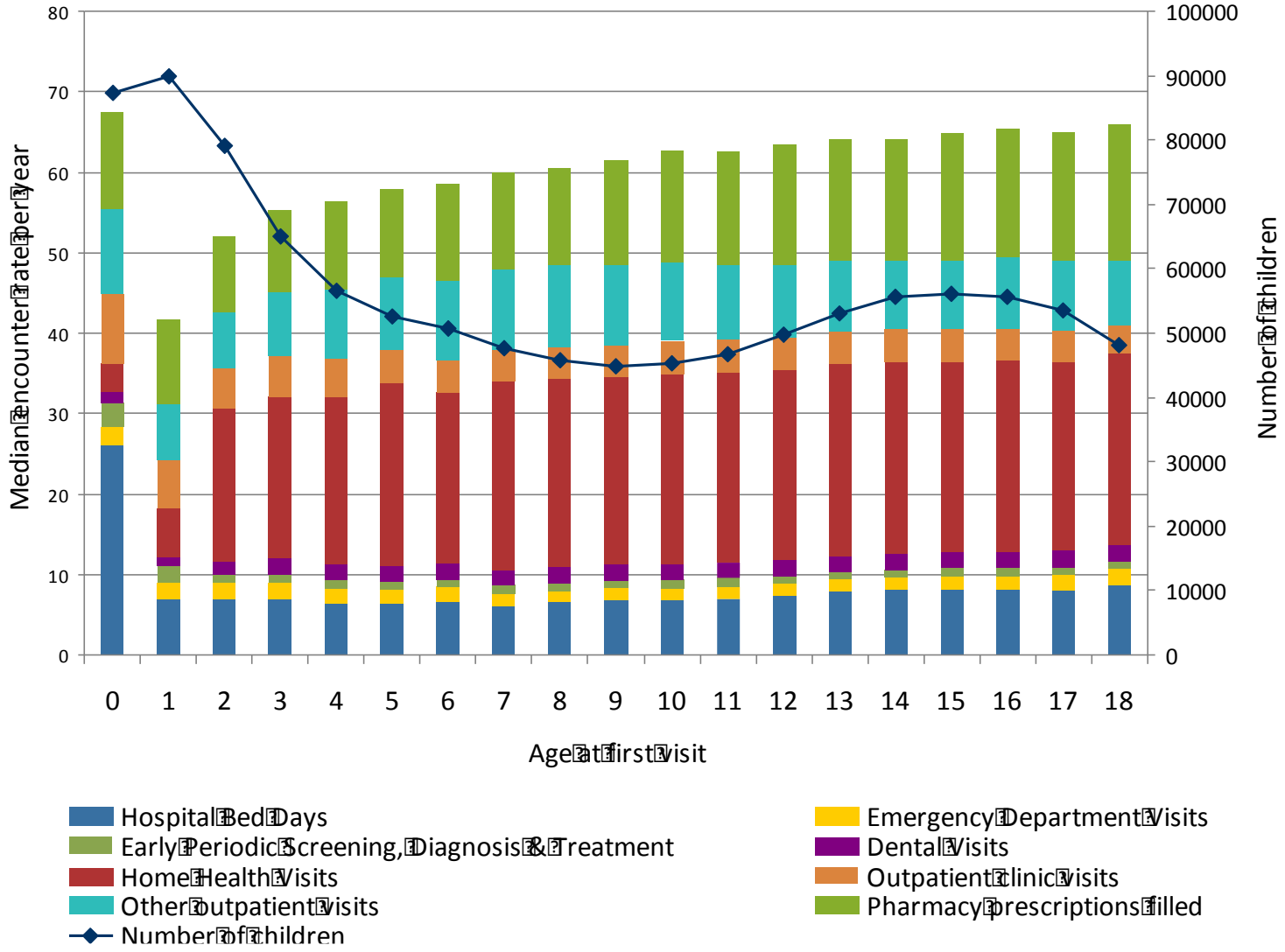


* Simons TD, et al. Pediatric Medical Complexity Algorithm (PMCA), Pediatrics 2014

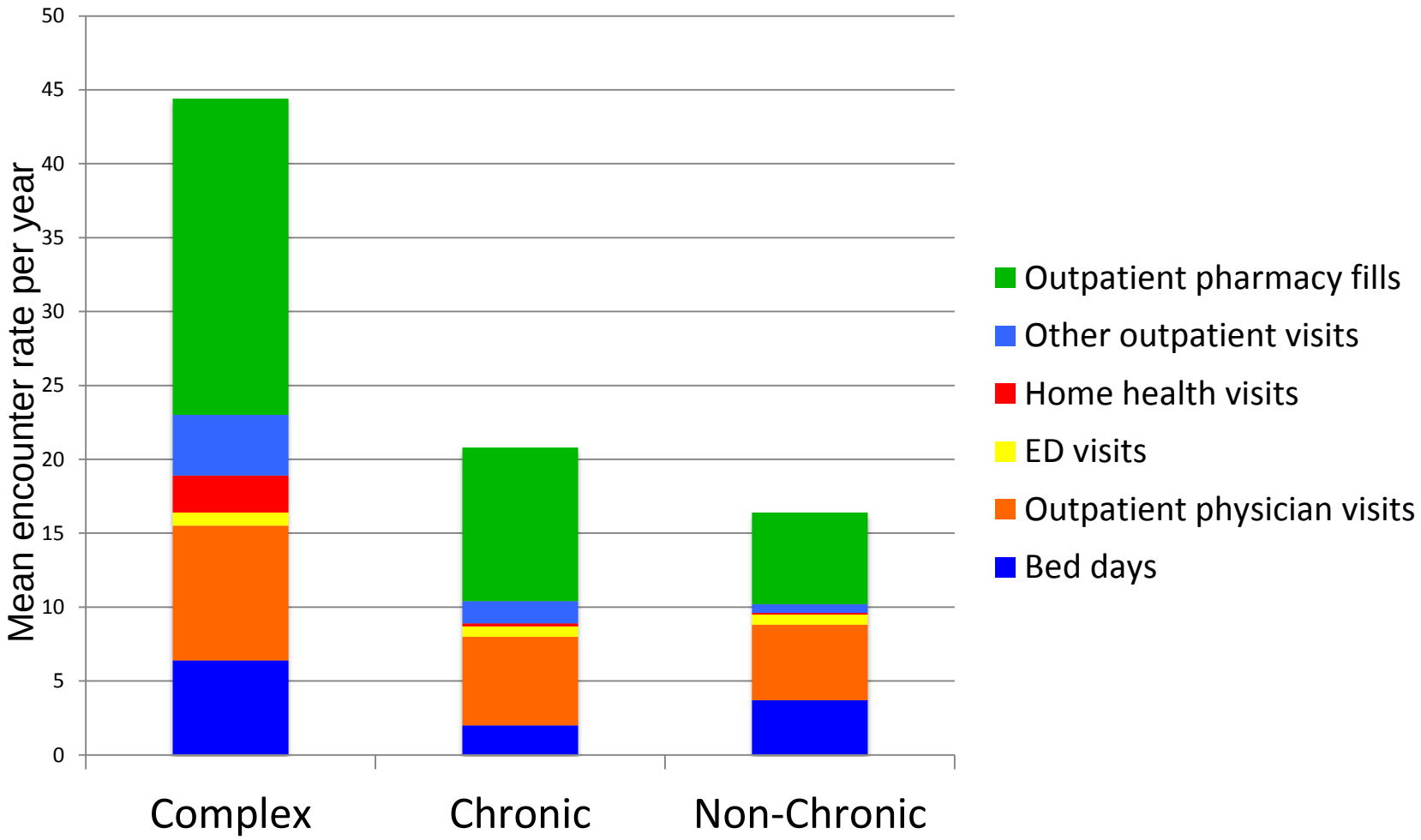
Patterns of Care
Visits per child per year

	Children with ≥ 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)

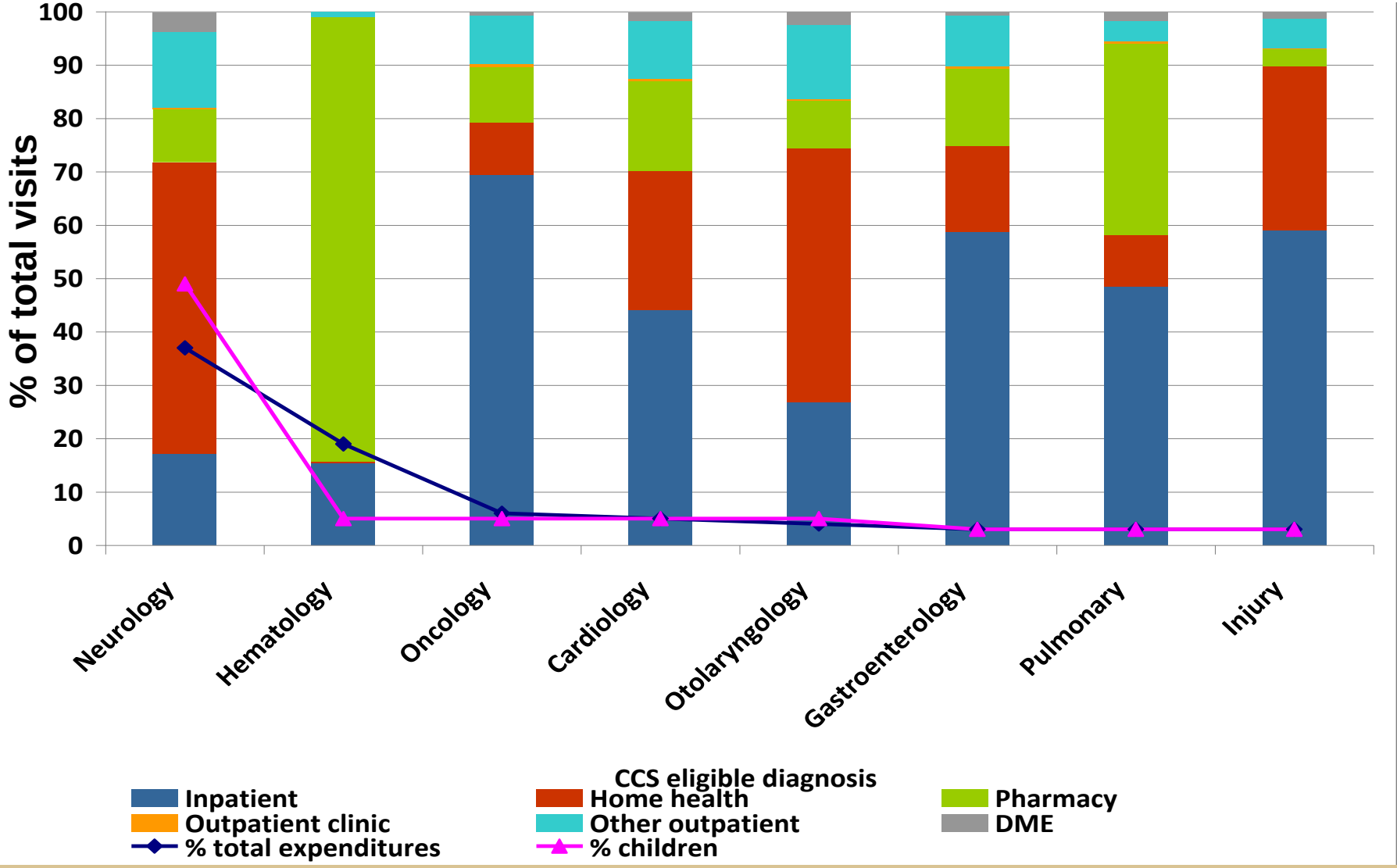
Patterns of Care by Age



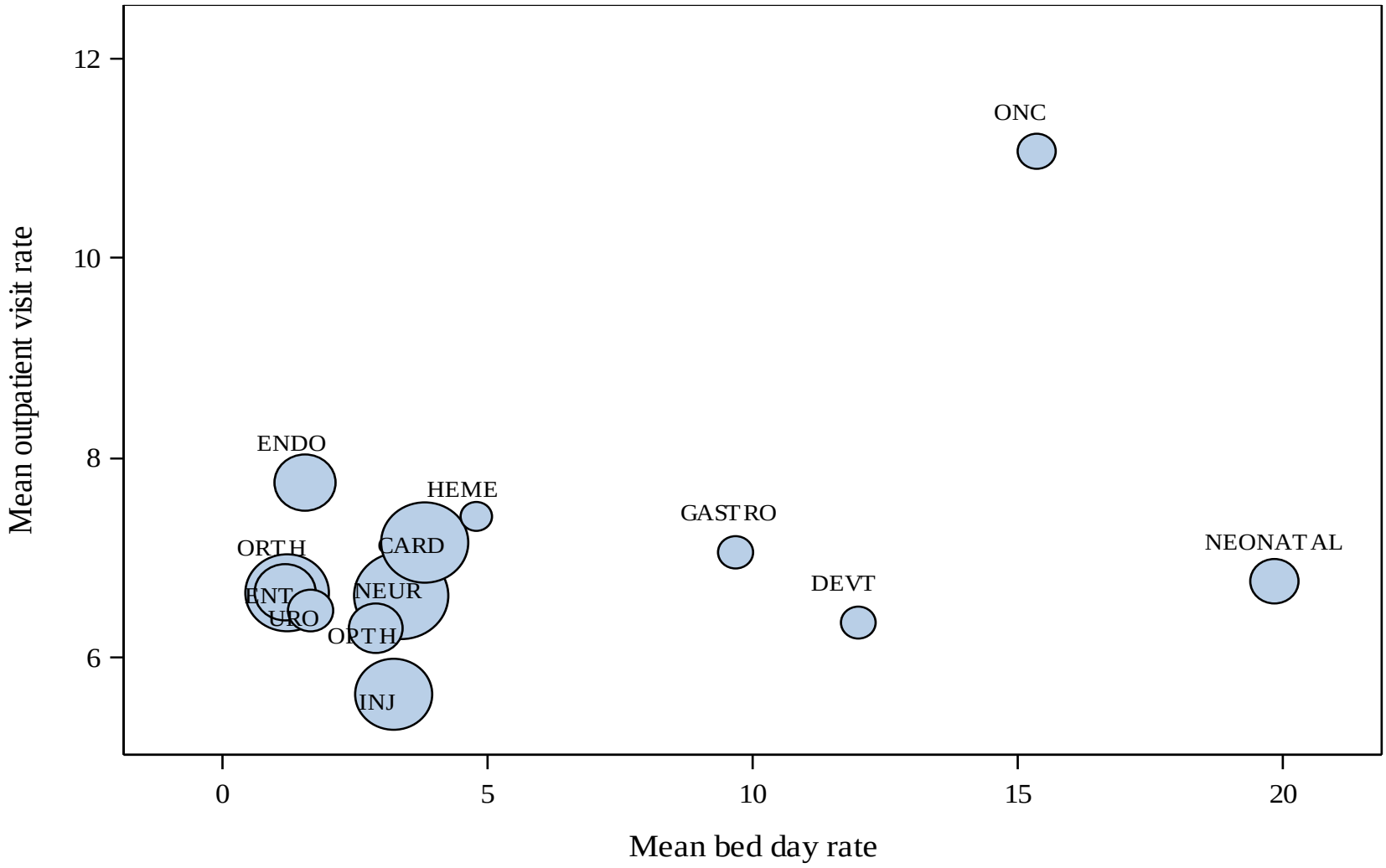
Patterns of Care
by Medical Complexity



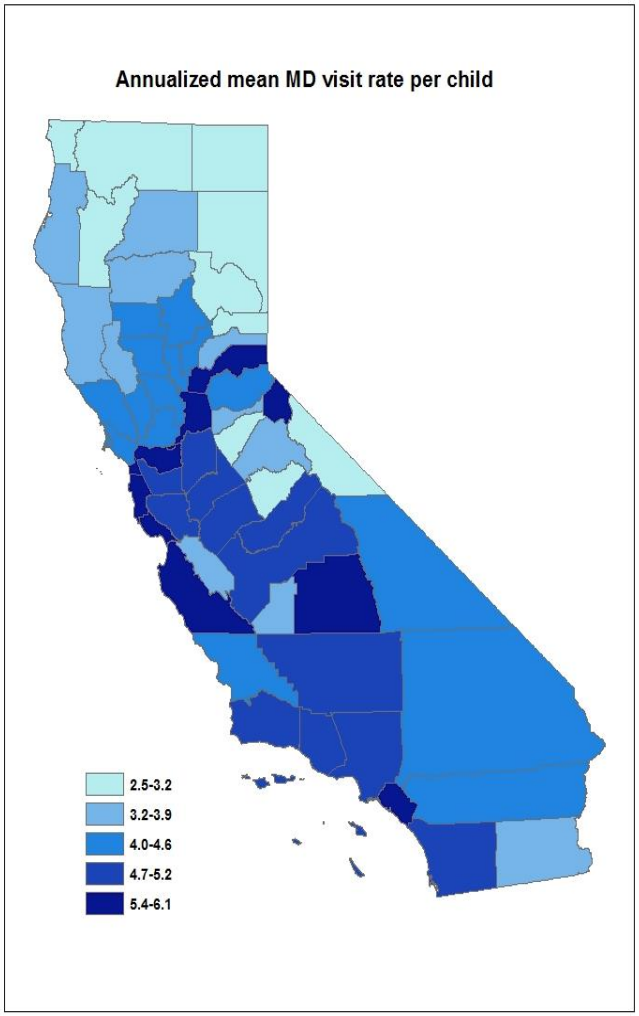
Patterns of Care
by Diagnostic Category

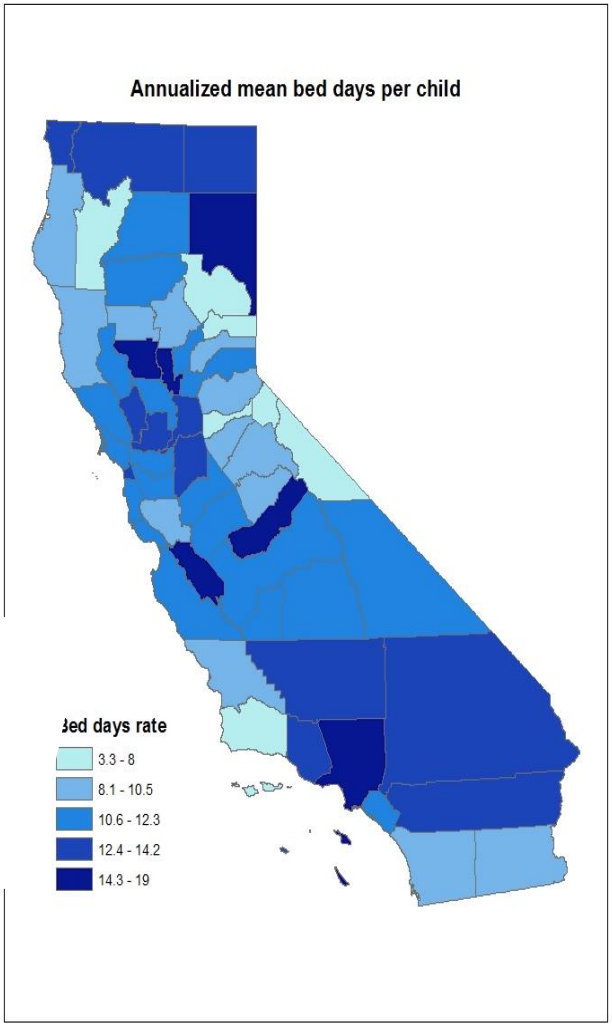


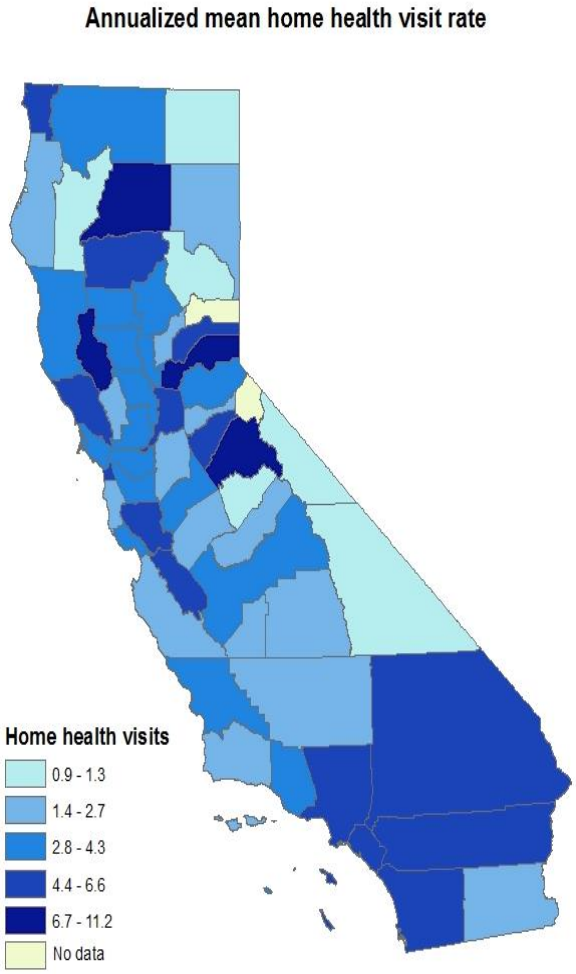
Outpatient: Inpatient Patterns by Diagnostic Category



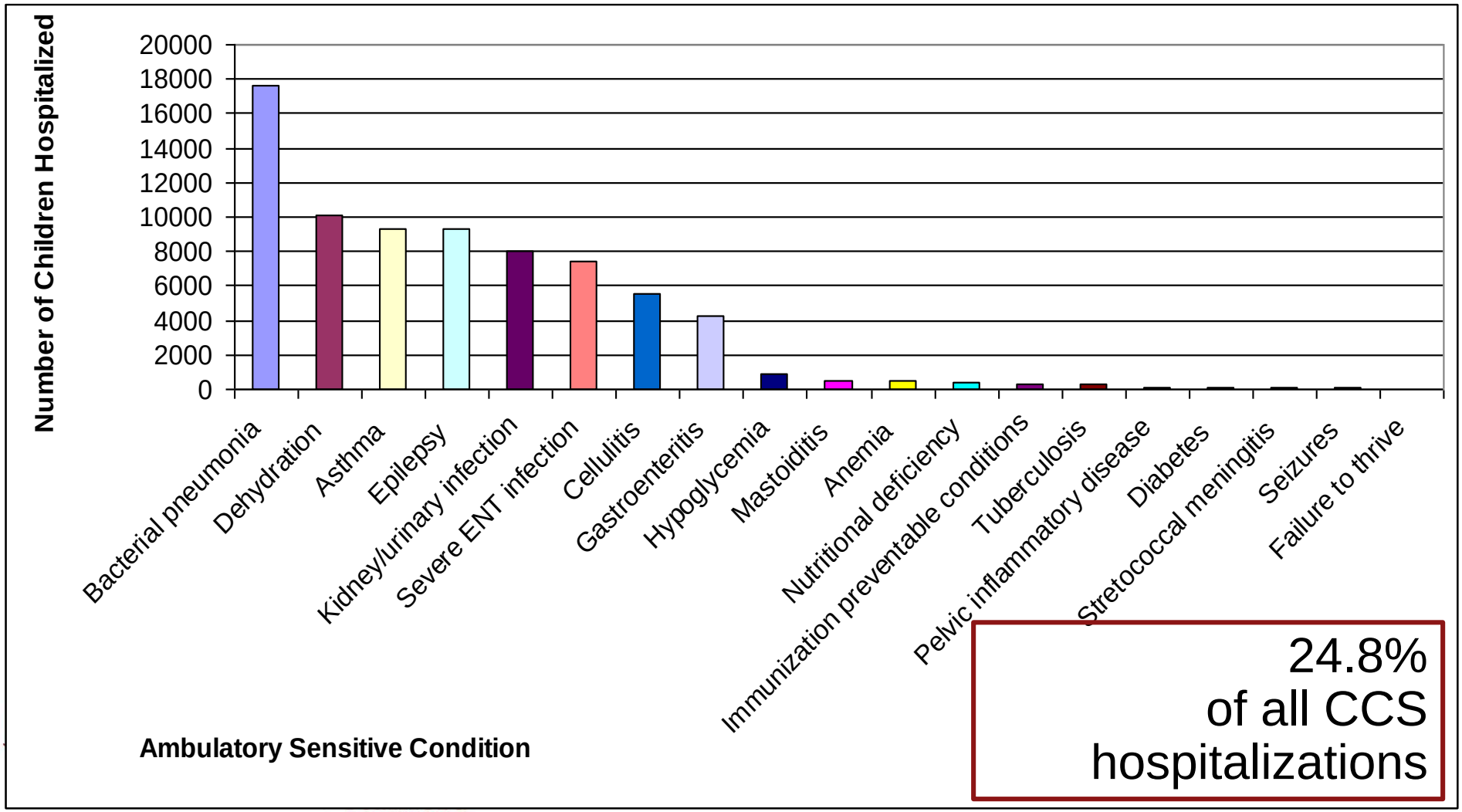
Patterns of Care
Regional Variability





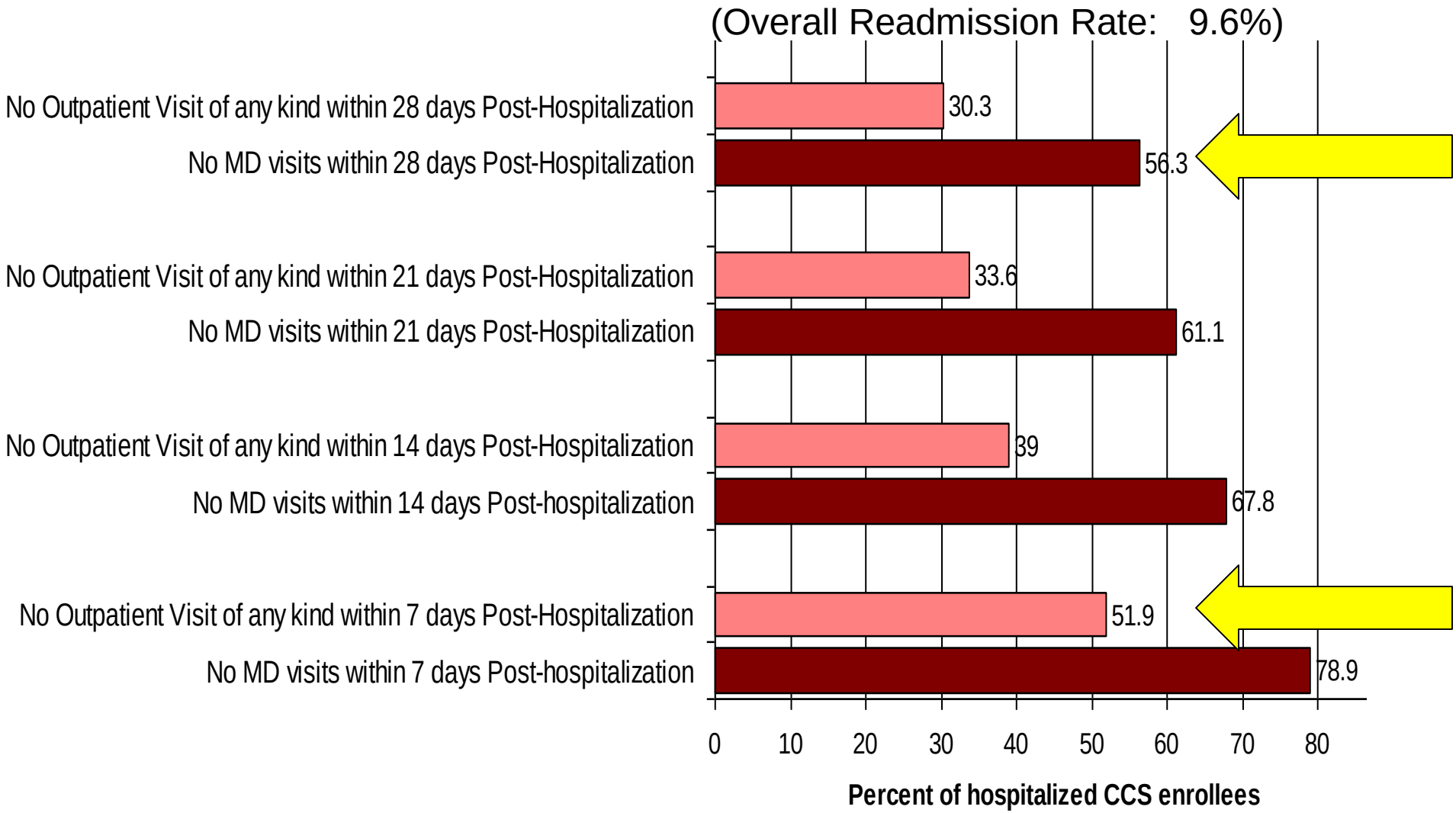


Quality of Care:
Potentially Preventable Hospitalizations

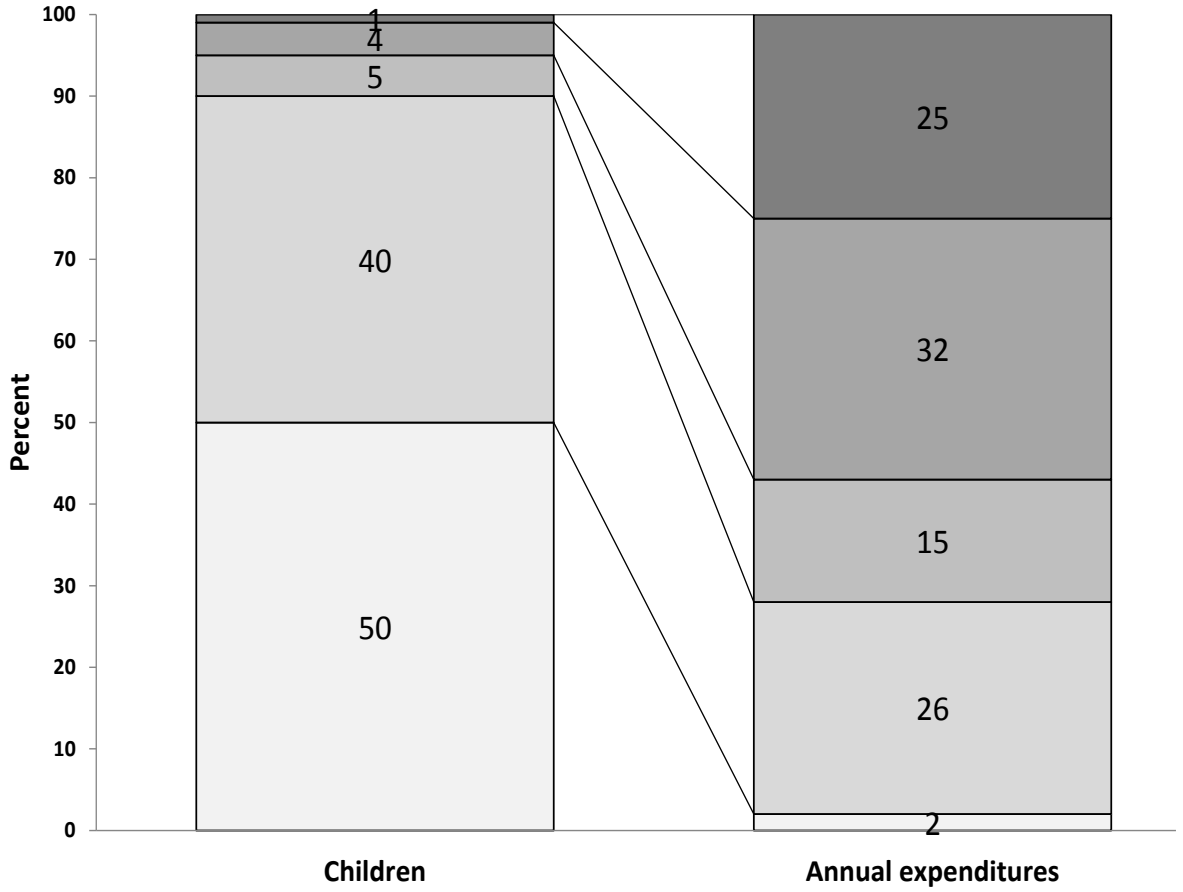


24.8%
of all CCS
hospitalizations

Quality of Care:
No Care After Hospital Discharge

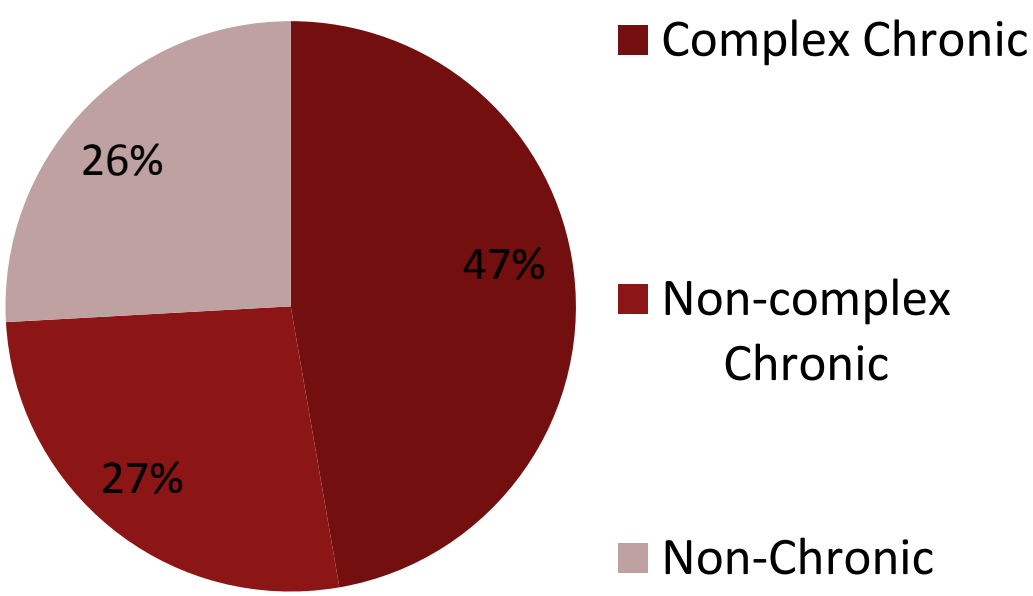


Cost Distribution
By Child

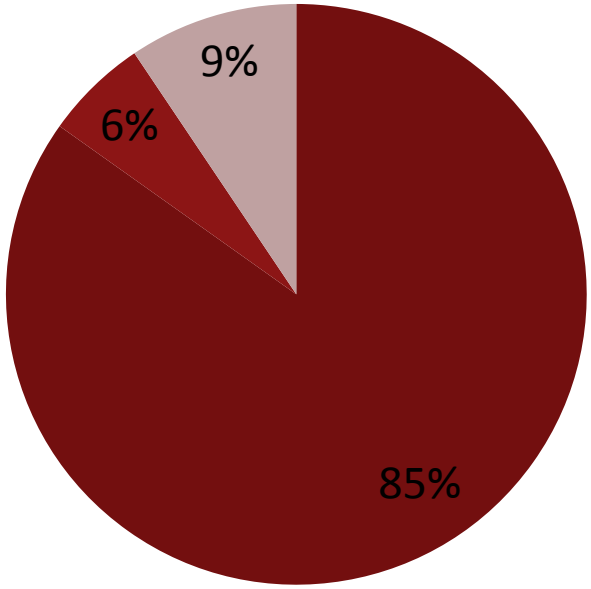


Cost Distribution
By Medical Complexity

Among All CCS Enrollees



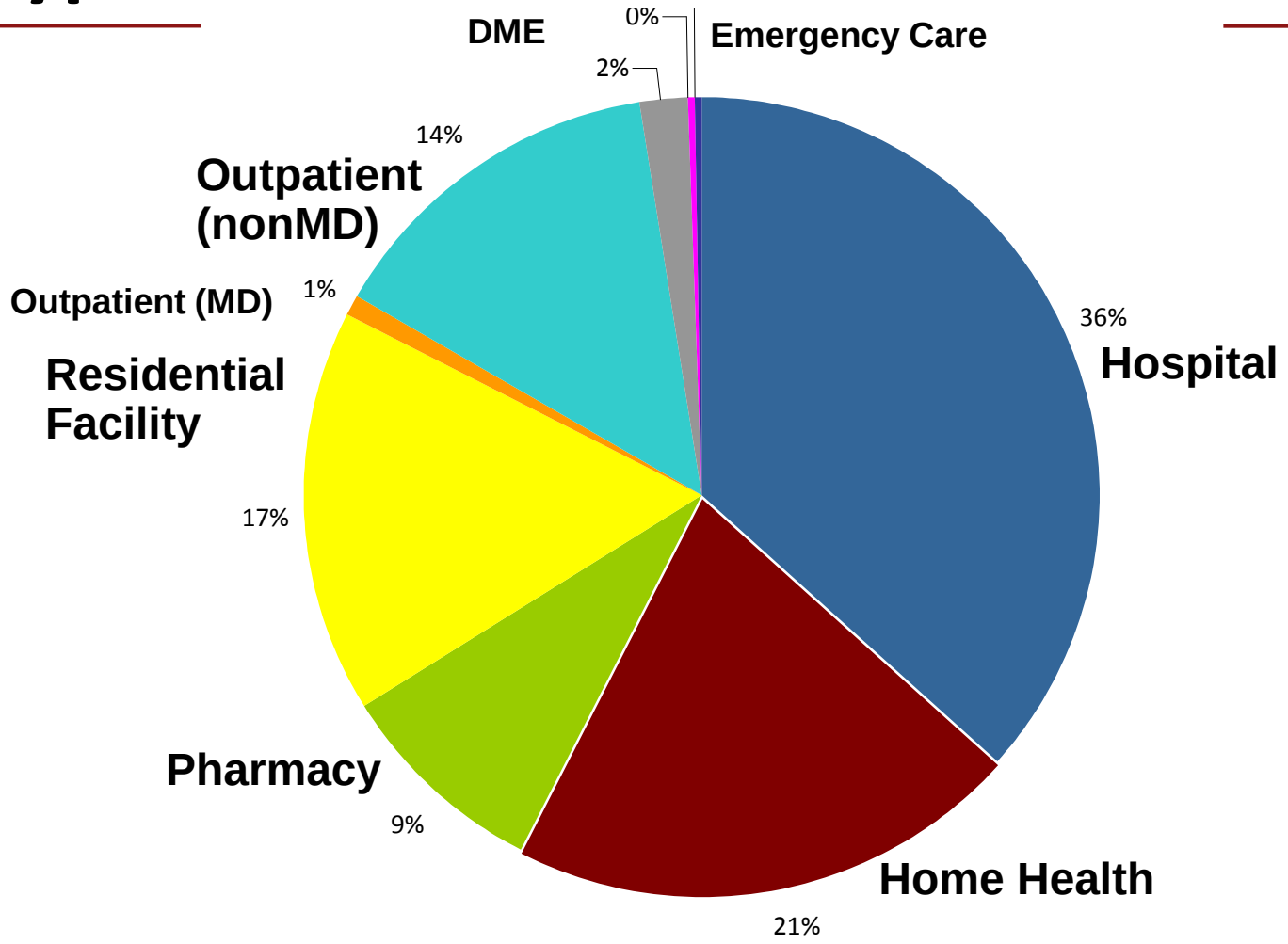
Among "High Cost" Children*



*Top 10% of annual expenses

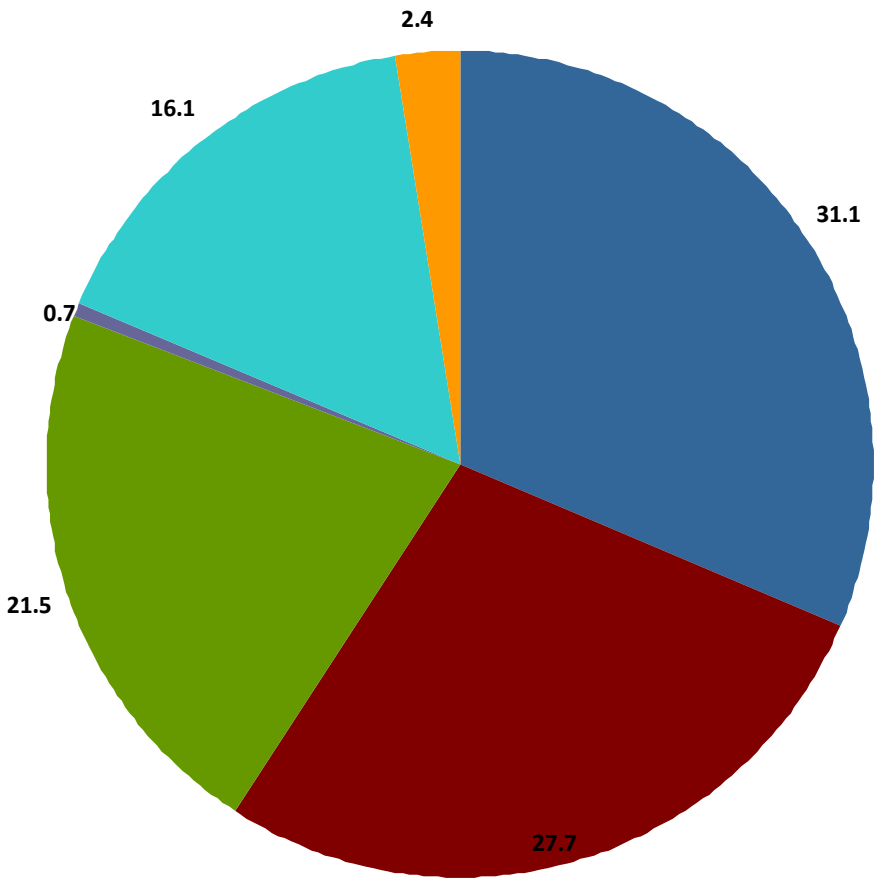
**Pediatric Medical Complexity Algorithm (PMCA), Mangione-Smith R. 2014

Cost Distribution
By Type of Care

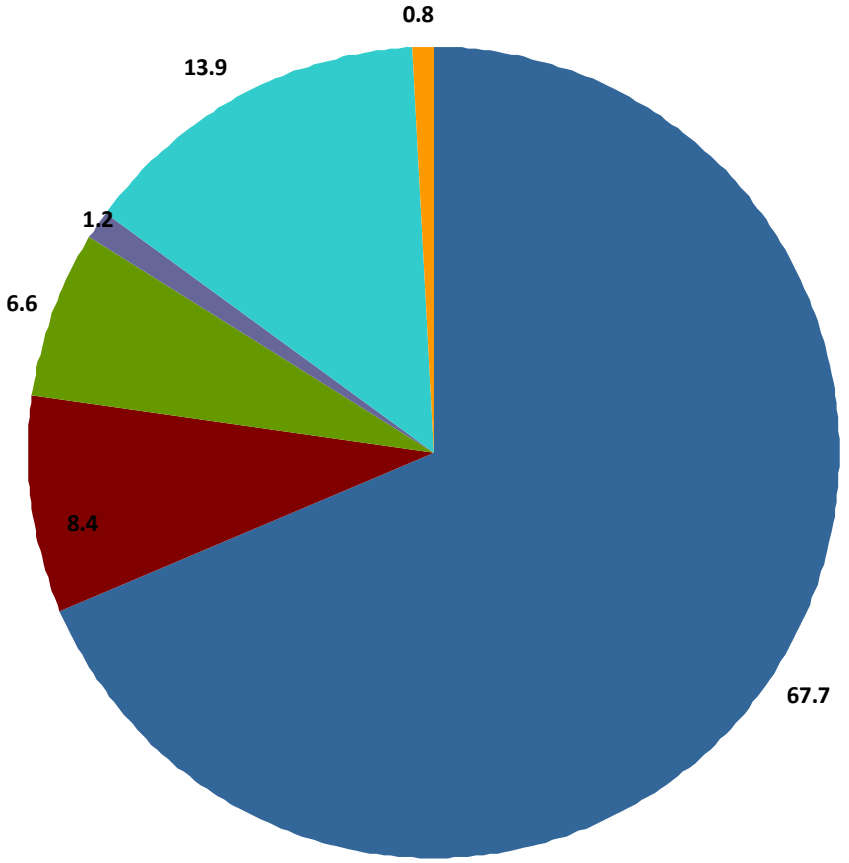


Cost Distribution, by Medical Complexity

Complex Chronic

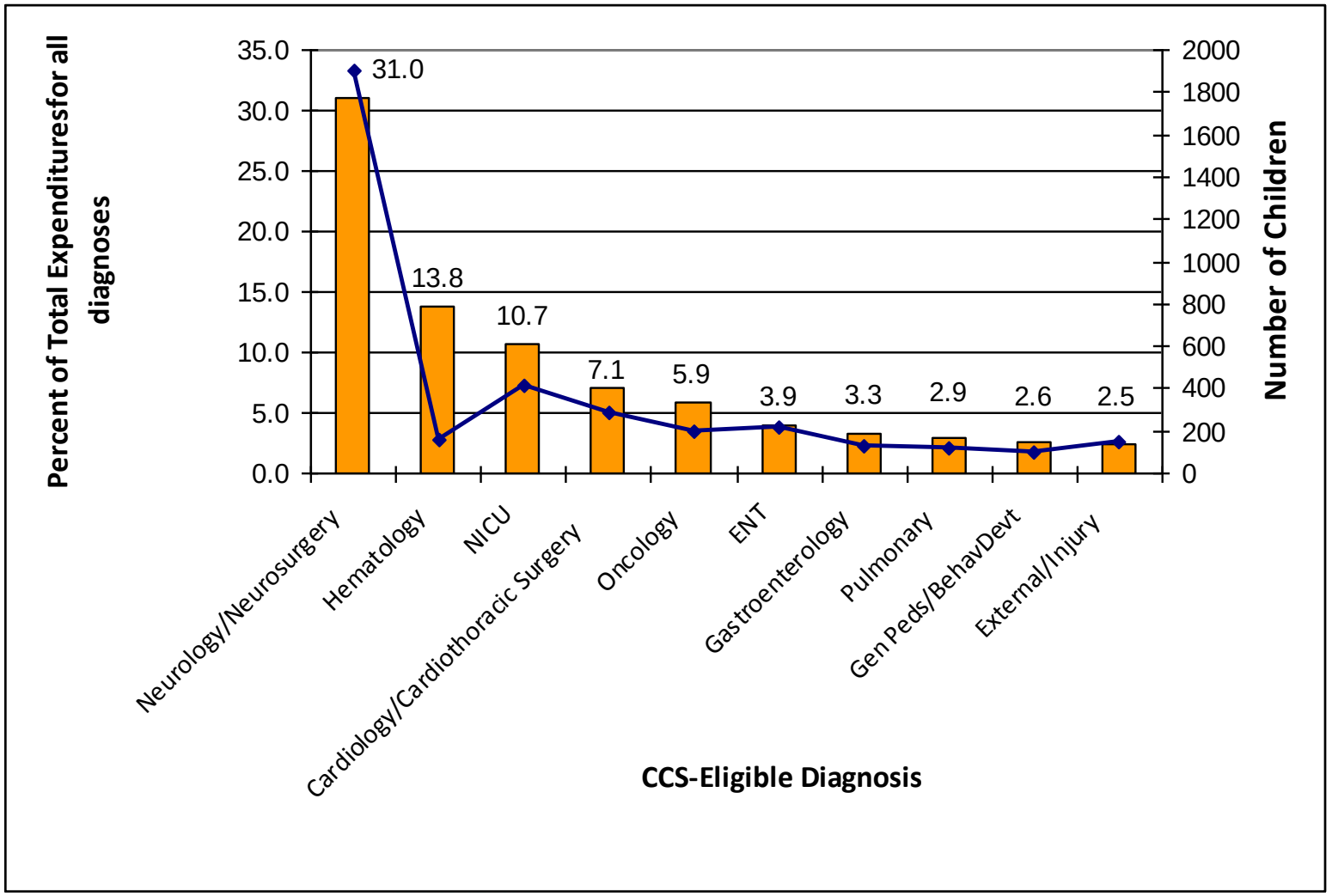


Non-complex/non-chronic

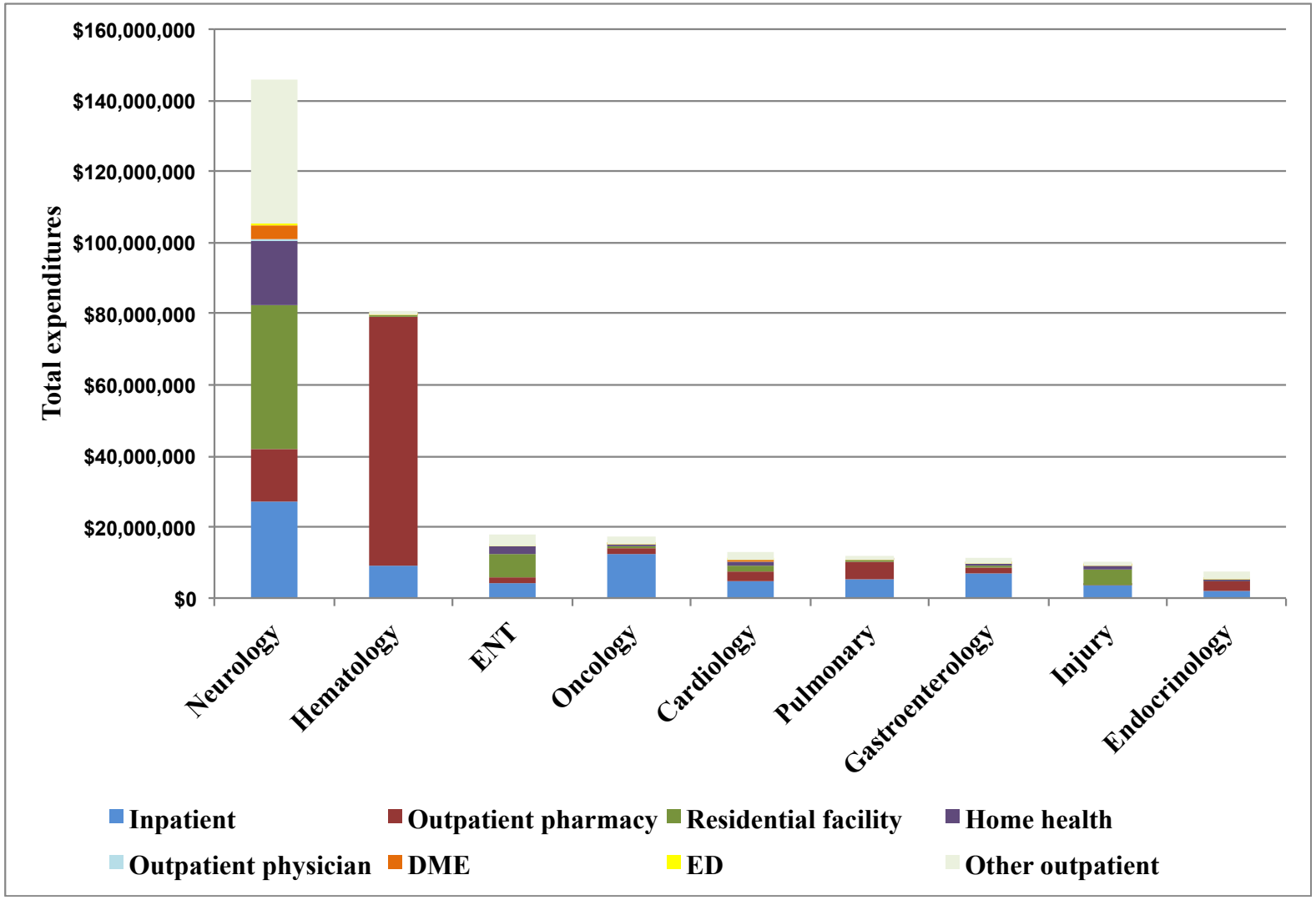


Inpatient | Home health | Pharmacy | Outpatient clinic | Other outpatient | DME

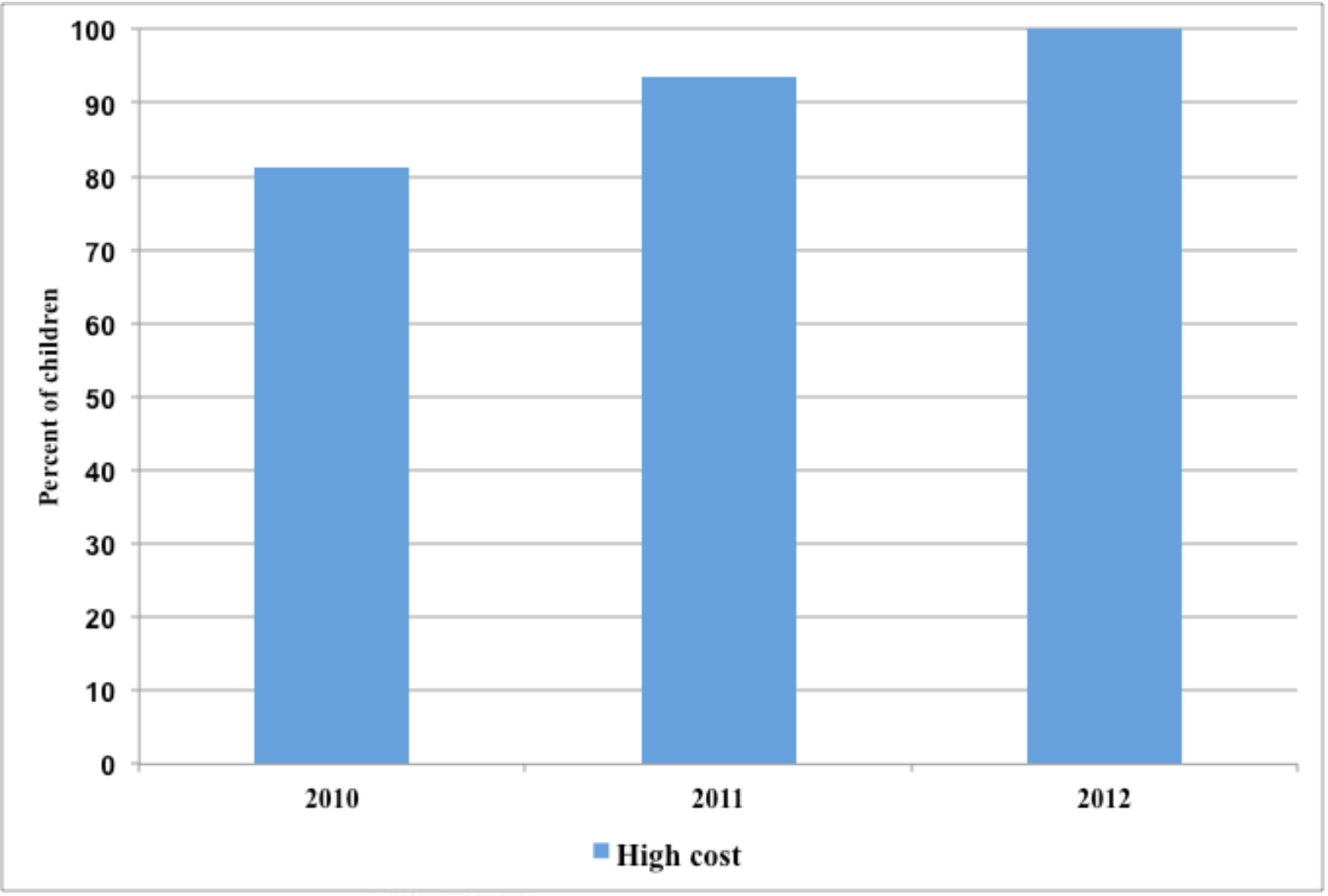
Cost
by Diagnostic Category



Costs Distribution
by Diagnostic Category

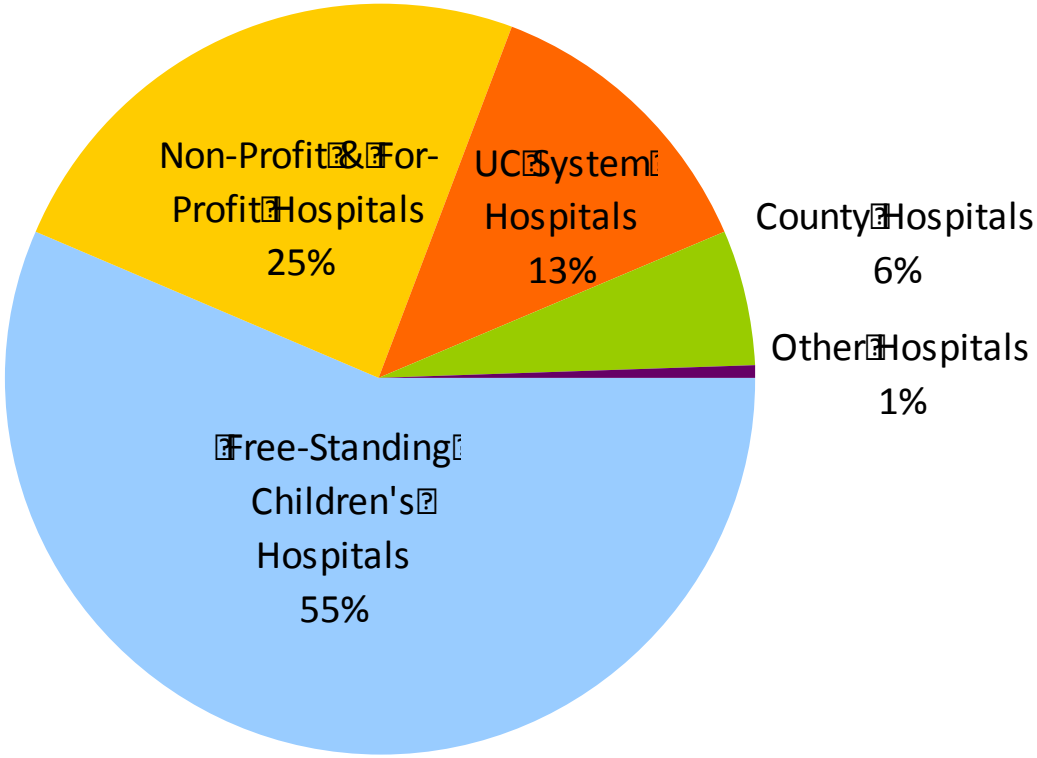


"High Cost Children"
Over Time

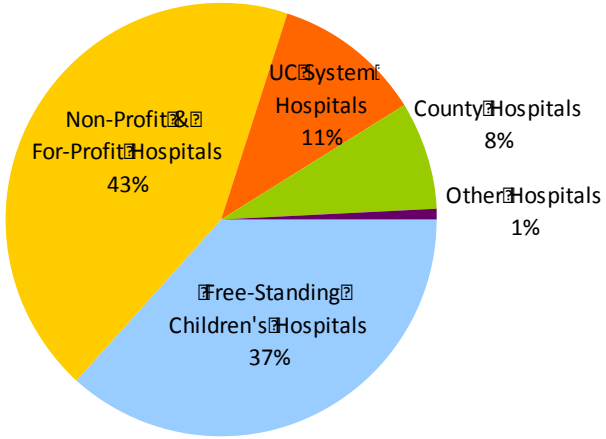


Cost Distribution by Hospital Type

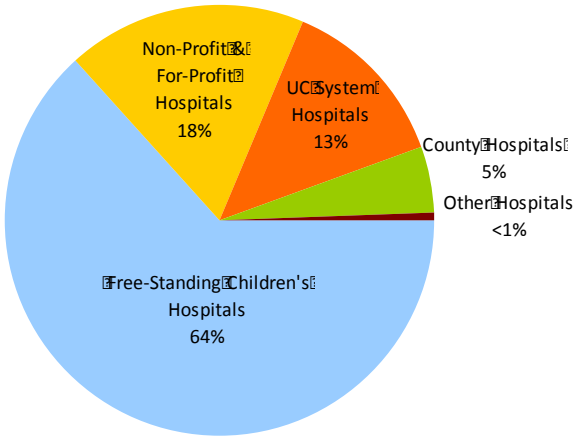
All Children



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

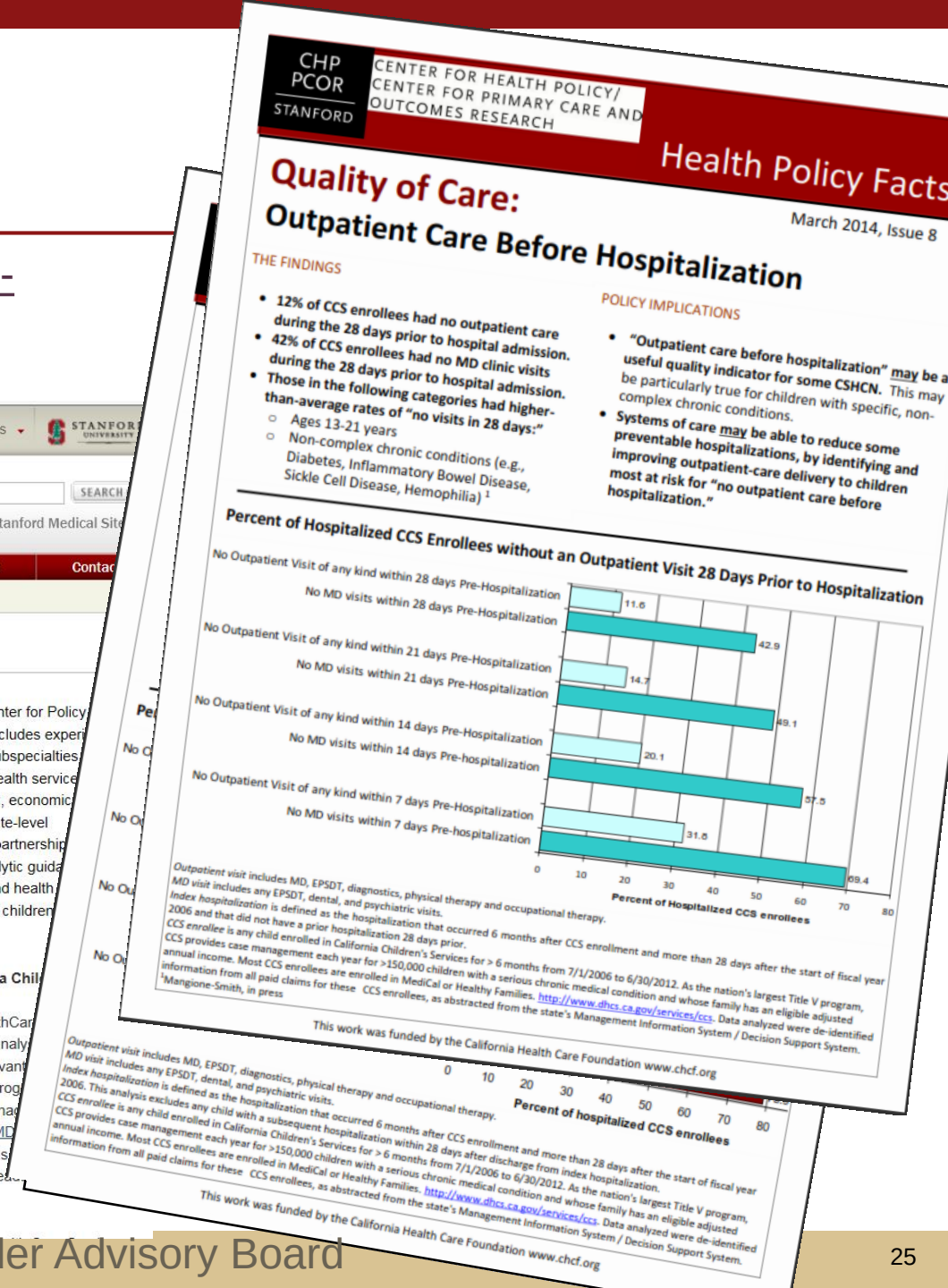
- **Care System Innovation**
  - Redesign Outpatient Systems to reduce Inpatient Care
  - Enhance Regionalized Subspecialty and Primary Care

- **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/



Thank You

CCS and DHCS
California Stakeholders

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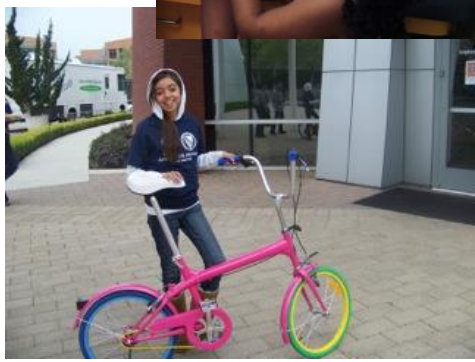

California HealthCare Foundation

Lucile Packard Foundation for Children's Health