Integrating a System of Care (SOC) Approach with Pediatric Medical Homes: Evaluation of Massachusetts Young Children's Interventions for Learning and Development (MYCHILD)

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Background on MYCHILD Program

- MYCHILD transforms the pediatric medical home into the center of a system of care where early childhood mental health issues are routinely identified and addressed.
  - Children are enrolled in MYCHILD birth through the end of first grade.
- Family partner and early childhood mental health clinician pairs are integrated within pediatric teams in four health practices in Boston to provide family-driven culturally competent and coordinated care to young children and their families.
- The evaluation uses multiple methods:
  - Surveys, focus groups, clinical outcome measures and MassHealth data to answer policy relevant questions.

Rationale

- The aim is to have a policy relevant evaluation that produces information policymakers can use to support the health and wellbeing of young children.
- Through close collaboration between the Massachusetts Executive Office of Health and Human Services(EOHHS), Massachusetts Department of Public Health (MA DPH), Boston Public Health Commission (BPHC), Abt Associates, medical homes and other collaborators we were able to craft an evaluation plan that meets the needs of policymakers and community stakeholders.
- Evaluations of mental health interventions for older children and adolescents often focus on reduction in residential placements, hospitalizations and criminal justice system involvement as outcomes.
- Infants and young children are rarely hospitalized for mental illness so, it is difficult to easily see the effects of mental interventions for young children.
- Studies have shown a significant association between asthma and mental illness.
- Four years of data allow us to explore trends in service use and costs over time.

Sample Research Questions

- What is the difference in medical service utilization for young children served through the Medical Home for early childhood mental health as compared to other disadvantaged children with similar needs?
  - Focus on asthma
- What is the relationship between changes in utilization and cost and changes in clinical status?
- What is the difference in Medicaid costs for young children served through the medical home for early childhood mental health as compared to other disadvantaged children with similar needs?

Methods for MassHealth Data

- A quasi-experimental design analyzing four years of MassHealth data is used to explore differences between service utilization and costs for children served by MYCHILD and a matched comparison group.
- Baseline data from 2009-2010 were examined to identify variables for use in propensity score matching.
  - Established baseline diagnosis rates for asthma and mental illnesses in children 0-14.
    - Developed proxy codes for asthma in young children based on young child codes for respiratory problems cross-referenced with NCQA asthma medications lists.
  - Established baseline utilization and costs for the population excluding the medically fragile population.
- Propensity scores will be used to match MYCHILD enrolled children whose caregivers have provided consent.
- Clinical outcome measures will also be linked to MassHealth costs and utilization for consented MYCHILD enrolled children.

Table 1. Race/Ethnicity of MassHealth Enrollees Ages 0-14 2009-2012

Race/Ethnicity	Number	Percent
Black	50,485	10.42
Hispanic	105,142	21.70
White	142,753	29.46
Multi-Racial	5,785	1.19
Asian	16,839	3.47
Indian	768	.16
Not Known	162,843	33.60
		N=484,615

Figure 1. Gender Distribution for MassHealth Enrollees Ages 0-14 2009-2012

48.75% 51%

N=484,615

■ Male ■ Female
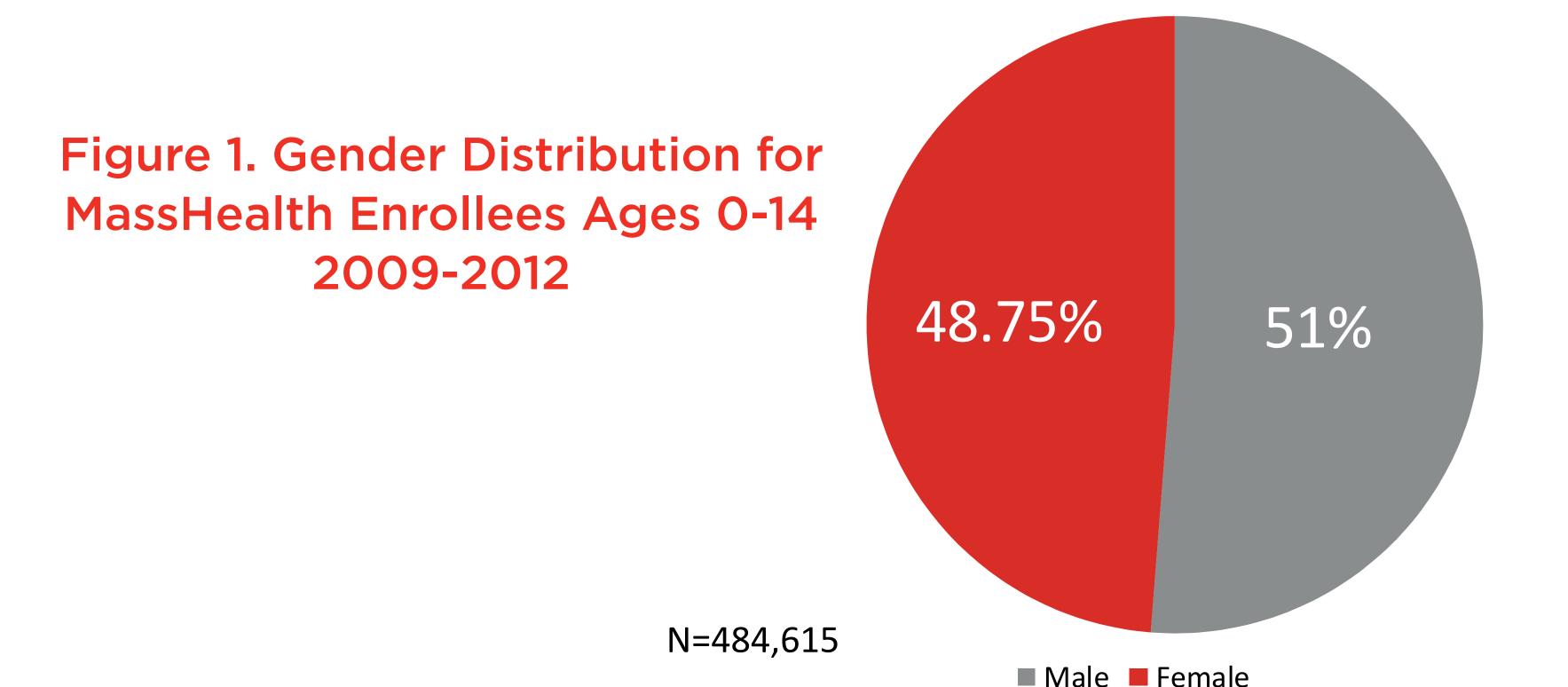
Figure 2. Asthma Diagnosis by Age 2009-2010

Age Distribution of Children with Asthma Diagnoses

■ Number of Children

N=51,574
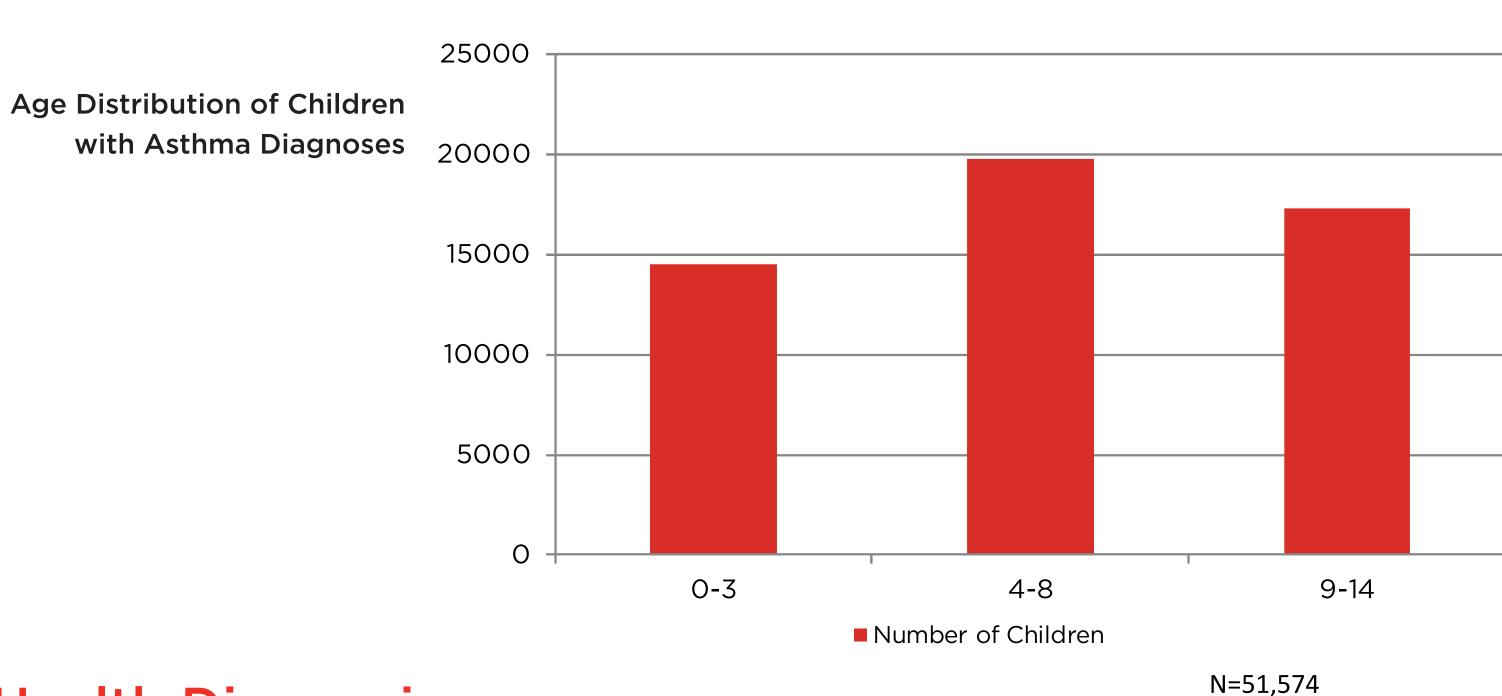
Figure 3. Mental Health Diagnosis by Age 2009-2010

Age Distribution of Children with Asthma Diagnoses

N=66,802

■ Number of Children
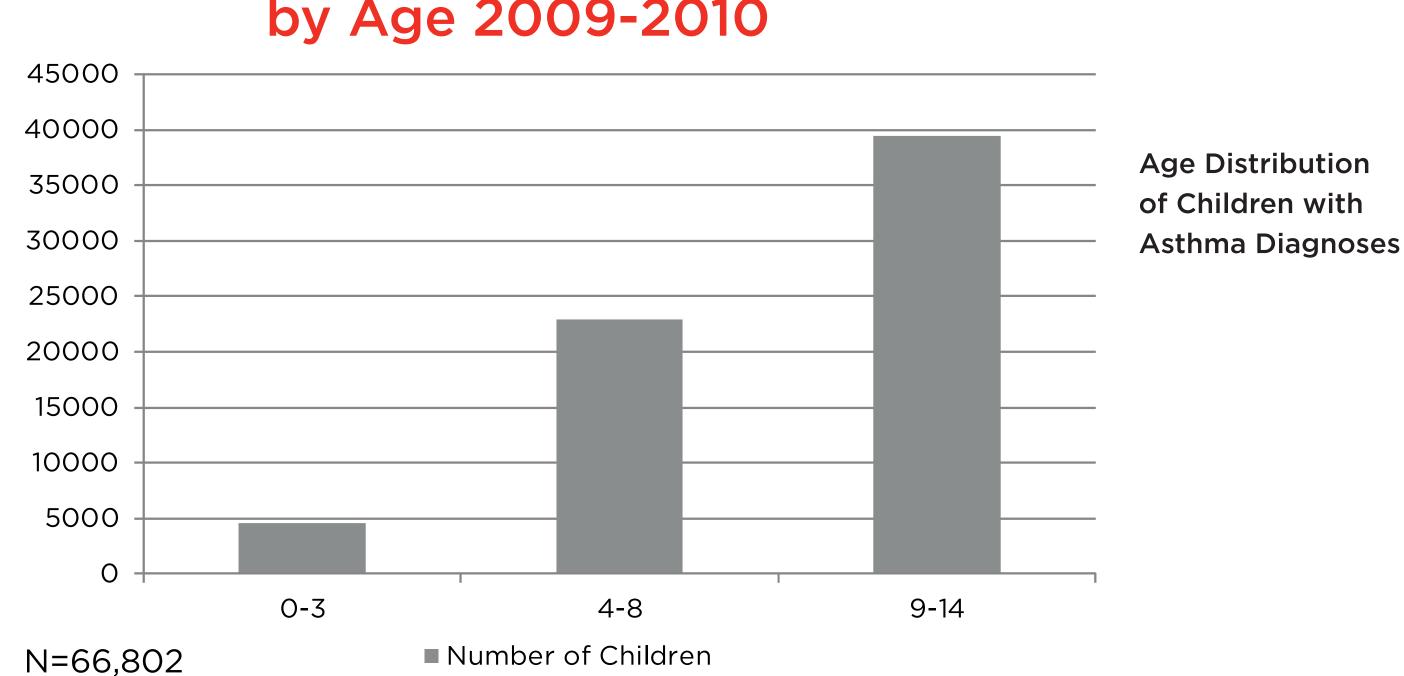
Table 2. Mental Health Diagnosis by Asthma Diagnosis 2009-2010

Asthma Diagnosis	Mental Health Diagnosis		Total
	No	Yes	
No	378,230	54,811	43,3041
	78.05%	11.31%	89.36%
	87.34%	12.66%	
	90.52%	82.05%	
Yes	39,583	11,991	51,574
	8.17%	2.47%	10.64%
	76.65%	23.25%	
	9.47%	17.95%	
Total	417,813	66,802	484,615
	86.22%	13.78%	100%

Frequency Percent Row Percent Column Percent

Chi-Square 4351.2238 p<.0001 1 DF

Next Steps

- Establish baseline costs and service utilization for children with both diagnoses
- Create comparison group using baseline data on: diagnoses, including co-occuring disorders, demographics, etc. using propensity score matching
- Analyze trends in service use for MYCHILD enrolled children and comparison group
- Link MYCHILD clinical outcome data to MassHealth data for consented children, for each of the five years
- Report outcomes to stakeholders