

Health Complexity in Children – Willamette Valley Community Health

March 2019

Introduction

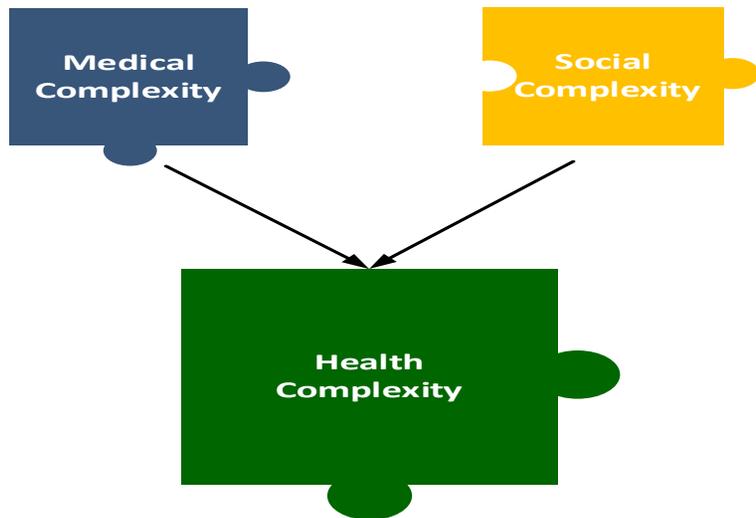
The goal of this project is to identify children with health complexity in the Medicaid population and share this information with CCOs and other partners. Health complexity is based on medical complexity and social complexity.

This report has data specific to your CCO's population. It contains data only for children enrolled in your CCO as of September 2018.

This project is a partnership between:

- 1) Oregon Pediatric Improvement Partnership (OPIP)
- 2) Oregon Health Authority (OHA) - Health Analytics Department
- 3) Department of Human Services (DHS) – Oregon Enterprise Data Analytics (OEDA) and Integrated Client Services (ICS)

Additional support for OPIP's role in providing technical consultation and facilitation of public and private stakeholders was provided by the Lucile Packard Foundation for Children's Health.



For questions about this report, please email Metrics.Questions@dhsaha.state.or.us



Data sources for this dataset include:

1. The ICS data warehouse which includes data from:
 - a) DHS programs: Aging and People with Disabilities, Child Welfare, Developmentally Disabled, Self-Sufficiency, and Vocational Rehabilitation
 - b) OHA programs: Alcohol and Drug, Contraceptive Care, Family Health Insurance Assistance Program, Healthy Kids Connect, Medical Assistance Program, Mental Health, Women Infants Children
 - c) External agencies: Department of Corrections, Oregon Housing and Community Services
2. Medicaid data sourced from the Medicaid Management Information System (MMIS).

Medical Complexity

Background

To measure medical complexity, we are using the Pediatric Medical Complexity Algorithm (PMCA). The PMCA was developed by a team at Seattle Children's Hospital and validated by the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN). The PMCA was run using three years of data and using the most conservative version of the algorithm. The target period was July 2015 to June 2016 with claims data pulled one year before this target year and one year after the target year for a three-year total period.

The PMCA takes into account 1) Utilization of services 2) Diagnoses, and 3) Number of body systems impacted, and assigns children into one of three categories:

1. Children with Complex Chronic Disease
2. Children with Non-Complex Chronic Disease
3. Children without Chronic Disease / Healthy

The three categories are co-linear with cost so as complexity increases so does cost.

PMCA is based on utilization and coding, so it does not capture children who 1) are not accessing services 2) cannot access specialized services, and/or 3) have diagnoses that were not coded, meaning medical complexity information is not in the data that we have access to.

For more information about the PMCA:

<https://www.seattlechildrens.org/research/centers-programs/child-health-behavior-and-development/labs/mangione-smith-lab/measurement-tools/>

Summary of Data and Key Findings

This dataset includes 36,763 publicly insured children that were enrolled in your CCO as of September 2018.

- 6.9% of children were placed into the complex chronic disease category
- 19.5% of children were placed into the non-complex chronic disease
- 73.6% of children were placed into the no chronic disease or healthy category

Social Complexity

Background

Social complexity is defined by COE4CCN as “a set of co-occurring individual, family or community characteristics that have a direct impact on health outcomes or an indirect impact by affecting a child’s access to care and/or a family’s ability to engage in recommended medical and mental health treatments. COE4CCN identified 18 social complexity factors associated with worse health outcomes and increased costs.

OPIP, OHA and DHS went through an extensive process to identify useable data sources for these social complexity factors using Health Analytics and Integrated Client Data Warehouse (ICS) data. After this process we were left with 12 factors of social complexity that could be identified for this population during this first phase of work. The lookback period for these data is the lifetime of the child plus one year before their birth. There are **5 child-level factors** and **7 parent/family level factors** for a total of 12 factors. For about 20% of children in this dataset, it was not possible to link the child to either parent. Therefore, these children only have data available for the 5 **child-level** social complexity factors.

Social Complexity Factors	Child-Level Factor	Parent/Family – Level Factor	Total
Poverty – Child received Temporary Assistance for Needy Families (TANF)	x		x
Foster Care – Child receiving foster care services DHS OR Kids since 2012	x		x
Mental Health – Child received mental health services through DHS/OHA	x		x
Substance Abuse – Child received substance abuse treatment through DHS/OHA	x		x
Child Abuse or Neglect – Captured by ICD-9 and ICD-10 diagnosis codes related to service	x		x
Poverty – Parent received Temporary Assistance for Needy Families (TANF)		x	x
Parental Death – Death of parent/primary caregiver in Oregon		x	x
Parental Incarceration – Parent incarcerated or supervised by the Department of Corrections in Oregon		x	x
Mental Health – Parent received mental health services through DHS/OHA		x	x
Substance Abuse – Parent received substance abuse treatment through DHS/OHA		x	x
Limited English Proficiency – Language other than English listed in primary language field		x	x
Parental Disability – OHA disability due to parent disability		x	x
Total Factors	5	7	12

Summary of Data and Key Findings

There was an average of 2.41 social complexity factors per child across the state. In other words, the average child had 2.41 social complexity factors. This did not vary significantly by CCO/Open Card. There was a range of 2.38 to 2.46 social complexity factors per child.

The table below shows the percent and the number of children with that social complexity factor for your CCO. Data for each child includes the lifetime of the child plus one year before their birth.

Prevalence by Social Complexity Factor

CCO	Total
WILLAMETTE VALLEY COMM. HEALTH	36,759

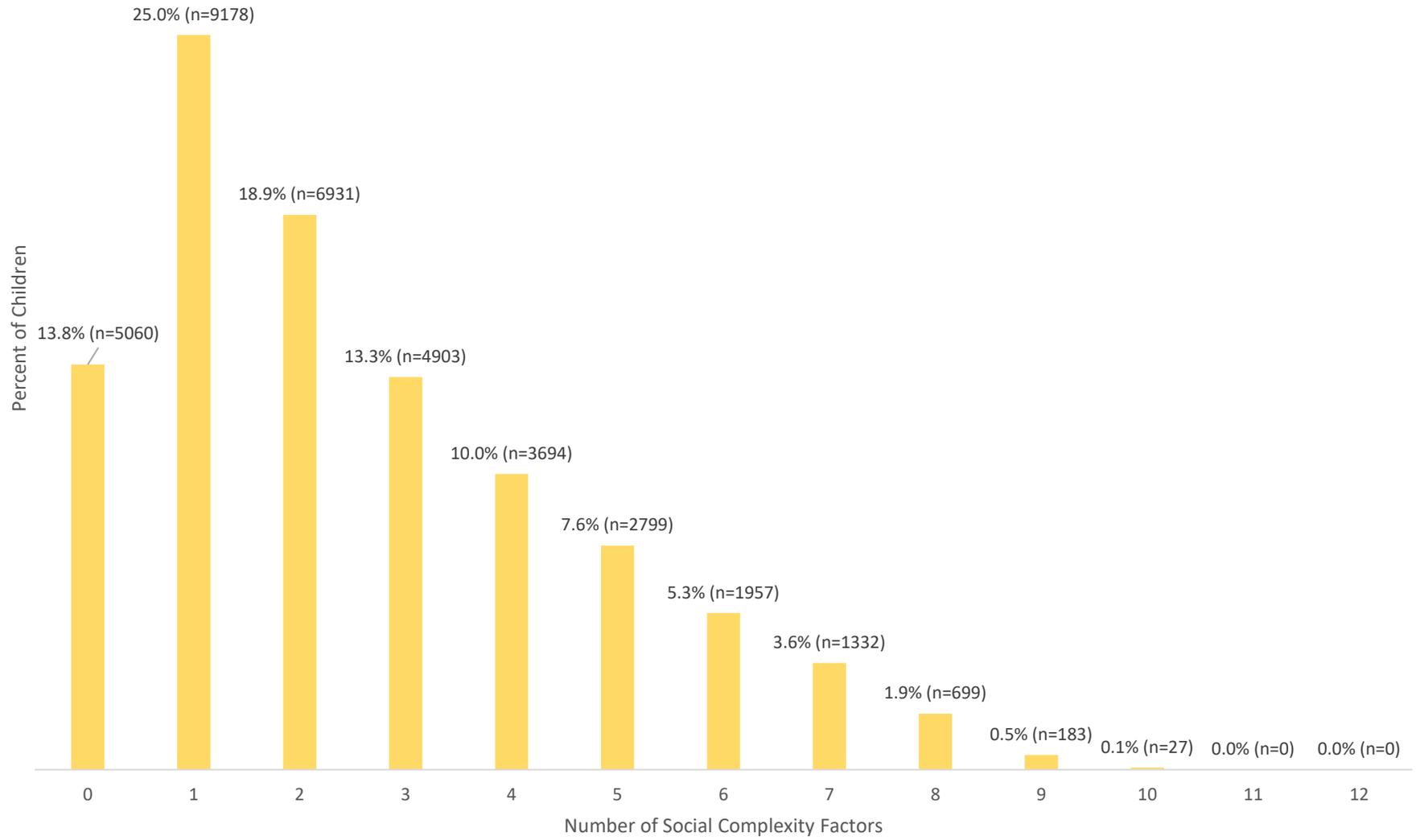
Risk indicator prevalence for WILLAMETTE VALLEY COMM. HEALTH

Indicator	n	Prevalence
Child abuse/neglect	2,107	5.73%
Foster care	4,232	11.51%
Limited English proficiency	10,483	28.52%
Mental Health - Child	12,509	34.03%
Mental Health - Family	15,165	41.26%
Parent death	505	1.37%
Parent disability	1,126	3.06%
Parental incarceration	7,321	19.92%
Poverty - Child	16,344	44.46%
Poverty - Family	12,503	34.01%
Substance Abuse - Child	1,701	4.63%
Substance Abuse - Family	11,099	30.19%

Note: Due to reporting rules from DHS Integrated Client Services, populations with low counts (<= 10 people) are masked and reported as NA.

Prevalence %s are for that CCO.

WILLAMETTE VALLEY COMM. HEALTH



Health Complexity

Background

Medical complexity and social complexity are then combined to create a metric of Health Complexity. The Health Complexity variable describes the degree to which the child has both medical and social complexity. This is important because the level and type of supports that are needed for children with high medical and social complexity is very different than the level and type of supports that would be useful for a child with low medical and low social complexity. The categories created combine the existing three categories for the PMCA with three categories based on the social complexity count variable: Children with 3 or more social risk factors, children with 1-2 risk factors, and children with no social risk factors. These categories were chosen because children with 1 or more social risk factors have been shown to have social complexity and children with more risk factors are shown to be at a greater risk. The goal is to identify the population with both levels of complexity.

Summary of Data and Key Findings

The nine boxes are the components of the nine-part categorical variable for health complexity

1. Healthy / 0 social factors	4. Non-complex chronic / 0 social factors	7. Complex chronic / 0 social factors
2. Healthy / 1-2 social factors	5. Non-complex chronic / 1-2 social factors	8. Complex chronic / 1-2 social factors
3. Healthy / 3+ social factors	6. Non-complex chronic / 3+ social factors	9. Complex chronic / 3+ social factors

Medical COMPLEXITY (3 Categories)	SOCIAL COMPLEXITY (12 Factors Total)		
	3 or More Factors	1-2 Factors	None in System-Level Data
Complex Chronic	9 3.7% 1,369	8 2.7% 1,009	7 0.4% 161
Non – Complex Chronic	6 10.5% 3,877	5 7.5% 2,751	4 1.4% 529
Non – Chronic / Healthy	3 28.1% 10,348	2 33.6% 12,349	1 11.9% 4,371

APPENDIX 1: COMPLEXITY BY AGE GROUP

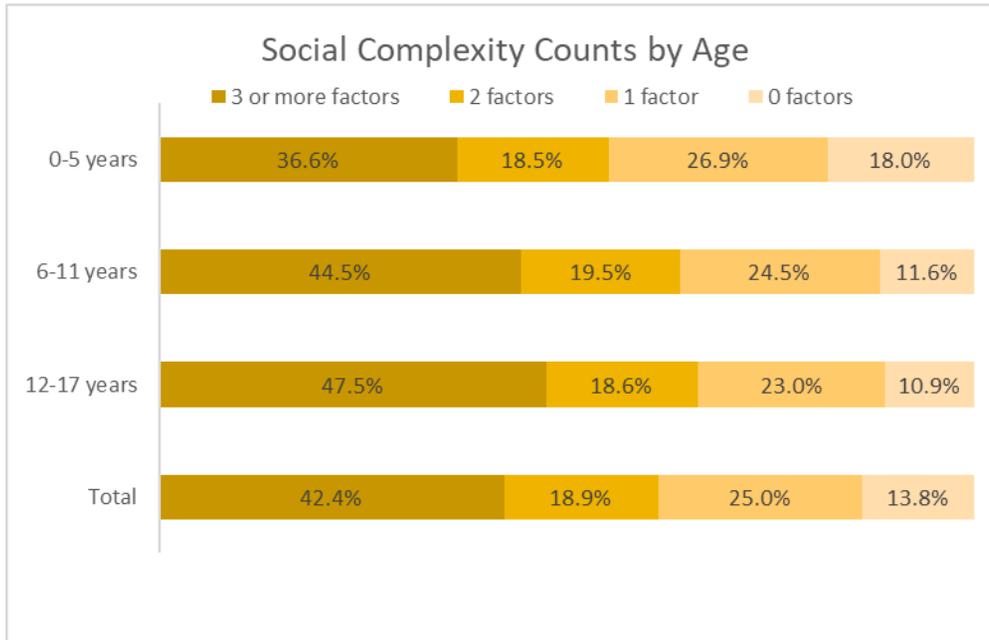
Medical Complexity by Age Group								
	0 - 5 yrs		6 - 11 yrs		12 - 17 yrs		Total	
WILLAMETTE VALLEY COMM. HEALTH								
Complex Chronic	648	4.7%	887	7.1%	1004	9.6%	2539	6.9%
Healthy	11332	82.6%	8861	70.7%	6874	65.4%	27067	73.6%
Non-complex Chronic	1745	12.7%	2777	22.2%	2635	25.1%	7157	19.5%
Total	13725	100.0%	12525	100.0%	10513	100.0%	36763	100.0%

Prevalence by Social Complexity Factor by Age Group

	0-5 years		6-11 years		12-17 years	
Social Complexity Factor	n	Prevalence	n	Prevalence	n	Prevalence
Child abuse/neglect	670	4.88%	778	6.21%	659	6.27%
Foster care	781	5.69%	1,526	12.18%	1,925	18.31%
Limited English proficiency	3,377	24.60%	4,061	32.42%	3,045	28.96%
Mental Health - Child	2,179	15.88%	4,682	37.38%	5,648	53.72%
Mental Health - Family	6,351	46.27%	5,007	39.98%	3,807	36.21%
Parent death	62	0.45%	158	1.26%	285	2.71%
Parent disability	351	2.56%	364	2.91%	411	3.91%
Parental incarceration	2,514	18.32%	2,610	20.84%	2,197	20.90%
Poverty - Child	5,156	37.57%	6,108	48.77%	5,080	48.32%
Poverty - Family	4,539	33.07%	4,469	35.68%	3,495	33.24%
Substance Abuse - Child	NA	NA	189	1.51%	1,503	14.30%
Substance Abuse - Family	4,135	30.13%	3,844	30.69%	3,120	29.68%

Note: Due to reporting rules from DHS Integrated Client Services, populations with low counts (<= 10 people) are masked and reported as NA.

Prevalence %s are for that CCO for all children ages 0 through 17.



Health Complexity by Age Group

WVCH	0-5 years		6-11 years		12-17 years		Total	
Health Complexity Category	n	%	n	%	n	%	n	%
1	2160	15.7%	1226	9.8%	984	9.4%	4370	11.9%
2	5196	37.9%	4100	32.7%	3053	29.0%	12349	33.6%
3	3976	29.0%	3535	28.2%	2837	27.0%	10348	28.1%
4	225	1.6%	189	1.5%	115	1.1%	529	1.4%
5	774	5.6%	1035	8.3%	942	9.0%	2751	7.5%
6	746	5.4%	1553	12.4%	1578	15.0%	3877	10.5%
7	86	0.6%	33	0.3%	42	0.4%	161	0.4%
8	256	1.9%	374	3.0%	379	3.6%	1009	2.7%
9	306	2.2%	480	3.8%	583	5.5%	1369	3.7%
All	13725	100.0%	12525	100.0%	10513	100.0%	36763	100.0%