

Addressing Medicaid/CHIP Insured Children with Health Complexity in Oregon: Child Health Complexity Data Released for 2023

Summary Developed by the Oregon Pediatric Improvement Partnership

Key Topics

1) Context setting

- 2) Review specific system-level data being used to operationalize health complexity and state-level data:
 - Part 1: Pediatric Medical Complexity Algorithm (PMCA)
 - **Part 2**: Indicators of Social Complexity
 - Part 3: Medical + Social Complexity = Health Complexity

Why Focus on Children's Health Complexity?



- Lifelong health and well-being start in early childhood
- Child health and development are particularly impacted by the social determinants of health and equity
 - Adverse childhood experiences (ACEs)
- Thoughtful and innovative approaches are needed to address children's health complexity and health disparities
 - Multi-generational focus



CCO 2.0 Focus Areas

CCO 2.0 policies build on Oregon's strong foundation of health care innovation and tackle our biggest health problems.



Improve the behavioral health system and address barriers to the integration of care



Increase value and pay for performance



Focus on the social determinants of health and health equity



Maintain sustainable cost growth and ensure financial transparency



Alignment with Original Raise Up Oregon Strategies

- Objective 4: Early childhood physical and social emotional health promotion and resilience –
 Strategies 4.1, 4.2, 4.4
- Objective 5: Young children with social emotional, developmental, and health care needs identified early and supported to reach full potential – Strategy 5.2
- Objective 7: Parents and caregivers have equitable access to support for their physical and social emotional health – Strategy 7.2
- Objective 9: Families and young children who are experiencing adversity have access to coordinated and comprehensive services – Strategies 9.1-9.4
- Objective 14: Data infrastructure is developed to enhance service delivery, systems building, and outcome reporting – Strategies 14.1, 14.4



Problem... or opportunity in Oregon? OPIP's perspective: Why They Were Interested in Health Complexity

Despite wonderful gains in patient centered primary care homes, coordinated care organizations and other efforts, there is a **need to better support children with health complexity**.

- To impact children's future health and preventable chronic conditions, need to address predictive social determinants of health and build resilience.
- To address children with health complexity, a population- and community-based approach and cross-sector engagement are required.



Past Funding from Lucile Packard Foundation for Children's Health to Develop the Child Health Complexity Data Model

Grant #1: System-Level Approaches to Identify Children with **Health Complexity** and Develop Models for Complex Care Management

Goal: Inform health systems on novel and generalizable approaches to identify children with **health complexity**, use of this inform to design better support systems for children and their families

Key Partners: Oregon Health Authority (OHA), Coordinated Care Organizations (CCOs), Kaiser Permanente Northwest – Publicly & Privately insured*

Grant #2: Health Complexity Indicators to Guide and Inform Policy, System- and Practice-Level Efforts: Supporting and Learning from Efforts in Oregon

Goal: Support the meaningful use of population-level health complexity data to drive improved policies and investments in care and health management supports for children with health complexity.

Key Partners: Oregon Health Authority (OHA), Coordinated Care Organizations (CCOs), Health System

Learn more:https://oregon-pip.org/area-of-focus/engaging-health-complexity/ and https://oregon-pip.org/our-projects/system-level-approaches-cyshcn-with-health-complexity/

Measuring Children's Health Complexity



Medical Complexity

- Defined using the Pediatric Medical Complexity Algorithm (PMCA)
 - Takes into account: 1) Utilization of services, 2) Diagnoses, 3) Number of body systems impacted
 - Assigns child into one of three categories: a) Complex with chronic conditions; b) Non-complex chronic conditions; or c) Healthy/ non-chronic conditions.

Social Complexity

• Defined by The Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) as:

"A set of co-occurring individual, family or community characteristics that can 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"

• Our work incorporates factors identified by *COE4CCN* as predictive of a **high-cost health care event** (for example, emergency room use).

Health Complexity

Combines medical and social complexity to create global understanding of children's health an

Important Note About System-Level Data & Indicators

- System-level data limited to enrollment and service utilization
- Represents an incomplete view of the needs of children and families as well as their resiliency and self-efficacy.
 - ✓ For example, while the social complexity indicators represented in the data may indicate a need for enhanced resources or care coordination, these indicators may also reflect the resiliency and navigation skills of families in seeking and securing the services they need.
 - ✓ While the complexity of children and their families' needs cannot be ignored, we encourage you to engage families to better understand their individual and community-level needs and resiliency as you consider how best to respond to these findings.



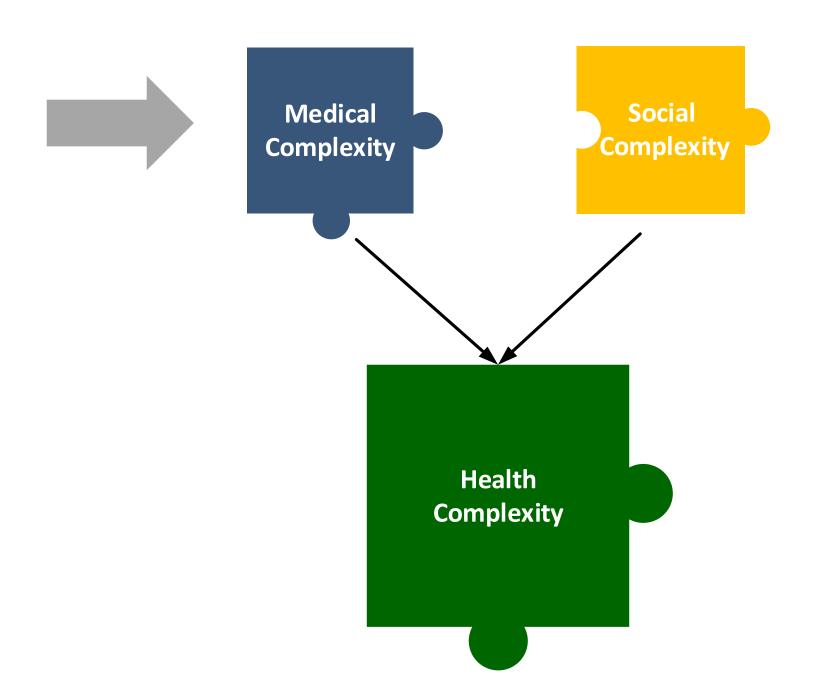
New Updates to the Data Sources and Reports for 2022, Released in 2023

- Data used to calculate PMCA reflects all children enrolled in Medicaid/CHIP through January 2023 and looks at claims from January 1, 2019 through December 31, 2021 (3-year lookback).
- PMCA Version 3.2 was used. This version adds 17 new ICD 10 codes to the algorithm
- Social complexity factors use data from one year prior to a child's birth to May 2021 and may look back as far as 2000, when applicable.
- OHA contracted with a new All Payer All Claims (APAC) data vendor. After a competitive procurement process, OHA contracted with Human Services Research Institute (HSRI) to collect and maintain APAC data starting January 2021. Because of the vendor transition and different processes and systems, there may be longitudinal differences in the PMCA results.
- In previous years, OHA supported technical assistance to help CCOs in using the reports. Technical assistance hours were granted to all CCOs and were used through December 31, 2020. OHA no longer provides technical assistance support for this work.



COVID-related Impacts on Children's Health Complexity Data

- In response to the COVID-19 pandemic, OHA implemented temporary policy changes to help existing OHP members keep their coverage and to simplify the application process for Oregonians newly eligible for OHP, resulting in increased enrollment.
- COVID-19 may have impacted access to health care and utilization of services.
- As school and community interactions moved online, social factors were impacted. For example, the volume of child welfare reports decreased from 2019 to 2020.





Pediatric Medical Complexity Algorithm

- Developed by a team at Seattle Children's, validated by Center of Excellence on Quality
 of Care Measures for Children with Complex Needs (COE4CCN)
 - Developed as a way to identify a population, stratify quality metrics, and target patients who may benefit from complex care management
 - Intentionally meant to address issue with Chronic Illness & Disability Payment System
- Based on claims and diagnosis
- Categorizes complexity into three categories:
 - 1) Complex chronic condition,
 - 2) Non-complex chronic condition, and
 - 3) Healthy
- The three categories are co-linear with COST (as complexity increases, so does cost).
- Updated data uses All Payer All Claims Data
- PMCA 3.2, Three Year Look Back Period, More Conservative Algorithm

Pediatric Medical Complexity Algorithm Findings for Oregon: *Population Aged Birth-20*

Oregon State Total Enrolled: N=502,475

1. Complex Chronic Condition: 9.7%

N=48,670

27.7%

2. Non-Complex Chronic Condition: 18.0%

N=90,337

3. Healthy: 72.3%





Pediatric Medical Complexity Algorithm Findings for Oregon: *Population Aged Birth-5*

Oregon State Total Enrolled: N=134,291

Complex Chronic Condition: 6.9%
 N=9,255
 Non-Complex Chronic Condition: 11.6%

N=15,523

3. Healthy: 81.5%



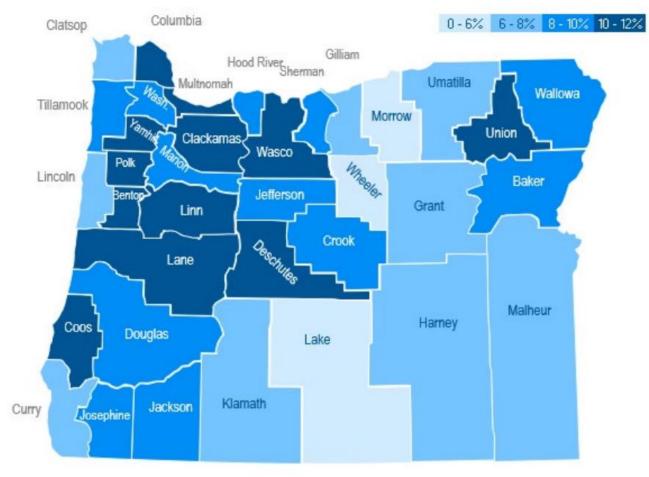




PMCA Average Medical Complexity by County: Population Aged Birth-20 with COMPLEX CHRONIC

Medical Complexity by County: Complex Chronic

Darker blue shows a higher percentage of kids who the PMCA categorizes as "complex chronic."



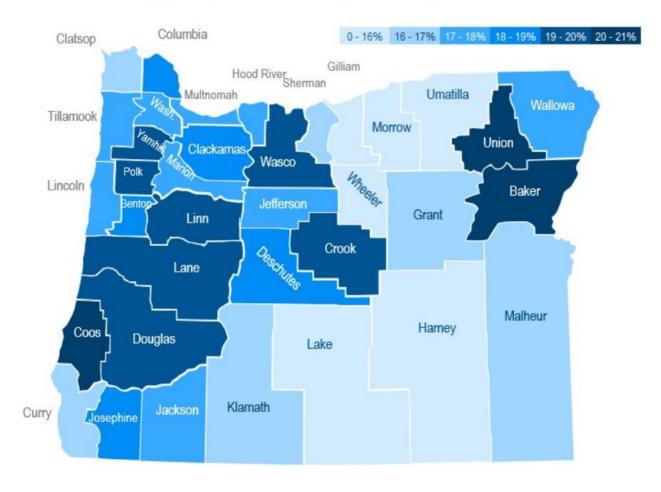




PMCA Non-Complex Chronic: Population Aged Birth-20

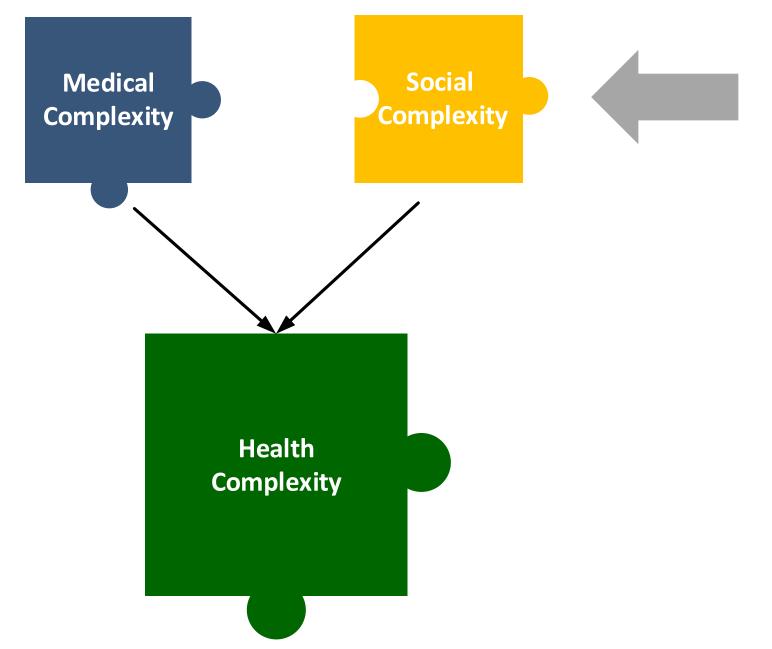
Medical Complexity by County: Non-Complex Chronic

Darker blue shows a higher percentage of kids who the PMCA categorizes as "non-complex chronic."









18 Social Complexity Factors

Identified by the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) as associated in literature with worse health outcomes and costs

12 SC risk factors from literature review related to worse outcomes:

- 1. Parent domestic violence
- 2. Parent mental illness
- 3. Parent physical disability
- 4. Child abuse/neglect
- 5. Poverty
- 6. Low English proficiency
- 7. Foreign born parent
- 8. Low parent educational attainment
- 9. Adolescent exposure to intimate partner violence
- 10. Parent substance use disorder
- 11. Discontinuous insurance coverage
- 12. Foster care

COE4CCN studies showed worse outcomes or consensus on impact:

- 13. Parent death
- 14. Parent criminal justice involvement
- 15. Homelessness
- 16. Child mental illness
- 17. Child substance abuse treatment need
- 18. Child criminal justice involvement

Identifying Feasible Social Complexity Variables in Oregon: Leveraged Integrated Client Data Warehouse (ICS)

- Data sources from OHA-Health Analytics and Integrated Client Data Warehouse (ICS)
- Collaboration between OHA and DHS to provide staffing
- Data-sharing agreements
- Linkage of the child and parent to allow for child-level and population-level analysis
- Input obtained from public and private stakeholders in November 2017 and April 2018 about data methodologies





Identifying Feasible Social Complexity Variables in Oregon: Leveraged Integrated Client Data Warehouse (ICS)

Data sources from OHA-Health Analytics and Integrated Client Data Warehouse (ICS)

ICS includes data across the Department of Human Services (DHS), OHA client-based services, and data from other external agencies

DHS program data includes:

Aging and People with Disabilities, Child Welfare, Developmental Disability Services, Self-Sufficiency and Vocational Rehabilitation

OHA program data includes:

Alcohol and Drug, Contraceptive Care, Family Health Insurance Program, Healthy Kids Connect, Medical Assistance Programs, Mental Health, Women Infants and Children

Additional agency data includes:

Department of Corrections, Oregon Housing and Community Services







INDICATOR: Descriptive Information* (Source)	CHILD FACTOR	FAMILY FACTOR	TOTAL
POVERTY – CHILD: Access of Temporary Assistance for Needy Families (TANF), below 37% federal poverty level (ICS, data available 2001-2022)	Х		х
POVERTY- PARENT: Access of TANF (ICS, data available 2000-2022)		х	х
FOSTER CARE: Child received child welfare services (ICS, data available 2000-2022)	Х		х
PARENTAL DEATH: Death of parent in OR (ICS-Death Certificate in Oregon, data available 1989-2022)		х	х
PARENTAL INCARCERATION: Parent incarcerated or supervised by the Dept. of Corrections in Oregon (ICS-Department of Corrections for state felony, not including county/municipal charges, data available 2000-2022)		х	х
MENTAL HEALTH – CHILD: Child received mental health services through DHS/OHA (ICS-NMH Caseloads, data available 2000-2022)	х		х
MENTAL HEALTH – PARENT: Parent received mental health services through DHS/OHA (ICS-NMH Caseloads, data available 2000-2022)		Х	х
SUBSTANCE USE DISORDER – CHILD: Child received substance abuse treatment through DHS/OHA (ICS-AD Caseloads, data available 2000-2022)	х		х
SUBSTANCE USE DISORDER – PARENT: Parent received substance abuse treatment through DHS/OHA (ICS-AD Caseloads, data available 2000-2022)		Х	х
CHILD ABUSE AND NEGLECT: ICD-9, ICD-10 dx codes used by providers (OHA Medicaid claims data, data available 2000-2022)	Х		х
POTENTIAL LANGUAGE BARRIER: Language other than English listed in the primary language field (OHA Medicaid Enrollment, most current data for family)		Х	х
PARENTAL DISABILITY: Parent is eligible for Medicaid due to a recognized disability (OHA Medicaid Enrollment, most current data for family)		х	х
TOTAL NUMBER OF INDIVIDUAL FLAGS * Look back period includes prenatal period through the lifetime of child, unless an exception is noted or	5	7	12



Pediatric Social Complexity Findings for Oregon

Important notes about data being shown:

- Look back period for factors from ICS: Presence of the risk factor in prenatal period (year before birth) through lifetime of the child OR since variable was available in the ICS data system
- For "Family" indicators: Linkage of child to a parent in ICS:
 - Unable to link to a parent: 24%
- For the <u>aggregate population-level</u> reports: state, CCO and county-level:
 - Reporting of prevalence of individual factors in the aggregate data reports
- For the <u>child-level data file</u> to be sent to CCO for their attributed population, the variables are blinded and indicate the <u>number</u> of risk factors, but do NOT indicate WHICH specific indicators.
 - ❖ Three social complexity count variables: Child (0,1,2,3, 4-5), Family (0,1,2,3,4,5,6-7) and Total (0,1,2,3,4,5,6,7,8,9,10,11-12)







State Findings on Prevalence of Each Social Complexity Indicator: *Population Aged Birth-20*

INDICATOR	CHILD FACTOR	FAMILY FACTOR
Poverty – TANF (for Child and by Parent)	37.0%	32.3%
Toverty TAINT (for entire and by Farenty	(n=185,784)	(n=162,233)
Foster Care – Child receiving foster care services DHS ORKids	11.4%	
roster care terms roster care services bits official	(n=57,161)	
Parent Death – Death of parent/primary caregiver in OR		1.9%
raicht beath beath of parent, primary caregiver in on		(n=9,743)
Parental Incarceration – Parent incarcerated or supervised by the		20.7%
Dept. of Corrections in Oregon		(n=104,127)
Mental Health: Child – Received mental health services through DHS/OHA	38.2%	
Wiental Fleatin. Child Received Mental fleatin Services through Drisy OffA	(n=191,982)	
Mental Health: Parent – Received mental health services through DHS/OHA		41.0%
Wichtal Fleath. Farcht Received mental fleath services through brisy offa		(n=206,125)
Substance Use Disorder: Child – Substance abuse treatment through DHS/OHA	2.9%	
Substance ose Disorder. Clind Substance abase treatment through Drisy OriA	(n=14,376)	
Substance Use Disorder: : Parent – Substance abuse treatment through		25.0%
DHS/OHA		(n=125,804)
Child Abuse/Neglect: ICD-9, ICD-10 dx codes related used by provider	7.6%	
Cliffic Abuse/Neglect. 1CD-3, 1CD-10 dx codes related used by provider	(n=38,303)	
Potential Language Barrier: Language other than English listed as primary		15.5%
language		(n=77,973)
Parent Disability: Parent is eligible for Medicaid due to a recognized disability		4.6%
raient Disability. Farent is engine for intedicald due to a recognized disability		(n=23,221)



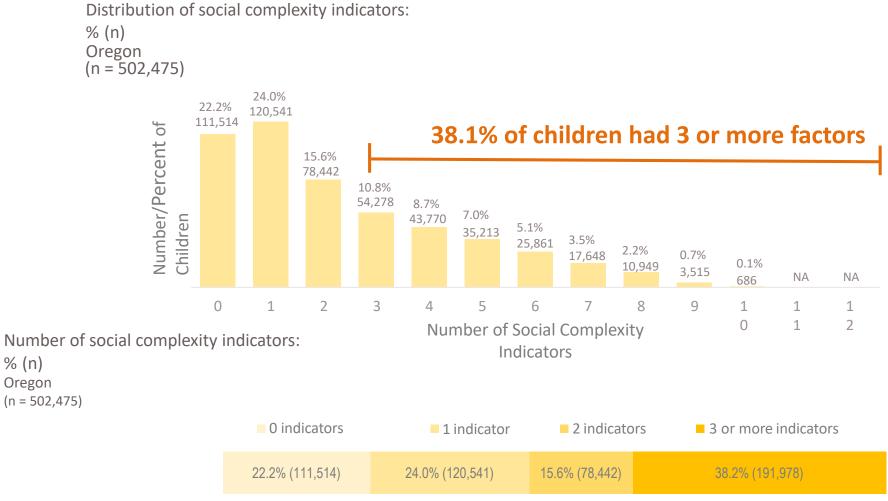
State Findings on Prevalence of Each Social Complexity Indicator: *Population Aged Birth-5*

INDICATOR	CHILD FACTOR	FAMILY FACTOR
Poverty – TANF (for Child and by Parent)	24.4% (n=32,776)	30.0% (n=40,309)
Foster Care – Child receiving foster care services DHS ORKids	6.2% (n=8,383)	
Parent Death – Death of parent/primary caregiver in OR		0.8% (n=1,041)
Parental Incarceration – Parent incarcerated or supervised by the Dept. of Corrections in Oregon		16.9% (n=22,683)
Mental Health: Child – Received mental health services through DHS/OHA	17.5% (n=23,505)	
Mental Health: Parent – Received mental health services through DHS/OHA		42.2% (n=56,605)
Substance Use Disorder: : Child – Substance use disorder treatment through DHS/OHA		
Substance Use Disorder: : Parent – Substance use disorder treatment through DHS/OHA		19.1% (n=25,708)
Child Abuse/Neglect: ICD-9, ICD-10 dx codes related used by provider	4.4% (n=5,934)	
Potential Language Barrier: Language other than English listed as primary language		13.8% (n=18,575)
Parent Disability: Parent is eligible for Medicaid due to a recognized disability		3.6% (n=4,821)





State Distribution of Social Complexity Factors: *Population Aged Birth-20*









State Distribution of Social Complexity Factors: *Population Aged Birth-5*

Number of Indicators	Percent/Number of Children
0	29.2% (n=39,265)
1	27.2% (n=36,461)
2	15.2% (n=20,364)
3 or more	28.4% (n=38,201)





Putting the Social Complexity Data into Perspective: Number of Individual Children by Age Group

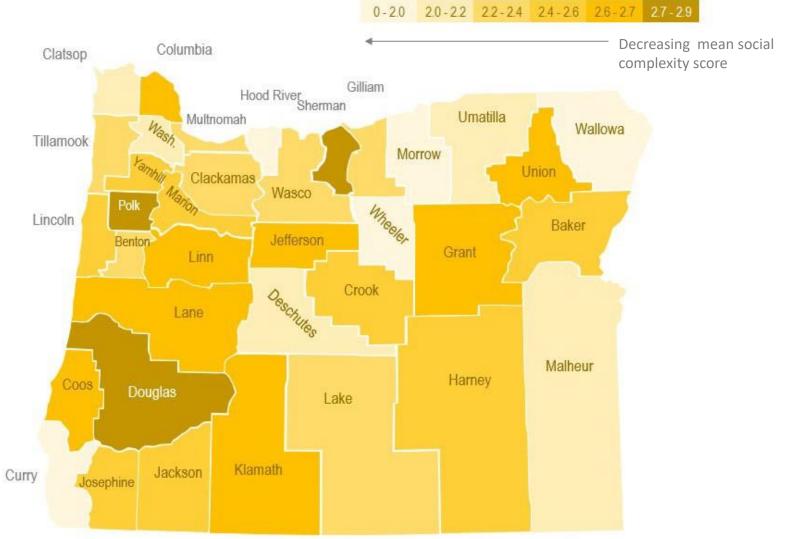
- Looking at the population aged birth-20:
 - When we look at the proportion of kids exposed to 3 or more of the risk factors: 38.2% → 191,978 kids
- Looking at the population aged birth 0-5:
 - When we look at the proportion of kids exposed to 3 or more of the risk factors: 28.4% → 38,201 kids





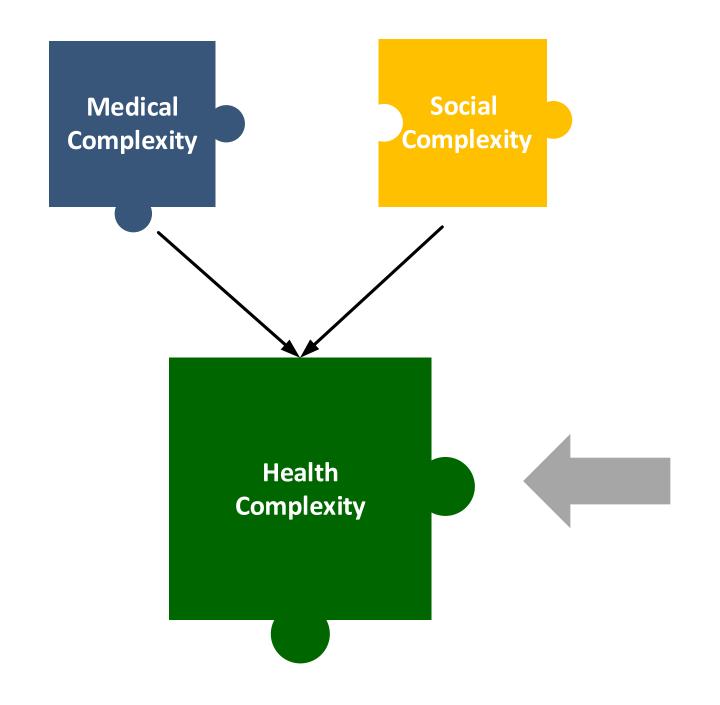


Average Number of Social Complexity Factors by County: Population Aged Birth-20









Health Complexity Categorical Variable: Purpose and Goal

- Given that medical complexity and social complexity will be independently examined and shared,
 create a <u>categorical variable</u> that combines the unique and different information from each analysis.
 - Categories anchored to level of medical complexity <u>AND</u> level of social complexity
 - ❖ Understand the population with <u>both levels</u> of complexity
- Build off the learnings from the COE4CCN
 - One or more social complexity indicators associated with higher costs
 - The more factors present, the higher costs gradient effect
- Create a manageable level of categories for population-level aggregate reports that are aligned with the goal of the health complexity variable
 - CCOs will have the fodder for the health complexity variable (child-level medical and social complexity categorical variables) and create their own versions depending on their intended uses.
- Ensure categories have sufficient denominators to allow for state and county-level reporting, maintain data sharing agreements when shared at a child level



Oregon Health Complexity Categorical Variable Findings: *Population Aged Birth-20*

MEDICAL COMPLEXITY	SOCIAL COMPLEXITY (Total Factors Possible in Preliminary Data Shown Here N=12)					
(3 Categories)	3 or More Indicators 1-2 Indicators		None in System- Level Data			
HIGH Medical Complexity (Chronic, Complex PMCA=1)	5.0% (25,357)	3.8% (19,133)	0.8% (4,180)			
MODERATE Medical Complexity (Non-Complex, Chronic PMCA=2)	8.9% (44,739)	7.1% (35,812)	1.9% (9,786)			
NO MEDICAL COMPLEXITY (PMCA=3)	24.3% (121,882)	28.7% (144,038)	19.4% (97,548) Neither Medically or Socially Complex			





Oregon Health Complexity Categorical Variable Findings: *Population Aged Birth-5*

MEDICAL COMPLEXITY	SOCIAL COMPLEXITY (Total Factors Possible in Preliminary Data Shown Here N=12)					
(3 Categories)	3 or More Indicators	1-2 Indicators	None in System- Level Data			
HIGH Medical Complexity (Chronic, Complex PMCA=1)	2.7% (3,685)	3.1% (4,119)	1.1% (1,451)			
MODERATE Medical Complexity (Non-Complex, Chronic PMCA=2)	4.0% (5,337)	5.1% (6,879)	2.5% (3,307)			
NO MEDICAL COMPLEXITY (PMCA=3)	21.7% (29,179)	34.1% (45,827)	25.7% (34,507) Neither Medically or Socially Complex			





Aggregate Data Reports Display the Data by Groups of Children

Data displayed by four age groups:

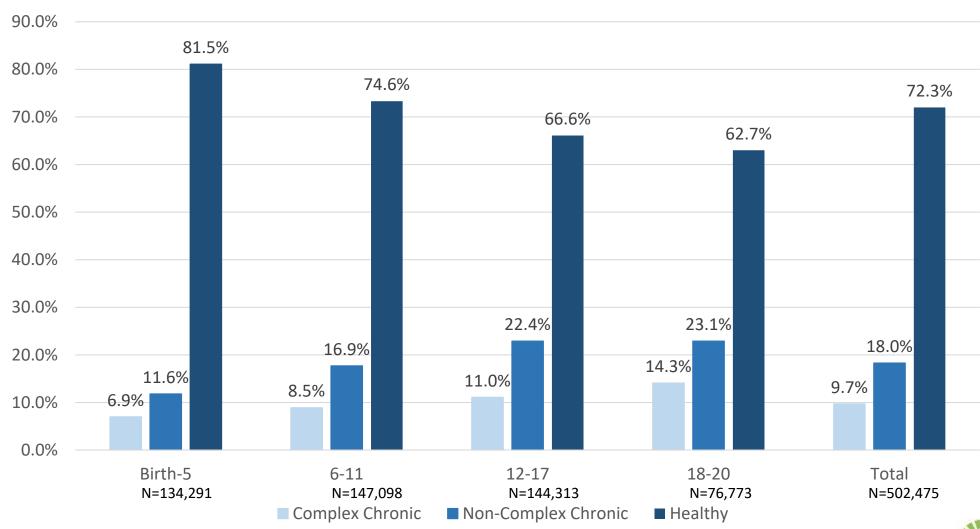
- 0-5 years old
- 6-11 years old
- 12-17 years old
- 18-20 years old

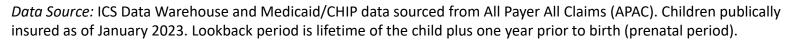






Pediatric Medical Complexity Algorithm Findings: By Age of Child









Social Complexity by Age of Child

	Children 0-5 N=134,291		Childre N=14	_				
Indicator *For data sources, see data dictionary	Child Factor	Family Factor	Child Factor	Family Factor	Child Factor	Family Factor	Child Factor	Family Factor
Poverty – TANF (for Child and by Parent)	24.4% (32,776)	30.0% (40,309)	39.2% (57,707)	35.2% (51,769)	44.3% (63,935)	33.5% (48,279)	40.9% (31,366)	28.5% (21,879)
Foster Care – Child receiving foster care services DHS ORKids	6.2% (8,383)		10.5% (15,434)		14.5% (20,898)		16.2% (12,446)	
Parent Death – Death of parent/primary caregiver in OR		0.8% (1,041)		1.6% (2,394)		2.5% (3,621)		3.5% (2,687)
Parental Incarceration – Parent incarcerated or supervised by the Dept. of Corrections in Oregon		16.9% (22,683)		21.3% (31,386)		23.2% (33,531)		21.5% (16,527)
Mental Health: Child – Received mental health services through DHS/OHA	17.5 % (23,505)		35.4% (52,051)		50.0 % (72,365)		57.4% (44,061)	
Mental Health: Parent – Received mental health services through DHS/OHA		42.2% (56,605)		43.8% (64,391)		40.3% (58,117)		35.2 % (27,012)
Substance Use Disorder: Child – Treatment through DHS/OHA					3.1% (4,422)		12.2% (9,387)	
Substance Use Disorder: Parent –Treatment through DHS/OHA		19.1% (25,708)		25.2% (37,039)		29.0 % (41, 825)		27.7% (21,232)
Child Abuse/Neglect: ICD-9, ICD-10 dx codes related used by provider	4.4% (5,934)		7.4% (10,918)		9.8% (14,128)		9.5% (7,323)	
Potential Language Barrier: Language other than English listed as primary language		13.8% (18,575)		15.1% (22,172)		17.7% (25,576)		15.2% (11,650)
Parent Disability: Parent is eligible for Medicaid due to a recognized disability		3.6% (4,821)		4.1% (6,011)		5.2% (7,533)		6.3% (4,856)







Social Complexity by Age of Child

NUMBER OF INDICATORS (SOCIAL RISK FACTORS)	CHILDREN AGES 0-5 N=134,291	CHILDREN AGES 6-11 N=147,098	CHILDREN AGES 12-17 N=144,313	CHILDREN AGES 18-20 N=76,773
0	29.2% (39,265)	22.0% (32,284)	17.7% (25,506)	18.7% (14,359)
1	27.2% (36,461)	23.0% (33,814)	22.5 % (32,427)	23.2% (17,839)
2	15.2% (20,364)	15.5% (22,848)	16.1% (23,212)	15.7% (12,018)
3 or More	28.4% (38,201)	39.5% (58,052)	43.8% (63,168)	42.4 % (32,557)

Priority Areas We Want to Focus Next

- Hearing from and learning from families about their lived experience
 - Understanding the data and what it means, and doesn't
 - Parent informed and driven solutions about how to provide best match supports to meet the needs of families
 - Learn from families with high complexity that are thriving what made it work and what barriers do we need to remove
- Hearing from communities about the strengths and weakness of the data
- Ensuring those people who are using the data and who may receive the data are trauma informed and use a trauma informed lens in all applications
- Framing the report with a resiliency and strength-based lens, adding in resiliency data

Children with Experience Health Complexity Must be a Primary of Health Equity Efforts

https://www.lpfch.org/publication/children-who-experience-health-complexity-must-be-primary-focus-health-equity-efforts

For More Information

Health System Strategies to Ensure a Focus on Children with Health Complexity

https://www.lpfch.org/publication/health-systems-strategies-ensure-focus-children-health-complexity

System-Level Approaches to Identify Children with Health Complexity and Develop Models for Complex Care Management

Visit: https://oregon-pip.org/our-projects/system-level-approaches-cyshcn-with-health-complexity/

Children's Health Complexity Data

Transformation Center, Oregon Health Authority

Visit: https://www.oregon.gov/oha/HPA/dsi-tc/Pages/Child-Health-Complexity-Data.aspx