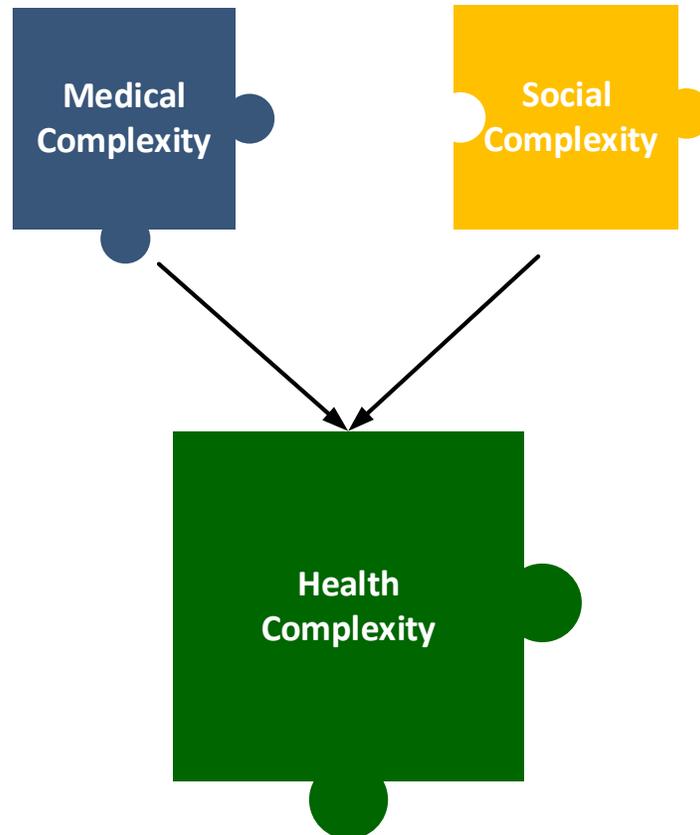


Putting a Spotlight on Children with **Health Complexity**  
Overview of a Novel and Applied Methodology to Identify Children with Health Complexity In Order to Inform Investments & Improvements

Pre-Webinar Reading Material



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## Purpose of this Summary:

On April 2<sup>nd</sup> from 11-12 PST, 2-3 EST the Oregon Pediatric Improvement Partnership and Oregon Health Authority will lead a webinar to share on efforts to develop and operationalize a standardized way, using system-level data, to identify publicly insured children in Oregon with health complexity. **Health complexity** is a concept that takes into account both the child's **medical** and **social** complexity. Presenters will describe how this data is being used by the Oregon Health Authority, including how the data was shared with Oregon's [Coordinated Care Organizations \(CCOs\)](#), in order to guide improvements and investments that build health and resilience in children. CCOs are regional networks of all types of healthcare providers (physical health, addictions and mental health, and dental care) who work together to serve Oregon Health Plan (Medicaid) members and who operate on an annual global budget. This summary is intended to be read by participants of the April 2<sup>nd</sup> webinar **beforehand** so that background and context on Oregon's efforts is provided and a component of the webinar can be devoted to questions from the audience.

## Introduction/ Background:

The [Oregon Pediatric Improvement Partnership \(OPIP\)](#) is a statewide organization focused on improving the health of children and youth in Oregon. OPIP received a grant from the Lucile Packard Foundation for Children's Health titled "[System-Level Approaches to Identify Children with Health Complexity and Develop Models for Complex Care Management.](#)" This grant supported OPIP to work in partnership with the Oregon Health Authority (OHA) to develop and operationalize novel methods for using state-level medical and social complexity data in order to identify children with health complexity. Secondly, models were identified for how OHA could then share population and child-level data about health complexity to key stakeholders and the CCOs. Throughout the process, public and private stakeholders – including parents of children with health complexity – were engaged to provide input and guidance on the methodologies and data sharing proposed.

## Overview of Definitions, Data Sources and Methodologies:

Overall, our goal was to develop and operationalize standardized way, using system-level data, to identify publicly insured children in Oregon with **health complexity**, a concept that takes into account both the child's **medical** and **social complexity**.



**Medical Complexity:** Medical complexity was operationalized through the use of the [Pediatric Medical Complexity Algorithm \(PMCA\)](#). The Pediatric Medical Complexity Algorithm (PMCA) is based on claims and diagnosis information. OHA examined Medicaid claims data for publicly insured children over a three-year period. Based on these claims and using the PMCA algorithm, children were grouped into one of three categories: 1) Complex with chronic conditions; 2) Non-Complex, with chronic conditions; or 3) Healthy.

**Social Complexity**

**Social Complexity:** Efforts were anchored to the definition of 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.” The **COE4CCN identified 18 factors** that either in past literature or through their own studies were correlated with worse health outcomes or higher health care costs.

Anchored to those factors, OPIP and OHA then examined specific indicators that existed or could be collected in Oregon’s **Medicaid or Integrated Client Services (ICS)** data. Twelve different social indicators, described in Figure 1, were identified as feasible to be collected for each publicly insured child, either based on services the child received (Child Factor) or based on services that one or both parents of the child received (Family Factor) during the course of the child’s lifetime or the prenatal period. A **summary count** of the number of social complexity indicators was then created. Secondly, a three-part social complexity categorical variable (3 or more, 1-2, or 0 risk factors) was then created.

**FIGURE 1: SOCIAL COMPLEXITY INDICATORS**

INDICATOR (Source, Descriptive Information)	CHILD FACTOR	FAMILY FACTOR	TOTAL
<b>POVERTY - CHILD</b> *- For Child - Access of Temporary Assistance for Needy Family [TANF], Below 37% Federal Poverty Level (ICS Data available 2000-2017)	X		X
<b>POVERTY - PARENT</b> *- Parent Access of TANF(ICS Data available 2000-2017)		X	X
<b>FOSTER CARE</b> * -Child receiving foster care services (ICS, Child interacted with Foster Care System. Data available 2000-2017)	X		X
<b>PARENT DEATH</b> * – Death of parent/primary caregiver in OR (ICS-Death Certificate in Oregon, Data available 1989-2017)		X	X
<b>PARENTAL INCARCERATION</b> * – Parent incarcerated or supervised by the Dept. of Corrections in Oregon (ICS-Department of Corrections for state felony charges, not including county/municipal charges. Data available 2000-2017)		X	X
<b>MENTAL HEALTH: CHILD</b> * – Received mental health services through DHS/OHA (ICS- NMH Caseloads. Data available 2000-2017)	X		X
<b>MENTAL HEALTH PARENT</b> *– Received mental health services through DHS/OHA (ICS- NMH Caseloads. Data available 2000-2017)		X	X
<b>SUBSTANCE ABUSE-CHILD</b> *– Substance abuse treatment through DHS/OHA (ICS- AD Caseloads. Data available 2000-2014)	X		X
<b>SUBSTANCE ABUSE-PARENT</b> *: Parent – Substance abuse treatment through DHS/OHA (ICS- AD Caseloads. Data available 2000-2014)		X	X
<b>CHILD ABUSE AND NEGLECT</b> - ICD-9, ICD-10 dx codes related used by provider (OHA Medicaid Claims Data, 6/2014-06/2017)	X		X
<b>LIMITED ENGLISH PROFICIENCY:</b> Language other than English listed in the primary language field (OHA Medicaid Enrollment, Most current data for child)		X	X
<b>PARENT DISABILITY:</b> OHA eligibility due to parent disability (OHA Medicaid Enrollment, Most current data for child)		X	X
<b>TOTAL NUMBER OF INDIVIDUAL FLAGS</b>	<b>5</b>	<b>7</b>	<b>12</b>

\* Look back period includes pre-natal period through the lifetime of the child, unless an exception is noted due to availability of data.

Health Complexity

**Health Complexity:** The indicators of **medical** and **social complexity** were then combined, at a child-level, to ascertain **overall health complexity**. The specific medical complexity identified by the PMCA (complex, chronic; non-complex chronic) AND their level of social complexity (number of factors identified, if 3 or more social indicators were identified) were considered. OPIP led the development, in partnership with OHA and with significant input from various stakeholders, of the nine-part **Health Complexity Categorical Variable** shown in **Figure 2**. The top row (#1-3) represents children with complex, chronic condition by the varying levels of social complexity indicators identified (3+, 1-2 or none, as represented by system-level data). The middle row (#4-6) represents children with non-complex, chronic conditions by varying levels of social factors, and the bottom row (# 7-9) represents children who appear to be healthy based on the PMCA but have varying levels of social complexity, with #9 representing children with no medical and no social complexity based on system-level data (#9).

FIGURE 2: HEALTH COMPLEXITY CATEGORICAL VARIABLE

MEDICAL COMPLEXITY (3 Categories)	SOCIAL COMPLEXITY		
	3 or More Indicators	1-2 Indicators	None in System-Level Data
HIGH Medical Complexity (Chronic, Complex PMCA=1)	#1 <i>(Chronic, Complex medical complexity and 3 or more social complexity indicators)</i>	#2	#3
MODERATE Medical Complexity (Non-Complex, Chronic PMCA=2)	#4	#5	#6
NO MEDICAL COMPLEXITY (PMCA=3)	#7	#8	#9 <i>(No medical complexity and no social complexity indicators)</i>

*Developed by the Oregon Pediatric Improvement Partnership*

**Data Sharing to Guide and Inform Investments and Improvements in Care for Children with Health Complexity:**

Through OPIP’s grant from LPFCH, meetings of various stakeholders were held and learning sessions were facilitated with the [CCOs](#).

In November 2018, [OPIP led an all-day learning session](#) attended by representatives from all 15 CCOs in the state. At this meeting:

- The **state-level report** (attached) was released displaying the health complexity findings statewide. County-level reports were released in March 2019.
- OPIP led a **presentation spotlighting** variations in the findings by region and by child characteristics such as age, race and ethnicity.
- Specific **strategies and tools** were then provided to support CCOs in considering how this data could be used to drive and inform community level engagement, development of complex care programs, and be leveraged to support a health complexity informed approach with front-line health care providers. Before the meeting a [compendium of tools and resources](#) to address children with health complexity was created and shared.

Each CCO received the following from OHA:

- 1) A **Population-Level Data Report**: This aggregate data report mirrored the state-level report, but was specific to the population of children attributed to their CCO and for whom health complexity data was available. At a population-level, the aggregate reports show the prevalence of specific indicators at a CCO-level.
- 2) A **Child-Level Data File**: This data file included each child attributed to the CCO at the time of the data transfer for whom there was health complexity data. The data file included **three sets** of variables:
  - **One variable** related to **Medical Complexity** that is a three-part categorical variable mapping to the PMCA categories.
  - **Three variables** related to **Social Complexity that are the count variables described on page 3**: Child (0-5), Family (0-7) and Total (0-12). These **counts are blinded** to the specific indicators that contributed to the count.
  - **One variable** related to the **Health Complexity** that is a nine-part categorical variable described on page 4.

### Supporting Use of the Data:

On the April 2<sup>nd</sup> webinar, OHA will share how health complexity data findings have been and will be used to guide and inform priority areas for policy improvements, investments, and partnerships meant to build health and resilience in the state of Oregon.

The [OHA Transformation Center](#) is now partnering with OPIP to provide supports and technical assistance to CCOs focused on using children’s health complexity data and to develop short guides to help CCOs. Specifically, OPIP will be supporting CCOs that request technical assistance in:

1. Using population-level findings regarding children’s health complexity to engage community-level partners and facilitate community conversations.
2. Using health complexity data to develop models of best match care coordination and case management for children with various levels of health complexity.
3. Using children’s health complexity information to guide efforts with front-line health care providers

More information about this work can be found here: <https://www.oregon.gov/oha/HPA/dsi-tc/Pages/Child-Health-Complexity-Data.aspx>