



WELCOME
TO THE 2023
NDACAN
SUMMER
TRAINING
SERIES!

- The session will begin at 12pm EST.
- Please submit questions to the Q&A box.
- This session is being recorded.

NDACAN SUMMER TRAINING SERIES

National Data Archive on Child Abuse and Neglect

Cornell University & Duke University

NATIONAL DATA
ARCHIVE ON CHILD
ABUSE AND NEGLECT



Children's Bureau

An Office of the Administration for Children & Families

NDACAN SUMMER TRAINING SERIES SCHEDULE 2023

- July 5 — Introduction to NDACAN and the Administrative Data Series
- July 12 — New Data Acquisition: CCOULD Data
- July 19 — Causal Inference Using Administrative Data
- July 26 — Evaluating and Dealing with Missing Data in R
- August 2 — Time Series Analysis in Stata
- August 9 — Data Visualization in R

SESSION AGENDA

- Introduction
- Why was the Child and Caregiver Outcomes Using Linked Data (CCOULD) created?
- Introduction to the child welfare data in the CCOULD
- Brief guide to using Medicaid claims data
- Linking child welfare and Medicaid data
- Limitations of the CCOULD
- How do I obtain the CCOULD?

INTRODUCTION

Ben Allaire, MS

Senior Research Economist at RTI
International

Data Linkages Lead for the Child and
Caregiver Outcomes Using Linked Data
(CCOULD) Project





CCOULD

Child and Caregiver
Outcomes Using Linked Data

**WHY WAS THE CHILD AND CAREGIVER
OUTCOMES USING LINKED DATA
(CCOULD) CREATED?**

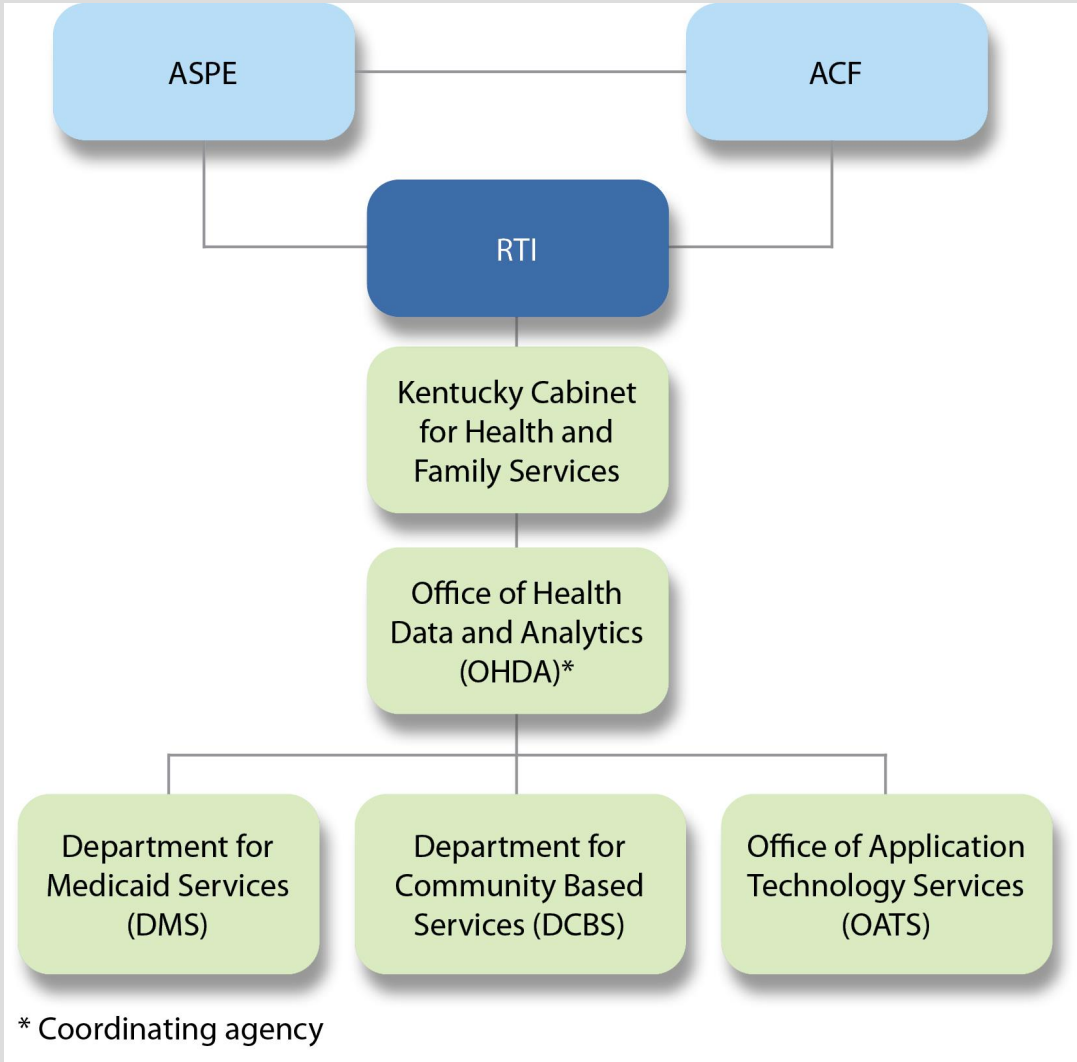
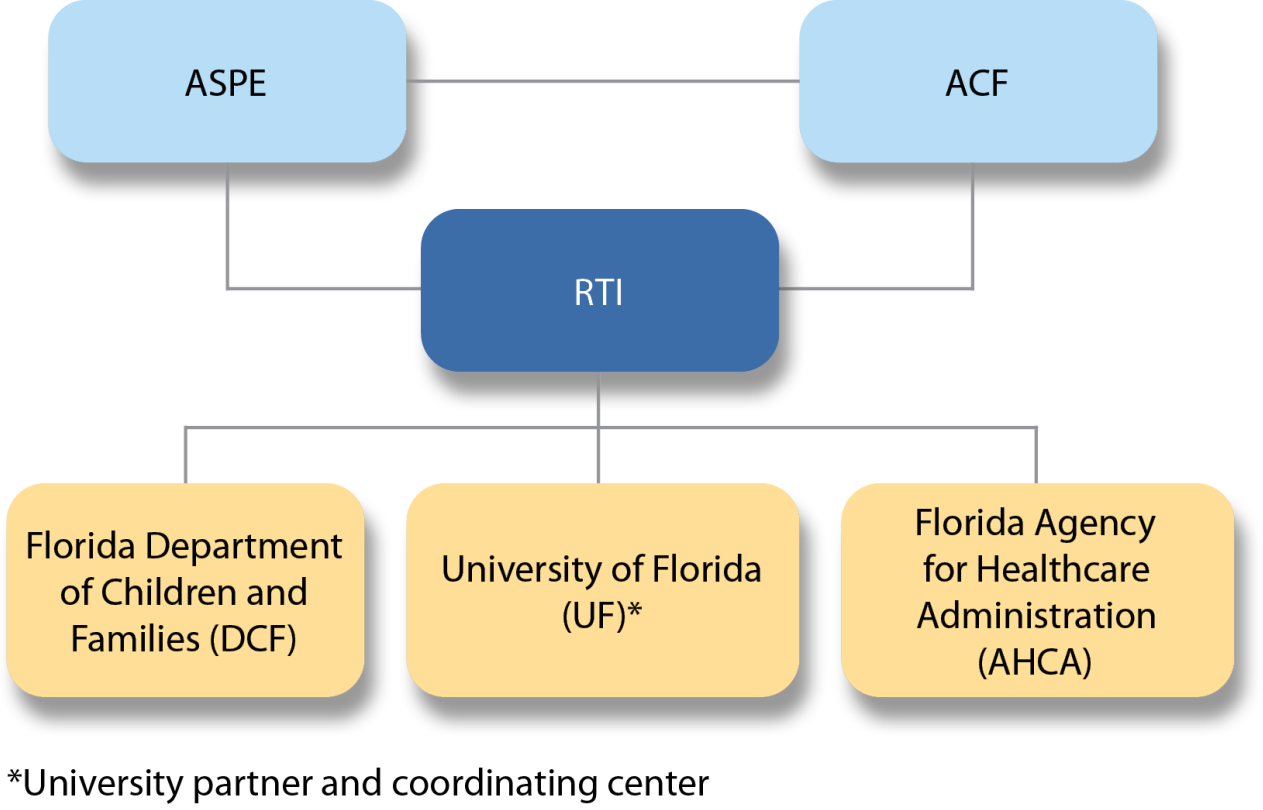
WHY WAS THE CCOULD CREATED?

- In 2019, one in three children in foster care entered due to parental drug use. (HHS, 2019)
- The 2018 Family First Prevention Services Act created new incentives for states to evaluate the effectiveness of services provided by the child welfare system and/or Medicaid to families at risk of entering or re-entering the child welfare system.
- What is known about the combination of child and parental needs is limited.
 - Child welfare data alone cannot provide a holistic picture of the supports and services needed by families in crisis.
- Linked administrative data sources such as CCOULD can help provide agencies with data to assess whether parents and caregivers are receiving the services needed to treat substance use disorder and the impact that treatment could have on child welfare outcomes.

POSSIBLE RESEARCH QUESTIONS

- What demographic characteristics, clinical characteristics, and medical care utilization patterns are associated with parents/caregivers receiving Medicaid-funded SUD treatment?
- What demographic characteristics are associated with parents/caregivers receiving Title IV-E funded SUD treatment?
- What impact does the receipt of mental health diagnosis and treatment have on child welfare outcomes?
- How does child eligibility for Medicaid impact caregiver utilization?
- What are the medical costs associated with child maltreatment?

WHO CREATED THE CCOULD



Figures from Mark et al (2022)

CCOULD OVERVIEW

- CCOULD are deidentified, linked longitudinal child welfare and Medicaid claims data for children and caregivers from two states, Florida and Kentucky, and are available from NDACAN.
- Unique dataset to have both children and caregivers linked to Medicaid.
- Can be used to examine relationships between:
 - Medicaid utilization;
 - Health and behavioral health services;
 - Patient-centered outcomes; and
 - Child welfare outcomes.
- A linked to the Lessons Learned report <https://www.acf.hhs.gov/opre/report/ccould-lessons-learned>

FILES INCLUDED IN CCOULD

File	Description
Child welfare report files	Administrative data on child welfare events
Child foster care episode files	Administrative data on child placement episodes
Title IV-E Services provided files	Administrative data on Title IV-E services provided to families.
Medicaid enrollment files	Data on Medicaid enrollment and eligibility of the person.
Medicaid claims files	Data on inpatient, outpatient, long term care, and prescription drugs claims.

INTRODUCTION TO THE CHILD WELFARE DATA IN CCOULD

CHILD WELFARE DATA IN CCOULD

- CCOULD's child welfare data was constructed to follow the National Child Abuse and Neglect Data System (NCANDS) and Adoption and Foster Care Analysis and Reporting System (AFCARS) data structures.
- Aided in data acquisition from states and facilitates research use.

CHILD WELFARE VARIABLES IN THE CCOULD

- Maltreatment report information, including report dates, dispositions, maltreatment data, perpetrator data, child and caregiver risk factors, and services information.
- Foster care and adoption data, including reasons for removal, removal and placement dates, number of placements, and placement settings.

BRIEF GUIDE TO USING MEDICAID CLAIMS DATA

MEDICAID CLAIMS

- Medicaid is a government-run program that provides healthcare coverage to low-income individuals and families.
 - Over 82 million Americans are on Medicaid; 39 million are children. CCOULD contains approximately 1 million linked children and 90,000 caregivers.
 - Children in foster care are generally eligible for Medicaid until they reach the age of 18, regardless of their family's income level or medical needs.
- Claims data is generated when healthcare services are provided to Medicaid beneficiaries.
- Claims data includes information about the healthcare provider, the service provided, the diagnosis, and the cost of the service.

TYPES OF MEDICAID FILES

- **Enrollment files:** provide information on how long the individual is enrolled in Medicaid and includes demographics and reasons for eligibility.
- **Inpatient (IP) files:** contain information about healthcare services provided to patients during an inpatient hospital stay, including the admission and discharge dates, diagnosis/procedure codes, and payments.
- **Other Therapy (OT) files:** contain information from outpatient care, emergency department visits, home health services, and other care centers. The information includes service dates, diagnosis/procedure codes, and payments.
- **Prescription Drug (RX) files:** contain information on the prescription drugs filled by the person, including the National Drug Code, fill date, and taxonomy code.

- Example from Raghavan et al (2014) of using linked child welfare data with Medicaid: what are the costs of psychotropic drugs prescribed to maltreated children?

Cumulative Medicaid drug expenditures (MRX classification) among youths participating in the NSCAW and a comparison sample^a

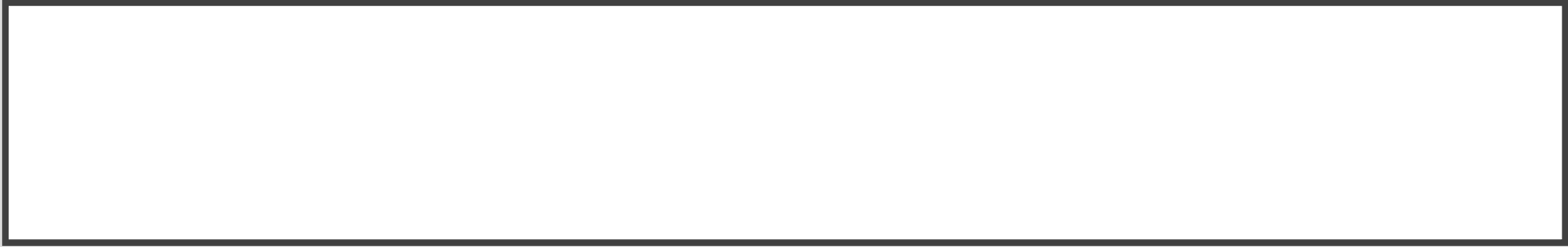
Characteristic	Part 1: any expenditure			Part 2: expenditure if >\$0			Combined marginal effect (parts 1 and 2) ^b		
	OR	95% CI	p	GLM coeff ^c	95% CI	p	\$	95% CI	p
NSCAW sample (reference: comparison sample)	1.93	1.67 to 2.24	<.001	.25	.12 to .39	<.001	189.83	136.32 to 243.34	<.001
Male (reference: female)	1.90	1.63 to 2.22	<.001	.15	.001 to .30	≤.05	200.32	129.37 to 271.27	<.001
Age (reference: 3–5)									
6–11	9.03	7.12 to 11.47	<.001	.62	.33 to .92	<.001	894.86	602.97 to 1,186.76	<.001
12–13	12.19	9.31 to 15.97	<.001	.97	.66 to 1.28	<.01	1,790.35	1,165.39 to 2,415.30	<.001
≥14	13.89	10.65 to 18.12	<.001	1.11	.81 to 1.42	<.001	1,801.08	1,261.39 to 2,340.76	<.001
Race-ethnicity (reference: white)									
Black	.68	.56 to .82	<.001	-.20	-.38 to -.02	≤.05	-153.80	-223.86 to -83.74	<.001
Hispanic	.68	.48 to .95	≤.05	-.10	-.39 to .19	ns	-112.84	-221.30 to -4.38	≤.05
Other or unknown	1.59	1.15 to 2.20	<.01	.39	.11 to .68	<.01	331.94	91.33 to 572.55	<.01
Insurance (reference: fee for service)									
Other and multiple types	1.17	.72 to 1.90	ns	.23	-.41 to .87	ns	139.70	-223.07 to 502.48	ns
PCCM only ^d	.48	.39 to .61	<.001	-.60	-.81 to -.39	<.001	-325.06	-409.83 to -240.28	<.001

^a NSCAW, National Survey of Child and Adolescent Well-Being. nT=9,402 child-year observations. All models included state and year dummy variables (not shown) to control for state Medicaid differences and time trends. All insurance categories in the model included full behavioral health coverage.

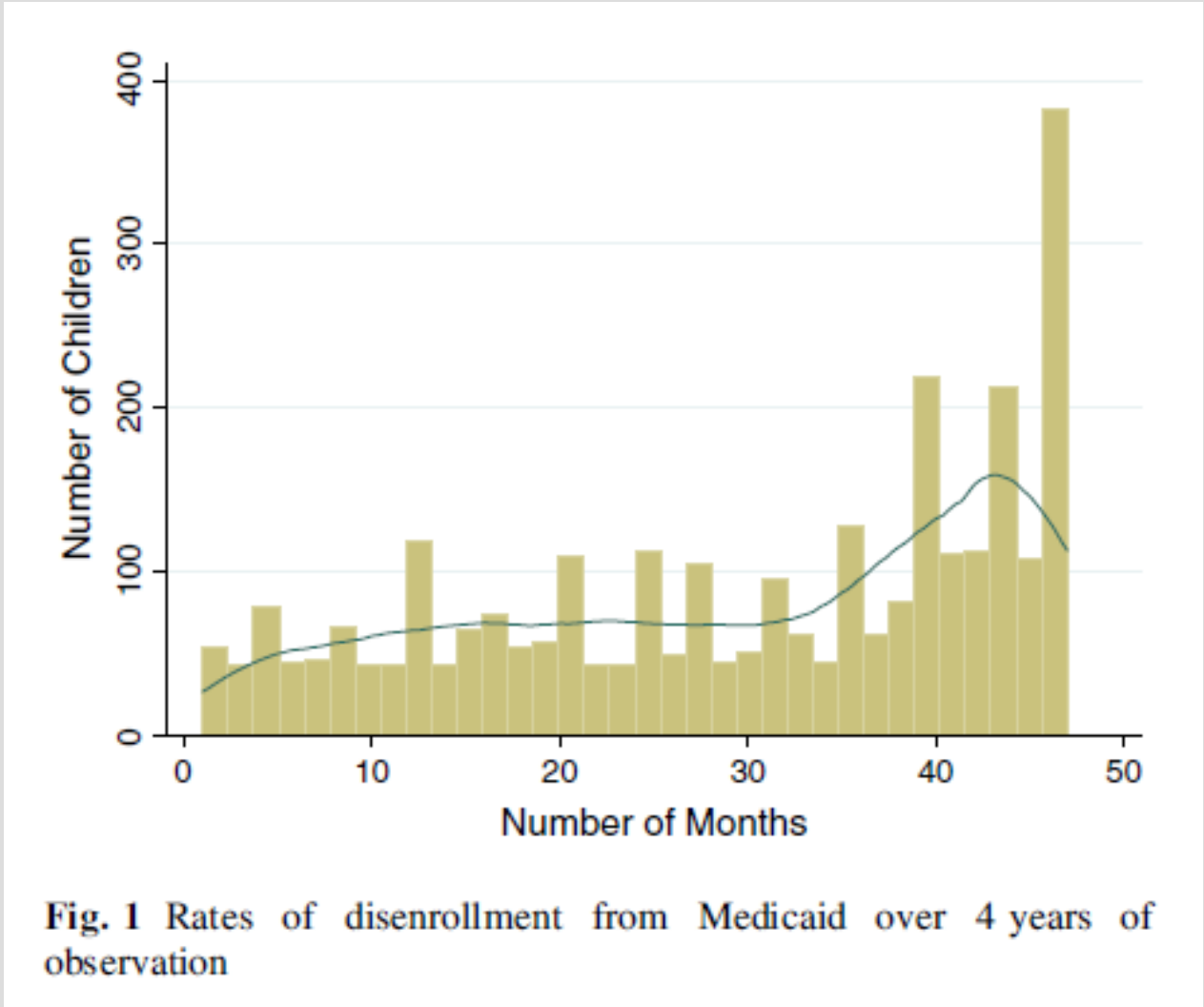
^b Reflects both differences in the likelihood of use of (part 1) and levels of expenditure on (part 2) psychotropic drugs

^c Generalized linear model coefficient

^d Primary care case management



- Example from Raghavan et al (2016): How well do children in the child welfare system stay enrolled in Medicaid over time?
- Key with claims data: linking claims data with enrollment data allows the researcher to follow individuals over time, so the researcher can see the association between something that happened a time y with an outcome at time z .



LINKING CHILD WELFARE AND MEDICAID DATA

LINKAGE INFORMATION

- Both Florida and Kentucky linked the child welfare and Medicaid data deterministically via a Social Security Number (primary linkage) and an identifier created from the first name, last name, date of birth, and sex in the absence of an SSN (secondary linkage).
- Deterministic (or exact) linking uses a unique identifier to link datasets.
- Deterministic linking presumes only two outcomes: match or no match.

POPULATION OVERVIEW

- The CCOULD Florida dataset includes maltreatment reports from 2016 to 2020.
 - The child welfare dataset includes 824,677 unique children, identified from 645,401 reports. All 824,677 children have demographic records.
 - The dataset also contains information on 45,988 linked caregivers.
- The CCOULD Kentucky dataset includes maltreatment reports from 2016 to 2021.
 - The child welfare dataset includes 263,086 unique children, identified from 461,742 child welfare reports or investigations.
 - The dataset also contains information on 43,883 linked caregivers.
- Both states also have comparison group data for people not involved with child welfare.

COMPARISON GROUPS

- Florida also provided a Medicaid comparison sample of individuals not associated with the child welfare system. The sample represents a 10% sample of adults and a 10% sample of children in Medicaid.
- Kentucky also provided a 10% Medicaid comparison sample of 330,022 individuals – adults and children - not associated with the child welfare system.

CHILD DESCRIPTIVES

Children in Welfare Data	All Children		Children with Unsubstantiated Report Disposition		Children with Substantiated Report Disposition		Children with neither Unsubstantiated or Substantiated Report Disposition	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Total	664,890		514,544		134,119		16,227	
Age Groups								
Under age 1	28,948	4%	14,815	3%	13,127	10%	1,006	6%
Age 1	32,489	5%	21,782	4%	9,861	7%	846	5%
Age 2-4	106,035	16%	77,924	15%	25,559	19%	2,552	16%
Age 5-9	186,455	28%	146,387	28%	35,788	27%	4,280	26%
Age 10-13	154,878	23%	126,196	25%	25,169	19%	3,513	22%
Age 14-17	135,974	20%	112,192	22%	20,428	15%	3,354	21%
Missing	20,111	3%	15,248	3%	4,187	3%	676	4%
Gender								
Male	331,842	50%	257,328	50%	66,248	49%	8,266	51%
Female	328,408	49%	253,053	49%	67,453	50%	7,902	49%
Unknown	4,640	1%	4,163	1%	418	0%	59	0%
Race								
American Indian or Alaska	1,072	0%	806	0%	257	0%	9	0%
Asian	3,115	0%	2,488	0%	553	0%	74	0%
Black or African American	196,873	30%	159,441	31%	33,711	25%	3,721	23%
Native Hawaiian or Other Pacific Islander	631	0%	483	0%	128	0%	20	0%
White	402,708	61%	305,063	59%	87,523	65%	10,122	62%
Unable to Determine	10,130	2%	6,893	1%	2,608	2%	629	4%
Missing	50,361	8%	39,370	8%	9,339	7%	1,652	10%
Ethnicity								
Hispanic or Latino	16,572	2%	8,673	2%	7,486	6%	413	3%
Not Hispanic or Latino	209,804	32%	130,077	25%	70,296	52%	9,431	58%
Missing	438,514	66%	375,794	73%	56,337	42%	6,383	39%
Medicaid Eligibility Status								
Eligible Due to CHIP Alone	116,153	17%	96,818	19%	16,423	12%	2,912	18%
Eligible Due to Foster Care Status Alone	90,424	14%	42,960	8%	45,630	34%	1,834	11%
Eligible Due to Both CHIP and Foster Care Status	5,948	1%	2,612	1%	3,124	2%	212	1%
Eligible For Medicaid	452,365	68%	372,154	72%	68,942	51%	11,269	69%
Diagnoses								
Any MH diagnosis	346,964	52%	258,086	50%	80,007	60%	8,871	55%
Any SUD Diagnosis	32,230	5%	25,092	5%	6,037	5%	1,101	7%
Any MH or SUD Diagnosis	351,457	53%	261,722	51%	80,760	60%	8,975	55%

CAREGIVER DESCRIPTIVES

Caregivers in Child Welfare Data	All Linked Caregivers		Caregivers with Children with Unsubstantiated Report Disposition		Caregivers with Children with Substantiated Report Disposition		Caregivers with Children with neither Unsubstantiated or Substantiated Report Disposition	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Total	81,559		27,774		51,272		2,513	
Age Groups								
Age 18-25	15,179	19%	4,513	16%	10,494	20%	172	7%
Age 26-40	51,276	63%	18,088	65%	32,482	63%	706	28%
Age 41-55	12,215	15%	4,549	16%	7,483	15%	183	7%
Age 56-64	921	1%	408	1%	496	1%	17	1%
Age 65+	51	0%	23	0%	28	0%	0	0%
Missing	1,917	2%	193	1%	289	1%	1,435	57%
Gender								
Male	26,797	33%	9,071	33%	17,346	34%	380	15%
Female	53,115	65%	18,610	67%	33,806	66%	699	28%
Unknown	1,647	2%	93	0%	120	0%	1,434	57%
Race								
American Indian or Alaska	177	0%	58	0%	118	0%	1	0%
Asian	264	0%	73	0%	188	0%	3	0%
Black or African American	16,488	20%	6,948	25%	9,328	18%	212	8%
Native Hawaiian or Other Pacific								
Islander	91	0%	37	0%	54	0%	0	0%
White	61,675	76%	20,207	73%	40,621	79%	847	34%
Unable to Determine	686	1%	107	0%	564	1%	15	1%
Missing	2,178	3%	344	1%	399	1%	1,435	57%
Ethnicity								
Hispanic or Latino	5,153	6%	2,299	8%	2,805	5%	49	2%
Not Hispanic or Latino	61,513	75%	20,026	72%	39,320	77%	2,167	86%
Missing	14,893	18%	5,449	20%	9,147	18%	297	12%
Diagnoses								
Any MH diagnosis	51,118	63%	16,602	60%	32,754	64%	1,762	70%
Any SUD Diagnosis	48,271	59%	14,949	54%	31,758	62%	1,564	62%
Any MH or SUD Diagnosis	61,507	75%	19,920	72%	39,564	77%	2,023	81%
Any OUD Diagnosis	36,456	45%	10,963	39%	24,340	47%	1,153	46%
Any AUD Diagnosis	30,251	37%	9,543	34%	19,883	39%	825	33%

LIMITATIONS OF THE CCOULD

LIMITATIONS

- Both datasets are administrative data, not research data.
 - Claims may not include detailed clinical information or patient-reported outcomes.
- Service dates are only available at the month-level.
- Claims data may not capture the full scope of healthcare utilization for certain populations, such as those who receive care outside of traditional healthcare settings.
- Geographic indicators are limited to state-level indicators.

HOW DO I OBTAIN THE CCOULD?

ITEMS NEEDED FOR OBTAINING THE CCOULD

- IRB approval to use the data.
- An application including a data storage plan and research data plan.
- The names and contact information of the people accessing the data.

REFERENCES

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2019). *The AFCARS Report* No. 26. Washington, DC: U.S. Department of Health & Human Services. Retrieved from <https://www.acf.hhs.gov/sites/default/files/documents/cb/afcarsreport26.pdf>.

Mark, T. L., Dolan, M., Allaire, B., & Bradley, C. (2022). Linking Child Welfare and Medicaid Data: Lessons Learned from Two States. Retrieved from <https://aspe.hhs.gov/reports/ccould-lessons-learned-report>

Raghavan, R., Brown, D. S., Allaire, B. T., Garfield, L. D., & Ross, R. E. (2014). Medicaid expenditures on psychotropic medications for maltreated children: a study of 36 states. *Psychiatric services*, 65(12), 1445-1451.

Raghavan, R., Allaire, B. T., Brown, D. S., & Ross, R. E. (2016). Medicaid disenrollment patterns among children coming into contact with child welfare agencies. *Maternal and child health journal*, 20, 1280-1287.

QUESTIONS?

BEN ALLAIRE
RTI INTERNATIONAL
SENIOR RESEARCH ECONOMIST

BALLAIRE@RTI.ORG

NEXT WEEK...

July 19, 2023

Presenter:

**Garrett Baker, MEd.,
PhD Student, Sociology and Public Policy
Duke University**

Topic:

Causal Inference Using Administrative Data