



# Allegheny County Child Maltreatment: By the Numbers

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# The Question

What is the financial cost of child maltreatment in Allegheny County?

Findings will be used to advocate for more evidence-based prevention funding

# Methods for Calculations

- Many Federal, State & Local government, academic, nonprofit, etc. studies are published annually
  - Data availability is consistent issue across all studies
- Prevalence vs Incidence Based Approaches
  - Prevalence-based approach estimates total costs occurred because of child maltreatment over a set time period
    - Includes all cases that onset in or before the base time period
  - Incidence-based approach estimates total lifetime costs resulting from all new cases of child maltreatment within a set time period
    - More difficult, requires short- and long- term data sets

# Starting Point

- Study published by the CDC in 2012: “The Economic Burden of Child Maltreatment in the United States and implications for Prevention” by Fang, Brown, Florence and Mercy
  - Incidence- based approach: looked at all confirmed new child maltreatment cases in 2008 to estimate costs
  - Estimated costs per case
- Estimated lifetime costs of all **new** child maltreatment cases in 2008 was **\$124 billion**
  - Estimated lifetime cost for each new nonfatal case was \$210,012; each fatal case \$1,272,900
- Six Main Cost Domains
  - Short-term health care
  - Long-term medical
  - Productivity losses
  - Child welfare
  - Criminal Justice
  - Special Education

# Steady State Assumption

	<u>FY15/16</u>	<u>FY16/17</u>	<u>FY17/18</u>	<u>FY18/19</u>
<b><u>Investigations</u></b>	17,901	20,094	21,256	22,289
Increase		12.3%	5.8%	4.9%
Avg Age	7.8	7.9	8.2	8.5
<b><u>Investigated Children</u></b>	13,998	15,247	16,099	16,844
Increase		8.9%	5.6%	4.6%
Avg Age	7.7	7.8	8.0	8.4
<b><u>Substantiated</u></b>	3,010	3,469	4,356	4,451
Increase		15.2%	25.6%	2.2%
Avg Age	7.0	7.1	7.4	7.6

# Incidence Rate

- In FY 18/19 children in the KIDS system were investigated an average of 1.32 times
  - Children with substantiated maltreated were investigated an average 1.13 times
  - Children without substantiated maltreated were investigated an average of 1.25 times
- For all investigated children in FY 18/19:
  - 42% had been investigated in the prior 3 years
  - 12% had substantiated maltreatment in the prior 3 years
- For children with substantiated maltreatment in FY 18/19:
  - 51% had been investigated in the prior 3 years
  - 18% had substantiated maltreatment in the prior 3 years
- Previous research has shown that children in unsubstantiated cases have similar maltreatment experiences and developmental outcomes to children in substantiated cases

# Child Welfare



- Methodology
  - Ideally measure through longitudinal studies
  - Aggregate all federal/state/local spending on child welfare activities, using steady-state assumptions
- Allegheny County welfare activities are broadly placement services, non-placement services and blank programs
- Data Used:
  - All client dates and demographic information
  - Allegations, status determinations of investigations
  - Fiscal department budget information

# Child Welfare Costs

- FY 18/19 CYF Overall Budget: \$289,787,502
  - Cost Per Investigation: \$13,001
  - **Cost Per Investigated Child: \$17, 204**
  - Cost Per Substantiated Maltreatment: \$ 65,106
- Total annual child welfare costs in 1 year serve as a proxy for the lifetime welfare costs of victims investigated in that year



# Short-Term Health Care



- Data Used

- Medicaid mental health claims from 2015 to 2019
- Medicaid drug and alcohol claims from 2015 to 2019

- Methodology

- Matched children with claims of maltreatment and children with no claims of maltreatment
- Ran propensity score matching (matched on age, gender, and race)
- Compared cost numbers for the two groups
  - Summed total costs for each child for the year (regardless of service within cost domain)

# Mental Health: Propensity Score Matching

## Summary of Balance for Matched Data:

	Means Treated	Means Control
distance	0.1063	0.1063
DOB_YR	2006.6114	2006.6114
GENDERFemale	0.4857	0.4857
GENDERMale	0.5143	0.5143
GENDERUnknown	0.0000	0.0000
RACEBlack	0.4671	0.4671
RACEOther	0.0302	0.0302
RACEUnknown	0.0000	0.0000
RACEWhite	0.5027	0.5027

## Sample Sizes:

	Control	Treated
All	18409	1822
Matched	1822	1822
Unmatched	16587	0
Discarded	0	0

# Mental Health Cost



Average Cost per Child

<b>Fiscal Year</b>	<b>Investigated</b>	<b>Not Investigated</b>	<b>Difference</b>
15/16	\$8660.76	\$3932.40	\$4728.36
16/17	\$8668.00	\$3226.40	\$5411.60
17/18	\$9150.39	\$3252.20	\$5898.19
18/19	\$9806.60	\$2668.95	\$7137.65

# Mental Health Cost



## Total Cost of Investigated Children

<b>Fiscal Year</b>	<b>Cost</b>	<b>Cost (2019 Dollars)</b>
15/16	$\$8660.76 * 2392 =$ $\$20,716,537.92$	\$22,345,816.09
16/17	$\$8668.00 * 2086 =$ $\$18,081,448.00$	\$19,260,512.37
17/18	$9150.39 * 2534 =$ $\$23,187,088.26$	\$24,183,881.43
18/19	$9806.60 * 1822 =$ $\$17,867,625.20$	\$17,867,625.20

# Drug & Alcohol: Propensity Score Matching

Summary of Balance for Matched Data:

	Means Treated	Means Control	Sample Sizes:		
				Control	Treated
distance	0.6489	0.3234	All	873	498
DOB_YR	2001.5984	1998.8876	Matched	498	498
GENDERFemale	0.4518	0.4839	Unmatched	375	0
GENDERMale	0.5482	0.5161			
RACEAmerican Indian/Alaskan Native	0.0000	0.0000			
RACEAsian	0.0060	0.0040			
RACEBlack/African American	0.5482	0.4920			
RACETwo or More Races	0.0020	0.0000			
RACEUnknown	0.0000	0.0000			
RACEwhite	0.4438	0.5040			

# Drug & Alcohol Cost



## Average Cost per Child

<b>Fiscal Year</b>	<b>Investigated</b>	<b>Not Investigated</b>	<b>Difference</b>
15/16	\$6393.5	\$8109.79	\$-1,716.29
16/17	\$6971.29	\$7397.2	\$-425.91
17/18	\$7029.0	\$5413	\$1,616
18/19	\$6864.83	\$5323.3	\$1,541.53

# Drug and Alcohol Cost



## Total Cost of Investigated Children

<b>Fiscal Year</b>	<b>Cost</b>	<b>Cost (2019 Dollars)</b>
15/16	$\$6393.5 * 340 =$ \$2,173,790	\$2,344,750.45
16/17	$\$6971.29 * 428 =$ \$2,983,712.12	\$3,178,275.56
17/18	$\$7029.0 * 482 =$ \$3,387,978	\$3,533,624.29
18/19	$\$6864.83 * 498 =$ \$3,418,685.34	\$3,418,685.34

# Judicial & Special Education

## Criminal Justice

- Received budget report for 2010 from Allegheny County
  - Cost per arrest in 2011-2012, probation costs
  - Allegheny County Jail costs
- Juvenile office costs, Shuman Detention Center
- Criminal Justice System
  - Average of \$7,910.45 per maltreated child in the juvenile court system

## Special Education

- Incremental effect of child maltreatment on needing special education
- 24.2% of CM victims received special education by age 8, compared to 13.7% of non-victims
- Children with disabilities are at higher levels of risk
- Average special education costs of \$9,378.34



# Productivity Loss & Long Term Medical Costs

## Productivity Loss

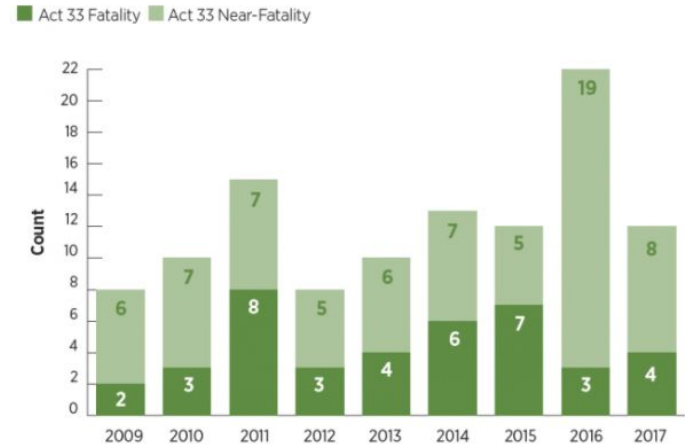
- Currie & Wisdom (2010) compared group of individuals with documented histories of child maltreatment to comparison group
- Fang paper used this logic for estimate
- CM reduces earnings by \$6,905.67 annually (2019 dollars)
- \$169,253.39 in present discounted value of earnings from age 6 on
- Assuming earnings from age 18 to 64

## Long Term Medical

- Used estimates from a long-term medical study of 3,333 women
- Compared group with history of child maltreatment to control
- Average annual healthcare costs due to maltreatment of \$682.36
- Present value from age 18-64 of \$12,349.75

# Fatalities in Allegheny County

- Allegheny County has information on fatalities & near- fatalities from 2009-2017
  - Average of 4.4 fatalities per year
  - Average of 7.78 near fatalities per year
- In 2017, majority of victims are >1 year old (58%)
  - Most perpetrators are family
- Average medical costs of \$16,531.40 per fatality
  
- Average lifetime productivity loss of \$1,475,881.10



# 2019 Cost Breakdown: Non-Fatal



Source of cost	Average Lifetime Costs		Total lifetime costs: Cases: 3,561
	2019 Dollars	2021 Dollars	
Mental Health Costs	\$66,957	\$69,372	\$247,018,393
Drugs & Alcohol Treatment	\$11,745	\$12,169	\$43,329,773
Long-term health care costs	\$12,346	\$12,791	\$45,546,976
Productivity losses	\$169,253	\$175,357	\$624,409,746
Child welfare costs	\$17,204	\$17,824	\$63,467,699
Criminal justice costs	\$7,910	\$8,125	\$28,931,500
Special education costs	\$9,378	\$9,716	\$34,597,409
<b>Total</b>	<b>\$294,794</b>	<b>\$305,353</b>	<b>\$1,087,301,497</b>

# 2019 Cost Breakdown: Fatal



Source of cost	Average Lifetime Costs		Total lifetime costs: Cases: 4.44
	2019 Dollars	2021 Dollars	
Medical costs	\$16,531	\$17,128	\$76,046
Productivity losses	\$1,475,881	\$1,529,104	\$6,789,223
<b>Total</b>	<b>\$1,492,413</b>	<b>\$1,546,232</b>	<b>\$6,865,269</b>

**Total costs (including both fatal and nonfatal cases) \$1,094,166,766**



Thank You!