The impact of child maltreatment on development: Implications for prevention and policy

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Outcomes of Maltreatment Mental health

anxiety, depression, PTSD, psychiatric disorders

Behavioral health

substance & alcohol dependence, teen pregnancy school dropouts, rape, domestic violence

Physical health

inflammation, cardiovascular disease, obesity, diabetes, lung cancer, chronic pain, headaches STIs, autoimmune diseases, cognitive deficits preterm delivery, premature death

\$124 billion aggregate lifetime economic burden

Fang et al., 2014; JAMA; Centers for Disease Control and Prevention, Noll et al, 2012; Pediatrics











Each year in the US

 7.4M children are referred to Child Protective Services (CPS)



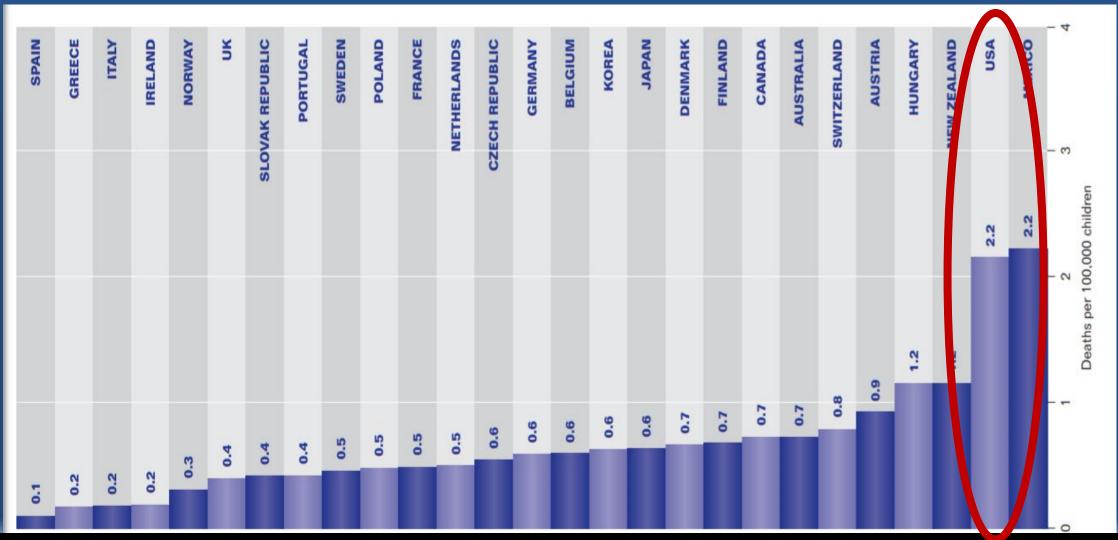
- 3.2M investigated
- 1.2M Substantiated or at 'significant risk'
- Over 2500 die of child maltreatment

www.acf.hhs.gov/sites/default/files/cb/cm2016 GAO-11-599 Strengthening National Data on Child Fatalities Could Aid in Prevention





The US is 2nd in deaths from child abuse



https://www.unicef-irc.org/publications/pdf/repcard5e.pdf









The Prevalence:

12.5% of US children victims of substantiated maltreatment by age 18



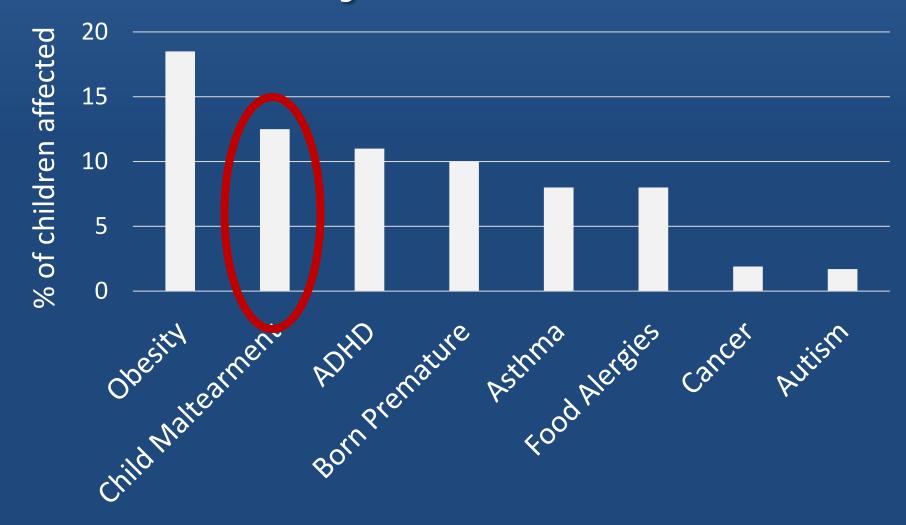
Wideman et al., 2014, JAMA; Centers for Disease Control and Prevention;







Prevalence of major childhood conditions

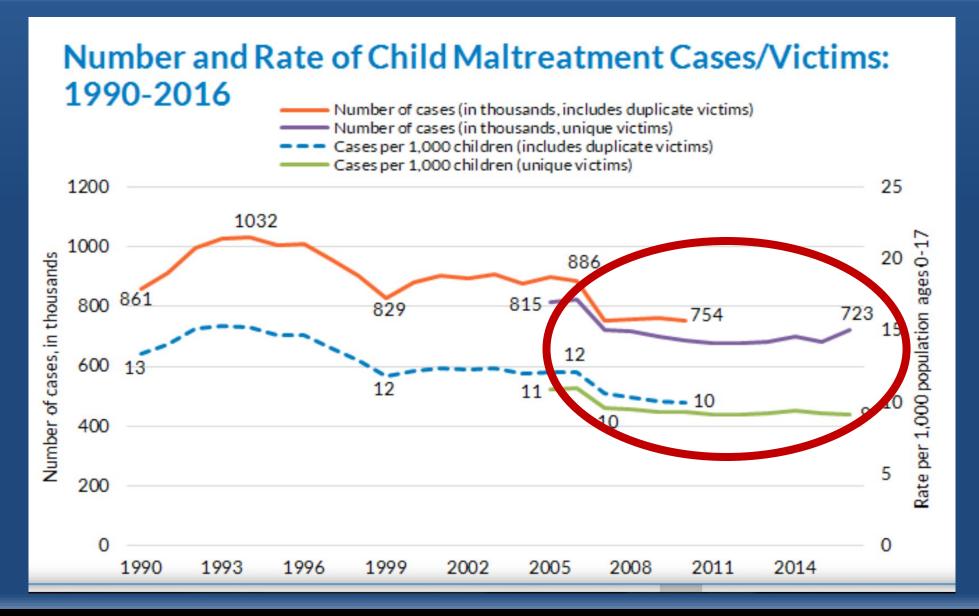


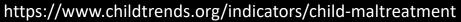
Wildeman, C., et al., (2014). The prevalence of confirmed maltreatment among US children, 2004 to 2011. JAMA Pediatrics









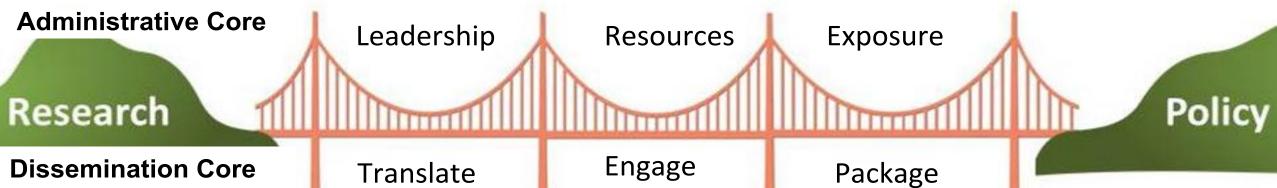






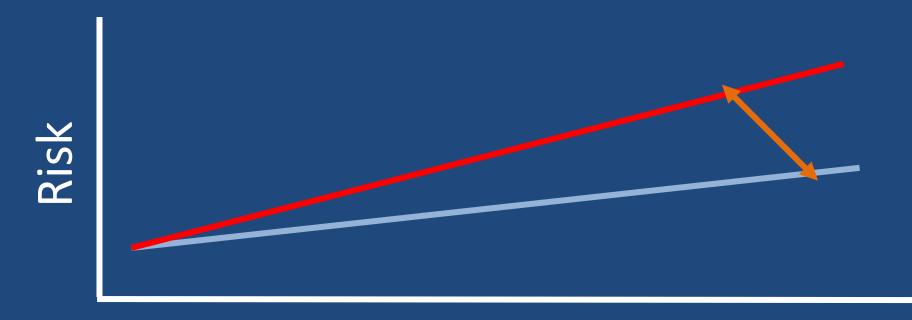


How can SCIENCE effect change?



Causal Inference thru Prospective research:

Confirmed abuse
Matched control group
Strong inference about differences and change



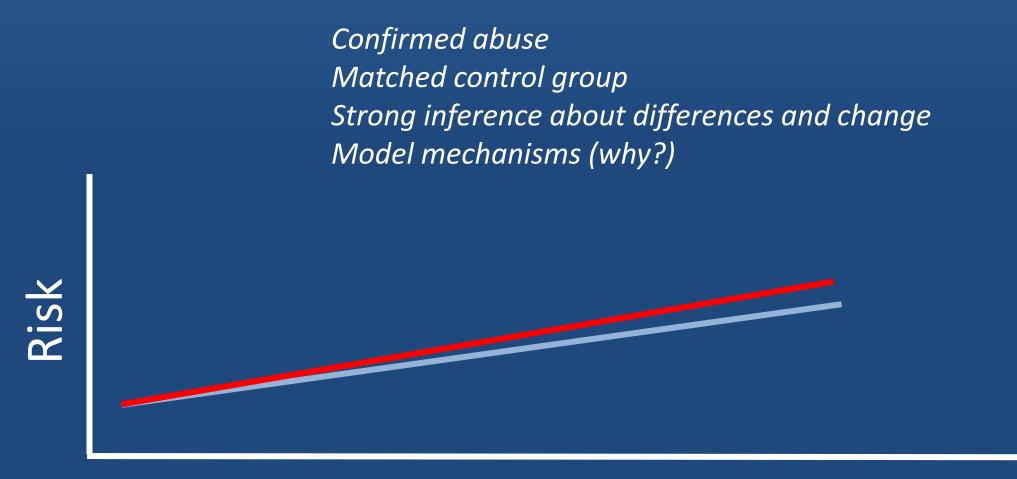
Time







The Power of Prospective Studies:

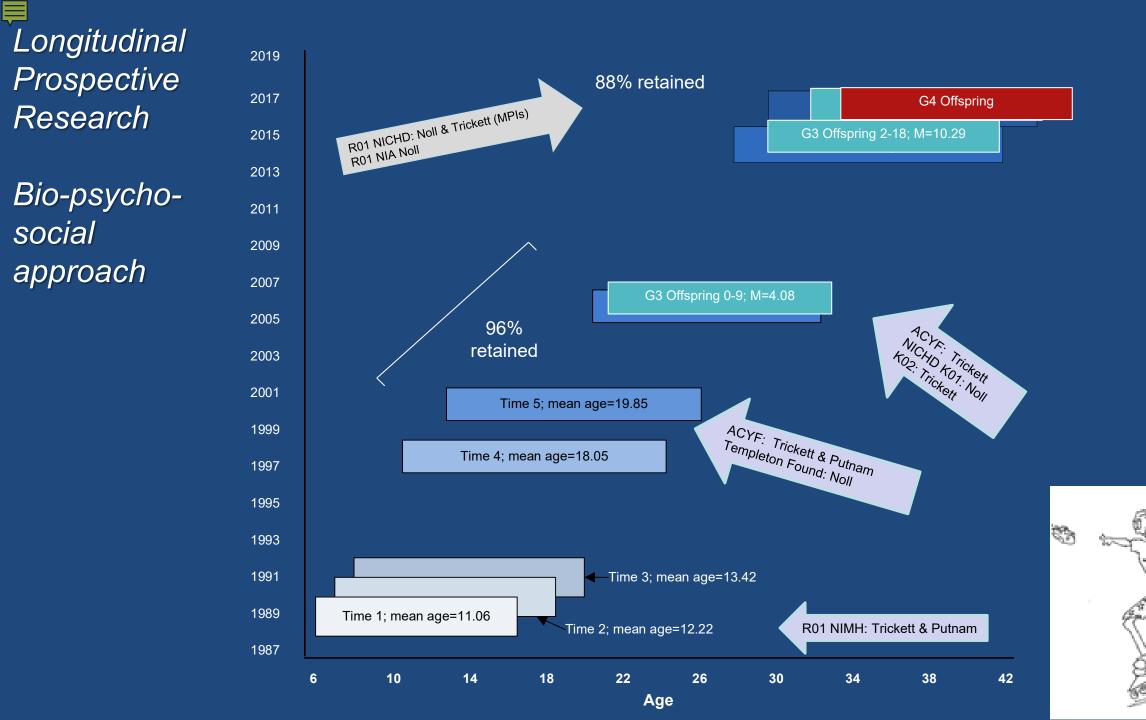


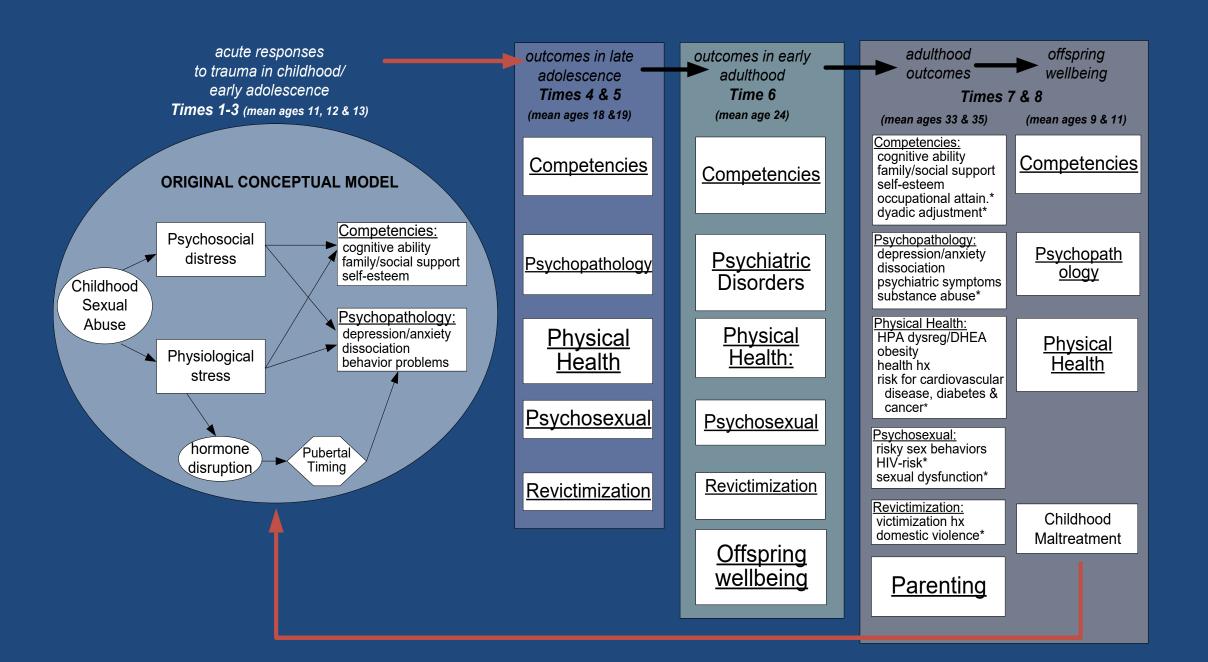
Time

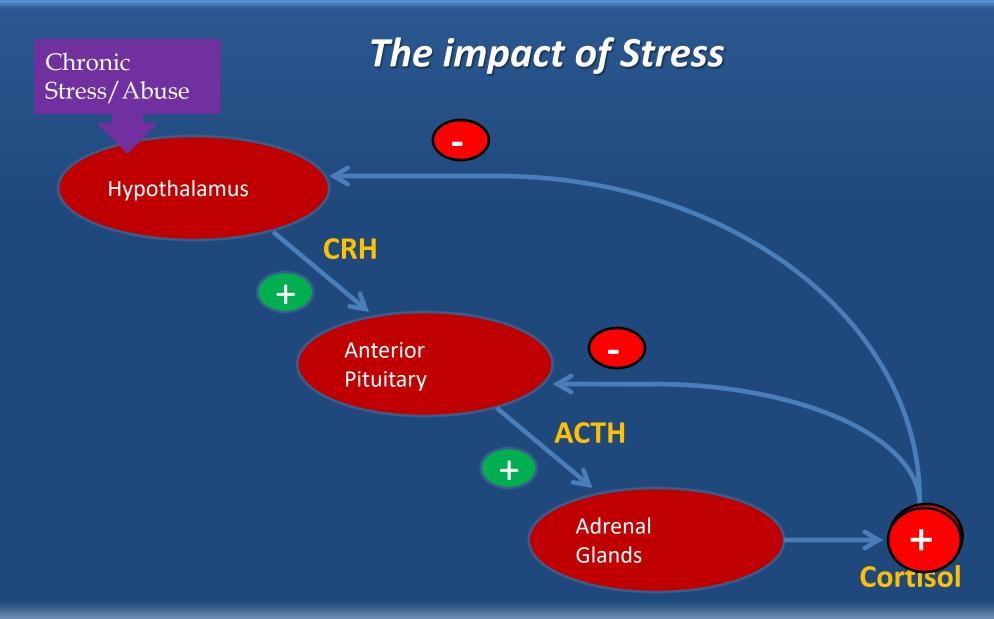


















Biological Embedding Hypothesis

Stress Potentiation of stress responses Changes in neural circuits Structural & functional Disinhibition of CRF changes inflammatory mediators Pituitary NFκB **Immune cells ACTH** Increased De-/Methylation of stressresponse egulatory genes **Adrenal cortex** Cortisol Telomere shortening Chromosome

Autonomic Immunologic Epigenetic Telomere Biology

Neuroendocrine

McEwen, PNAS, 2011

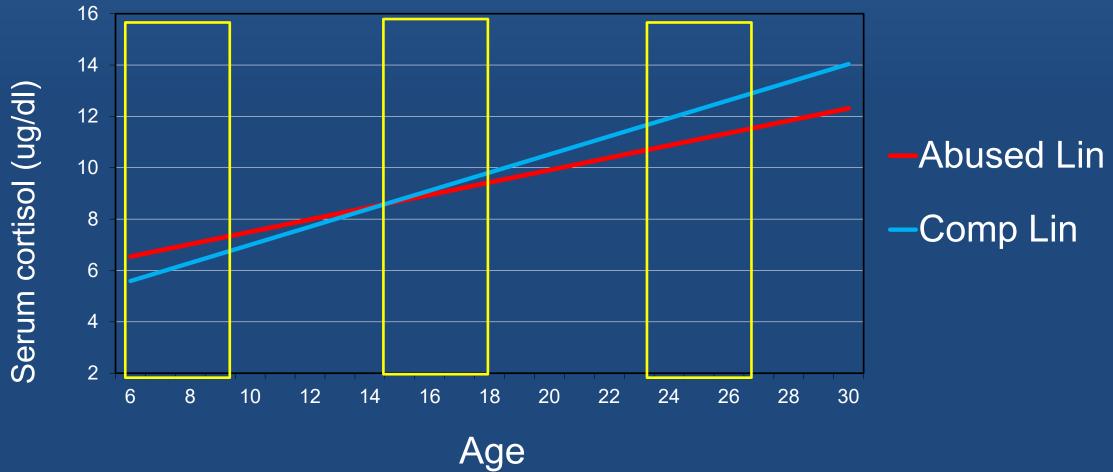




Increased cortisol secretion



Basal free serum cortisol across development: Developmental Evidence for Bio







Lower peak and slower acquisition of vocabulary

160

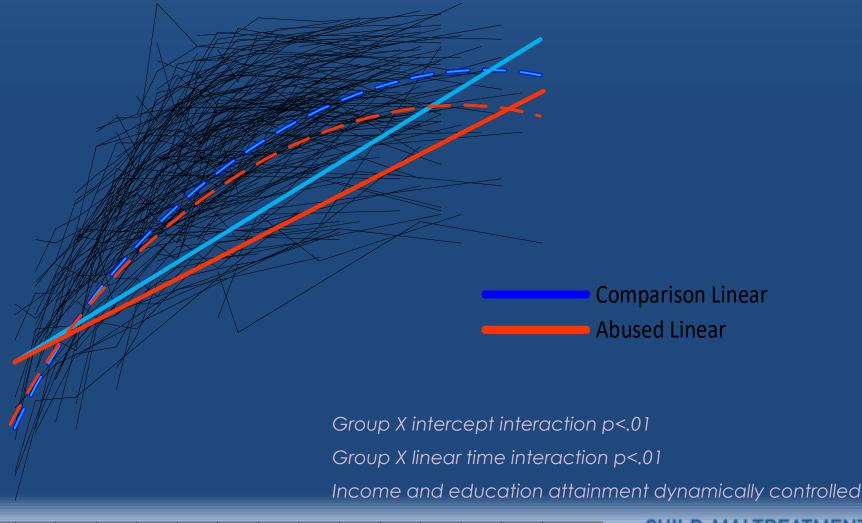
80

40

Implications:

- ↓ graduation rates
- ↓ educational attainment
- ↑ financial dependence

Premature cognitive aging?

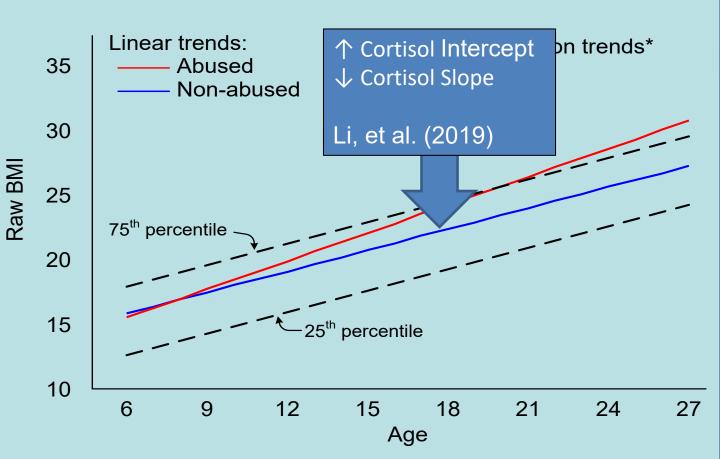


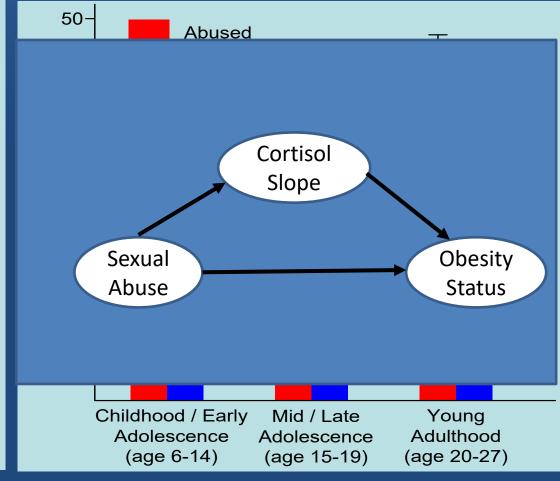






Developmental Course of Obesity



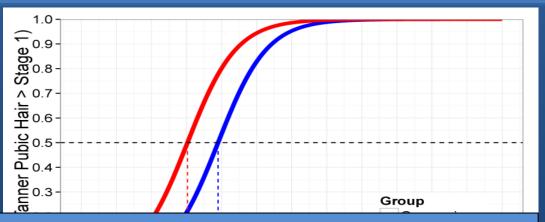






Pubertal Timing

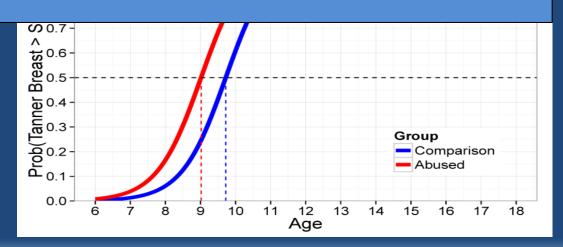
12 mos. earlier pubic hair



Meta analysis of 460,000 women across 35 countries younger age at menarche signaled higher relative risk for breast cancer

Collaborative Group on Hormonal Factors in Breast Cancer, (2012) Lancet Oncology

8 mos. earlier breast



Noll, et al., Journal of Adolescent Health, 2017









Impact Across Development

Childhood:

†disrupted attachment

†childhood depression

↑PTSD symptoms

†externalizing behavior problems

†somatic complaints

↓family cohesion

†depressed mothers

↓cognitive performance

↓school performance

Adolescence:

↑earlier pubertal timing

↑depressive symptoms

↑PTSD symptoms

↓cognitive abilities

↓age at first voluntary intercourse

↑alcohol & drug use

↑teen pregnancy

↑HIV risk behaviors

↑self harm

↑sleep problems

↑revictimization

Adulthood:

†premature parturition

↑persisting PTSD

†psychiatric diagnoses

†clinical depression

↑alcohol & drug abuse

†suicide attempts

↑inter-partner violence

†sexual violence / rapes

↑obesity

↑cognitive deficits

†premature death

Trickett, Noll, & Putnam, Development & Psychopathology 2011







Offspring Outcomes

Born Preterm (gestational age <37 wks)

Abused group: 19.4%

Comparison group: 10.1%

p<.01

Both pre-pregnancy cortisol levels and prenatal alcohol use were predictors

Noll et al., Journal of Pediatric Psychology, 2007







Offspring Outcomes

Cognitive Ability Scores

Abused group: 87.47*

Comparison group: 94.48

Bayley Infant Development

PPVT-scores

WJ-R scores

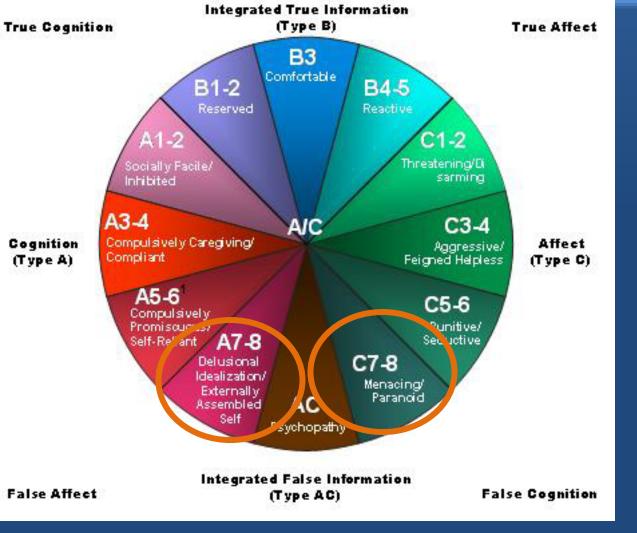


Noll et al., Journal of Interpersonal Violence, 2007









B A C
Secure Avoidant/ Anxious/
Depressive Reactive

Abused 11%** 48%** 41%**

Comparison 40% 26% 34%

and C's most notable in the abused group

Higher Subscript A's

Based on Infant SS and Preschool Aged Assessment (PAA) using the DMM coding system of Patricia Crittenden, PhD

Kwako, Noll, et al., Clinical Child Psychology & Psychiatry, 2010







Offspring Outcomes

Child Protective Service (CPS) Involved Abused group: 17%

Comparison group: 1%

p<.01
majority neglect & physical abuse
1 sexual abuse

40% permanent removal from mom

2 G3 sexual abuse perpetrators

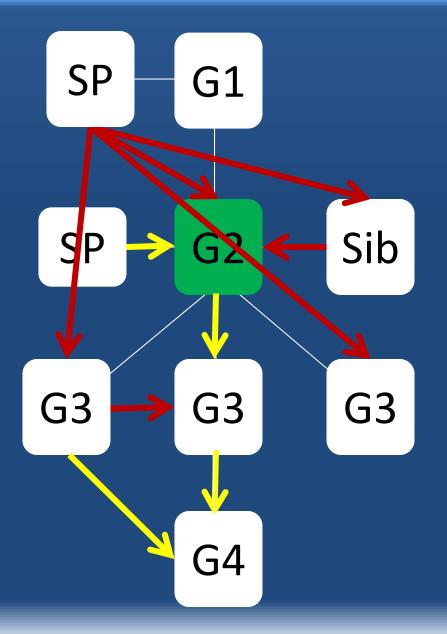
5 deaths (all born to abused mothers)

Noll et al. (2007) Journal of Interpersonal Violence





















Maltreated Offspring



17%*





offspring born to sexually abused mothers



offspring born to comparison mothers



Maltreated offspring born to a *teenage mom*

5

* =abused vs. comparison difference at p<.01







Noll, JG (2003) Journal of Consulting and Clinical Psychology

High-risk Pathways to Teen Pregnancy

514 abused and non-abused **Outcome** adolescent females **High-risk Behaviors/ Attitudes and** assessed yearly from age 14-19 **Psychosocial Difficulties** Teen High-risk Behaviors (non-sexual): Parenthood Behavior Problems/Delinquency BTISSIanceSubetance Use High-risk Partner Affiliation High-risk Attitudes: Contextual Factors Sexual Distortion Teen Young age at Menarche Pregnancy Desire Pregnancy High-risk Parenting Pregnancy-vulnerable Cognitions Psychosocial Difficulties: Poor Cognitive Functioning Psychological Distress Low Perceived Support High-risk Sexual **Behaviors** Maltreatmen

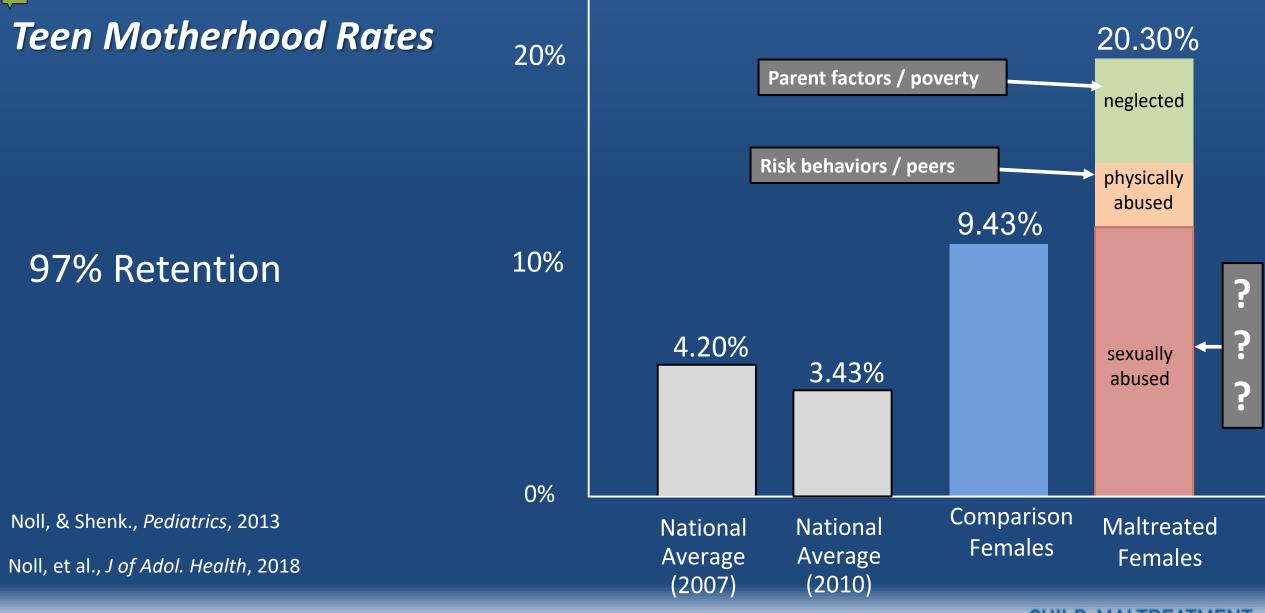


R01 HD073130 PI: Noll 2008-2013

















Investigated maltreatment is as disruptive as Substantiated maltreatment

	Investigated but unsubstantiated		Investigated and		
Outcome			substantiated		
	(n =	(n = 136)		(n = 179)	
Teen mother	2.75	$(1.34, 5.62)^{**}$	2.28	$(1.18, 4.41)^*$	
HIV risk behaviors ¹	1.42	$(1.15, 1.74)^{***}$	1.30	(1.09, 1.55)**	
Drug use in past year ²	0.38	(.13)**	0.41	(.12)***	
Beck depression score ³	1.96	(±2.56)	2.42	(±1.08)*	

Kugler, et al., Child Abuse & Neglect, 2018







Publically available Social Networking profiles







- Send Message
- Add to Friends
- Add Comment

~I CAN CARE LESS BOUT WUT THA NEXT BITCH DOIN! IM DOIN WUT I DO AN IM LOVIN IT! I HEARD SHE TALKIN SHIT BUT DIS AINT WUT THAT DUC SHE WANT!!Posted 1 hour ago view more

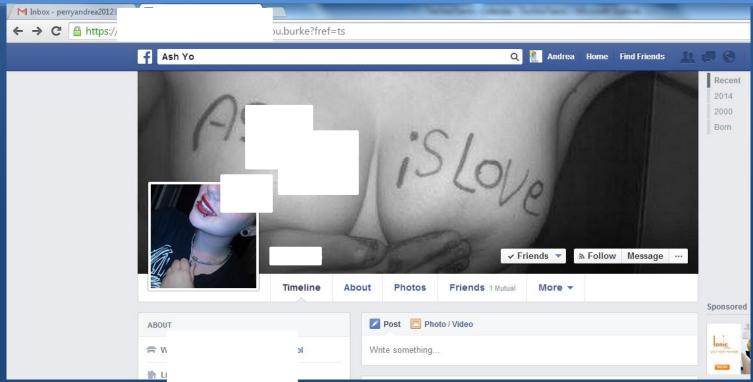
Name: Samely last r Age: 16 goin on 21!

City; Florence, KY; I am a junior at Marane n High

Call me or txt me at 719 3; I'll pick up, no prob







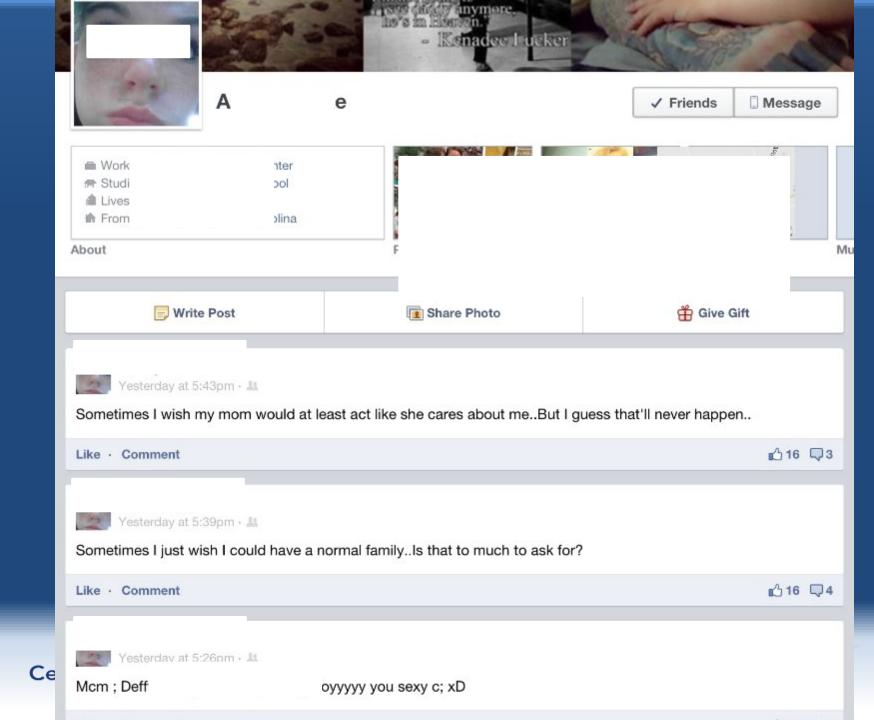
Publically available Social networking profiles





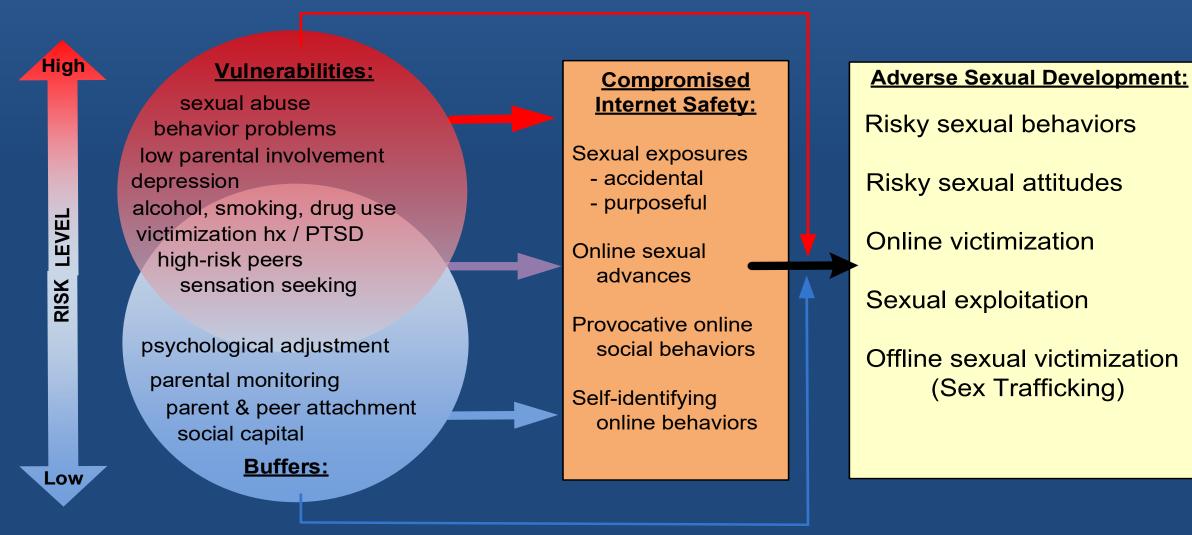


Publically available Social networking profiles





Teen Internet and Social Media Behaviors; "TechnoTeens"



R01 HD073130 PI: Noll 2013-2019







TechnoTeens

First naturalistic, observational study of teen internet use

460 adolescent females (aged 12-15) and caregivers

1/3 sexually abused referred from protective services

1/3 matched controls; 1/3 census matched controls

3 annual follow-ups: (94% Retention)

2 hour psychosocial interview (self-reported behaviors and victimization)

Internet URL activity captured and quantified for adult content (4 weeks)

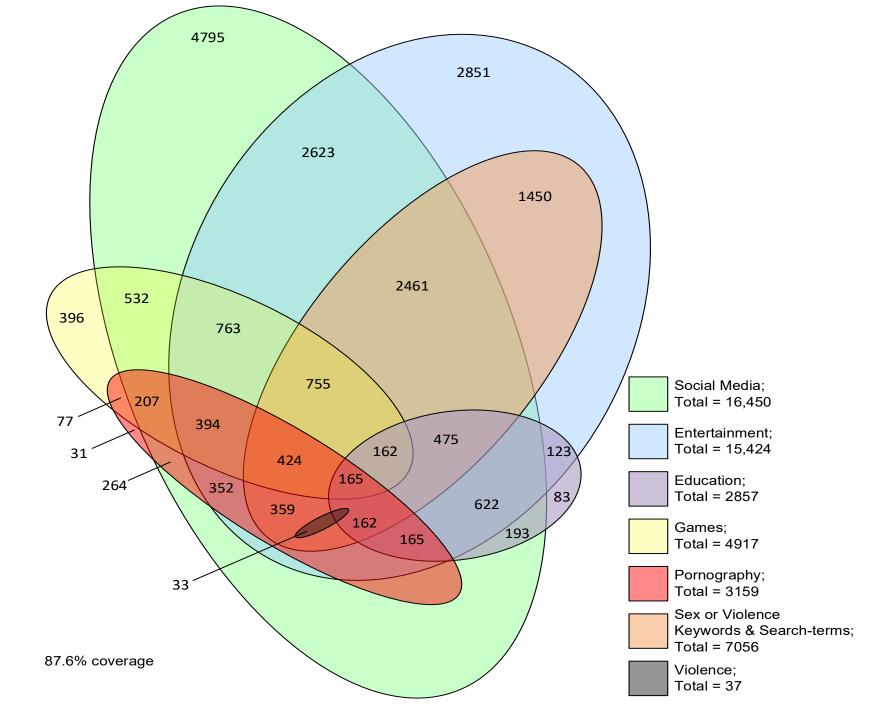
Sophisticated keystroke authentication algorithm; 97% specificity

YouTube and other video keyword quantification

Social media face pages quantified for provocative features



Internet Use Patterns (23,839 2 hr Sessions)



TechnoTeens Findings (not yet published)

35% consumed pornography (via URL observation) 46% abused vs. 28% control (p<.01)

51% cyberbullied (structured interview)
62% abused vs. 43% control (p<.05)

22% received online sexual advances (structured interview) 6% sexual advances "went too far"

11% abused vs. 3% control (p<.01)

45% met stranger offline (structured interview)
5% met stranger offline ending in assault or attempted assault
10% abused vs. 2% control (p<.01)











TechnoTeens Findings (not yet published)

Longitudinal findings (2 years later):



↑ Pornography → risky sexual behaviors

↑ Sex/violence videos → meetings w/ strangers offline





NIH Capstone Center for Healthy Children (P50HD089922 PI:Noll) Clinical **Populations** CDR **Basic Science** Health Abusive Clinical Disparities Head Grow new Practice science Trauma Dissemination & **Address** Outreach Core relevant **Educate &** questions Engage Translate & **Impact** Communicate policy **ADMINISTRATIVE CORE**







Child Health Study N=1200:

900 Maltreated; (300 ea, sexual abuse, physical abuse, neglect)

300 Comparisons (clean)

Aged 8-13; 50% Boys

Maltreatment:

Sexual Abuse Physical Abuse Neglect

MPIs: Heim & Schreier



Bio Embedding:

Neuroendocrine
Autonomic
Immunologic
Epigenetic
Cellular Biology
Neurocircuitry

Malleable Behavioral

Factors:

Healthy Lifestyle
Diet, Exercise, Sleep
Healthy behaviors
Regulation

Resilience:

School Engagement
Personal Agency
Social Support
Coping / Flexibility
Cognitive Ability

Moderators: Genotype, Gender, Ethnicity, Pubertal Stage, Maltreatment type, timing

Health Status:

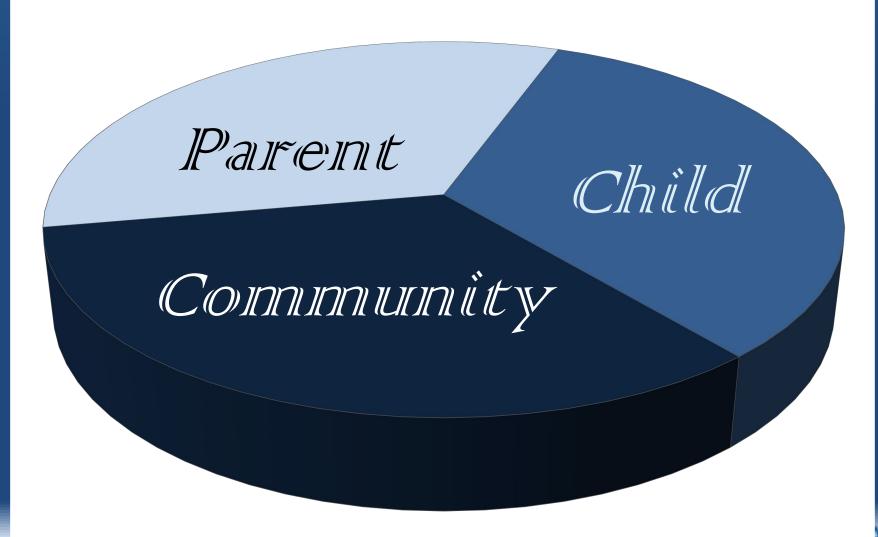
Brain Health
Behavioral &
Emotional Health
Physical Health

Day-long health assessments repeated every 2 yrs.





Pennsylvania Universal Child Sexual Abuse Prevention Trial









Community: Stewards of Children

2 hour interactive session

In-person, on-line, targeting 5% of all adults

Media campaign

Radio ads, social media, mass mailing

Key concepts

- Learn the facts
- Minimize opportunity
- Talk about it
- Recognize the signs
- React responsibly











Child: Safe Touches

50-minute interactive workshop

K-3 classroom delivery

Key concepts

- Private parts of the body
- Difference between safe and not-safe touches
- Secrets versus surprises
- Tell an adult
- The child is not to blame

Teacher & Admin Education











Parenting: Parenting Safe and Health Children

One hour parent-focused curriculum

Key concepts

- Healthy sexual development
- Parent-child communication about sex and safety
- Promoting safety

Designed to be *braided* into evidence-based parent-training programs for at-risk parents referred for child welfare services



Parent Handbook



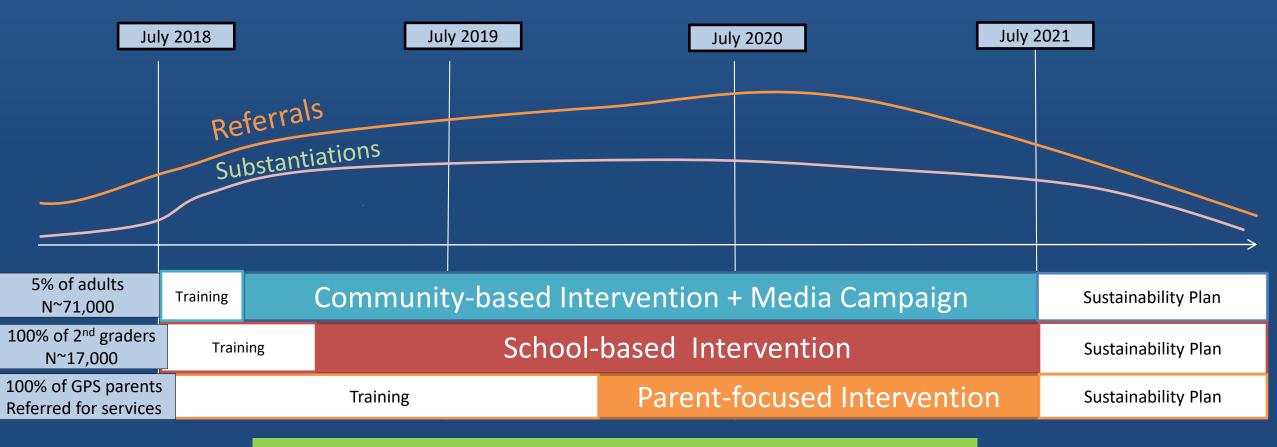
Promoting the Safety and Wellbeing of Your Child







Pennsylvania Child Sexual Abuse Prevention Trial PSU/PADHS



Evaluation:

- **♦** Referrals, Substantiation & Conviction Rates
- ↑ Knowledge, Attitudes & Behaviors (pre-post, 6mos, & 12mos)
- **↑** Population Awareness (Random Digit Dialing/Web Survey)

Center for Healthy Children M





NIH Capstone Center for Healthy Children P50HD089922 PI:Noll Clinical **Populations CDR Basic Science** Health Abusive Clinical Disparities Head Grow new Practice science Trauma Dissemination & **Address** Outreach Core relevant Educate & questions Engage Translate & **Impact** Communicate policy **ADMINISTRATIVE CORE**







Dissemination & Outreach Core (DOC)

Max Crowley: Pl

Link Cohort Study Data to Administrative Data:

Impacts on other state systems
Demonstrate costs of CM
Impact of interventions

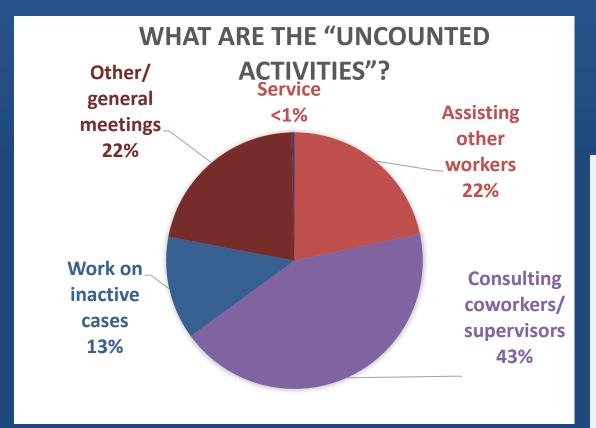
Community-based Participatory
Research (CBPR) Model:
A Resource for CW Administration
10 Demonstration Projects:
PA Depts. of Human Services,
Health, and Juvenile Justice







Pennsylvania Caseworker Time Use Study

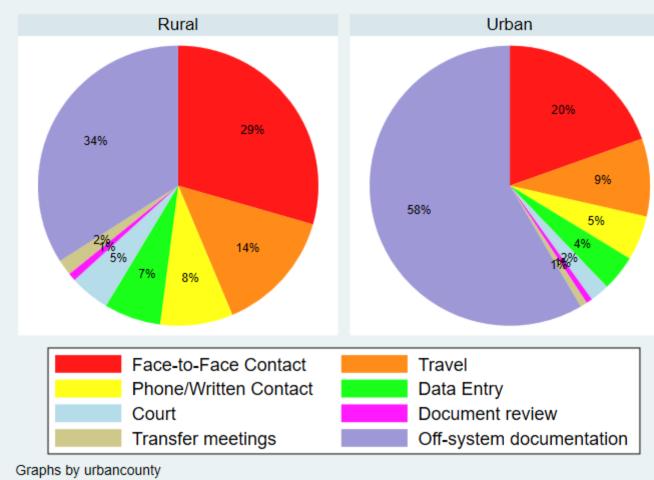


Reducing uncounted activities: 1 additional work-week

Dr. Sarah Font

Center for Hea

Reducing off-system documentation: ½ additional work-week





Dr. Sheridan Miyamoto



Funding provided by:
Department of Justice, Office for Victims of Crime
Award #: 2016-NE-BX-K001





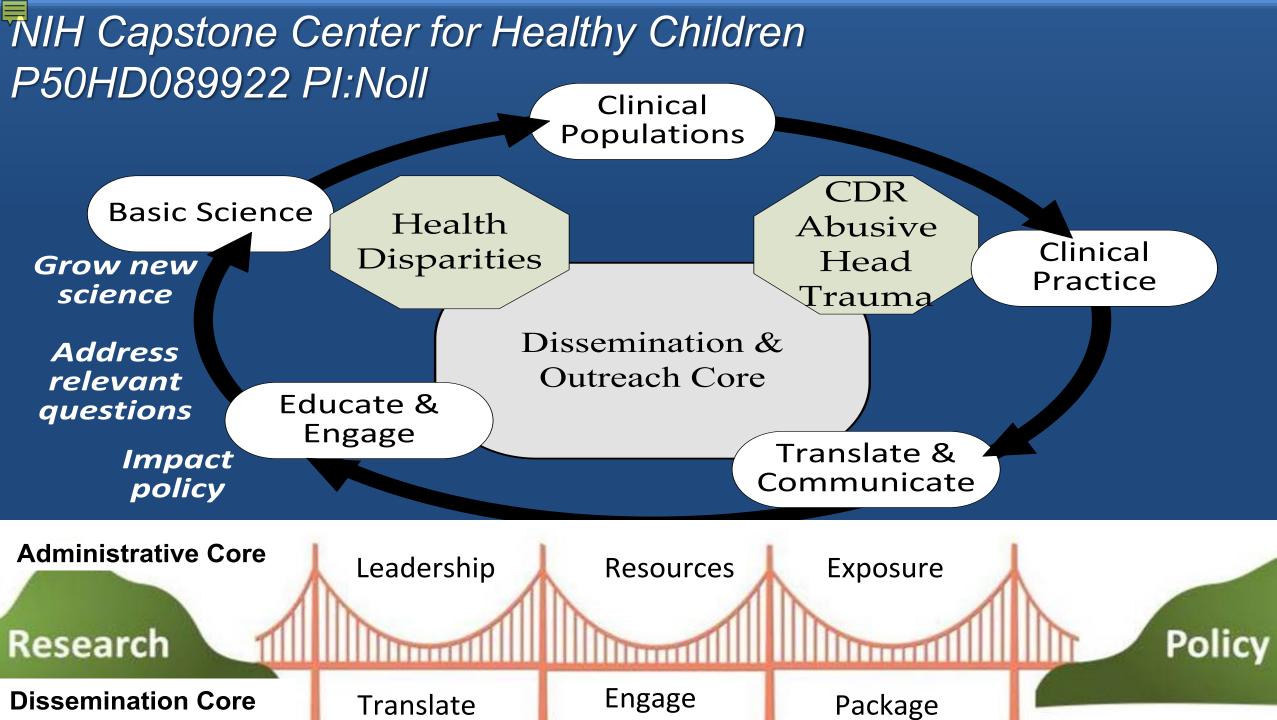
The Sexual Assault/Abuse Forensic Examination Telehealth Center

Sheridan Miyamoto, PhD, FNP, RN











Four basic essentials of policy engagement:

- 1. Ask pressing questions (through partnerships)
- 2. Conduct the best research
- 3. Translate into messages that resonate with practitioners and policymakers
- 4. Become a resource for practitioners, staffers & legislators





Policy Activities

CHILD ABUSE PREVETNION & TX ACT



Preventing Child Maltreatment through Coordinated, Community-based Strategies



Child maltreatment is both highly

Prevention will result in significant

cost-savings by both stopping maltreatment before it happens AND

Prevention efforts work hest when

Current efforts have demonstrated

limited impact and are not widely

CAPTA has the potential to improve

community capacity for coordinating

services and systems, investing in rigorously evaluated demonstration

projects, and fostering innovation.

prevention efforts by increasing

conomic burden of \$124 billion Approximately 4 million reports are made to Child Protective Services (CPS) each year involving 7.4 million children?. Of thes reports 3.5 million are investigated and 12.5% of children in the U.S. will be victims of substantiated maltreatment by age 183. Regardless of substantiation4

CPS involvement is associated with a host of negative outcomes including subsequent maltreatment, teen motherhood, poor mental health, HIV, and substanuse56. Almost 40% of children are re-referred to CPS following an initial referral

Given its high cost and sheer number of child victims, the problem of child maltreatment is in dire need of effective and sustained prevention efforts—both in terms of stopping maltreatment from ever occurring (primary prevention) and curtailing deleterious outcomes once a CPS referral has been made (targeted

Primary prevention efforts provide preventive education and supports to new orents, families, schools, and community members. Such efforts work best when there is also a community-level response where available services are identified an disseminated in a coordinated fashion10. For example, Triple P and the Durham Family Initiative bring together and coordinate various evidence-based reevention services within communities to promote healthy families, including reducing risk for maltreatment¹⁰. While these efforts are promising, there are substantial challenges that limit the coordination of services at the community-level and only few models that have been effective at reducing overall rates of child



Targeted prevention strategies are provided to families after a CPS referral based on level of risk such as parental substance abuse and domestic violence. (2) These include parenting education and home visiting to reduce risk and increase protective factors by promoting parenting skills, stable family relationships, and supportive environments. (3) Although 1.9 million children eceive targeted prevention each year2 prevention strategies have shown only small to moderate effects 455, and the extent to Department of Health and Human Services found only 6 with high- or moderate-quality studies to have positive impacts on ig child maltreatment. These targeted efforts have largely been shown to impact rates of physical abuse and neglect with little direct impact on rates of sexual abuse¹



DATA

EXPUNCTION



Issues Related to Protective Service Record Expungement and Destruction

Pennsulvania State Senate Rill 9381 seeks to revise the expurigement process for Protective Service (PS) records by allowing local agencies to maintain records internally that aid with "risk and safety assessment and research" Pennsylvania's current expunction law requires the destruction of all paper and digital records of the investigation after some time, including the relatively expedient destruction of unsubstantiated case files. This is a blunter expunction process than what is employed by some other states 2.3.4 or as required by federal law. 5 Moreover some caution against distinguishing between substantiated and unsubstantiated cases because both are related to similar risks to child health and development. 6 SB 938 maintains provisions to destroy PS records in the statewide registry, which is intended to protect individuals involved in unsubstantiated abuse and neglect cases, as public access to those records can hinder employment, volunteer, or adoption opportunities. While unrestricted access to case records (e.g., inclusion in background checks) can be problematic for accused perpetrators, record destruction hinders efforts to protect children and prevent maltreatment. A more balanced approach would protect information so that it is only accessible for purposes that protect children, including future PS investigations and research that can strengthen maltreatment prevention

Concerns about Destroying Case File:

- Child welfare workers cannot protect children as well if they do not have previously collected information or the child's risk of maltreatment. Risk of future maltreatment (and PS recidivism) is similar regardless of substantiation.7 Therefore, prior case files for all PS-involved children can assist in their protection by improving risk and safety assessments, following cases across jurisdictions, identifying potential adoptive families if risks cannot be mediated, and locating missing children. Vital information from prior investigation:
- 2. Record destruction contributes to workforce inefficiencies and risks worker safety, salient concerns according to a recent Auditor General report.8 When a family is investigated multiple times, investigative information that was previously collected and destroyed during expunction must be reproduced by case workers. Further, case files can provide vital information about risks to worker safety (e.g., previous aggression against workers). Retaining case files can impact the health and wellbeing of the child welfare workforce by (1) alerting caseworkers to potential dangers within the case context and (2) increasing efficiency and reducing burnout by eliminating the need to replicate previously destroyed records.
- investigated for child maltreatment are referred to services designed to reduce risk and improve the safety of children - regardless of whether the case is substantiated. B Decades of unadulterated case records are needed for evaluating which interventions hold the most promise for long-term impact and cost-effectivenes assessments that enable shrewd decisions about government-funded services. Moreover, record destruction threatens transparency and corrective action in government activities because prior records can reveal red flags that may have been missed and identify areas where better training or monitoring is needed.
- 4. We will be unable to conduct research to inform the prevention of challenges faced by child welfare-referred youth. Just because a child maltreatment case has not been substantiated does not mean that there was no risk or harm incurred by the child(ren). In fact, risk associated with PS referrals (e.g., poorer academic hehavioral health outcomes) is similar for children regardless of whether the case is substantiated 9,10,11 Data on prior investigations supports effective prevention efforts - for instance, we are only beginning to understand circumstances that lead to child sex trafficking, and data on prior PS involvement is vital.

Recommendation: Allow protective service records to be maintained internally for uses that promote child well being, enhance caseworker efficiency, and enable research that informs the responsible and effective use of tax dollars. These recommendations comply with federal law, 5 and are consistent with the National Commission on Evidence-Based Policymaking's recommendations on protecting information while enabling the use of data to

PREVENTING HUMAN **TRAFFICKING**



Preventing Human Trafficking

Approximately 40 million people worldwide, including many in the United States timated to be victims of human trafficking — a form of modern-day slavery in which traffickers use force, fraud, or coercion to control both adults and children Human trafficking can take many forms, such as forced and bonded labor, domestic servitude, and commercial sexual exploitation.

Awareness about human trafficking and the factors that make individuals and communities vulnerable has increased, but prevention efforts designed to proactively address known risk factors are lacking. Instead, efforts typically address exploitation after harm occurs 2 These downstream interventions contrast with primary prevention, which aims to prevent trafficking before it occurs by addressing revention efforts that address known risk factors for victimization using multi-

Trafficking vulnerabilities occur at the individual, family/neighborhood, and societal levels (see table below).3-5 Lack of access to protection and justice make people vulnerable to trafficking.6 Traffickers tend to exploit the needs of potentia needs, such as love and belongingness. The potential for exploitation is influenced by events across the life course, route of victimization,4 and gender.7 Prevention strategies can be tailored to the specific vulnerabilities and needs of individuals and

Individual level^{3,4,9} Family/neighborhood level3-5:

- · Family dysfunction
- basics including food and shelts
 - Social norms tolerating · Adult commercial sex

RECOMMENDATIONS

Facilitate primary prevention efforts by supporting community stakeholders' collaborative use of data and rresponding approaches for addressing known risk factors





- To succeed, prevention strategie enforcement, housing, schools
- Raising awareness alone is not sufficient to prevent human trafficking. It must be used as part of a
- Most of this work is concentuall of prevention programs is urgently

- · Lack of awareness Sexualization and devaluation of children
- · Political/social upheaval

Encourage human trafficking task forces to place greater emphasis on primary prevention



CONGRESSIONAL BRIEFING (Dec 2018) Child Abuse Prevention: "We've got a long, long way to go."



CONGRESSIONAL **HEARING** (March 2019) Strengthening **Prevention and Treatment of Child Abuse and Neglect**



for Healthy Children

BRIEFING (March 2018) **Protecting Children Through Home Visiting**

CONGRESSIONAL

