

# Trauma Informed Care in the NICU: Transforming Neonatal Care

Dena K. Hubbard, MD, FAAP

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## Disclosure

- Dr. Hubbard has documented no financial relationships to disclose or conflicts of interest to resolve.
- The majority of these slides and what I know about Trauma Informed Care has been learned from Patty Davis. Thank you Patty!



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## Learning Objectives

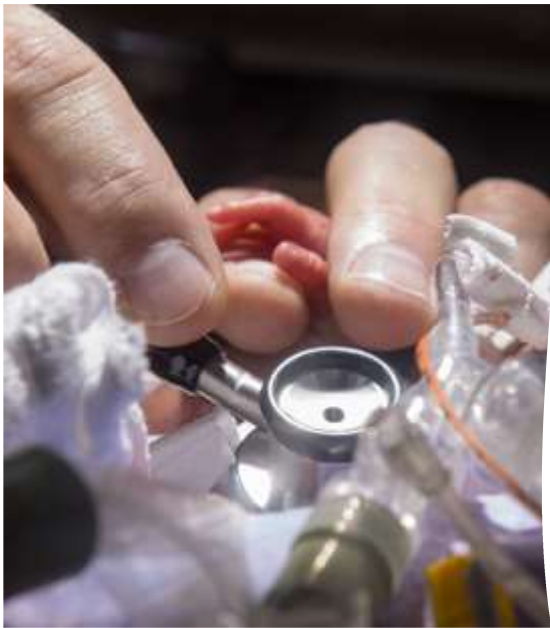
- Define psychological trauma and toxic stress
- Understand how trauma impacts brain development and lifelong health
- Delineate need for trauma-informed care
- Identify the basic principles of trauma informed care

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## Tell us about you...



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## What is Trauma Informed Care?

1. **Realizes** impact of trauma and potential recovery
2. **Recognizes** signs & symptoms of trauma in patients, families, staff
3. **Responds** by incorporating TIC policies and procedures
4. Actively **Resists** re-traumatization

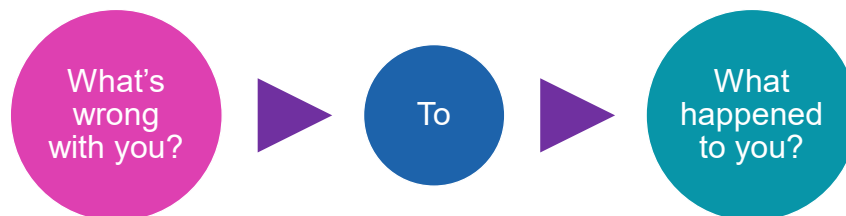
SAMHSA, 2018



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## Trauma Informed Healthcare

- A trauma informed perspective reinforces the notion that all people want to live their best lives
- Creates a cultural shift in healthcare – Instead of thinking:



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# Define psychological trauma and toxic stress

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## Understanding (Psychological) Trauma

- *Any* experience that overwhelms ability to cope.
  - Individual
  - Family
  - Community
- Event
- Experience
- Effects

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## Potential Traumatic EVENTS

### *What comes to mind*

- MVA
- Child maltreatment
- Community violence
- Being laid off/furlough
- Natural disasters (COVID-19)
- IPV

### *More often missed*

- Racial discrimination
- Family member w/ mental illness or substance abuse
- Explicit and Implicit biases (sexual orientation, weight, gender, culture)
- Secondary trauma at work
- Poverty

### *NICU Stay*

- Parent/child separation
- High stress events (code blues and deaths)
- Fear of unknown
- Pain/Cold – delayed soothing
- Lack of privacy

NCTSN; Felitti & Anda, 1998; Hall, 2013, CPI, Sanders & Hall, 2018



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# Understand how trauma impacts brain development and lifelong health



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# Stress Response System

Extra oxygen is sent to the brain, increasing alertness.

Sight, hearing, and other senses become sharper. Eye sight may narrow.

Hormones (adrenaline and cortisol) are secreted

Heart rate and breathing quicken

Decrease in digestive (GI) activity

Blood rushes to our muscles which become tense

Body sweats

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# Cognitive distortions

- All or Nothing
- Emotional Thinking
- Blaming (others) Blaming (Self)
- Difficulty planning or thinking ahead
- Less able to make decisions
- Always being right

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## Brain in the palm of your hand

- Palm and wrist – brain stem (“automatic” brain – blood pressure, breathing, heart rate, digestion)
- Thumb – “emotional” brain (triggers the fight, flight & freeze)
  - Real threats
  - Triggered memories of threats (ie. Sound of someone’s voice, facial expression of a teacher, simple touch on the shoulder...)
- Fingers – Prefrontal Cortex (“thinking” brain - reasoning and emotional control)
- “Flip your Lid”
  - Child yelling at teacher when they think they’re unfair
  - Parent not sharing their full story, was triggered when walking into clinic



2010, Siegel, D.

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## Why do some cope well and others do not?...

### Positive Stress

- Brief increases in heart rate, mild elevations in stress hormone levels.
- Normal part of healthy development
- Result of briefly distressing experiences



### Tolerable Stress

- Serious, temporary stress responses, buffered by supportive relationships
- Result of more severe, longer-lasting difficulty



### Toxic Stress

- Prolonged activation of stress response systems in the absence of protective relationships
- Result of strong, frequent and/or prolonged adversity



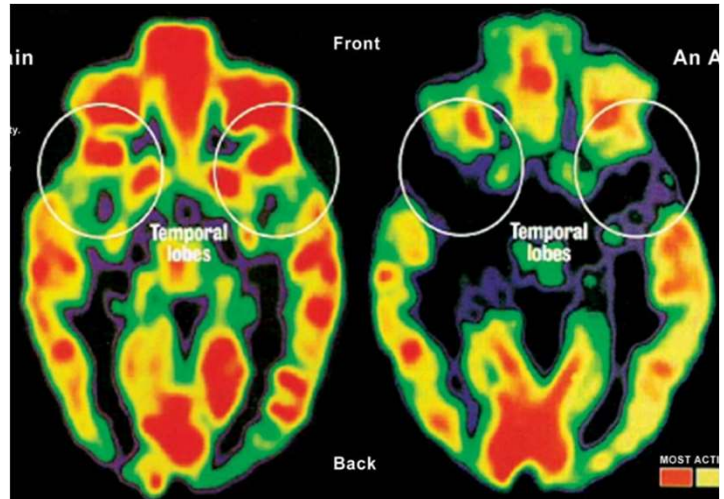
Center on the Developing Child; Harvard University

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## Effects of trauma on the brain

- Adults severely neglected as children may have a smaller prefrontal cortex
- Studies of children and adults with traumatic stress have shown reduced volume in the hippocampus
- Abuse/neglect can cause over-activity of the Amygdala



<https://www.childwelfare.gov/pubs/issue-briefs/brain-development>



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## Science of Resilience

- PTSD is treatable!
- Brain Plasticity
- Cannot erase the trauma
- Opportunity for healing
- Learn to self-regulate thoughts and emotional reactions

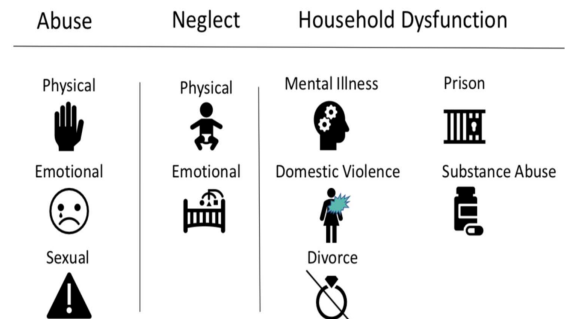


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## Adverse Childhood Events Study

- In the 1990s, middle-class American adults took surveys about their childhood experiences and current health status.
- This study asked about 10 experiences related to:
  - **Violence and abuse**
  - **Neglect**
  - **Household concerns**
- The total number of experiences a participant had was their **ACEs score**



Felitti, Anda, Nordenberg, 1998, American Journal of Preventative Medicine



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## What did the ACE Study Show?

1. Prevalence of ACEs were much more common than had been known
  - 2/3 of respondents reported at least one ACE and 87% of those  $\geq 2$ .
  - Other ACE studies with more racially, ethnically and socio- economically diverse populations showed higher rates even when looking at same ACEs.
2. Graded dose-response relationship with chronic medical and mental health conditions in adulthood.
  - With an ACEs Score  $\geq 4$  vs 0, relative disease risk rose to the following:
 

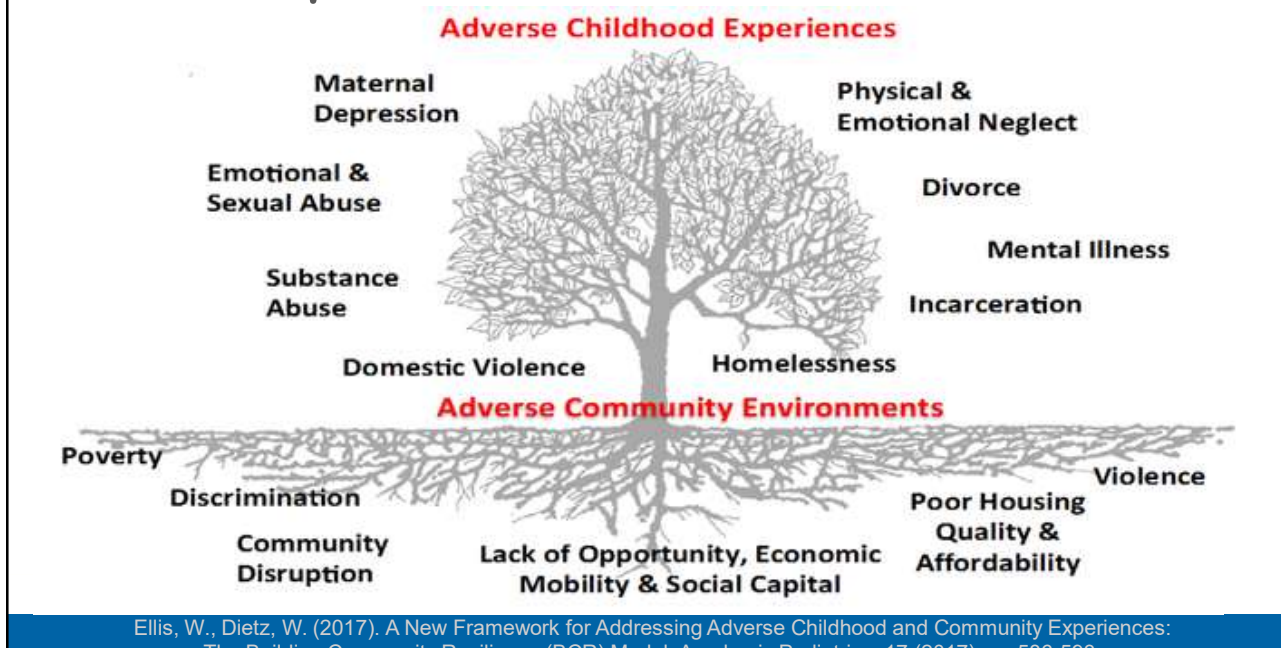
1.6	Diabetes	3.9	COPD
1.9	Cancer	4.6	Clinical Depression
2.2	Heart Disease	4.7	Illicit Drugs
2.4	Stroke	12.2	Suicide Attempt

Felitti et al, 1998; www.cdc.gov



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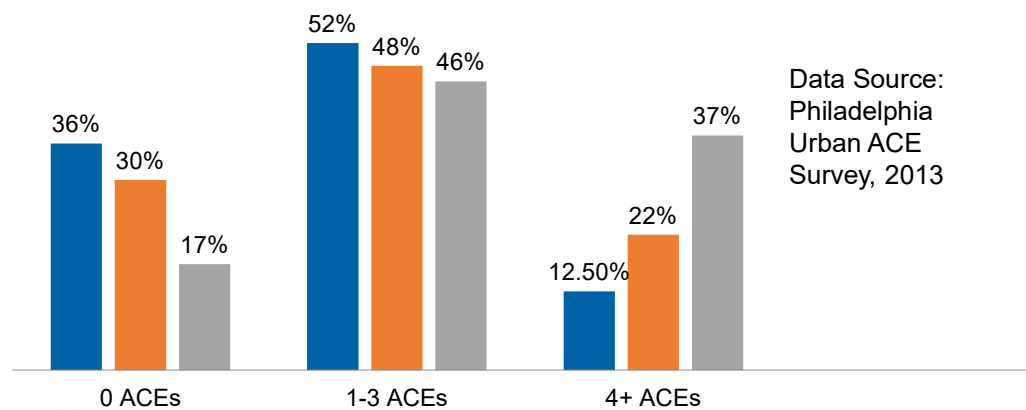
## Further Culprits of Trauma – The Pair of ACEs



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## Distribution of Standard and Urban ACE Scores

■ The ACE Study ■ Standard ACE Score (9 items) ■ Urban ACE Score (14 items)



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## Findings in Children and Families today...

- Children with  $\geq 4$  ACEs are **32X more likely** to have behavioral problems
- Children with  $\geq 3$  ACEs are **~4X more likely** to have developmental delays
- Adolescents with  $\geq 7$  ACEs are **51X more** at likely to attempt suicide
- Children with  $\geq 4$  ACEs are **6.2 times** more likely to use alcohol by 14yo
- Young children with an ACE score of  $\geq 4$  are **2X as likely** to have a body mass index (BMI)  $\geq 85\%$

Burke et al, 2011; Boynton-Jarrett et al, 2010; Dube et al, 2006 and 2001;  
Marie-Mitchell et al, 2013, [endabusenetworkofcare4elearning.org](http://endabusenetworkofcare4elearning.org);



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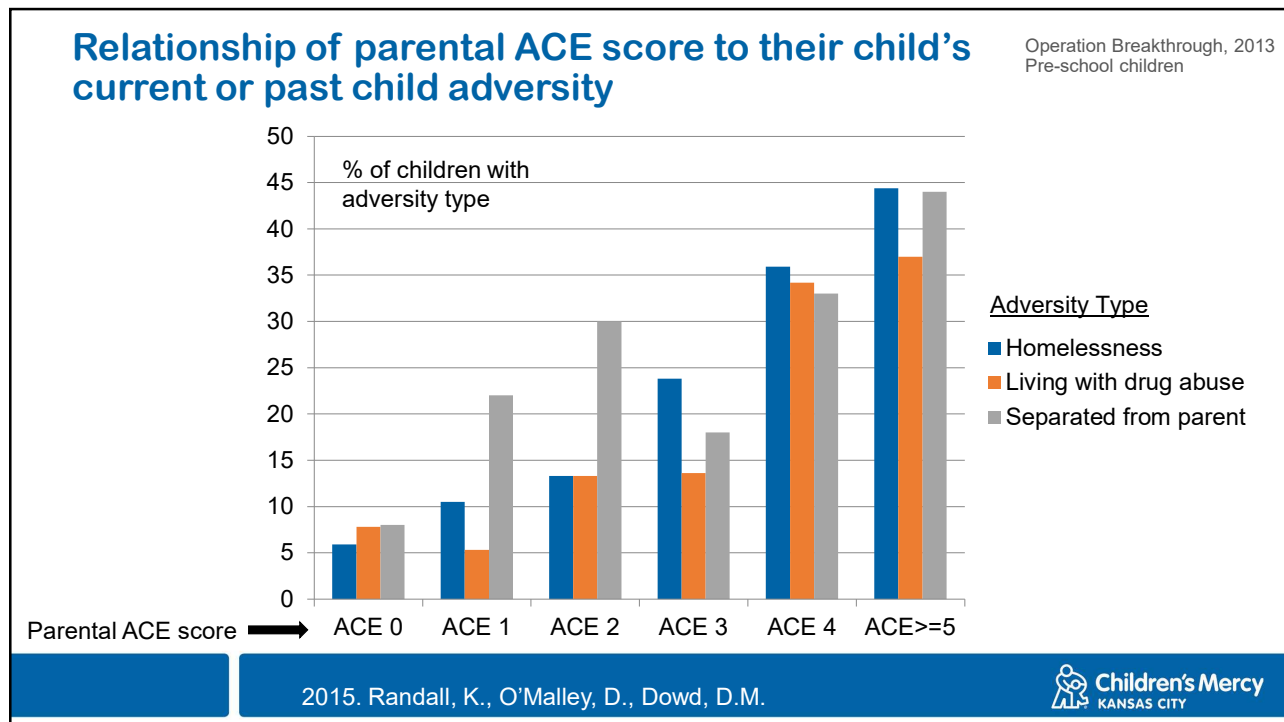
## What about parental ACEs?

- Caregiver ACEs are associated with current child experiences of adversity
- Socioeconomic status and education level **may not** be accurate indicator
- Multiple ACEs → greater challenges modulating their own stress responses and helping their children adapt to life stressors
- Parents with ACE score  $\geq 4$  recognize that ACEs impact
  - Personal health
  - Child's health
  - Parenting

2018, Lê-Scherban, F.    2016 Szilagyi M et al    2016, O'Malley, Randell, Dowd  
2015, Sweeney et al; Center for Children's Healthy Lifestyles and Nutrition



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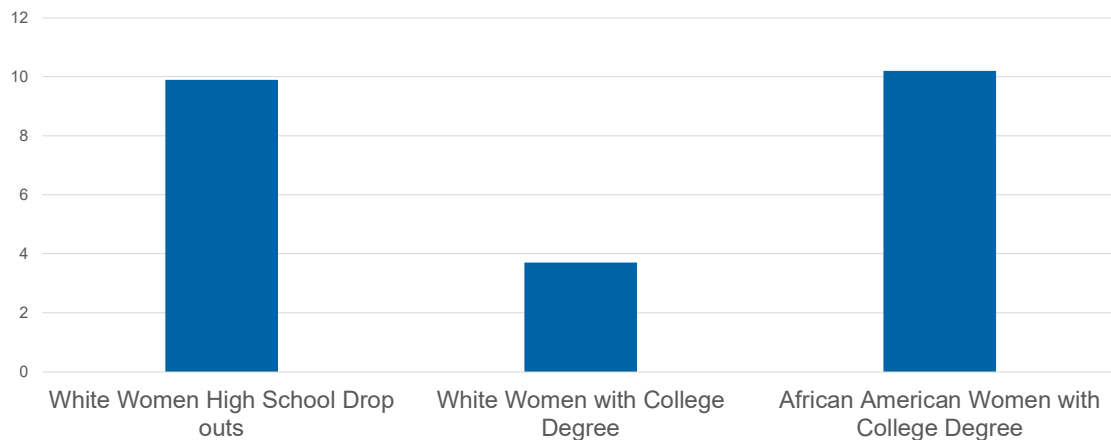
# Delineate need for trauma-informed care in the NICU

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## Infant Mortality Disparities

Rate of death per 1000 babies born

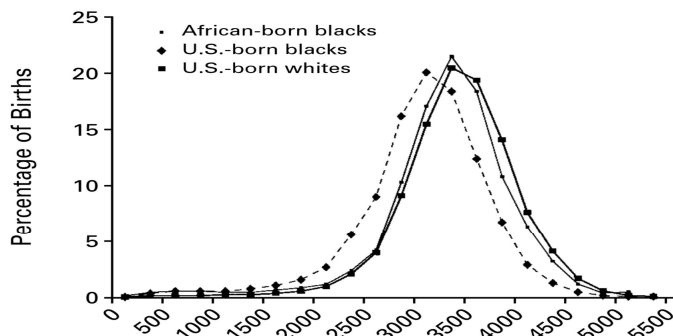


National Center for Health Statistics, CDC 2006; Unnatural Causes



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## EFFECTS for mothers of color in the US



- Infants of U.S. born black women had mean birth weights of **350g** < infants born to US born white women.
- US born black women experience a significantly higher rate (**13.2%**) of low birth weight babies (<2500g) compared to both groups (4-7%)

- Black women are **60 %** more likely than white women to have a preterm birth
- Am Indian and Black women are **2-3X more likely** to die of pregnancy complications than white women
- Racial disparities are already highlighted in COVID-19 outcomes
- **Healthworker bias** and **mistrust** of pts toward healthcare system

Richard, DJ&Collins, JW, Different Birth Weight Among Infants of US born Blacks, African Born Blacks and US Born Whites, N Engl J Med. 1997 Oct 23; 337 (17):1209-1214, NICHQ, 2019



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## Common triggers in the NICU healthcare setting

- Physical touch
- Vulnerability
- Loss of privacy
- Racial and economic oppression
- Feeling unheard by provider/team
- Authoritative stance
- Feel caretaking ability questioned
- Judgment



Daniela Pereira Rodrigues, BSN, RN, CNS Neonatal Nurse Specialist Clinical Research Manager At PBSF  
ONE Conference 2020; Sanders and Hall, 2018.



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## Outcomes for Infants in the NICU

- A NICU stay is now considered an ACE
- Neonatal experience impacts future
  - Behavior
  - Learning
  - Attention
  - Emotional intelligence
  - Interaction with family
  - Outcomes
- Neonatal pain

S Johnson et al J Pediatrics 2010 ; Raylene Phillips, H. Als, 2019 ; Lupien, McEwen et al Nature Reviews Neuroscience 2009 Lupin



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# Identify the basic principles of trauma informed care

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## The Challenge – We don't know what we don't know...

- Similar to Standard Precautions
  - We don't know what kind of diseases/illnesses our patients have, so we treat everyone with caution
- Trauma-Informed Care
  - We don't know what kinds of experiences our patients have had when they present for services, so we need to approach them in a universally sensitive manner



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## Trauma Informed Key Principles

A trauma informed approach incorporates the Key Principles into every interaction, policy and procedure.



SAFETY



TRUST



CHOICE



COLLABORATION



EMPOWERMENT



CULTURAL  
HUMILITY

Missouri Model: A Developmental Framework to Trauma Informed, 2014  
Harris & Fallot, 2001; SAMHSA (2014)



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## Racial Bias = Health Inequity

**“Racism is a core social determinant of health that is a driver of health inequities. These health inequities are not the result of individual behavior choices or genetic predisposition but are caused by economic, political, and social conditions, including racism.”**

Pediatrics, 2019



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### Equality

The assumption is that everyone benefits from the same supports. This is equal treatment.

### Equity

Everyone gets the supports they need (this is the concept of "affirmative action"), thus producing equity.

### Justice

All 3 can see the game without supports or accommodations because **the cause(s) of the inequity was addressed.** The systemic barrier has been removed.

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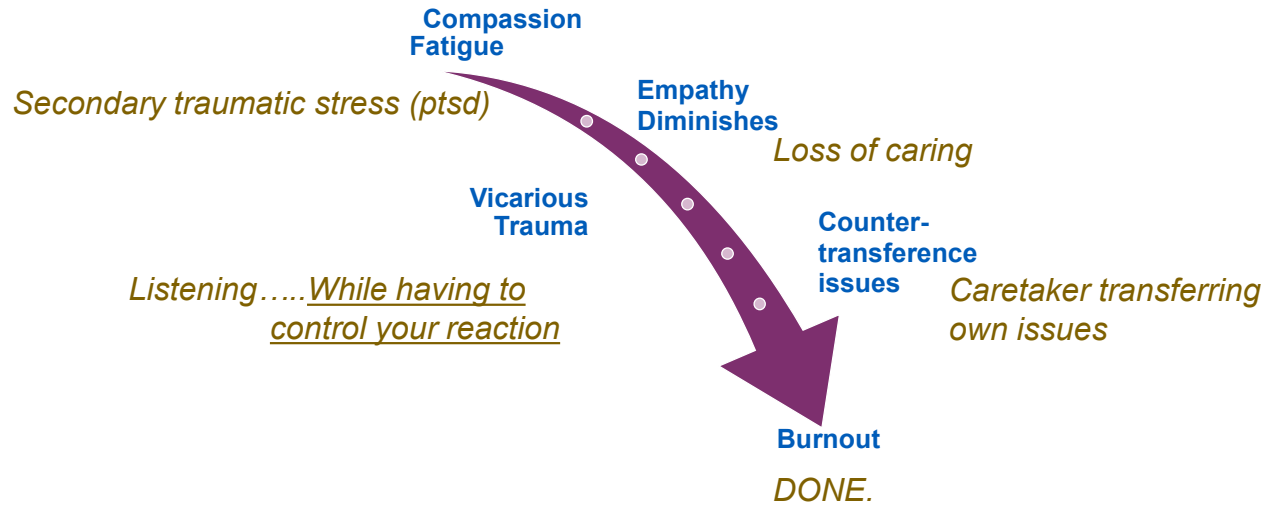
## Trauma Informed Healthcare

- A trauma informed perspective reinforces the notion that all people want to live their best lives
- Creates a cultural shift in healthcare – Instead of thinking:

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# Trauma Informed Approach...

## What happens?

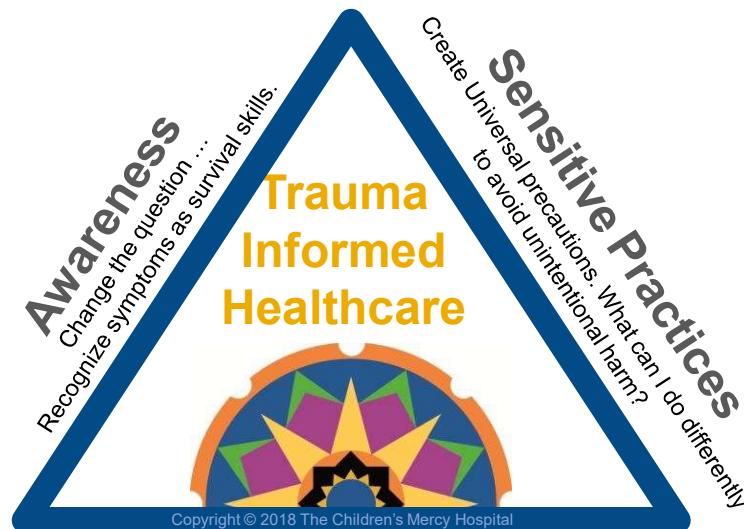


LOVE WILL.

Vicarious Trauma Institute, [www.vicarioustrauma.com](http://www.vicarioustrauma.com) 2012, ViveBene, LLC 37



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## Resilience at Work

Make it an intentional act to care for ourselves so that we can care for others.

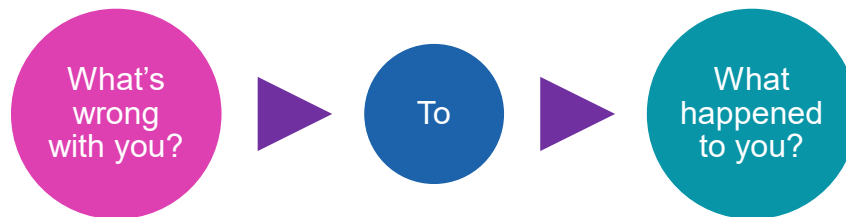
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## Poll Question

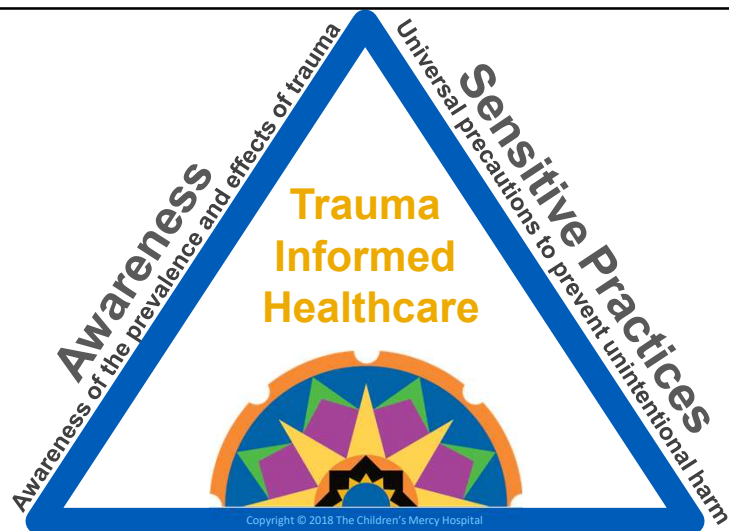
- The next time you are in a challenging situation communicating with a patient, family, or colleague, are you willing to transform your thinking from



## Questions?



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## Resilience at Work

Understand the impact of trauma in their own lives and in their work.  
Empowered with available interventions designed to care for them while they care for others.



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