Trauma Informed Care in the NICU: Transforming Neonatal Care
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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!
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

Tell us about you…
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

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:
  - What’s wrong with you?
  - To
  - What happened to you?
Define psychological trauma and toxic stress

Understanding (Psychological) Trauma

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

SAMHSA, 2015
### 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

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**Understand how trauma impacts brain development and lifelong health**
Stress Response System

- Hormones (adrenaline and cortisol) are secreted
- Blood rushes to our muscles which become tense
- Extra oxygen is sent to the brain, increasing alertness.
- Sight, hearing, and other senses become sharper. Eye sight may narrow.
- Heart rate and breathing quicken
- Decrease in digestive (GI) activity
- Body sweats

Cognitive distortions

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

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
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

Science of Resilience

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


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 > 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 > 4 vs 0, relative disease risk rose to the following:
     | Disease       | Relative Disease Risk |
     |---------------|-----------------------|
     | Diabetes      | 1.6                   |
     | Cancer        | 1.9                   |
     | Heart Disease | 2.2                   |
     | Stroke        | 2.4                   |
     | COPD          | 3.9                   |
     | Clinical Depression | 4.6           |
     | Illicit Drugs | 4.7                   |
     | Suicide Attempt | 12.2              |

Felitti et al, 1998; www.cdc.gov
Further Culprits of Trauma – The Pair of ACEs

Adverse Childhood Experiences

- Maternal Depression
- Physical & Emotional Neglect
- Emotional & Sexual Abuse
- Divorce
- Substance Abuse
- Mental Illness
- Domestic Violence
- Incarceration
- Homelessness
- Violence
- Poverty
- Discrimination
- Community Disruption
- Lack of Opportunity, Economic Mobility & Social Capital
- Poor Housing Quality & Affordability

Further Culprits of Trauma – The Pair of ACEs

Distribution of Standard and Urban ACE Scores

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

Data Source:
Philadelphia Urban ACE Survey, 2013
Findings in Children and Families today…

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


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 > 4 recognize that ACEs impact
  - Personal health
  - Child’s health
  - Parenting

Relationship of parental ACE score to their child’s current or past child adversity

% of children with adversity type

Adversity Type
- Homelessness
- Living with drug abuse
- Separated from parent

Parental ACE score
- ACE 0
- ACE 1
- ACE 2
- ACE 3
- ACE 4
- ACE >=5

2015. Randall, K., O’Malley, D., Dowd, D.M.

Delineate need for trauma-informed care in the NICU
Infant Mortality Disparities

Rate of death per 1000 babies born

White Women High School Drop 
White Women with College Degree 
African American Women with College Degree

National Center for Health Statistics, CDC 2006; Unnatural Causes

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
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

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
Identify the basic principles of trauma informed care

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
**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.”

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**Pediatrics, 2019**
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:

  What’s wrong with you?  ➤  To  ➤  What happened to you?
**Trauma Informed Approach…**

• You don’t have to be a therapist to be *therapeutic*. A buffering, supportive individual has an opportunity to mitigate the trajectory of trauma

• Don’t take it personally

• Work to understand that an individual’s responses and behaviors may be a result of changes in the brain and body and designed for safety

• Remain nonjudgmental, consider what you don’t know

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**Systems Work and the NICU**

• Information only can be inefficient

• Organization-wide change

• It is not a one-time conversation

• Commitment to change is a process

• Starts with system-wide AWARENESS

• Brainstorming with staff is key
What happens?

Secondary traumatic stress (ptsd)

Compassion Fatigue

Empathy Diminishes

Vicarious Trauma

Loss of caring

Counter-transference issues

Caretaker transferring own issues

Burnout

DONE.

Listening.....While having to control your reaction

Vicarious Trauma Institute, www.vicarioustrauma.com 2012, ViveBene, LLC

Resilience at Work

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

Children's Mercy

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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

  - What's wrong with you?
  - To
  - What happened to you?

Questions?
Resilience at Work

Trauma Informed Healthcare

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.