The Social Determinants of Health: It’s Time to Consider the Causes of The Causes

1. Social factors are powerful determinants of health
   1. Any given factors are contigent upon the presence of myriad other factors – social, economic, psychological, environmental, genetic, and epigenetic.
2. Emergence of gene-environment interactions
   1. No longer mutually exclusive
   2. A bad gene may be expressed only in the presence of triggers in the social or physical environment and these environments potentially can be modified by social policies
3. Social Determinant Health
   1. Outside the realm of standard medical care
4. Collaboration with others to improve health outcomes for socially disadvantaged populations
   1. Appreciation of some of the social factors 🡪 effective treatment for patients
   2. Influence living and working conditions that are generally the strongest determinants of whether people are healthy or become sick in the first place
   3. Clinical an d public health practitioners can strengthen routine procedures to assess and respond to social needs through referrals and/or on-site social and legal services
   4. Clinicians and public health practitioners can be key resources for local, state, and national policy makers on the crucial issue of health equity for all Americans

The Impact of Adverse Childhood Experiences and Toxic Stress on Childhood Health and Development

1. What are ACES?
   1. Adverse Childhood Experiences are traumatic experiences that can have a profound effect on a child’s developing brain and body with lasting impacts on a person’s health throughout her lifespan.
      1. Abuse
         1. Physical
         2. Emotional
         3. Sexual
      2. Neglect
         1. Physical
         2. Emotional
      3. Household dysfunction
         1. Mental illness
         2. Incarcerated relative
         3. Mother treated violently
         4. Substance abuse
         5. Divorce
   2. Strong correlations between ACEs and poor health outcomes
      1. As the number of ACE increased, the risk of the negative health outcomes increased as well
2. What is Toxic Stress?
   1. Positive stress: mild or moderate stress response and short-lived in duration, causing brief increases in heart rate or mild changes to the body’s stress hormone levels
   2. Tolerable stress: more severe stress response that has the potential to impact a child’s development over time but its negative effects are tempered by its limited duration which allows the child’s brain to recover in time
   3. Toxic stress: extreme, frequent, or extended activation of the of the body’s stress response without the buffering presence of a supportive adult
3. Importance of Early Childhood in Healthy Brain Development
   1. Windows of opportunity are crucial periods when significant brain development is occurring
      1. Age zero to five
   2. Neuroplasticity is the process by which the brain is shaped by experiences.
   3. Cellular plasticity is the number of connections between brain cells.
   4. Synaptic plasticity is the strength of the connections between brain cells
4. The Toxicity of Toxic Stress
   1. Adrenaline is a hormone, central to the body’s short-term stress response, whose effects include increased heart rate and pupil dilation helping to prepare the body for “fight or flight”
   2. Cortisol is a hormone, central to the body’s long-term stress response, whose effects include increased blood pressure and blood sugar and regulation of the body’s metabolism and immune response.
   3. When the body process too much cortisol, the body’s immune response is suppressed, increasing the chance of infection and disease
5. Impact of Toxic Stress on the Developing Brain
   1. Toxic stress can result in changes to crucial parts of the brain including the hippocampus, prefrontal cortex, and the amygdala
      1. Hippocampus: responsible for learning, memory, and some types of stress regulation
      2. Prefrontal cortex: responsible for decision-making, judgement, impulse control, and attention
      3. Amygdala: responsible for processing emotional reactions
6. Recommendations
   1. Gather more data on the prevalence of ACEs throughout the US
   2. Improve access to healthcare, including mental health, for all families
   3. Advance the integration of behavioral and physical health care services
   4. Support research to identify evidence-based interventions for toxic stress
   5. Educate pediatricians and other healthcare professionals who serve children on the effects of ACEs and impact of toxic stress on children’s developing brains and bodies

Disrupting the Pathway

1. The greater attention on high utilization provides an additional opportunity to reduce patterns of high utilization across the population by applying prevention methodology
2. Adult high-utilizer population commonly suffer from diabetes, hypertension, renal disorders, coronary artery disease, asthma, and behavioral health conditions
   1. Chronic diseases are a major driver of high utilization
   2. Trauma is a common experience among high utilizers
3. The community environments that shape health over the life course
   1. Health equity: attainment of the highest level of health for all
4. Healthcare should augment the impact of care coordination in order to comprehensively address high utilization
   1. Patient-centered approach neglects broader environmental factors that can improve health and interrupt patterns of high utilization
   2. Triple Aim: lower costs, improved quality, and improved population health
      1. Food and activity-related chronic disease are significantly represented in high utilizers
      2. Asthma is a condition that can be reduced via improvements in community conditions
      3. Reducing trauma exposure can also support the reduction of medical utilization in the long term
      4. Individuals with housing and other social issues also face other issues related to access to health food, employment
5. A prevention approach to high utlization
   1. Reduce the severity of existing health conditions of high utilizers
   2. Support the maintenance of health of those at risk for becoming high utilizers
   3. Prevent individuals from becoming high utilizers in the first place
6. Community Determinants of Health and Safety 🡪 Behaviors and exposures 🡪 medical conditions
7. Healthy care has to expand its efforts and pursue comprehensive strategies that will further disrupt the pathway of high utilization
   1. Not only might a prevention approach reduce costs and improve outcomes among existing high utilizers, it can reduce the severity of existing health conditions and prevent individuals at risk from becoming high utilizers in the first place