Social Determinants of Health in Pediatrics

“Something there is that doesn’t love a wall…”

R. Neal Davis MD  MS
March 17, 2017
Objective

• Introduce social determinants of health
• Discuss a framework for understanding social determinants of health in children
• Identify evidenced based practices to address social determinants of health
• Suggest specific action items for practices and health plans
• Literary breaks along the way
# Social Determinants of Health

<table>
<thead>
<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
<th>Health Care System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Housing</td>
<td>Literacy</td>
<td>Hunger</td>
<td>Social integration</td>
<td>Health coverage</td>
</tr>
<tr>
<td>Income</td>
<td>Transportation</td>
<td>Language</td>
<td>Access to healthy options</td>
<td>Support systems</td>
<td>Provider availability</td>
</tr>
<tr>
<td>Expenses</td>
<td>Safety</td>
<td>Early childhood education</td>
<td>Social integration</td>
<td>Community engagement</td>
<td>Provider linguistic and cultural competency</td>
</tr>
<tr>
<td>Debt</td>
<td>Parks</td>
<td>Vocational training</td>
<td>Support systems</td>
<td>Discrimination</td>
<td>Quality of care</td>
</tr>
<tr>
<td>Medical bills</td>
<td>Playgrounds</td>
<td>Higher education</td>
<td>Access to healthy options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>Walkability</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Health Outcomes**
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations
Life Course Theory and Social Determinants

Health And Wellness

Optimal Trajectory

Sub-optimal Trajectory

Prenatal Birth Childhood Adulthood
Life Course Theory

• Epigenetics
Life Course Theory

- Epigenetics
Life Course Theory

• Toxic Stress
  • Adverse Childhood Experiences Studies (ACE)
    • Felliti, Anda
    • 18,000 respondents
    • Kaiser, San Diego
# Categories of ACE

## Abuse, by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological (by parents)</td>
<td>11%</td>
</tr>
<tr>
<td>Physical (by parents)</td>
<td>11%</td>
</tr>
<tr>
<td>Sexual (anyone)</td>
<td>22%</td>
</tr>
</tbody>
</table>

## Household Dysfunction, by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Abuse</td>
<td>26%</td>
</tr>
<tr>
<td>Mental Illness</td>
<td>19%</td>
</tr>
<tr>
<td>Mother Treated Violently</td>
<td>13%</td>
</tr>
<tr>
<td>Imprisoned Household Member</td>
<td>3%</td>
</tr>
</tbody>
</table>
# ACE Score

Number of categories adverse childhood experiences are summed …

<table>
<thead>
<tr>
<th>ACE score</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>48%</td>
</tr>
<tr>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>4 or more</td>
<td>7%</td>
</tr>
</tbody>
</table>

• More than *half have at least one ACE*
Adverse Childhood Experiences

% Alcoholic as Adult vs. ACE Score as Child

0 1 2 3 4+
Life Course Theory

Outcomes
Associated with
Adverse Childhood Experiences

- Alcoholism and alcohol abuse
- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Depression
- Fetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease (IHD)
- Liver disease
- Risk for intimate partner violence
- Multiple sexual partners
- Obesity
- Sexually transmitted diseases (STDs)
- Smoking
- Suicide attempts
- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy
ACE Study- Conceptual Model

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan
Nurture Gap
Social Determinants of Health

• Developmental impact
Social Determinants of Health

• Are there evidence based strategies to help?
An ecobiodevelopmental framework for early childhood policies and programs.


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Risk and Resilience

Health And Wellness

- Prenatal
- Birth
- Childhood
- Adulthood

Optimal Trajectory
Sub-optimal Trajectory

Promote Resilience
Reduce Risk

Promote Resilience
Reduce Risk
Risk and Resilience

Health And Wellness

Prenatal Birth Childhood Adulthood

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Promote Resilience
Reduce Risk

Promote Resilience
Reduce Risk

Optimal Trajectory
Sub-optimal Trajectory
Resilience

• [http://developingchild.harvard.edu/science/key-concepts/resilience/](http://developingchild.harvard.edu/science/key-concepts/resilience/)
Resilience

- Suglia et al 2009, Arch Pediatr Adolesc Med
- Maternal intimate partner violence and increased asthma incidence in children: buffering effects of supportive caregiving.
Hippocampus volume by preschool depression severity and maternal support.

Luby J L et al. PNAS 2012;109:2854-2859
Reach Out and Read

• Building parent/caregiver capacity for nurturing and engaging relationships
• Focus on early literacy, language, nurturing
• Evidence based- 15 peer reviewed studies
• Greatest impact on those at highest risk
• Anecdotal awesomeness
Nurture Gap

Cumulative Language Experiences

Cumulative Words Spoken to Child (in millions)

Age of Child

Professional: 45
Working-Class: 26
Low-Income: 13

6:1
2:1
1:2

Hart and Risley, 1995
Thirty Million Words (TMW)

• [https://www.youtube.com/watch?v=7BrrPOiPISw](https://www.youtube.com/watch?v=7BrrPOiPISw)
• Coming soon...
Literary Break- Victor Hugo

• The gamin is a beauty and, at the same time, a disease of the nation—a disease that must be cured.
• How? By light.
• Light makes whole.
• Light enlightens...
• Give them light, so they can give you warmth.
Risk and Resilience

Health And Wellness

Prenatal Birth Childhood Adulthood

Optimal Trajectory
Sub-optimal Trajectory

Promote Resilience
Reduce Risk

- Optimal Trajectory
- Sub-optimal Trajectory
Risk and Resilience

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Promote Resilience
Reduce Risk
Nurse Family Partnership

- National non-profit organization
- Nurse home visitation
  - 1st time high-risk mothers
  - Visits 2-4 times per month from pregnancy through age 2 years of the child
- Marked change in life course
Nurse Family Partnership

- Evidence
  - 18% reduction pre-term births
  - 31% reduction in closely-spaced second births
  - 60% reduction in infant mortality
  - 31% reduction in child maltreatment through age 15 years
  - 39% reduction in language delay
  - 38% reduction in ED for child injuries ages 0-2 years
  - 46% reduction in youth crimes and arrests ages 11-17 years
  - 53% reduction in youth substance abuse ages 12-15 years

- $5-6 return on investment for every $1 spent
January 2015 - Salt Lake County Health Department increased NFP resources and expanded to other counties

March 2015 - NFP presentation to OB group in Salt Lake

October 2015 - Implementation of collaborative workflow

September 2015 - Intermountain/NFP Quality Improvement team

Dec 2016 - Expansion to Logan

Spring 2016 - Expansion to Ogden

2008
Salt Lake County Health Department NFP

2015
Intermountain-NFP Timeline

2016
- Expansion to Ogden
Basic QI team structure

Guidance team
- OB manager, County Health Department NFP lead
- IH Healthcare Delivery Research
- IH Community Benefit, IH Women’s and Newborn Clinical Program, Select Health, County Health Dept
- Physicians, RNs, MAs, PSRs, NFP RNs

Project team
- IH Medical Group Pediatrician
- Team leader
- Facilitator
- OB manager, County Health Department NFP lead

Front line workers
- Process
- Fundamental knowledge
- Participation
- Ownership
- Fingerprinting
- Physicians, RNs, MAs, PSRs, NFP RNs
Intermountain-NFP Collaboration

- Data on referred and enrolled January 2016- January 2017

<table>
<thead>
<tr>
<th>City</th>
<th>Referred</th>
<th>Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Lake City</td>
<td>147</td>
<td>57</td>
</tr>
<tr>
<td>Ogden</td>
<td>49</td>
<td>6</td>
</tr>
<tr>
<td>Logan</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Intermountain-NFP Collaboration

• Number need to treat to prevent...
• First preterm birth- 38
• Subsequent preterm birth- 26
• Infant death- 294
• Child maltreatment- 18
• Child injuries treated in ED- 7
• Youth substance abuse- 4
Lessons Learned/Future Directions

• Build process into workflow
  • Ground level empowerment
  • Allow flexibility
• Warm Handoff
• Regular feedback and collaboration
• Area Deprivation Index Study
• Expansion???
Intermountain- NFP Take Home Points

Trust

Team
Risk and Resilience

Health and Wellness

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Sub-optimal Trajectory
Identifying and Reducing Risk

- SEEK Model- Identify psychosocial risk and use team-based medical home care
  - Parent Screening Questionnaire
  - Case Management model to allocate resources
- Assess psychosocial risk early and link to help/empowerment
Screening - Parent Questionnaire

• **PLEASE CHECK**
  • □ Yes □ No Do you need the phone number for Poison Control?
  • □ Yes □ No Do you need a smoke detector for your home?
  • □ Yes □ No Does anyone smoke tobacco at home?
  • □ Yes □ No In the last year, did you worry that your food would run out before you got money or Food Stamps to buy more?
  • □ Yes □ No In the last year, did the food you bought just not last and you didn’t have money to get more?
  • □ Yes □ No Do you often feel your child is difficult to take care of?
  • □ Yes □ No Do you sometimes find you need to hit/spank your child?
  • □ Yes □ No Do you wish you had more help with your child?
  • □ Yes □ No Do you often feel under extreme stress?
  • □ Yes □ No In the past month, have you often felt down, depressed, or hopeless?
  • □ Yes □ No In the past month, have you felt very little interest or pleasure in things you used to enjoy?
  • □ Yes □ No In the past year, have you been afraid of your partner?
  • □ Yes □ No In the past year, have you had a problem with drugs or alcohol?
  • □ Yes □ No In the past year, have you felt the need to cut back on drinking or drug use?
  • □ Yes □ No Are there any other problems you’d like help with today?
SEEK Outcomes

• SEEK I- Intervention group
  • Fewer reports to CPS compared to regular care (nearly one half)
  • Fewer reports of severe or very severe physical assault compared to regular care (one third)

• SEEK II
  • No difference in time spent addressing psychosocial issues
  • Greater provider confidence/efficiency
They are about problems that affect many families. If there’s a problem, we’ll try to help. Please answer the following questions about your child being seen today. If there’s more than one child, please answer “yes” if it applies to any one of them. This is voluntary. You don’t have to answer any questions you prefer not to.

Do you need the phone number for Poison Control? (1-800-222-1222)  
Do you have a smoke detector for your home? 
Does anyone smoke tobacco at home?  
In the last year, did you worry that your food would run out before you got money or Food Stamps to buy more?  
In the last year, did you run out of food before you had money to get more?  
Do you often feel your child is difficult to take care of?  
Do you sometimes find you need to hit/spank your child?  
Do you wish you had more help with your child?  
Do you often feel under extreme stress?  
In the past month, have you often felt down, depressed, or hopeless?  
In the past month, have you felt little interest or pleasure in things you used to enjoy?  
In the past year, have you been afraid of your partner?  
In the past year, have you had a problem with drugs or alcohol?  
In the past year, have you felt the need to cut back on drinking or drug use?  
Are there any other problems you would like help with today?
Community Neighborhood

- Food resources
- Parents As Teachers
- Utah Youth Village
- Family Support Center
- Hopeful Beginnings
- System of Care
- Intimate Partner Violence Link Line
- Early Intervention
211 Search

Common Searches

- Food Resources
- Housing
- Dental Services
- Mental Health Services
- more

Add a resource to this directory
Connect2Health

- [https://spark.utah.edu/community/](https://spark.utah.edu/community/)
God had done a grander thing with it, he sheltered a child.

He, who does not weep, does not see.
Life Course

Prenatal  Birth  1 year  2 years  3 years  4 years  5 years  6 years...
Life Course

Prenatal    Birth    1 year    2 years    3 years    4 years    5 years    6 years...
Life Course

Prenatal  Birth  1 year  2 years  3 years  4 years  5 years  6 years...
Action Items

• Clinic practices implement screening for psychosocial risks
• Clinic practices develop relationships between care management and community partners
• Clinic practices implement resilience based strategies such as Reach Out and Read and Thirty Million Words
• Health plans incentivize practices to develop a plan for psychosocial risks
Barriers for Us

• Not my job?
  • No

• Lack of evidence?
  • No

• Lack of resources?
  • No
Barriers for Children

• Are psychosocial risks a barrier to a nurturing environment for a child?
  • Yes

• Are psychosocial risks a barrier for a child’s development?
  • Yes

• Are psychosocial risks a barrier to the long term health and wellness of a child?
  • Yes
Mending Wall- Robert Frost

“Something there is that doesn’t love a wall...
That wants it down...”