A Proactive Approach to Iowa’s Health: Addressing the Social Determinants from Birth and Beyond
1. What issues are prevalent in your practice and community?

2. How can I use knowledge of these issues to improve services I provide to my client/patient?

3. How do social determinants affect health not only in childhood, but along the life spectrum?

4. How can I apply the lessons presented today to integrate Social Determinants of Health into my organization?

5. How can we as a community improve coordination to improve quality of life?

Chris Espersen, MSPH
Director of Quality
Primary Health Care
“Populations that typically experience lower income levels are more likely to have lower education levels, live in densely populated areas, remote rural areas, or areas with little or no access to healthier food outlets and markets; experience violence and poorer sexual health outcomes; have no or inadequate health insurance; and be employed in positions that are more labor-intensive with fewer opportunities for upward mobility”

Study overview

• Examines the relationship between adverse childhood experiences (ACEs) and the impact on adult health and behavior throughout the lifespan

• Conducted by Dr. Robert Anda, CDC, and Vincent Felitti, Kaiser Permanente

• Largest and most comprehensive study ever done on the subject

Adverse Childhood Experiences

• Abuse: physical, sexual, psychological
• Neglect: emotional, physical
• Exposure to other traumatic stressors:
Study method

17,421 members of the Kaiser Health Plan in San Diego County from 1995-1997

Confidential survey asking questions about childhood trauma and current health status and behaviors combined with physical examination

Demographics:
• primary care
What it found

Of those surveyed:

• Two-thirds reported at least one Adverse Childhood Experience
• 1 in 5 experienced 3 or more ACEs
• 28% were physically abused and 21% were sexually abused as children; 27% grew up with substance abuse in the home
• 66% of the women experienced abuse, violence or family strife in childhood
• Women were 50% more likely than men to have experienced 5 or more ACEs
People with 4 or more ACEs compared to those with 0 ACEs:

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>% INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>242%</td>
</tr>
<tr>
<td>Obesity</td>
<td>222%</td>
</tr>
<tr>
<td>Depression</td>
<td>357%</td>
</tr>
<tr>
<td>Illicit drug use</td>
<td>443%</td>
</tr>
<tr>
<td>Injected drug use</td>
<td>1,133%</td>
</tr>
<tr>
<td>STD</td>
<td>298%</td>
</tr>
<tr>
<td>Attempted suicide</td>
<td>1,525%</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>555%</td>
</tr>
</tbody>
</table>

As the number of ACEs increases, so does the level of risk for each health issue.
Prevalence of ACEs in Iowa

Average score across seven comparison states:
(Arkansas, California, Louisiana, New Mexico, Tennessee, Washington & Wisconsin)
ACE Impacts on Lifelong Health

Adverse Childhood Experiences

- Disrupted Neurodevelopment
- Social, Emotional, and Cognitive Development
- Adopting Health-Risk Behaviors
- Disease, Disability, and Social Problems
- Death

Conception

Death
Disrupted Neurodevelopment

Healthy Brain
This PET scan of the brain of a normal child shows regions of high (red) and low (blue and black) activity. At birth, only primitive structures such as the brain stem (center) are fully functional; in regions like the temporal lobes (top), early childhood experiences wire the circuits.

An Abused Brain
This PET scan of the brain of a Romanian orphan, who was institutionalized shortly after birth, shows the effect of extreme deprivation in infancy. The temporal lobes (top), which regulate emotions and receive input from the senses, are nearly quiescent. Such children suffer emotional and cognitive problems.
Persistent stress changes brain architecture

**Normal**

- Typical neuron with many connections

**Chronic stress**

- Neuron damaged by toxic stress – fewer connections

Prefrontal Cortex & Hippocampus

Impact on brain function

Affect Regulation
Panic reactions, depression, anxiety, hallucinations

Somatic Issues
Sleep disturbances, severe obesity, pain

Substance Use
Smoking, alcoholism, illicit drug use, IV drug use

Sexuality
Early intercourse, promiscuity, sexual dissatisfaction

Memory
Amnesia (childhood)

Arousal
High stress, problems with anger, perpetrating domestic violence
Significant Adversity Impairs Development in the First Three Years

Source: Barth et al. (2008)
Students with higher number of ACEs are more likely to:

- Be designated to special education
- Score lower on standardized tests
- Have language difficulties
- Be suspended or expelled
- Have poorer health
- Fail a grade
On average, 5 out of every 30 students in an Iowa school classroom will live with a parent who has a very high ACE score – a score of 4 or more.
Adoption of Health Risk Behaviors

What happened to you? vs. What’s wrong with...
## Probability of Outcomes

Given 100 American Adults

<table>
<thead>
<tr>
<th>No ACEs</th>
<th>1-3 ACEs</th>
<th>4-8 ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33</td>
<td>51</td>
</tr>
<tr>
<td>WITH 0 ACEs</td>
<td>1 in 16 smokes</td>
<td>1 in 9 smokes</td>
</tr>
<tr>
<td></td>
<td>1 in 69 are alcoholic</td>
<td>1 in 9 are alcoholic</td>
</tr>
<tr>
<td></td>
<td>1 in 480 uses IV drugs</td>
<td>1 in 43 uses IV drugs</td>
</tr>
<tr>
<td></td>
<td>1 in 14 has heart disease</td>
<td>1 in 7 has heart disease</td>
</tr>
<tr>
<td></td>
<td>1 in 96 attempts suicide</td>
<td>1 in 10 attempts suicide</td>
</tr>
</tbody>
</table>
ACEs and Smoking in Iowa

Adults with higher ACEs are almost twice as likely to smoke cigarettes than those with zero ACEs.
Odds Compared to Group with Zero ACEs

ACE-related Odds of Certain High Risk Behaviors: Any Intravenous Drugs Use, STDs, Prostitution, or Risky Sex.

The odds of having an HIV high risk factor quadrupled for Iowa adults having three or more ACEs.
More than 33% of adults reporting four or more ACEs had received a diagnosis of clinical depression but were not currently taking any form of medication.
Impact on lifelong health in Iowa

ACEs and Poor overall Health

- Poor General Health*
- Activity Limitations**

ACE-Related Number of Bad Health Days in Last Month

- Mental Health*
- Physical Health**
### Disease, Disability, & Social Problems

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>0 ACEs</th>
<th>1 ACEs</th>
<th>2 ACEs</th>
<th>3 ACEs</th>
<th>4+ ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>100%</td>
<td>130%</td>
<td>145%</td>
<td>155%</td>
<td>236%</td>
</tr>
<tr>
<td>Asthma</td>
<td>100%</td>
<td>115%</td>
<td>118%</td>
<td>160%</td>
<td>231%</td>
</tr>
<tr>
<td>Cancer</td>
<td>100%</td>
<td>112%</td>
<td>101%</td>
<td>111%</td>
<td>157%</td>
</tr>
<tr>
<td>COPD</td>
<td>100%</td>
<td>120%</td>
<td>161%</td>
<td>220%</td>
<td>399%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>100%</td>
<td>128%</td>
<td>132%</td>
<td>115%</td>
<td>201%</td>
</tr>
<tr>
<td>Heart Attack</td>
<td>100%</td>
<td>148%</td>
<td>144%</td>
<td>287%</td>
<td>232%</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>100%</td>
<td>123%</td>
<td>149%</td>
<td>250%</td>
<td>285%</td>
</tr>
<tr>
<td>Kidney Disease</td>
<td>100%</td>
<td>-17%</td>
<td>164%</td>
<td>179%</td>
<td>263%</td>
</tr>
<tr>
<td>Stroke</td>
<td>100%</td>
<td>114%</td>
<td>117%</td>
<td>180%</td>
<td>281%</td>
</tr>
<tr>
<td>Vision</td>
<td>100%</td>
<td>167%</td>
<td>181%</td>
<td>199%</td>
<td>354%</td>
</tr>
</tbody>
</table>
Not every adult with a history of adverse experiences will have poor health outcomes, but many will experience some problems, and some will experience serious difficulties.
The Magnitude of the Solution

**ACE reduction** reliably predicts simultaneous decrease in all of these conditions attributable risk.

Source: Washington Family Policy
Now what?
Pediatric Integrated Health Program

Fostering holistic health for children & youth with a mental health diagnosis

Integrated Health Program Care Team

Child & Family

Care Coordinator

Nurse

Family Peer Support Specialist

Orchard Place

Developing Strong Futures
Making the Most of Well-Child Care with Public-Private Partnerships

Rebecca Goldsmith, MPH
1st Five Program Consultant
Iowa Department of Public Health
There are over 240,000 young children ages birth though five in Iowa. Of these youngest Iowans:

- 25% live in poverty. (48,000)
- 16% have parents with compromised mental health status including depression or anxiety. (38,400)
- Almost 40% have mothers with less than “excellent” or “very good” physical or mental health.
- 21% percent of children (ages 4 months to 5 years) are at moderate or high risk of developmental, behavioral or social delays as reported by one or more parent.

Kids Count Data Center, Annie E. Casey Foundation.
2005 Iowa Child and Family Household Health Survey
The Health and Well-Being of Children: A Portrait of States and the Nation 2007 US Department of Health and Human Services, Maternal and Child Health Bureau
http://mchb.hrsa.gov/nsch07/state/iowa.html
Ibid.
Children with developmental/behavioral problems are eluding early detection

• Nationally, 71% of pediatricians use only observation of development to screen children; however, this method identifies only 30% of young children with developmental disabilities.

• Only 1 in 6 children with a developmental concern are identified before starting school.

• In Iowa, only 50% of children birth-12 months enrolled on Medicaid receive adequate developmental screening, and less than 30% for children 1-2 years.


Impact of Caregiver Depression on Children

Infants of clinically depressed mothers often withdraw from daily activities and avoid interaction with caregivers.

Older toddlers may exhibit aggressive or impulsive behavior.

Children often learn from the patterns of their early experiences and perceive that only negative strategies, such as fussing or crying, will elicit a caregiver response.
All children of mothers whose depression remitted after treatment remained free of psychiatric diagnoses at 3 months, whereas 17% of the children whose mothers remained depressed acquired a diagnosis.

Children’s Healthy Development: Who Sees Young Children?

<table>
<thead>
<tr>
<th>Service</th>
<th>% of All Children Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive Health Care Visit (0-5)</td>
<td>90.7%</td>
</tr>
<tr>
<td>EPSDT Visit (0-2)</td>
<td>41.2%</td>
</tr>
<tr>
<td>WIC Participation (0-5)</td>
<td>31.0%</td>
</tr>
<tr>
<td>Formal Child Care Arrangement (0-4)</td>
<td>N/A</td>
</tr>
<tr>
<td>Head Start/Early Head Start (0-5)</td>
<td>4.4%</td>
</tr>
<tr>
<td>Part B of IDEA (3-5)</td>
<td>5.7%</td>
</tr>
<tr>
<td>Part C of IDEA (0-2)</td>
<td>2.35%</td>
</tr>
</tbody>
</table>

Sources:
Preventive Health Visit: National Survey of Children's Health
EPSDT 416 Forms, Centers for Medicare and Medicaid Services (CMS)
WIC - FDA, Food and Nutrition Services, Office of Analysis, Nutrition, and Evaluation
Formal Child Care: Census Bureau Special Report: Who’s Minding the Kids?
Head Start: National Head Start Association, Program Fact Sheets
Part B: U.S. Department of Education, Office of Special Education Programs, Data Analysis System
Part C: IDEAd Data. Data Tables for Office of Special Education Programs State Reported Data
Primary Care Provider
Involvement is Key

- Providers play an *important* role in early identification of children
- Viewed as a credible source
- Parents expect guidance on behavior and development during routine office visits
1st Five uses a three-level system of child health care

**Level 1 services:**
Standardized Universal Surveillance

**Level 2 services:**
Developmental Screening

**Level 3 services:**
Evaluation, Diagnosis & Treatment
Level 1 - Standardized Universal Surveillance

Iowa Child Health & Development Record (CHDR) forms are used as part of all well child visits during the period from birth - age 5.

The Iowa CHDR forms help to identify:

- **Risk factors** in a child's life related to family stress, caregiver depression and social/emotional concerns.

- **Developmental "red flags"** that signal the need for further assessment and evaluation.
# Level 2 – Developmental Screening

**AAP RECOMMENDATIONS** for routine standardized screening of all children

<table>
<thead>
<tr>
<th>Age</th>
<th>Screening Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 months</td>
<td>General developmental screening</td>
</tr>
<tr>
<td>18 months</td>
<td>General developmental screening</td>
</tr>
<tr>
<td></td>
<td>Screening for autism</td>
</tr>
<tr>
<td>24 months</td>
<td>General developmental screening if a 30-month surveillance exam is not scheduled</td>
</tr>
<tr>
<td></td>
<td>Screening for autism</td>
</tr>
<tr>
<td>30 or 36 months</td>
<td>General developmental screening</td>
</tr>
</tbody>
</table>

*When standardized screening is performed, it should also be accompanied by surveillance in all appropriate domains.*
Don’t watch and wait.
1st Five Partnership Model

1. Provider identifies patient with a need for referral
   - The primary care provider performs standardized surveillance for social/emotional development, family stress and parental depression

2. Referral is sent to 1st Five
   - If a condition is identified, the child is linked to the 1st Five care coordinator (CC) through a one-step referral process

3. 1st Five contacts the family and links them with appropriate intervention services

4. 1st Five care coordinator follows up with the provider on the patient’s status
   - The CC provides follow-up on the status of the patient
   - 1st Five monitors the family’s progress

   - The CC follows up with the family on a regular basis
About Children Served by 1st Five

- 74% Medicaid
- 16% Private
- 14% Under 1
- 34% Ages 3-5
- 46% Ages 1-2
- 6% Over 5
- 5% Other/unknown
- 3% Uninsured
- 2% Hawk-i

- 42% Girls
- 58% Boys
- 8% Other*
- 13% Spanish
- 79% English
Currently, 49 counties and 80 medical practices are involved in 1st Five, 6,356 families have been referred to 1st Five and 1,244 children have been referred to well-child care.
Potential Reasons for Referral to 1st Five

- Early Intervention & Evaluation Services
- Developmental Delay
- Speech Therapy
- Occupational Therapy
- Physical Therapy
- Financial Stress
- Family/Relationship Stress
- Domestic Abuse
- Child Care
- Head Start & Preschool
- Family Support Services
- Housing Resources
- Maternal/Caregiver Depression
- Mental Health Issues
- Behavior Issues
- Parent Education Programs
- Food Assistance
- Family Planning
- Medicaid/Dental/\textit{hawk-i}\ Insurance Needs
- Substance Abuse
- Transportation Concerns
What Providers are Saying...

“Many times it takes that extra person to ensure a referral gets completed.”
~ Nurse, Primary Health Care, Marshalltown

“This is like a dream come true, we have needed something like this for a long time.”
~ Becky, Midwife, Knoxville Area Community Health Clinic, Knoxville

“I’m learning a lot more about patients than I have ever known before. I’m so glad we’re doing this, and it actually saves us time.”
~ Dr. Rhonda Enserro, Walnut Creek Pediatrics, Des Moines
Iowa’s 1st Five National Recognition

Primary Care and Public Health: Exploring Integration to Improve Population Health, Institute of Medicine, 2012, P. 64.

“Systems of Care Coordination for Children: Lessons Learned Across State Models,” Commonwealth Fund, Issue Brief, September 2010

Sarah Black
Site Coordinator
Visiting Nurse Services

Making the Most of Well-Child Care Through Public-Private Partnerships
APPROACH

- Respect
- Listen
- Build Trust
- Care
- Integrity
- Advocacy
- Expertise
For every initial referral into 1st Five an average of three and a half referrals to programs or connections to other services and resources are made.
VALUE of 1st FIVE

• to Providers

• to Families

• to Community resources
1st Five Healthy Mental Development Initiative

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Collecting Social Determinants of Health

OBS Term for preferred language can help measure LEP in your population in addition to PMS information

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Assessing Risk and Aligning Resources

- Best when it is already in your databases/records
- When all else fails, incorporate a form

<table>
<thead>
<tr>
<th>Evaluación de las Necesidades del Cuidado de su Salud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nombre del Paciente</td>
</tr>
<tr>
<td>Instrucciones: Esta corta evaluación ayudará a Primary Health Care entender y entender las necesidades de su cuidado de salud. Por favor seleccione una declaración en cada grupo que mejor describa su situación o experiencia con el cuidado de su salud general en los últimos 12 meses. Por favor circule el número al lado de la declaración que haya seleccionado.</td>
</tr>
<tr>
<td><strong>Cobertura de salud</strong></td>
</tr>
<tr>
<td><strong>Acceso a Cobertura</strong></td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td><strong>Calidad de cobertura</strong></td>
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<tr>
<td>0</td>
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<tr>
<td>1</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
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<tr>
<td><strong>Continuidad de cobertura</strong></td>
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<td>1</td>
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<td>2</td>
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<td>3</td>
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<tr>
<td><strong>Citas médicas</strong></td>
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<tr>
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<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
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<tr>
<td><strong>Abuso de sustancias y alcohol</strong></td>
</tr>
<tr>
<td>0</td>
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<tr>
<td>1</td>
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<tr>
<td>2</td>
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<td>3</td>
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<tr>
<td><strong>Síntomas de salud mental</strong></td>
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<td><strong>Vivienda</strong></td>
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<tr>
<td>3</td>
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<tr>
<td><strong>Encarcelamiento (prisión o cárcel)</strong></td>
</tr>
<tr>
<td>0</td>
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<tr>
<td>1</td>
</tr>
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<td>2</td>
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<td><strong>Transporte</strong></td>
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<td>2</td>
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<tr>
<td>3</td>
</tr>
</tbody>
</table>
Utilizing and Communicating Results

- Range based on average scores
- Identify highest risk
- Refer to appropriate care team member
  - Behavioral Health Consultant
  - Clinical Pharmacist
  - Nurse Care Manager
  - Care Coordinator
  - Community resource
- Track outcomes and cost of delivery
Practice and Policy Implications

• Do what is asked of us, but don’t stop there
• Risky Business—need to incorporate SDH into risk models
• Understand your costs, understand your value
• Know your patients/clients and disseminate this knowledge to others
• Question and thoughtfully adapt your role

• Be an advocate, an ambassador, and an agitator
Thank you!