Integrated Health through an Integrative Theory of Behavioral Health
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Outline of presentation

- History of the Public Health Revolution
- Epidemics—Past & Present
- Counting the Costs
- Common Denominators
- Evidence-Based Prevention & Treatment
- Policy Levers
- Call to Action
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Brief Critique

- Tensions between *Prevention, Early Intervention & Treatment* characterize last 100 years in mental health
- Divide between mental health & general health system persist
- Medical care system is a *disease* system not a *health* system
- Behavioral health is the lynch pin for improving overall health, productivity & well being.
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The Public Health Revolution
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Yesterday’s Epidemics

- In mid 1800’s, roughly 100,000 died in UK of cholera
- By 1842, industrialization led to life expectancy of 15 years for male workers
- Death rates in cities was twice rural rates
- Sanitation was suspected as the leading cause of cholera
The Public Health Revolution

- In 1854, John Snow used careful epidemiological data implicating water as the source of infection
- He removed the Broad Street pump handle & the outbreak ended
- His causal theory remained unproven for 30 years.
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The Public Health Revolution

- Eventually Pasteur developed “germ theory”
- Koch identified cholera bacillus as an infectious agent
- These successive discoveries changed everything
  - Public hygiene was adopted to reduce exposure
  - Vaccinations/antibiotics helped control infections
  - Mental Hygiene movement - led by Beers - sought the same advances for mental health conditions through prevention & treatment
Building & Sustaining Thriving Fundamentals

The Public Health Revolution

- New infrastructure was constructed at the community level to:
  - Deliver clean water
  - Provide safe food
  - Dispose of waste effectively
  - Construct healthy living & working environments
- Legislation was passed
- Standards were set
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Today’s Epidemic Equivalents
Two decades ago the United States ranked 11th in global life expectancy.

Today, the United States is 50th.

While we spend twice as much as our economic competitors.
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Today’s Epidemic Equivalent Indicators

Persons with Severe Mental Illnesses served in public systems are dying 25 years early

- This phenomena has been known since at least 1934
- 66 Papers Published between 1934-1996

Life Expectancy with SMI: 53 Years
Life Expectancy: 77.8 Years
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Today’s Epidemic Equivalent Indicators

Annual Prevalence of Mental Health Conditions

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>25</td>
</tr>
<tr>
<td>Germany</td>
<td>20</td>
</tr>
<tr>
<td>Belgium</td>
<td>15</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10</td>
</tr>
<tr>
<td>France</td>
<td>5</td>
</tr>
<tr>
<td>U.S.</td>
<td>0</td>
</tr>
</tbody>
</table>
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Today’s Epidemic Equivalent Indicators

Lifetime Prevalence of Mental Disorders

- Non-Hispanic Americans
- U.S.-born Mexican-Americans
- Mexican nationals
- New Immigrants after 13 years

Prevalence of mental disorders
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Today’s Epidemic Equivalent Indicators

- **Loss of Human Capital**
  - In 2009, the IOM estimated that the 2007 costs of mental, emotional and behavioral disorders in children exceeded **$247 billion** each year.
    - Approximately $ 296 billion in 2013 dollars
  - In 2002 serious mental health conditions are associated with **$193.2 billion** in lost earnings per year.
    - Approximately 267 Billion in 2013 dollars
    - Only Wal-Mart and Exon had greater earnings in 2012
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Today’s Epidemic Equivalent Indicators

Academic Underachievement

- Postsecondary graduation rates fell from 2\textsuperscript{nd} to 16\textsuperscript{th} by 2005
- In 2007, our students ranked among 30 countries:
  - 21\textsuperscript{st} in science literacy
  - 24\textsuperscript{th} in problem-solving literacy
  - 25\textsuperscript{th} in mathematics literacy
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Today’s Epidemic Equivalent Indicators

- Incarceration
  - With a prison population of 2.3 million, we have the highest rate of incarcerations in the world:
    - U.S. 700/100,000 people**
    - China 110/100,000 people
    - France 80/100,000 people

** Overrepresentation of minorities in juvenile Justice, as well as, the adult prison system
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So How Did We Get Here?
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So How Did We Get Here?

- Causal Factors in the Development of Illness - involve the interaction of risk & protective factors that produce health & illness
  
  - **Risk factors**
    - Genetic Vulnerability
    - Environmental Stress and Trauma
  
  - **Protective Factors**
    - Personal Skills and Resources
    - Environmental Buffers
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So How Did We Get Here?

- **Social Determinants of Health**
  - Mediated through reactions to toxic stress associated with living & working in unpredictable environments, which can lead to:
    - Neurological
    - Endocrine, &
    - Immune system changes that underlie health & mental health conditions
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What We Know

- The Adverse Childhood Experiences Study (ACE)
  - Kaiser Permanente/CDC Collaboration
  - 17,000 Largely Middle Class Participants with Health Insurance
  - 80% White (Hispanic and Non-Hispanic)
  - Balanced for Sex
  - 74% Have Attended College
<table>
<thead>
<tr>
<th>ACE Category</th>
<th>Definition</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional abuse</td>
<td>Recurrent threats, humiliation</td>
<td>11%</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>Beating, not spanking</td>
<td>28%</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>Contact abuse only</td>
<td>22%</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>Mother treated violently</td>
<td>13%</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>Alcoholic or drug user in household</td>
<td>27%</td>
</tr>
<tr>
<td>Incarceration</td>
<td>Household member imprisoned</td>
<td>6%</td>
</tr>
<tr>
<td>Mental illness</td>
<td>Householder suicidal, mentally ill or hospitalized</td>
<td>17%</td>
</tr>
<tr>
<td>Parental separation</td>
<td>Not raised by both biological parents</td>
<td>23%</td>
</tr>
<tr>
<td>Physical neglect</td>
<td>Lack of adequate food, shelter, physical support</td>
<td>10%</td>
</tr>
<tr>
<td>Emotional neglect</td>
<td>Family failed to provide a source of strength, emotional support, and protection</td>
<td>15%</td>
</tr>
</tbody>
</table>
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Four or More Categories of Childhood Adverse Experiences Compared to Those with None:

- 7.4 Fold Increase for Alcoholism
- 10.3 Fold Increase for Drug Abuse
- 4.6 Fold Increase for Depression
- 12.2 Fold Increase in Suicide Attempts
- 2.2 Fold Increase in Ischemic Heart Disease
- 1.9 Fold Increase in Cancer,
- 3.9 Fold Increase in Chronic Lung Disease
- 1.6 Fold Increase in Skeletal fractures
- 2.4 Fold Increase in Liver Disease.
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Today’s Epidemic Equivalent Indicators

- Half of all adolescents who will have a lifetime diagnosis of mental illness will have that diagnosis by age 14
- On average – they will not receive treatment until age 24
- Children with mental health conditions are likely to perform poorly in class, miss school, drop out, abuse drugs/alcohol, have poorer occupational goals & achievements
General Theory

Genetic Vulnerability

Toxic Environments (Stress & Trauma)

Toxic Environments (Stress & Trauma)

Allostatic Load & Neural Encoding

Behavioral Health Disorders

Compromised Academic Achievement & Social Functioning

Compromised Occupational Achievement & Quality of Life

Diminished Socio-Economic Status/Health Status Development of Chronic Illnesses
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What Can We Do?
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What Can We Do?

- Implement evidence-based prevention & early intervention
  - Reduce the community risk factors of trauma & toxic stress
  - Increase resiliency in individuals & communities

We have tools that act as “behavioral vaccines”

- Nurse Family Partnership
- Seattle Social Development Project
- Good Behavior Game
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What Can We Do to Reduce Risk Factors?

- **Implement evidence-based prevention & early intervention**
  - Home Visitation Programs have reduced child maltreatment by as much as 40%
  - Positive Parenting Programs (Triple P) have demonstrated a 28% reduction in child maltreatment at the **county** level
  - Olweus Bullying Prevention Program has reduced school violence by as much as 70%
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Seattle Social Development Project

Effects of social development intervention in childhood fifteen years later

Prevalence

Age 24  Age 27

Control

Full

Mental Health America
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What Can We Do?

- Implement evidence-based prevention & early intervention
  - Good Behavior Game
    - First grade intervention program incentivizing & rewarding positive group behaviors significantly improves classroom management
    - At 13 year follow-up, study demonstrated:
      - 36% reduction in special education placements
      - 21% increase in high school graduation
      - 61% increase in college attendance
      - 35% less likely to abuse alcohol
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Evidence Based Interventions are Cost Effective

Washington State Institute on Public Policy
• Created by the Legislature
• Uses Systematic, Rigorous Methodologies to Estimate Overall Costs and Benefits of Social Interventions
• Pew/MacArthur Disseminating to States through their Results First Initiative
### Summary of Benefits and Costs (2003 Dollars)

<table>
<thead>
<tr>
<th>Dollars Per Youth (PV lifecycle)</th>
<th>Benefits</th>
<th>Costs</th>
<th>B - C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood Education</td>
<td>$17,202</td>
<td>$7,301</td>
<td>$9,901</td>
</tr>
<tr>
<td>Nurse Family Partnership</td>
<td>$26,298</td>
<td>$9,118</td>
<td>$17,180</td>
</tr>
<tr>
<td>Seattle Soc. Dev. Project</td>
<td>$14,246</td>
<td>$4,590</td>
<td>$9,837</td>
</tr>
<tr>
<td>Guiding Good Choices</td>
<td>$7,605</td>
<td>$687</td>
<td>$6,918</td>
</tr>
</tbody>
</table>

### Selected Findings

- Reduced crime: $3,957
- Increased high school graduation: $10,320
- Reduced K-12 grade repetition: $150

**Benefits Per Youth**: $14,426

**Cost Per Youth**: $4,590

**Benefits Per Dollar of Cost**: $3.14

Full Listing Can Be Download at: [www.wa.gov/wsipp](http://www.wa.gov/wsipp)
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New Marching Orders
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New Marching Orders

- **Learn from the past**
  - The last public health movement succeeded by:
    - Reducing community risk factors by draining swamps, building sewage
    - **Strengthening community protective factors** by building safe housing, paving streets
    - Decreasing individual exposure to pathogens with antiseptics, sanitation, quarantines
    - Increasing capacity of individuals to resist infection with vaccinations
    - Curing infections with antibiotic treatment
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New Marching Orders

- Adapt to the present
  - The new public health movement will succeed by:
    - Reducing community risk factors by assuring safe & resource rich neighborhoods, jail & juvenile justice reducing unemployment rates of crime, etc.
    - Strengthening community protective factors with social insurance programs, environmental policies to reduce exposure (e.g. alcohol taxes), safe houses, etc.
    - Decreasing individual exposure to toxic stress by lowering child abuse/neglect, bullying, etc.
    - Increasing individual resilience by skill building & implementing behavioral vaccines
    - Contain the impact of toxic stress through treatment that is accessible, evidence-based and reimbursable.
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Final Thoughts
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Final thoughts

- Practice *Living Your Life Well*
- Let’s collaborate in creating the collective & political will
- Join Mental Health America in its Movement
  - Join with local, state, or national MHA in organizing your local community, or
  - Start a MHA Affiliate if there is none in your area.
- Sign up at [http://takeaction.mentalhealthamerica.net](http://takeaction.mentalhealthamerica.net)

For questions or information contact: dshern@mentalhealthamerica.net