Social Determinants of Health: Implications for Public Health Practice

Chris Armijo
Colorado Foundation for Families and Children
2008 Colorado Chronic Disease Conference
November 13, 2008
Change
Changing Provider and Organizational Practices

► The Colorado Trust’s Equality in Health Initiative
► Improving cultural competency to reduce health disparities
► Building organizational cultural capacity in health care, mental health, and non-profit organizations
► Working with organizations to:
  ▪ Facilitating cultural competency change
  ▪ Managing complex change
  ▪ Resistance to change in organizational practice
Impacting Public Health Practice to Address SDH

- Organizational Change
- Multi-system change
- Individual Change
Individual-level Change

How does SDH impact my own practice?
“Everyone thinks of changing the world, but no one thinks of changing [her] himself.”

-Leo Tolstoy
Organizational Theory/Behavior Education

- Biostatistics I
- Biostatistics II
- Research Methods
- Intro to Epidemiology
- Advance Epidemiology
- Health Services Research

- Community Health Practicum
- Community Research Methods
- Intro to Health Systems
- Health Economics
The Skills for Change

► Individual skills to impact organizational change
  ▪ Leadership development
  ▪ Organizational and systems change theories
  ▪ Organizational resources

► Individual skills to address SDH
  ▪ A common and accepted public health framework for SDH
  ▪ Previous training in social epidemiology, community health, social and behavioral health, etc.
  ▪ Understanding of the risk factors that impact other determinants of health (i.e. poverty, educational issues, land use, etc.)
Organizational Change

How does SDH impact my organization’s practice?
“Three feet of ice does not result from one day of freezing weather.”

-Unknown, Chinese Proverb

冰封三尺，绝非一日之寒
Complex Organizational Change

How does SDH impact my organization’s practice?
Transformational vs. Transactional
Reframing cultural competency

Moving organizations to think beyond:

- Cultural competency “trainings”
- Translating materials
- Bilingual and/or bicultural staff
- Hiring a diversity coordinator
- Prescriptive approaches to working with diverse communities
Transformational
<table>
<thead>
<tr>
<th>Workforce Competencies</th>
<th>Organizational Standards and Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge of Public Health Framework</td>
<td>1. Institutional Commitment to Address Health Inequities</td>
</tr>
<tr>
<td>2. Understand the social, environmental and structural</td>
<td>2. Hiring to Address Health Inequities</td>
</tr>
<tr>
<td>determinants of health</td>
<td></td>
</tr>
<tr>
<td>3. Community Knowledge</td>
<td>3. Structure that supports true community partnerships</td>
</tr>
<tr>
<td>4. Leadership Skills</td>
<td></td>
</tr>
<tr>
<td>5. Collaboration Skills</td>
<td>4. Support Staff to Address Health Inequities</td>
</tr>
<tr>
<td>6. Community Organizing Skills</td>
<td></td>
</tr>
<tr>
<td>7. Problem Solving Ability</td>
<td>5. Transparent &amp; Inclusive Communication (community, staff, partners etc.)</td>
</tr>
<tr>
<td>8. Cultural Competency/ Cultural Humility</td>
<td></td>
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<tr>
<td>9. Specific Personal Attributes</td>
<td>6. Institutional support for innovation</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>7. Creative use of categorical funds</td>
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<td></td>
<td></td>
</tr>
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<td></td>
<td>8. Community Accessible Data &amp; Planning</td>
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<td></td>
<td></td>
</tr>
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<td></td>
<td>9. Streamlined administrative process</td>
</tr>
</tbody>
</table>
Managing Complex Change

► Vision
► Skills
► Incentives
► Resources
► Action Plan
Managing Complex Change

Vision + Skills + Incentives + Resources + Action Plan = CHANGE

Vision + Skills + Incentives + Resources + Action Plan = CONFUSION

Vision + Skills + Incentives + Resources + Action Plan = ANXIETY

Vision + Skills + Incentives + Resources + Action Plan = RESISTANCE

Vision + Skills + Incentives + Resources + Action Plan = FRUSTRATION

Vision + Skills + Incentives + Resources + Action Plan = TREADMILL
Readiness for Change
Readiness for change vs. readiness for some change
Organizational to Multi-Systems change
Why Social Determinants of Health?

► Word/Topic/Idea du jour
► Why is this different than:
  ▪ Health Equity
  ▪ Health Disparities
  ▪ Cultural competency
  ▪ Inclusivity
► Being clear why this either is an extension of or an evolution of previous public health ideas
Now What?

► Investment in building organizational capacity to address SDH
► Additional individual-level training in SDH, systems theory, organizational theory, etc.
► Finding champions
  ▪ Public health leaders
  ▪ Organizational leaders
  ▪ Multi-system leaders
Comments on SES and cancer
Tim Byers Nov. 13, 2008

• Race and cancer

• Patterns of Care Study

• Poverty and Cancer report

• My conclusions about race, SES, and cancer as a public health opportunity
How could race be related to cancer risk?

• Genetics
• Culture
• Social factors
• Medical care access
• Poverty
The Patterns of Care Study

• Re-abstraction of cases from 1997
  – 7 states (CO, NY, IL, CA, LA, SC, RI)
  – Breast, prostate, colorectal
  – Approx 4500 of each cancer site
  – 5-year cancer mortality through 2003
  – Papers being published now
SES in the Patterns of Care Study

- Geocoding of SES by 2000 Census tracts

- Creation of three SES groupings based on neighborhood education and poverty:
  - Education: above or below 25% without HS
  - Poverty: above or below 20% in poverty
  - Both factors (16%), one factor (20%), neither factor (64%)

- Assessment of SES association with stage, treatment, survival
Breast cancer treatment without radiation following lumpectomy

- neither low education nor high poverty
- either low education or high poverty
- both low education and high poverty
Breast cancer treatment without chemotherapy for regional stage

- neither low educ nor high poverty: 27
- either: 36
- both low educ and high poverty: 35
Breast cancer treatment without antiestrogens if ER positive

- neither low educ nor high poverty
- either
- both low educ and high poverty
Colon cancer treatment without chemotherapy for regional stage

- neither low educ nor high poverty
- either
- both low educ and high poverty
Breast cancer mortality in progressively adjusted models

Hazard Ratio for death

Adjustment factors

- age
- race
- comorbidities
- stage
- treatment
Cancer & Poverty
Colorado 1995-2006
Figure 3: Five-year survival for all cancers by area poverty level, age, gender, race, and stage, 1999-2002, Colorado.

Those from poorer areas had worse survival for all cancers combined.
Figure 1: Five-year cause-specific survival for all cancers combined by race/ethnicity in Colorado, 1999-2002.

Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment, October, 2008.
Figure 2: Five-year cause-specific survival for all cancers combined by poverty level in Colorado, 1999-2002.

Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment, October, 2008.
Figure 3: Five-year cause-specific survival for all cancers combined by race/ethnicity and poverty level in Colorado, 1999-2002.

Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment, October, 2008.
My own conclusions regarding poverty and cancer overall

- Poverty is an important root cause of racial disparities in cancer

- We need to better highlight the role of poverty in cancer disparities

- We need to solve access as a primary reason for SES cancer disparities
Cancer & Poverty
Colorado 1995-2006
Colorado School of Public Health Center for Public Health Practice

- Facilitate student practicum placements
- Conduct outreach education
- Develop projects within partnerships
- Serve as consultants to communities
- Tim.Byers@uchsc.edu
Strategies to Address Social Determinants of Health: One Denver Neighborhood

J. Elaine Borton, MPH
Colorado Chronic Disease Conference
Thursday, November 13, 2008
Learning Objectives

- Review background and foundation of Park Hill Thriving Communities
- Focus on three primary areas of social determinants of health
- Connect key project strategies, activities and outcomes to social determinants of health
Park Hill Thriving Communities, A LiveWell Colorado Community
Park Hill, Denver
Driving Forces Behind PHTC

- Significant Health Disparities: NE Park Hill residents experience three to four times more than South Park Hill residents
- Multiple barriers to HEAL, including crime, drug and drug activity
- Diverse socio-economics within one community related to ethnicity, income, economics, transportation, education, health, housing, crime, social justice, environment
- Multiple transportation and redevelopment projects, influencing current and future residential density
### Setting a Foundation: Analyzing the Data

#### Table 1: Park Hill Demographics

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>NE. Park Hill</th>
<th>N. Park Hill</th>
<th>S. Park Hill</th>
<th>Park Hill Total</th>
<th>Denver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>4.7%</td>
<td>27.6%</td>
<td>74.6%</td>
<td>34.8%</td>
<td>51.9%</td>
</tr>
<tr>
<td>African American</td>
<td>68.5%</td>
<td>56.0%</td>
<td>12.8%</td>
<td>25.5%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>23.8%</td>
<td>10.9%</td>
<td>8.1%</td>
<td>6.7%</td>
<td>31.7%</td>
</tr>
<tr>
<td>Native American</td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.3%</td>
<td>0.29%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Asian/P. Islander</td>
<td>0.4%</td>
<td>1.1%</td>
<td>2.1%</td>
<td>1.09%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

#### Socio Economic Status

<table>
<thead>
<tr>
<th></th>
<th>NE. Park Hill</th>
<th>N. Park Hill</th>
<th>S. Park Hill</th>
<th>Park Hill Total</th>
<th>Denver</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Children receiving free school lunch</td>
<td>68.9%</td>
<td>46.0%</td>
<td>21.4%</td>
<td>Unknown</td>
<td>55.0%</td>
</tr>
<tr>
<td>% Children in poverty</td>
<td>33.9%</td>
<td>13.4%</td>
<td>6.9%</td>
<td>17.2%</td>
<td>20.8%</td>
</tr>
<tr>
<td>% Persons in poverty</td>
<td>23.8%</td>
<td>9.4%</td>
<td>6.9%</td>
<td>12.9%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>

#### Table 2: City and County of Denver Health Data

<table>
<thead>
<tr>
<th>Question</th>
<th>CO</th>
<th>DEN</th>
<th>W</th>
<th>B</th>
<th>H</th>
<th>O</th>
<th>&lt;$25K</th>
<th>$25-49K</th>
<th>≥$50 K</th>
</tr>
</thead>
<tbody>
<tr>
<td>% who have leisure time for physical activity each day</td>
<td>81%</td>
<td>78%</td>
<td>89%</td>
<td>63%</td>
<td>62%</td>
<td>71%</td>
<td>65.7%</td>
<td>82.2%</td>
<td>86.9%</td>
</tr>
<tr>
<td>% who eat 5 or more fruits/vegetables per day</td>
<td>23%</td>
<td>24%</td>
<td>21%</td>
<td>33%</td>
<td>23%</td>
<td>60%</td>
<td>22.4%</td>
<td>29.2%</td>
<td>21.4%</td>
</tr>
<tr>
<td>Based on body mass index, % who are overweight (BMI &gt; 25.0)</td>
<td>51%</td>
<td>29%</td>
<td>41%</td>
<td>62%</td>
<td>46%</td>
<td>65%</td>
<td>44.6%</td>
<td>50.6%</td>
<td>40.1%</td>
</tr>
<tr>
<td>Based on body mass index, % who are obese (obese=BMI &gt; 30.0)</td>
<td>15%</td>
<td>13%</td>
<td>8%</td>
<td>30%</td>
<td>19%</td>
<td>2%</td>
<td>3.9%</td>
<td>3.8%</td>
<td>5.7%</td>
</tr>
<tr>
<td>% without good physical health 8+ days during the past 30 days</td>
<td>11%</td>
<td>14%</td>
<td>12%</td>
<td>27%</td>
<td>10%</td>
<td>15%</td>
<td>16.4%</td>
<td>13.7%</td>
<td>7.6%</td>
</tr>
<tr>
<td>% who perceive health status is good-excellent</td>
<td>88%</td>
<td>82%</td>
<td>87%</td>
<td>78%</td>
<td>78%</td>
<td>83%</td>
<td>69.6%</td>
<td>82.4%</td>
<td>92.9%</td>
</tr>
<tr>
<td>% who perceive health status is fair-poor</td>
<td>12%</td>
<td>19%</td>
<td>13%</td>
<td>22%</td>
<td>22%</td>
<td>17%</td>
<td>30.3%</td>
<td>17.6%</td>
<td>7.1%</td>
</tr>
<tr>
<td>% who have been told they have diabetes (not gestational diabetes)</td>
<td>4%</td>
<td>5%</td>
<td>4%</td>
<td>17%</td>
<td>2%</td>
<td>9%</td>
<td>8.9%</td>
<td>1.8%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
Setting a Foundation to Reduce Health Disparities: A Socio-Ecological Approach

Diagram:
- Public Policy
- Community
- Organizational
- Interpersonal
- Individual
Setting the Foundation: Steps to Addressing Social Determinants of Health

- Engaged community/partners to develop a broad based approach to HEAL
- Implemented Photo Voices as a primary tool for environmental and policy changes
- Aligned priorities and community needs with multiple partners and agencies
- Established policy priorities by consensus
- Developed community wide social marketing campaign to increase awareness and participation
# The Vision for Eliminating Health Disparities in Park Hill

Equal access to healthy eating

Equal opportunities for active living

## Community Stakeholders

<table>
<thead>
<tr>
<th>Programs</th>
<th>Environment</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking Clubs &amp; Programs</td>
<td>Garden Clean-up &amp; Landscaping Projects</td>
<td>Park Hill Trail Access</td>
</tr>
<tr>
<td>Bicycle Clubs &amp; Programs</td>
<td>Promote PA and Bike Friendly Environment</td>
<td>Increase Bicycle Access &amp; Use</td>
</tr>
<tr>
<td>Nutrition/Healthy Eating Classes &amp; Programs</td>
<td>Increase Availability of Healthy Foods</td>
<td>Increase Access to Healthy Foods</td>
</tr>
<tr>
<td>Child Care Providers &amp; Business Programs</td>
<td>Social Marketing Campaign</td>
<td>Promote Healthy Eating &amp; Improve Nutrition</td>
</tr>
<tr>
<td>Safe Routes to School</td>
<td>Increase Safe Routes</td>
<td>Advocate for Safe Routes to School</td>
</tr>
</tbody>
</table>
Touching on Institutional Power. . .

- Imbalance of political will, the power of voices and trust in being heard
- Challenges in balancing and distributing resources equitably
  - Come back to mission!
- Push back on exhibiting Photo Voice images
  - (NIMBY)
Touching on Discriminatory Belief Systems...

- Unintended consequences of land/street design (East/West Corridors) and creative ways to address them
  - Walking clubs
  - Family Bike Rides
- Tree planting along Monaco Boulevard
- Safe walking paths; sidewalks along Monaco Boulevard
Determinants of Health and Contribution to Premature Death

- Behavioral Patterns* 40%
- Genetic Predisposition 30%
- Social Circumstances* 15%
- Health Care* 10%
- Environmental Exposure* 5%

Adapted from McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. Health Aff (Millwood) 2002; 21 (2) 78-93.

*Actionable Determinants of Health; Schroder SA. We Can Do Better-Improving the Health of the American People. N Engl J Med 2007; 357;1221-28
Focusing on Three “Actionable” SDH

- **Behavioral Patterns (40%)**
  - Nutrition
  - Physical Activity

- **Social Circumstances (15%)**
  - Economics/Income
  - Freedom from Racism
  - Education and Literacy
  - Employment/Working Conditions
  - Transportation
  - Food Access and Security
  - Fear/Stress

- **Environmental Exposure (5%)**
  - Unsafe Neighborhoods
  - Crime, Gang Activity
  - Lack of environmental supports for healthy eating/active living

- **Genetic Predisposition (30%)**
- **Health Care (10%)**
Focusing on . . .

- **Behavioral Patterns (40%)**
  - Nutrition
  - Physical Activity

- **Strategies**
  - Promoting use of and expanding programming at two neighborhood Parks & Rec Centers
  - Discussing and “marketing” Park Hill’s health disparities alone raised awareness of health disparities
  - Designing healthy eating/active living programs for disparate populations by topic, location and marketing (dance/walking/biking/nutrition)
Focusing on . . .

- **Behavioral Patterns (40%)**
  - Nutrition
  - Physical Activity

- **Strategies**
  - Social marketing efforts to communicate availability of free/low cost HEAL classes/programs
  - Offering bike safety education classes for youth and seniors (first time bike riders)
  - Advocating Complete/Living Streets
  - Improving and standardizing school and traffic signs via collaboration with SR2S Coalition
  - Creating The Park Hill Bike Depot, increasing bike access
Focusing on. . .

- **Social Circumstances (15%)**
  - Economics- Freedom from Racism-Income –Education-
  - Employment –Transportation -Food Access and Security

- **Strategies**
  - Advocating for healthy food retail to NE Park Hill
    - Working with OED/CPD/Land Developers/Retailers
  - Creating the Park Hill Bike Depot, influencing:
    - Skill and workforce development
    - Economic development w/in business district
  - Influencing Mayor’s Task Force on Zoning; Zoning Code Update
Focusing on . . .

*Social Circumstances (15%)*


*Strategies*

- Convening policy seminars on transportation, development; density and healthy food retail
- Using vacant buildings in positive ways
  - Xcel building razed for NE Watershed with walking path
  - Park Hill Bike Depot
- Supporting Economic Revitalization
  - Invested funds in Park Hill businesses and CBOs
  - Participating in Dahlia and Holly Square redevelopment projects
Focusing on. . .

- **Environmental Exposure (5%)**
  - Unsafe Neighborhoods - Crime, Gang Activity - Lack of environmental supports for healthy eating/active living

- **Strategies**
  - Installing artistic, functional “fruit hoop” bike racks
  - Working with Public Works to “sharrow” Park Hill
  - Partnering to renovate City of Axum Park with multi-use perimeter path
  - Strengthening partnerships with Police District Two and Gang Prevention Advocates
Focusing on...

- Environmental Exposure (5%)
  Unsafe Neighborhoods - Crime, Gang Activity - Lack of environmental supports for healthy eating/active living

- Strategies
  - Promoting street tree planting with Denver Digs Trees
  - Partnering with DURA and others on neighborhood redevelopment projects
  - Adding additional CO Shares food distribution site in NE Park Hill
  - Identifying Park Hill as a “food desert” and advocating for healthy food retail
Endings are Beginnings. . .

- Addressing barriers to active living and healthy eating creates direct links to social determinants of health
- Listen for and address cultural differences
- Consider Photo Voices as a tool to address SDH and shift policy
- Strengthen neighborhood advocacy and empowerment and civic participation
- Keep your eyes on the prize, persevere and be patient!
Thank you!

- J. Elaine Borton, MPH, CHES
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- City/County of Denver
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