Alaska Health Equity Index: An Interactive StoryMap and its Practical Applications

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Agenda

• How this tool came about
• Examples of practical applications
  • Other states
  • Alaska
• Demonstration
Background

Center for Disease Control & Prevention (CDC)
Agency for Toxic Substances and Disease Registry (ATSDR)
Geospatial Research & Services Program (GRASP)

CDC Social Vulnerability Index

- Socioeconomic Status
  - Below Poverty
  - Unemployed
  - Income
  - No High School Diploma

- Household Composition & Disability
  - Aged 65 or Older
  - Aged 17 or Younger
  - Civilian with a Disability
  - Single-Parent Households

- Minority Status & Language
  - Minority
  - Speak English "Less than Well"

- Housing & Transportation
  - Multi-Unit Structures
  - Mobile Homes
  - Crowding
  - No Vehicle
  - Group Quarters
CDC Social Vulnerability Index

SVI Interactive Map

Prepared County Maps
Can the Social Vulnerability Index Be Used for More Than Emergency Preparedness? An Examination Using Youth Physical Fitness Data

Social Vulnerability and Leisure-time Physical Inactivity among US Adults

Application of the Social Vulnerability Index for Identifying Teen Pregnancy Intervention Need in the United States
Limitations of CDC’s SVI

• Slow to update
• Interactive map only available at the broader census area level
• Prepared county maps at the tract level do not provide as much detail
• Inability to modify variables that index is comprised of
Examples of Practical Applications (Outside AK)

• Utah Department of Health
  • Health Improvement Index
  • Legislative district health disparities

• New Hampshire Department of Health and Human Services
  • Targeted outreach
  • Grant writing
• Health Improvement Index
• Based on BRFSS variables
Ranked small areas with a very high or high HII
Practical Applications:

- Standardize UDOH language related to health disparities and health equity
- Apply for funding to address geographic disparities
- A core measure to produce health reports – OHD Report Health Disparities by Legislative District
# Health Disparities by Utah State Legislative District 2019

## Utah State Senate District 1

This profile is part of a series highlighting the status of health disparities in the 29 Senate districts and 75 House districts in Utah. Profiles use health data grouped by Utah Small Areas and the Utah Health Improvement Index (HII) and provide an innovative and practical approach to working toward health equity.

_A report produced by the Utah Department of Health Office of Health Disparities._

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1. **A health disparity** exists if a Utah Small Area with a poor health outcome compared with Utah has a high or very high HII.
2. **An adverse health outcome** exists if a Utah Small Area with a poor health outcome compared with the state has a very low, low, or average HII.

### Small Area Profile

<table>
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<tr>
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<tbody>
<tr>
<td>--</td>
<td>State of Utah</td>
<td>--</td>
<td>7.7%</td>
<td>25.8%</td>
<td>9.0%</td>
<td>16.5%</td>
<td>22.0</td>
<td>22.4</td>
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<tr>
<td>17</td>
<td>SLC (Rose Park)</td>
<td>Very high</td>
<td>8.9%</td>
<td>30.3%</td>
<td>15.5%</td>
<td>20.5%</td>
<td>19.4</td>
<td>36.7</td>
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<tr>
<td>20</td>
<td>Magna</td>
<td>High</td>
<td>11.5%</td>
<td>32.5%</td>
<td>17.5%</td>
<td>16.3%</td>
<td>26.2</td>
<td>32.5</td>
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<tr>
<td>21.1</td>
<td>SLC (Glendale) V2</td>
<td>Very high</td>
<td>15.2%</td>
<td>40.4%</td>
<td>20.7%</td>
<td>17.2%</td>
<td>17.7</td>
<td>31.4</td>
</tr>
<tr>
<td>22.1</td>
<td>West Valley (Center)</td>
<td>Very high</td>
<td>13.2%</td>
<td>36.9%</td>
<td>14.5%</td>
<td>17.6%</td>
<td>22.4</td>
<td>16.2</td>
</tr>
<tr>
<td>22.2</td>
<td>West Valley (West) V2</td>
<td>Average</td>
<td>12.6%</td>
<td>36.4%</td>
<td>17.8%</td>
<td>18.6%</td>
<td>13.4</td>
<td>29.9</td>
</tr>
<tr>
<td>23.1</td>
<td>West Valley (East) V2</td>
<td>Very high</td>
<td>10.4%</td>
<td>34.0%</td>
<td>14.8%</td>
<td>23.2%</td>
<td>29.9</td>
<td>32.3</td>
</tr>
</tbody>
</table>

*Note caution in interpreting the estimate has a coefficient of variation > 30% and is therefore deemed unreliable by Utah Department of Health standards.*
Practical Applications:

• **Increase collaboration** among agencies working with disparate communities

• **Criteria to make legislative decisions** – Senator Millner, *Community Health Outcomes Bill* to be proposed during the 2019 legislative session

• Support local health departments in selecting **target communities** with current CDC funding
• Social Vulnerability Index
• Targeted outreach, navigation and marketing
  • Established contracts with Federally Qualified Health Centers and Hospitals in these communities for Community Health Workers
  • Ran targeted GoogleAds in these communities for the Free Screening Program
  • Developed services to address the highest vulnerabilities in the most vulnerable communities (e.g., Manchester we hired a bi-lingual CHW and in Franklin we established a ride share program)

• Grant-writing for future funding opportunities
Thank you

Mike Friedrichs, MPH

Whitney Hammond, MSW MPH

Karen Craver, MPH

NH Healthy Lives
PREVENT · PROMOTE · PROTECT

Alaska Division of Public Health
Prevention Promotion Protection
Examples of Practical Applications (In AK)

• Ladies First Breast and Cervical Program
  • Targeted outreach

• Spatial analysis with AK outcomes
  • Bivariate Moran’s I local spatial autocorrelation
• Targeted/tailored outreach:
  • Radio ads in low AHEI zip codes
  • Patient navigation
  • Digital ad campaign
Spatial Autocorrelation Between the HEI and Child Maltreatment (2017 OCS and ACS Data)

Reported Child Maltreatment Victims per 1,000 Children by Census Tract

Overall HEI Rank (Themes 1-4) by Census Tract

Bivariate Local Moran's I: HEI Rank & Reported Child Maltreatment Victims

* downtown tract excluded from analysis
Geographically Weighted Regression: Modeling Child Maltreatment with the HEI

Relationship Between HEI and Child Maltreatment

Linear Trend: CM Rate = 18.30 + 1.27*HEI Rank

R² = 0.65

Reported Victims per 1,000 Children

Overall HEI Rank
Spatial Autocorrelation Between the HEI and Teen Pregnancy (2017 ACS, 2013-2017 HAVRS Data)

* census areas with less than 5 births are excluded from analysis
Geographically Weighted Regression: Modeling Teen Pregnancy with the HEI

**Linear Trend:** Teen Birth Rate = 1.24 + 0.65*HEI Rank

*R² = 0.58*
Alaska Health Equity Index Demonstration

Alaska Health Equity Index

This story map contains data on health equity for 156 of the 167 Alaska census tracts (North Slope Borough Census Tract 3 and Prince of Wales-Hyder Census Tract 3 were excluded due to data limitations). This tool allows for a detailed examination of the Health Equity Index, using the most current US Census Bureau American Community Survey 5-year estimates (2013-2017).

There are 5 domains and 16 variables that are involved in the calculations as seen below:

- Domain 1: Socioeconomic Status
  - Below Poverty
  - Unemployed
  - Income
  - High School Diploma
  - Insurance Coverage

- Domain 2: Household Composition & Disability
  - Aged 65 or Older
  - Aged 17 or Younger
  - Males with a Disability
  - Single Parent Households

- Domain 3: Minority Status & Language
  - Minority
  - Speak English “less than well”
  - Multilingual

- Domain 4: Housing & Transportation
  - Mobile Homes
  - Crowding
  - No vehicle

- Domain 5: Health
  - High Prevalence of Disease
  - Accidents

Ranking and Flagging Explained

The map is organized by tabs, two for each domain and two for overall HDI.
<table>
<thead>
<tr>
<th>Domain 1: Socioeconomic Status</th>
<th>Below Poverty</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Unemployed</td>
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<tr>
<td></td>
<td>Income</td>
</tr>
<tr>
<td></td>
<td>No High School Diploma</td>
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<tr>
<td></td>
<td>Insurance Coverage</td>
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<tr>
<td>Domain 2: Household Composition &amp; Disability</td>
<td>Aged 65 or Older</td>
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<td></td>
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<tr>
<td>Domain 3: Minority Status &amp; Language</td>
<td>Minority</td>
</tr>
<tr>
<td></td>
<td>Speak English “Less than Well”</td>
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