Using Disadvantage Indices to Advance Health Equity: Lessons Learned from State COVID-19 Response Efforts

Supported by the Blue Shield of California Foundation
Purpose and Goals

• To highlight how states have used disadvantage indices to inform their COVID-19 vaccination efforts

• To surface early insights, challenges, and lessons learned based on states’ experiences to date

• To identify important areas for evaluation that could inform the ongoing pandemic response, as well as potential future uses of indices to advance health equity

The goal is to surface early evidence and evaluation needs that can help policymakers and researchers better understand the use of disadvantage indices to promote equity during the COVID-19 pandemic and beyond.
Speakers

• **Hemi Tewarson, J.D., M.P.H.**
  • Executive Director, National Academy for State Health Policy

• **Harald Schmidt, Ph.D., M.A.**
  • Assistant Professor, University of Pennsylvania

• **Rohan Radhakrishna, M.D., M.P.H.**
  • Deputy Director, California Department of Public Health

• **David Rickless, M.S.**
  • GIS Analyst, CDC

• **John Auerbach, M.B.A.**
  • Director of Intergovernmental and Strategic Affairs, CDC
Logistics

• Questions may be submitted at any time using the Q&A box
• A recording of this webinar will be available on the AcademyHealth website in one week
• For technical assistance during the webinar, please contact Zoom Support at (888) 799-9666
Health, place and priority setting: Addressing social justice in vaccine allocation (and elsewhere) through disadvantage indices

Harald Schmidt, PhD*
(*with multiple collaborators)

@harald_tweets
## Acknowledgements

(Collaborators and/or assistance with key questions, not endorsement of following slides)

<table>
<thead>
<tr>
<th>Alison Buttenheim</th>
<th>Nneka Okoli</th>
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<tr>
<td>Aditi Doiphode</td>
<td>Parag Pathak</td>
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<td>Sharonda Dasgupta</td>
<td>Govind Persad</td>
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<td>Amaka Eneanya</td>
<td>Dorothy Roberts</td>
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<td>Michelle Fiscus</td>
<td>Danielle Sharpe</td>
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<td>Barry Flanagan</td>
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<td>Lawrence Gostin</td>
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<td>Whitney Kerr</td>
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<td>Gianna Labella</td>
<td>Rebecca Weintraub</td>
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<td>Kate Miller</td>
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<td>Neha Nagpal</td>
<td>Helen Wu</td>
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<td>Ruqaiiah Yearby</td>
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Main points:

- Unadjusted, traditional rationing frameworks risk compounding existing income, racial/ethnic inequities*

- In a major shift, Disadvantage Indices were integrated in vaccine rationing to promote social, racial/ethnic justice

- There is public support and broader use; explore equity-promoting potential beyond the pandemic

*Avoidable unfair differences in health outcomes
1918 Flu pandemic

1918:
Neighborhoods with higher unemployment, higher population density, and lower literacy levels: higher transmission rates and cumulative influenza mortality
1918 Flu pandemic & 2018 US Flu pandemic guidelines

1918:
Neighborhoods with higher unemployment, higher population density, and lower literacy levels: higher transmission rates and cumulative influenza mortality

Disparities in influenza mortality and transmission related to sociodemographic factors within Chicago in the pandemic of 1918

Kyna H. Grantz1,2, Madhura S. Ranu3, Henrik Solje3, Gregory E. Glass4, Stephen E. Schuchat5, and Derek A. T. Cummings1,2

1Department of Sociology, University of Illinois at Chicago, USA
2Department of Sociology, University of Michigan, USA
3Department of Epidemiology, School of Public Health, University of Michigan, USA
4Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, USA
5Centers for Disease Control and Prevention, USA

Editor by Becton D. Singer, University of Florida, Gainesville, FL, and approved September 20, 2014; revised for review August 13, 2016

Social factors have been shown to create differential burden of influenza across different geographic areas. We explored the relationship

Prioritizing across groups

Fig. 1: Priority groups under NASEM and ACIP frameworks.

From: Equitable allocation of COVID-19 vaccines in the United States

Prioritizing across & within groups

Incorporate a metric of social disadvantage:

SVI incorporates “variables that the committee believes are most linked to the disproportionate impact of COVID-19 on people of color and other vulnerable populations”:

- set aside 10% of federally available vaccines for vulnerable communities
- States: “special efforts”
Disadvantage Indices: separate, overlapping worlds

Area Deprivation Index: https://www.neighborhoodatlas.medicine.wisc.edu
(Global) Multidimensional Poverty Index: https://ophi.org.uk/multidimensional-poverty-index/
Intersection race/ethnicity, disadvantage

Table 1. Demographics of SVI Quartiles in Minnesota

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Q1 SVI (High)</th>
<th>Q2 SVI</th>
<th>Q3 SVI</th>
<th>Q4 SVI (Low)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>54%</td>
<td>17%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>53%</td>
<td>20%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Hispanic or Latinx</td>
<td>47%</td>
<td>22%</td>
<td>17%</td>
<td>14%</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>24%</td>
<td>22%</td>
<td>22%</td>
<td>26%</td>
</tr>
<tr>
<td>White</td>
<td>24%</td>
<td>22%</td>
<td>22%</td>
<td>26%</td>
</tr>
<tr>
<td>Multiple</td>
<td>35%</td>
<td>23%</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>39%</td>
<td>24%</td>
<td>14%</td>
<td>20%</td>
</tr>
</tbody>
</table>
C19 Incidence, mortality and SVI

Figure 1. Heat Map of US Counties Showing Coronavirus Disease 2019 (COVID-19) Incidence and Mortality by Social Vulnerability Index (SVI)

A Overall SVI

B COVID-19 incidence

C COVID-19 mortality
Adoption of disadvantage indices by CDC’s 64 jurisdictions, Nov ’20 - Mar ‘21

March 2021:
- 34 states, 3 cities use Index
- 43 states/cities use index/zip

(Note: Analysis of plans, not practice)

Improving equity in allocations within states/jurisdictions

1. Larger shares of vaccines to more disadvantaged areas, appointments (n=17/24)
   TN, MA, CA, AK, IL, IN, MI, MN, ND, OH, WI, CT…

2. Define priority groups (17/17)
   AL, AK, FL, GA, Houston, KS, MD, NY, OR, PA…

3. Outreach and communication (n=12/16)
   AK, AZ, CT, LA, MA, MD, MI, NC, NY, VT, WA…

4. Dispensing site locations (n=8/10)
   CT, LA, MI, NC, NH, NJ, Philadelphia, SD

5. Monitor, course-correct (n=4/5)
   CA, MI, NC and OH
Public acceptability (?)

- Survey experiment, natl. representative sample, week before ‘vaccines for all’
- Additional allocations relative to foregrounding a) race, b) structural racism, and c) disadvantage:
  - Approval/support for additional allocations?
  - If additional allocations: how much more?

Schmidt, H, Shaikh, SJ, Sadecki, E, Buttenheim, A, Gollust, S. Race-based and place-based prioritization in COVID-19 vaccine allocation through the use of disadvantage indices: Framing effects and public attitudes (under review)
Indices’ use, concepts of disadvantage

- Area Deprivation Index (ADI, n=2)

- Social Vulnerability Index (SVI, n=29)

- COVID-19 Community Vulnerability Index (CCVI, n=5)

- California Healthy Places Index (HPI)

Indices’ overlap, differences: domains

Figure 2. Reported geographic units of disadvantage indices

- ADI
- CCVI
- HPI
- SVI

Block Group → Census Tract → Zip Code → County

Increasing Geographic Size

*Note: ADI provides linkages between block group and zip codes but does not calculate rank based on zip codes.

Srivastava, T, Schmidt, H, Sadecki, E, Kornides, M, Social vulnerability, disadvantage, and COVID-19 vaccine rationing: A review characterizing the construction of disadvantage indices deployed to promote equitable allocation of resources in the United States (July 8, 2021).
Indices use: Covid, elsewhere

Title/abstract, all fields: “Area Deprivation Index”, “Social Vulnerability Index”

<table>
<thead>
<tr>
<th></th>
<th>ADI</th>
<th>SVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>62</td>
<td>36</td>
</tr>
<tr>
<td>2021</td>
<td>62</td>
<td>36</td>
</tr>
</tbody>
</table>

RESULTS BY YEAR
Indices use: Covid, elsewhere

Title/abstract, all fields: “Area Deprivation Index”, “Social Vulnerability Index”

<table>
<thead>
<tr>
<th></th>
<th>ADI</th>
<th>SVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESULTS BY YEAR</td>
<td>RESULTS BY YEAR</td>
<td>RESULTS BY YEAR</td>
</tr>
<tr>
<td>2021: 57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021: 57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ADI and SVI use (2000-2021), primary focus

<table>
<thead>
<tr>
<th></th>
<th>ADI</th>
<th>SVI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>126</td>
<td>69</td>
</tr>
<tr>
<td>Public health</td>
<td>68</td>
<td>50</td>
</tr>
<tr>
<td><strong>Covid</strong></td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>Clinical</td>
<td>54</td>
<td>16</td>
</tr>
<tr>
<td>Methodology</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>‘Off label’</td>
<td>n/a</td>
<td>58</td>
</tr>
</tbody>
</table>

Note: Prelim data/WiP/ongoing review! Capturing (1988-2021): Country/region; geospatial analytic frame; type of application; Index as equity adjustment vs descriptive use (if former: data on impact)
Conclusion

- Disadvantage indices: unprecedented, rapid and widespread adoption--plausibly mitigated racial, social inequities
- Now: ‘vaccines for all’: but equity story (still) not over. Challenges:
  - Co-existing high supply/low ‘demand’, low supply/high demand
  - Natl: gap most/least advantaged increased
- Universalize index uptake, *esp if/when boosters*
- Look beyond ‘needles into arms’, to broader index use—where fitting—for social, racial justice
California’s Equity Tools for COVID-19:
The Healthy Places Index and Beyond

Rohan Radhakrishna MD, MPH, MS (he, him, his)
Office of Health Equity – Deputy Director
California Department of Public Health
rohan.radhakrishna@cdph.ca.gov @DrRohanRad
Aug 3rd 2021
Vision:
Everyone in California has equal opportunities for optimal health, mental health and well-being.

Mission:
Promote equitable social, economic, and environmental conditions to achieve optimal health, mental health, and well-being for all.

Central Challenge:
Mobilize understanding and sustained commitment to eliminate health inequity and improve the health, mental health, and well-being for all.

Statute
Established, as authorized by Section 131019.5 of the California Health and Safety Code, to provide a key leadership role to reduce health and mental health disparities to vulnerable communities.
Healthy Places Index: Unique Approach

Granular
Fine geographic resolution reveals the variation within cities, counties, and communities

Validated
Each indicator – and the overall index – is linked to a summary health outcome: life expectancy at birth

Policy Solutions
Each indicator is supported by a wealth of policy solutions detailed in the Policy Guides
<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Employed</td>
</tr>
<tr>
<td></td>
<td>Income</td>
</tr>
<tr>
<td></td>
<td>Above Poverty</td>
</tr>
<tr>
<td>Transportation</td>
<td>Employed</td>
</tr>
<tr>
<td></td>
<td>Income</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s Education or Higher</td>
</tr>
<tr>
<td>Social</td>
<td>Two Parent Household</td>
</tr>
<tr>
<td></td>
<td>Voting in 2012</td>
</tr>
<tr>
<td>Neighborhood</td>
<td>Retail Density</td>
</tr>
<tr>
<td></td>
<td>Park Access</td>
</tr>
<tr>
<td></td>
<td>Tree Canopy</td>
</tr>
<tr>
<td></td>
<td>Supermarket Access</td>
</tr>
<tr>
<td></td>
<td>Alcohol Outlets</td>
</tr>
<tr>
<td>Housing</td>
<td>Low-Income Renter Severe Housing Cost Burden</td>
</tr>
<tr>
<td></td>
<td>Low-Income Homeowner Severe Housing Cost Burden</td>
</tr>
<tr>
<td></td>
<td>Housing Habitability</td>
</tr>
<tr>
<td></td>
<td>Uncrowded Housing</td>
</tr>
<tr>
<td></td>
<td>Homeownership</td>
</tr>
<tr>
<td>Clean</td>
<td>Ozone</td>
</tr>
<tr>
<td>Environment</td>
<td>PM 2.5</td>
</tr>
<tr>
<td></td>
<td>Diesel PM</td>
</tr>
<tr>
<td></td>
<td>Water Contaminants</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Insured Adults</td>
</tr>
</tbody>
</table>
Healthy Places Index | Methods

- Indicator scores are standardized (Z score)
- Policy Action Area score (mean of indicators)
- Policy Action Area weights (predictive of life expectancy)

- Final HPI calculated by:
  - Multiplying each policy action area score with its weight
  - Summing across eight policy action areas
From Data to Action Using HPI
Healthy Place Index | Policy Guides

- Employed
- Median Income
- Above Poverty
- Preschool Enrollment
- HS Enrollment
- Bachelor's Education
- Automobile Access
- Active Commuting
- 2-Parent Households
- Voting
- Retail Density
- Park Access
- Tree Canopy
- Supermarket Access
- Alcohol Availability
- Low-Income Renter Housing
- Low-Income Homeowner Housing
- Housing Cost Burden
- Housing Habitability
- Uncrowded Housing
- Homeownership
- Ozone
- Fine Particulate Matter
- Diesel Particulate Matter
- Safe Drinking Water
- Insured Adults
- Extreme Heat
- Impervious Surfaces
- Outdoor Workers
- Public Transit Access
- Sea Level Rise
Healthy Places Index

cases/10,000

bottom 10% tracts in CA

interquartile range

median
top 10% tracts in CA
<table>
<thead>
<tr>
<th>Healthy Places Index</th>
<th>Economic Indicators</th>
<th>% Below Fed. Poverty Line</th>
<th>% with Health Insurance</th>
<th>Education Indicators</th>
<th>More than Bachelors Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Indicators</td>
<td>Severe Rent Burden</td>
<td>Median HH Income</td>
<td>Social Capital Indicators</td>
<td>Disabled</td>
<td>Linguistic Isolation</td>
</tr>
<tr>
<td>Cuts/10,000</td>
<td>Smoking</td>
<td>Obesity</td>
<td>COPD Prevalence</td>
<td>Diabetes Prevalence</td>
<td>PM2.5</td>
</tr>
</tbody>
</table>

decline of indicator
Blueprint for a Safer Economy and Equity

- California implemented the Blueprint on August 30, 2020 to reduce COVID-19 in the state with criteria for loosening and tightening restrictions on activities.

- A health equity metric took effect on October 6, 2020. To advance to the next less restrictive tier, a county must meet an equity metric or demonstrate targeted investments to eliminate disparities in levels of COVID-19 transmission, depending on its size.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Tier 1 Widespread (Purple)</th>
<th>Tier 2 Substantial (Red)</th>
<th>Tier 3 Moderate (Orange)</th>
<th>Tier 4 Minimal (Yellow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Case Rate for Tier Assignment** (Rate per 100,000 population* excluding prison cases^, 7 day average with 7 day lag)</td>
<td>&gt; 10</td>
<td>6 - 10</td>
<td>2 - 5.9</td>
<td>&lt; 2</td>
</tr>
<tr>
<td>Test Positivity^ (Excluding prison cases^, 7 day average with 7 day lag)</td>
<td>&gt; 8%</td>
<td>5 - 8%</td>
<td>2 - 4.9%</td>
<td>&lt; 2</td>
</tr>
</tbody>
</table>
## Methods

Use HPI scores to assign county’s census tracts to quartiles

Sum positive tests and total tests for the bottom quartile

Divide total positive tests by total tests and multiply by 100

<table>
<thead>
<tr>
<th>County risk level</th>
<th>Adjusted case rate*</th>
<th>Positivity rate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDESPREAD</td>
<td>More than 7.0</td>
<td>More than 8.0%</td>
</tr>
<tr>
<td></td>
<td>Daily new cases (per 100K)</td>
<td>Positive tests</td>
</tr>
<tr>
<td>SUBSTANTIAL</td>
<td>4.0 – 7.0</td>
<td>5.0 – 8.0%</td>
</tr>
<tr>
<td></td>
<td>Daily new cases (per 100K)</td>
<td>Positive tests</td>
</tr>
<tr>
<td>MODERATE</td>
<td>1.0 – 3.9</td>
<td>2.0 – 4.9%</td>
</tr>
<tr>
<td></td>
<td>Daily new cases (per 100K)</td>
<td>Positive tests</td>
</tr>
<tr>
<td>MINIMAL</td>
<td>Less than 1.0</td>
<td>Less than 2.0%</td>
</tr>
<tr>
<td></td>
<td>Daily new cases (per 100K)</td>
<td>Positive tests</td>
</tr>
</tbody>
</table>

*7-day average of daily COVID-19 cases per 100K with 7-day lag, adjusted for number of tests performed

**7-day average of all COVID-19 tests performed that are positive
Immediate COVID-19 Response Strategies

• Testing
• Contact Tracing
• Isolation Support
• Worker Protections
• Vaccinations
• Food Security

Medium and Longer-term COVID-19 Response Strategies

• Housing Security and Homelessness
• Economic Security
• Schools and Childcare
• Transportation / Physical Access and Mobility
• Health in All Policies (HiAP)/Governing for All

Cross cutting strategies

• Data
• Communication
• Language Access and Cultural Competency
• Community and Stakeholder Engagement
Technical Assistance

Goal: to provide fast, responsive regionally relevant technical assistance

Components
• Local Coordination Team
• ELC funding positions
  • Community engagement
  • Strategic Partnerships
• State Subject Matter Expert (within and outside of Public Health)
• Philanthropic funded efforts + CBOs
  • PHI, Kaiser, Together Toward Health
• Regional Collaborative
  • BARHII, Public Health Alliance of Southern California, San Joaquin Valley Consortium
• Advocacy efforts
  • ChangeLab Solutions, California Pan Ethnic Health Network, Public Health Advocates, Prevention Institute

Principles
Strategies
Promising practices and Examples
Resources
HPI captures disparity in COVID mortality

Least Advantaged

Most Advantaged
Equal is not Equitable: Use Age AND Place

More Benefit

% of deaths averted

Less Benefit

Coverage Among 65+

Equity: increased coverage for lower quartiles leads to more equal benefit

Equality: same coverage for all areas leads to un-equal benefit

Reality: without action coverage will be lower in lower quartiles due to access and mistrust

Source: Stanford SC Cosmo
HPI informed the vaccination strategy

California is changing its vaccine system to allocate 40% of supply to lowest-income ZIP codes

[Image of a COVID vaccine line sign]


https://covid19.ca.gov/vaccination-progress-data/
Vaccine Equity Metric (VEM) Used for Allocation Strategy & Provider Prioritization

• On March 2nd, CA started allocating 40% of vaccines to zip codes in the lowest VEM quartile (Q1)

• This matched Q1’s disproportionate share of COVID-19 case and death burden at 40%

• CA allocation strategy incorporates equity metrics where providers best at reaching Q1 or other priority communities get larger vaccine allotments
Using VEM To Track Equity Trends Over Time

- CA monitors vaccination rate trends by quartile to identify policies, events, or eligibility changes that impact equity.

- Expanding eligibility to high-risk occupations and implementing the 40-20-20-20 allocation policy led to higher Q1 shares.

- Eligibility expansion to all adults led to lower Q1 shares.

* 3/2: Allocated more vaccines to lowest quartile
** 3/15: Started vaccinating individuals at higher risk
Correlations between VEM and COVID-19 Case/Death Rates as of March 2021 (when VEM was developed)
HPI can help monitor equity in vax coverage

The challenges are systemic and persistent
Total vaccinations by race/ethnicity over time

Race/ethnicity data as reported by State vaccination dashboard

~66% white population
Of white 12+ population is vaccinated 1+ dose as of 7/27, compared to 56% of white 12+ population as of 5/1

~52% LatinX population
Of LatinX 12+ population is vaccinated 1+ dose as of 7/27, compared to 38% of LatinX 12+ population as of 5/1

~49% Black population
Of Black 12+ population is vaccinated 1+ dose as of 7/27, compared to 37% of Black 12+ population as of 5/1

Source: https://covid19.ca.gov/vaccination-progress-data/ as of 7/29/2021, 7am PT
As the State move from “surge to surgical”, the continuous impact assessment suggests that tailored combinations of levers can keep driving equity.

To help inform decision making about where to scale vaccination efforts, an operational impact assessment was conducted based on insights from Local Health Jurisdictions, surveys, and site-level vendor data.

**Initial learnings:** Specific combinations of levers/resources may be more effective for different communities or geographies than others, some examples include:

<table>
<thead>
<tr>
<th>Geography/Population¹</th>
<th>Levers</th>
<th>Potential lever ‘recipes’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racially or culturally diverse communities</td>
<td>1 3 4</td>
<td>Host clinics at sites with a high degree of community trust (e.g. schools, FBOs, SMBs)</td>
</tr>
<tr>
<td>Urban areas and large cities</td>
<td>1 2 3</td>
<td>Ensure incentives are immediately distributed and tailored to the targeted community</td>
</tr>
<tr>
<td>Small and dispersed communities</td>
<td>1 3</td>
<td>Focus door-to-door canvassing around highly convenient and well-known sites</td>
</tr>
<tr>
<td>Agricultural and other working communities</td>
<td>1 4</td>
<td>Pair walk-in availability and off-work hours with extensive local signage</td>
</tr>
<tr>
<td>Linguistically diverse communities</td>
<td>1 4</td>
<td>Provide multi-lingual services at every stage of vaccination (e.g. outreach, education, on-site)</td>
</tr>
</tbody>
</table>

¹ Geography/Population can overlap

Note: 1. Increasing public awareness and amplifying education  2. Encouraging vaccination  3. Increasing vaccination site convenience  4. Ensuring vaccination accessibility

Source: CDPH Equity Operations workstream
HPI can be the common language for addressing inequities

Vaccine ‘Hesitancy’

MIS-C Cases

Seroprevalence

Pre-existing Conditions

Hard-to-Count Populations

High Risk Occupations

School Reopenings
Fiscally administered by the Public Health Institute

**HPI Into Action Statewide**

**EQUITABLE GRANT MAKING**
- **Caltrans**
  - Sustainable Transportation Planning Grants ($25M/yr)
  - Adaptation Planning Grants ($5M/yr)
- **California Strategic Growth Council**
  - Transformative Climate Communities ($25M in 2018)
- **California Transportation Commission**
  - Active Transportation Program (~$220M/yr)
- **California Air Resources Board**
  - Community Air Protection Program ($5M/yr)

**ASSESSMENT & DECISION-MAKING**
- **California Department of Public Health (CDPH) – Nutrition & Obesity Prevention**
  - Development of 3-Year Implementation Workplans
- **CDPH – Maternal, Child and Adolescent Health Division**
  - Community Birth Plan to Reduce Preterm Births in African American Women in Los Angeles
- **CDPH – Office of Health Equity**
  - Mortality Rates Among Caucasian Men in Central San Joaquin Valley
- **California Air Resources Board**
  - Research Call – Mapping and Evaluating Transportation Access and Built Environment

**PLANNING GUIDANCE**
- **Governor’s Office of Planning & Research**
  - General Plan Guidelines
  - Senate Bill 1000 Guidelines
  - Integrated Climate Adaptation – CA Executive Order B-30-15
  - Resilient CA – State Adaptation Clearinghouse
- **California Natural Resources Agency**
  - Safeguarding California Plan
- **California Transportation Commission**
  - Regional Transportation Plan Guidelines
  - Comprehensive Multimodal Corridor Guidelines
- **California Environmental Justice Alliance**
  - SB 1000 Toolkit – Environmental Justice Element

Over $450 million in grant funding

*A Partnership for Healthy Places*
HPI Into Action Locally & Regionally

Southern California Association of Governments
Sustainable Communities Planning Grants

Kaiser Permanente, Southern California
Mental Health & Wellness Initiative: Local Partnership Grants

Riverside University Health System – Public Health
Adverse Childhood Experiences Score Program
Census Tract Identification for Increased Women, Infant & Children Program Outreach

Ventura – Community Memorial Health System
Wellness Collaborations - Prioritization by Census Tracts

Contra Costa County, Department of Public Health
Targeting Home Energy Efficiency Resources

Kaiser Permanente, Southern California
Catalyst of Organizational Assessment and Equity Framing
Community Health Needs Assessment

Los Angeles County Department of Public Health
85+ City and Community Health Profiles

Santa Barbara County Public Health Department
Presentations on Federal Budget Impacts on Health, and Community Health Needs Assessment

Santa Monica – St. John’s Medical Center
Community Health Needs Assessment

Solano County Public Health Department
Local Community Indicator Comparison Project

Sutter County Public Health Department
Community Health Assessment, Community Health Improvement Plan, and Strategic Plan

Southern California Association of Governments
2016 and 2020 Regional Transportation Plan
Active Transportation Database

Prevention Institute – Healthy, Equitable, Active Land Use Network
Strategic Planning Guide for Public Infrastructure Spending

Hospital Association of Southern California
Communities Lifting Communities Initiative

Ventura County
General Plan 2040 Update

Solano County Public Health Department
Maternal and Child Health Verification of Cumulative Health Impacts from Social Factors
Equity Index Best Practices

Work closely with locals

Make it explainable and transparent with the public

Check fidelity often and use creatively to prioritize resources

Carrots & Sticks
Vaccine Allocation
Provider Prioritization
Targeted Outreach (Air Game & Ground Game)
Mobile Clinic Deployment

Demonstrate the impact
Equity Index Challenges & Lessons Learned

Not a “cure all” always look at race/ethnicity & special pop.

Resource allocation decisions can invite methodology critiques. Document science-based responses to concerns.

Expect tradeoffs, keep equity as your North Star for practical impactful choices.