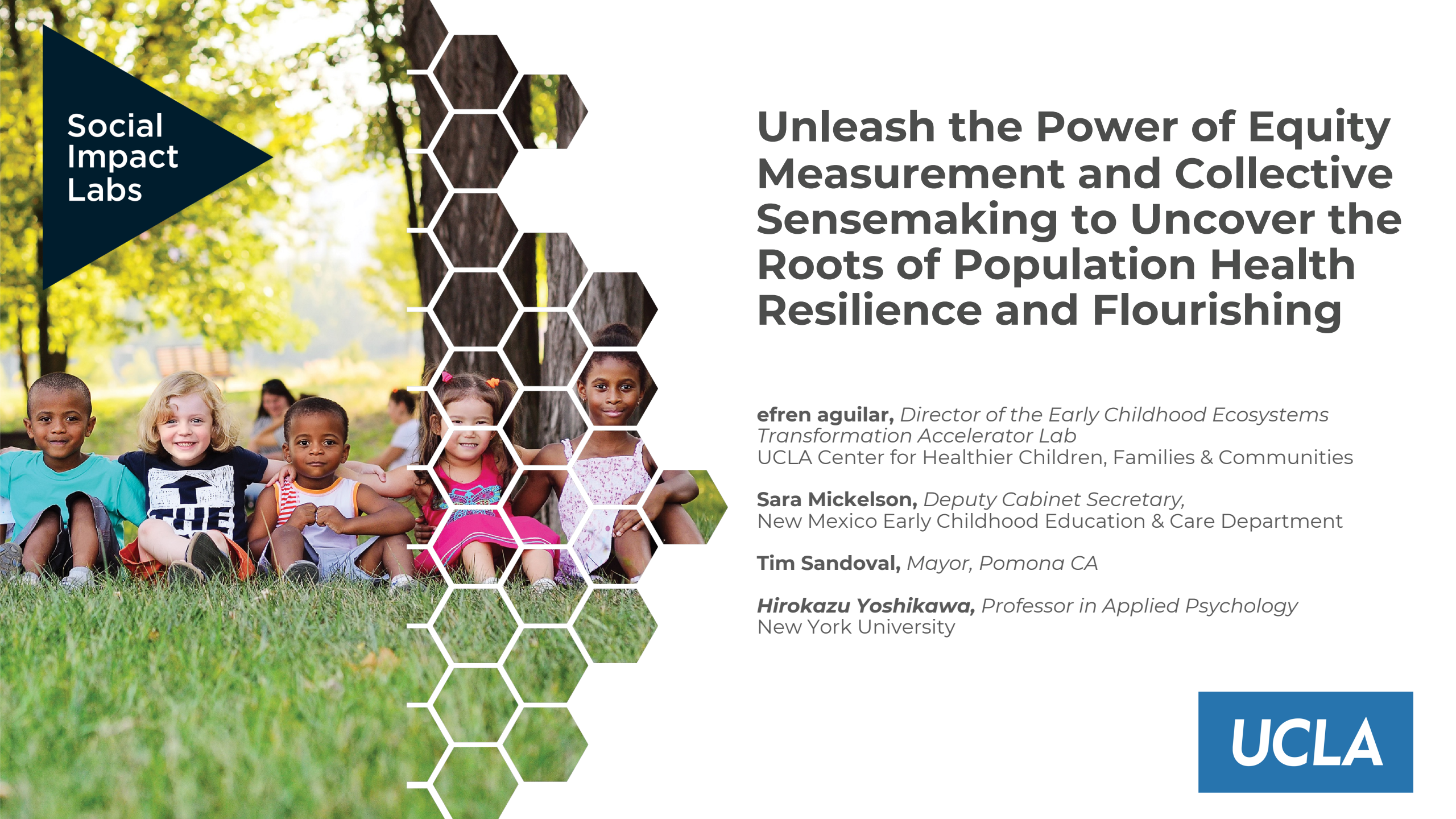




Social
Impact
Labs

Unleash the Power of Equity Measurement and Collective Sensemaking to Uncover the Roots of Population Health Resilience and Flourishing

efren aguilar, *Director of the Early Childhood Ecosystems Transformation Accelerator Lab*
UCLA Center for Healthier Children, Families & Communities

Sara Mickelson, *Deputy Cabinet Secretary,*
New Mexico Early Childhood Education & Care Department

Tim Sandoval, *Mayor, Pomona CA*

Hirokazu Yoshikawa, *Professor in Applied Psychology*
New York University

UCLA

Challenging Data Landscape

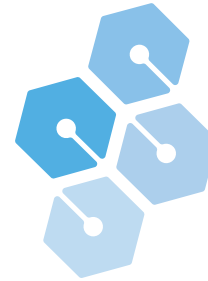
- Data from, by, and for community members have been extracted and used in ways that have not provided direct support to residents and their neighbors
- Population data designed to describe community systems have often been misused to draw false conclusions about people
- Data on equity and structural racism and violence if not used for the right reasons and in the right way can in and of themselves be further sources of trauma



Over 10 Years of Fieldwork

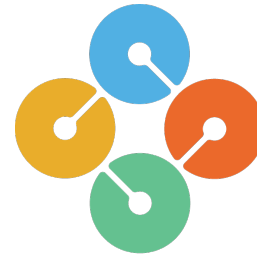
A graphic for Social Impact Labs featuring a large orange square on the left and a dark blue triangle pointing right on the right. The triangle contains the text 'Social Impact Labs'. Behind the triangle is a complex network of orange dots and lines, resembling a molecular or social structure.

**Social
Impact
Labs**



**Data
Informed
Futures**

Knowledge and insights
to transform children's lives.



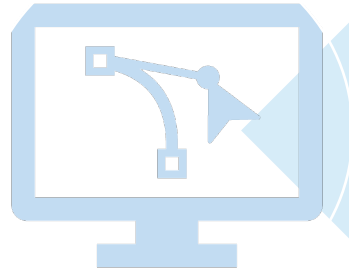
**The Center for
Healthier Children,
Families & Communities**

Building a future where all children thrive.

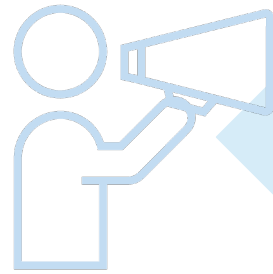


Learning Objectives:

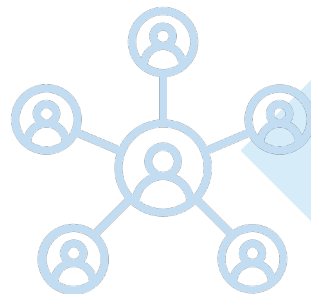
Participants will come out of the session with a better understanding of the following:



How to design data systems that help you track early childhood developmental trajectories; identify equity gaps at the earliest periods of development; and illuminate patterns of resilience



How to harness collective storytelling and collective sensemaking to uncover the community roots of population resilience and flourishing



How to bring this all together to transform your early childhood ecosystems

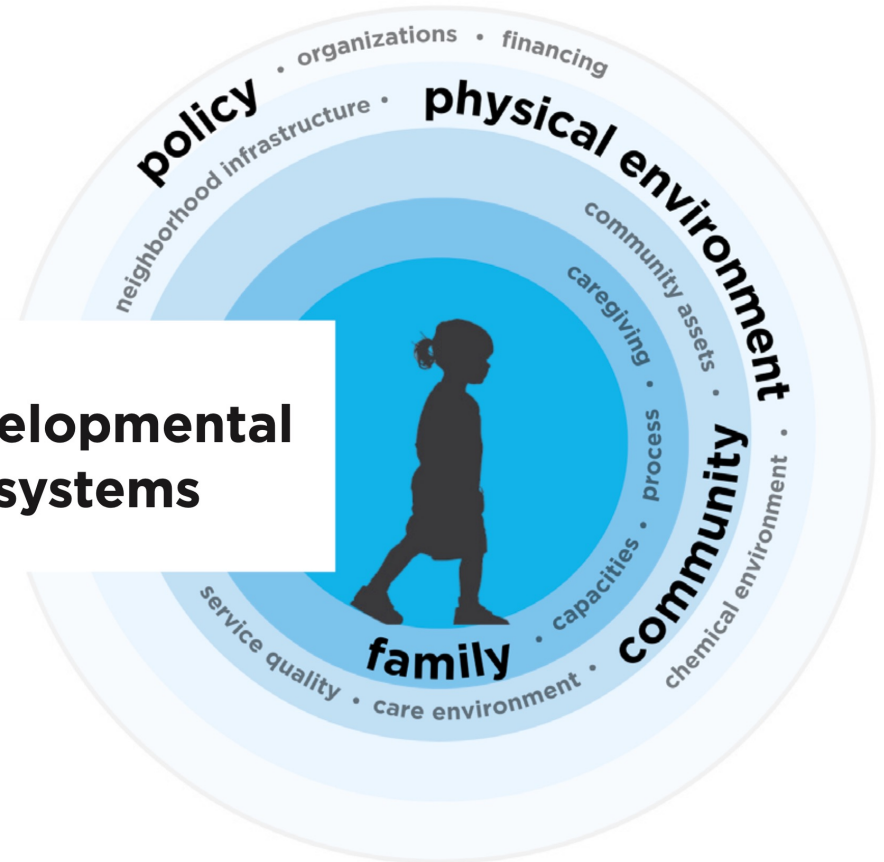
Grounding Ideas and Concepts



The Early Years Matter

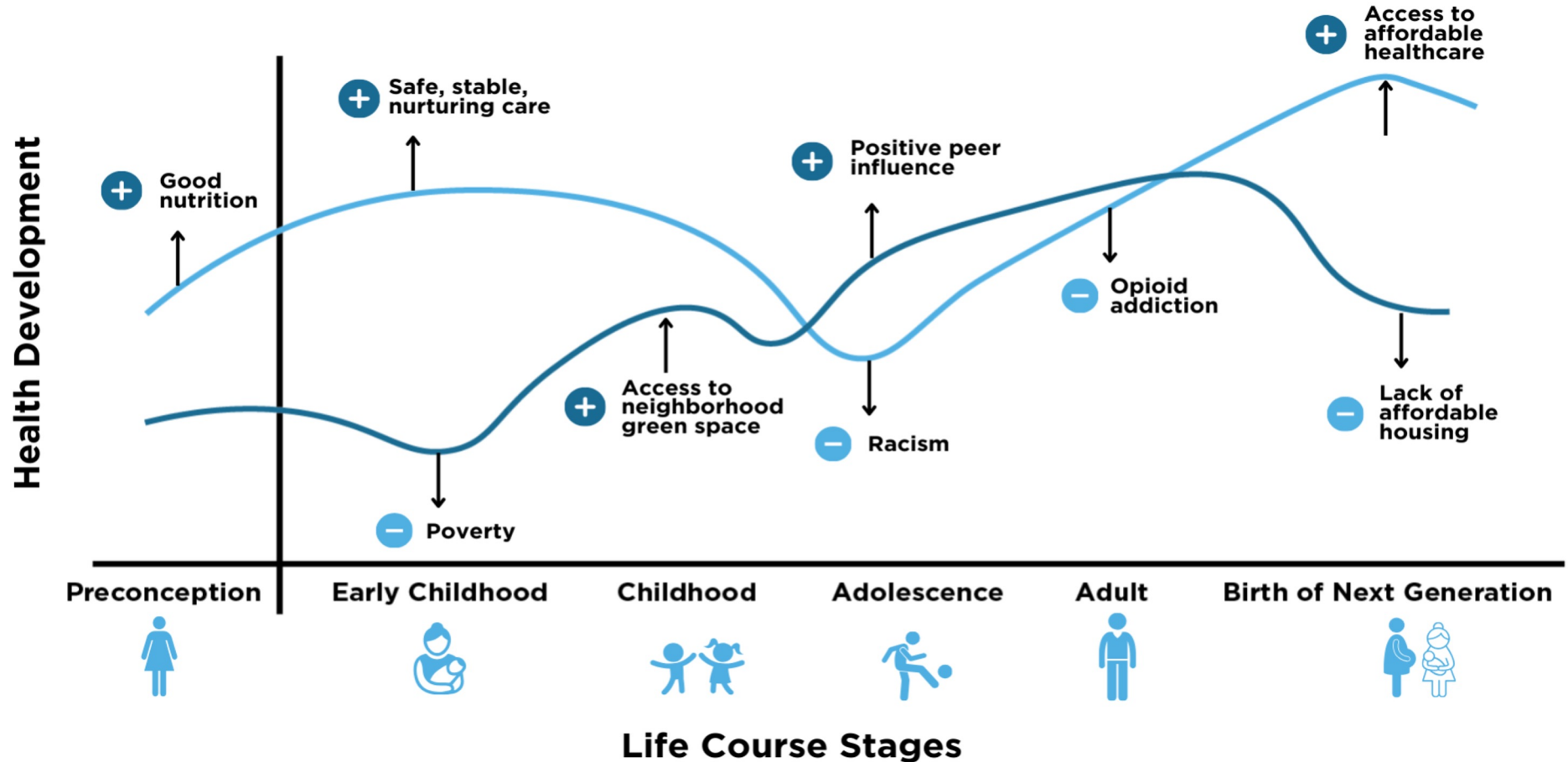
- The early years matter and have major impacts on children's wellbeing into adulthood
- The developmental ecosystems in which children grow up matter
 - Parents' health, quality of family relationships and family routines, living conditions, access to resources, the built environment, policies and societal factors (e.g., healthcare, education, racism, discrimination)

Developmental Ecosystems

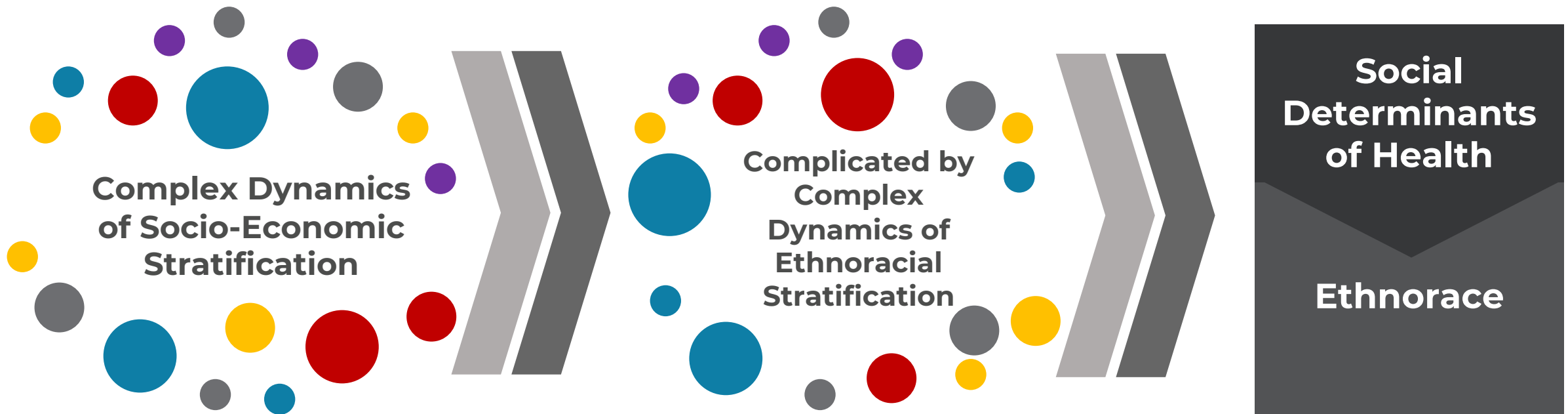


Lifecourse Health Trajectories

Health development is a dynamic process that begins before conception and continues throughout the lifespan.

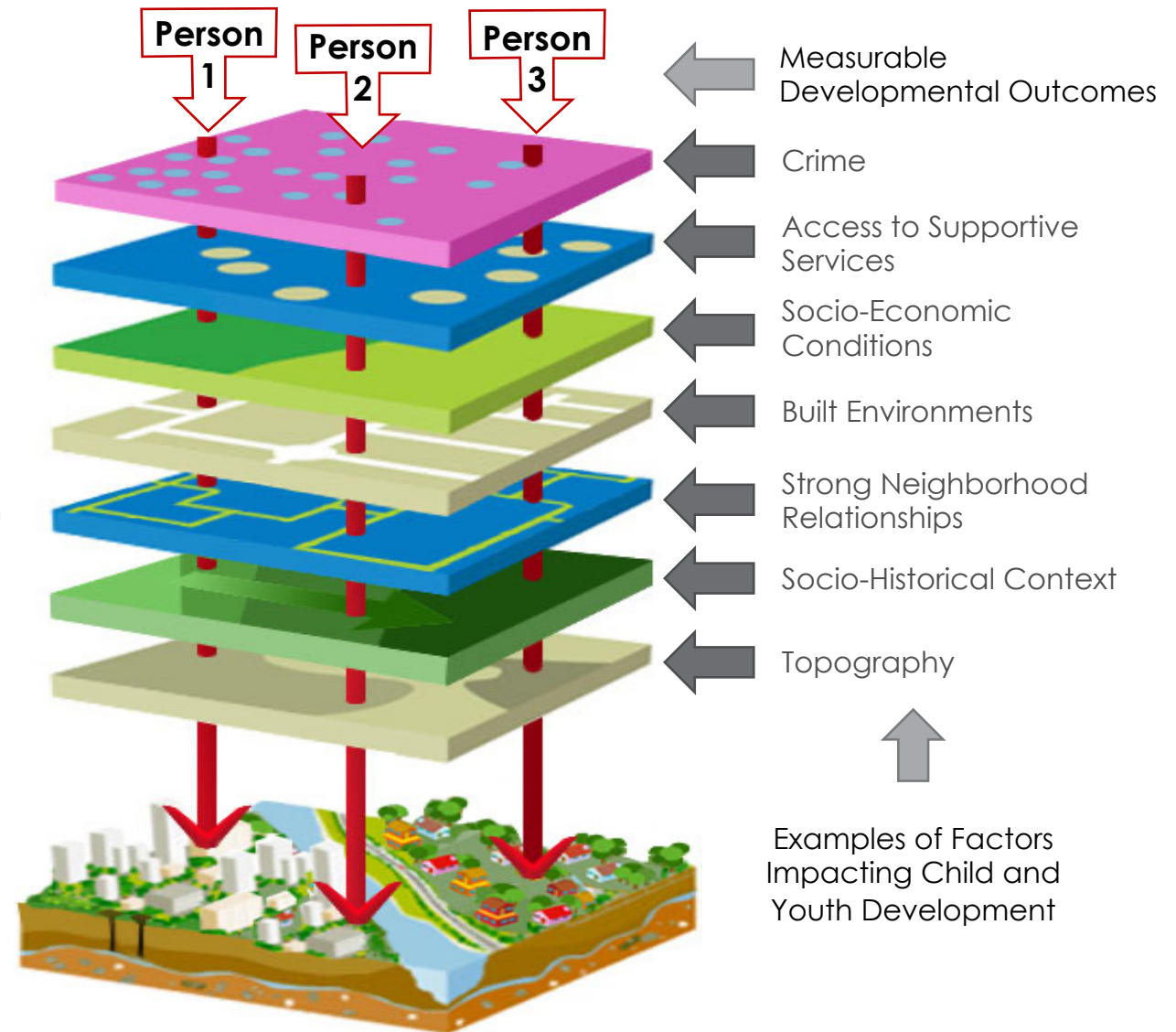


Complex relationship between SDOH and ethnorace



Spatial Effects on Human Development Complex & Dynamic Interactions

*Visualization of factors
that impact children
and youth health and
well-being*



Importance of Mapping Data at the Neighborhood Level

Some of these influences can be mapped and have impact on the whole population.



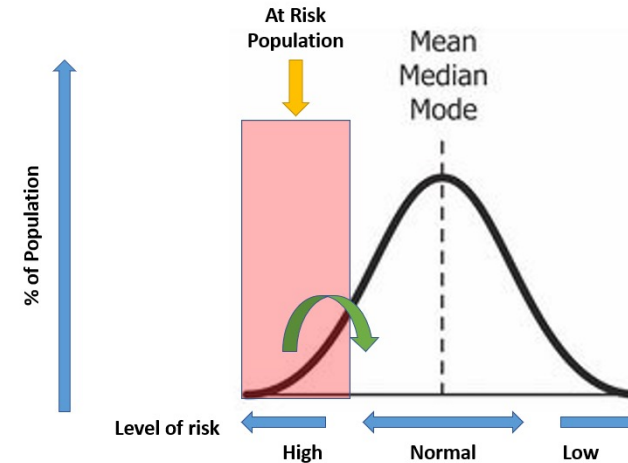
Naturally, looking at things this way reveals that not all game boards are equal.



Population Strategies are needed to shift the population curves and trajectories

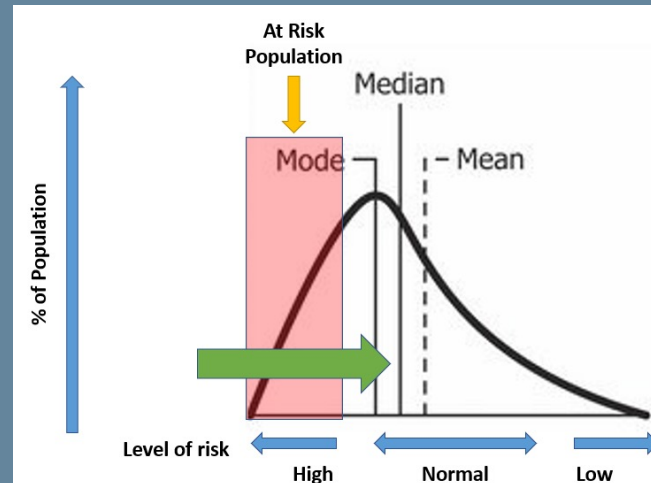
Current Dominant Strategy

- When 8%-16% of the population were at-risk for a particular disease early identification and treatment worked.
- This required engagement with the service systems managers – County Department.



Emerging Transformation Strategy

- But now that 30%-40% of the population is at risk population strategies are needed to shift the population curve.
- This means we need to engage with the managers of the ecosystems - Cities



Lessons Learned from Emerging Promising Practices

- Neighborhoods are key units of change
- Population Strategies are needed to shift the population curves and trajectories
- Population strategies require valid population measures across the lifecycle
- Using multi-dimensional data reveal organic patterns of resilience
- Equity challenges are not ethnoracially neutral so our data cannot be ethnoracially neutral



To level the playing field...



- We have to move beyond addressing this at the individual intervention level... (cost prohibitive, fails to address the root causes)
- Need to engage all the sectors in the early childhood ecosystem (health, early childhood education, civic institutions)
- Need to co-design community and culturally appropriate partnership models
- Co-design data systems



How to design data systems that help you track early childhood developmental trajectories; identify equity gaps at the earliest periods of development; and illuminate patterns of resilience



Data systems must be redesigned to:

Integrated Data Platform



Online Training



Data Collection



Customized Reports

- Respect local data sovereignty
- Positively shift population health at multiple levels (neighborhood, city, town, county, pueblo/sovereign lands, state)
- Effectively measure and track development across the lifecycle
- Quantify and reveal patterns of adversity and resilience



Caution about Using Population Outcomes without Contextual Data or Contextual Data without Population Outcomes

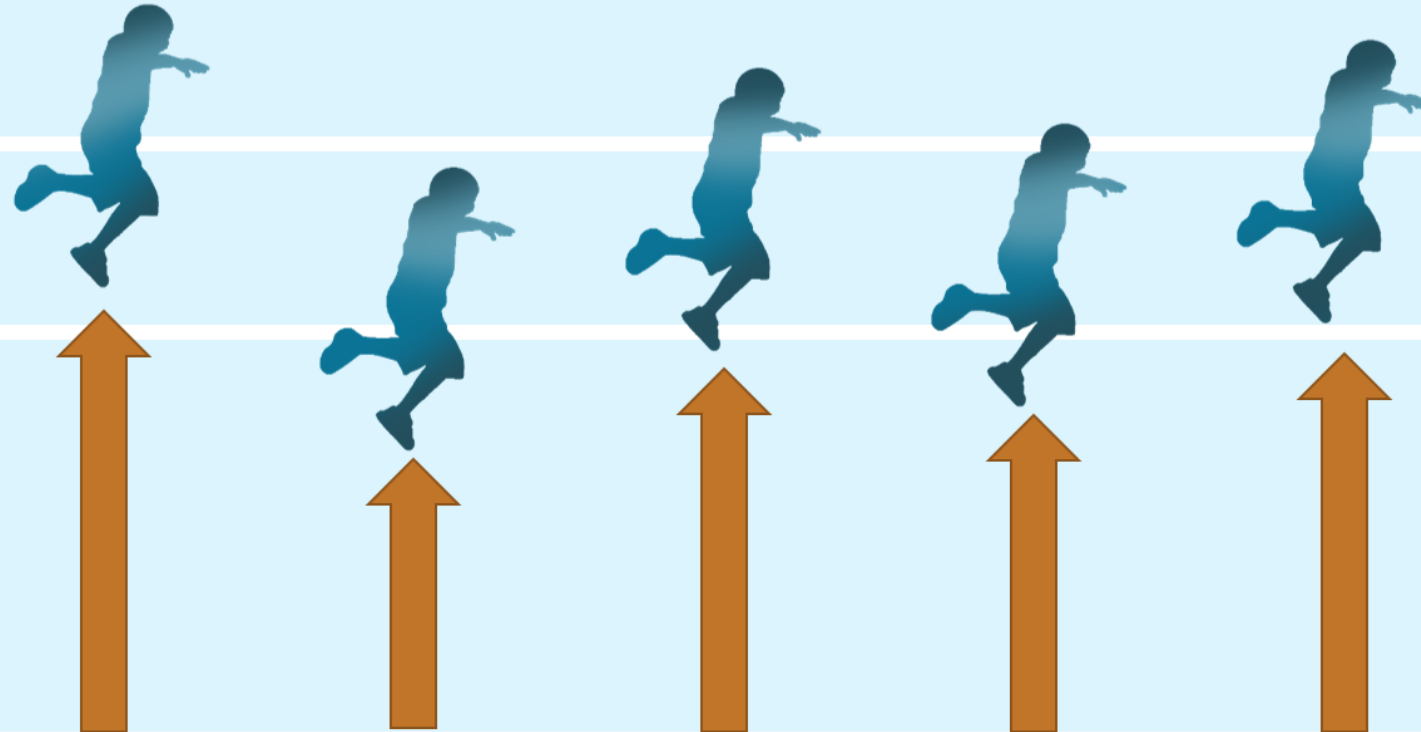
Performance on EDI

If success is measured by the vertical leap in this infographic, the results would lead to a specific set of conclusions and data narratives.

- On-Track

- At-Risk for being Vulnerable

- Vulnerable



Caution about Using Population Outcomes without Contextual Data or Contextual Data without Population Outcomes

Performance on EDI

But if you included information about the community contexts and used the same measure of the vertical leap, the analyses and narratives change.

- On-Track

- At-Risk for being Vulnerable

- Vulnerable



The Early Development Instrument



5 Developmental Areas of the EDI



These 5 areas of development are known to impact child well-being and academic performance



5 EDI Domains

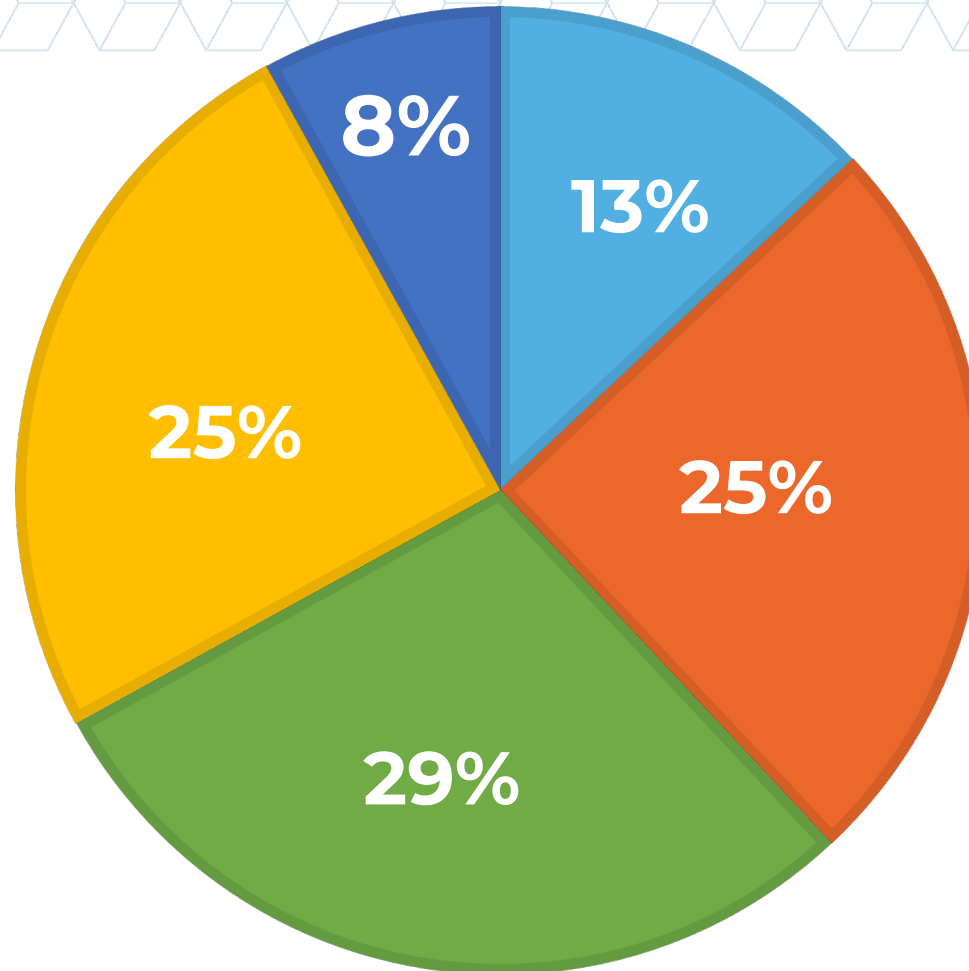
Distribution of survey items

Communication Skills

Ability to use language
Communicate needs
and understand

Language & Cognitive

Abilities with reading,
writing, numbers,
shapes



Physical Health & Well-Being

Motor skills
Physical readiness

Social Competence

Getting along with
peers,
Respect for others

Emotional Maturity

Emotional
wellbeing, feeling
sad, fearful, etc.



The National Neighborhood Equity Index (NNEI)



The Opportunity Challenge from our Communities

Neighborhood conditions are impacted by an array of factors

- Need something simple - an index

Considerations

1. Available at the neighborhood level
2. Available consistently and frequently over time
3. Actionable for every neighborhood



National Neighborhood Equity Index (NNEI)

- The NNEI¹ is a measure of socio-economic advantage and adversity at the neighborhood level.
- Consistently available – 5 yr aggregated estimates (US census)
- Covers every census tract in the US and its territories

¹ Developed by Charles Bruner, Child and Family Policy Center



National Neighborhood Equity Index

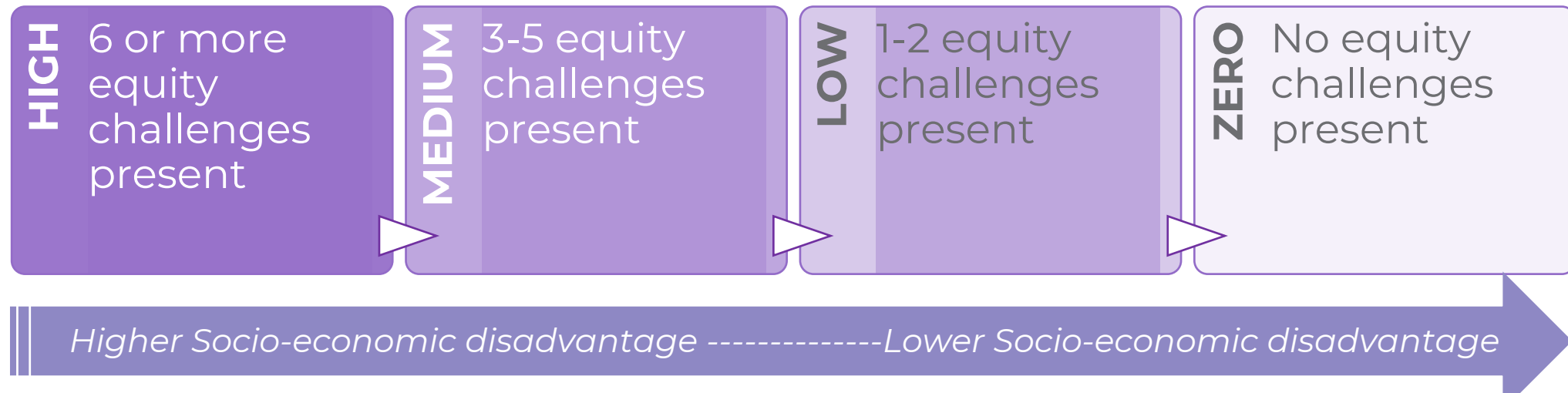
Comprised of eleven (11) indicators from
American Community Survey, US Census

Category	Indicator
Educational	• % Population without a High School Diploma (Ages 25 and Older) • % Population with a College Degree (Ages 25 and Older)
Economic	• % Population with Wage Income • % Families with Children in Poverty • % Households with Public Assistance Income
Social	• % Single Parent Family Households • % Limited English-Speaking Households • % Disconnected Youth (Ages 16-19; Unemployed and not in School) • % Children Enrolled in Preschool/Nursery School
Wealth	• % Owner-occupied Housing • % Households with Interest, Rent, or Dividend Income



Construction and Reporting of the Index

- Neighborhoods are categorized into one of 4 possible levels based on the number of equity challenge indicators present



NNEI	Total % n
Level 0 (Zero)	34% (49,833)
Level 1 (Low)	27% (38,884)
Level 2 (Medium)	25% (36,307)
Level 3 (High)	14% (19,933)



What is the strength of the NNEI in predicting early childhood health and development?

Model 1: NNEI and EDI vulnerability

Model 2: NNEI and EDI vulnerability accounting for gender & IEP

Model 3: NNEI and EDI vulnerability accounting for gender & IEP, race/ethnicity

Model 4: NNEI and EDI vulnerability accounting for gender & IEP, race/ethnicity x NNEI

VARIABLES	Model 1	Model 2	Model 3	Model 4
NNEI				
Level 1	1.256	1.282	1.209	1.128
Level 2	1.590	1.565	1.348	1.325
Level 3	1.765	1.751	1.439	1.423

Significant at $p < 0.01$

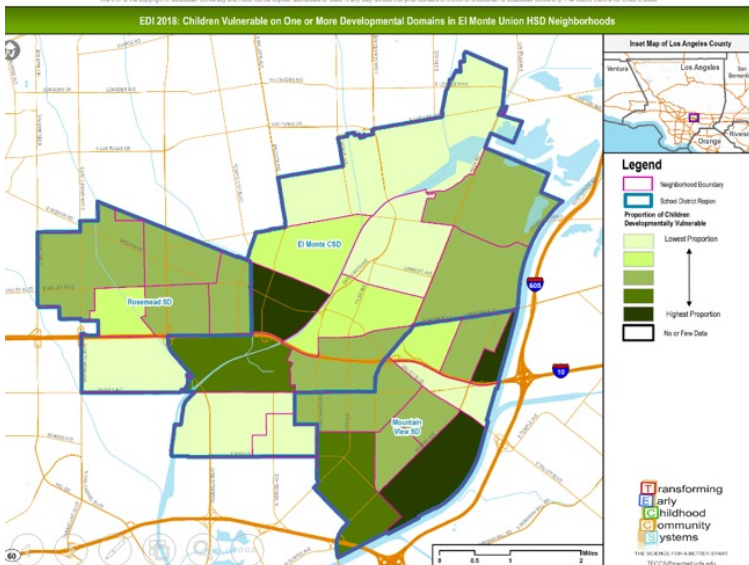
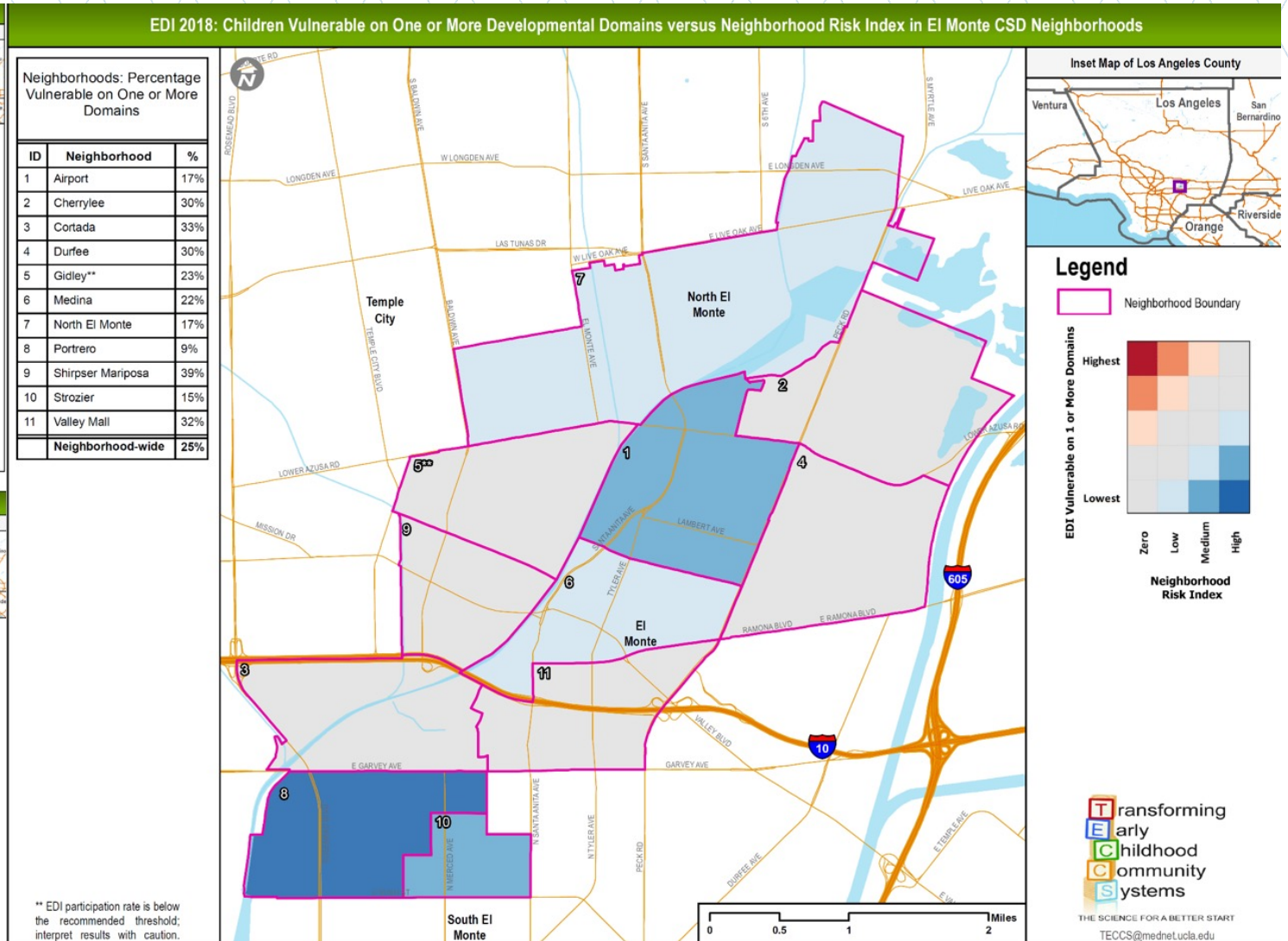
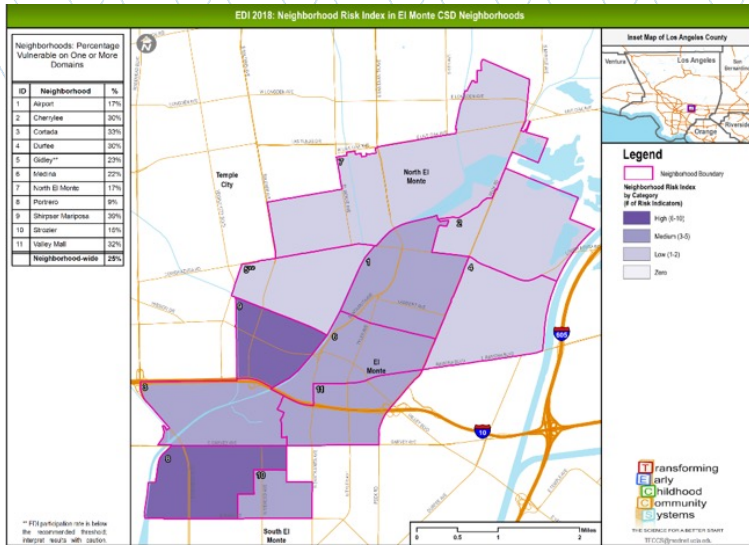
Significant at $p < 0.05$

For each model, the odds of being vulnerable on one or more EDI domains increased with each NNEI level.

NNEI was a strong predictor of EDI vulnerability



Combining outcomes data with context data you can map resilience across your communities



Key Finding

Higher levels of neighborhood equity barriers as measured by the NNEI are positively associated with lower well-being as measured by the EDI.



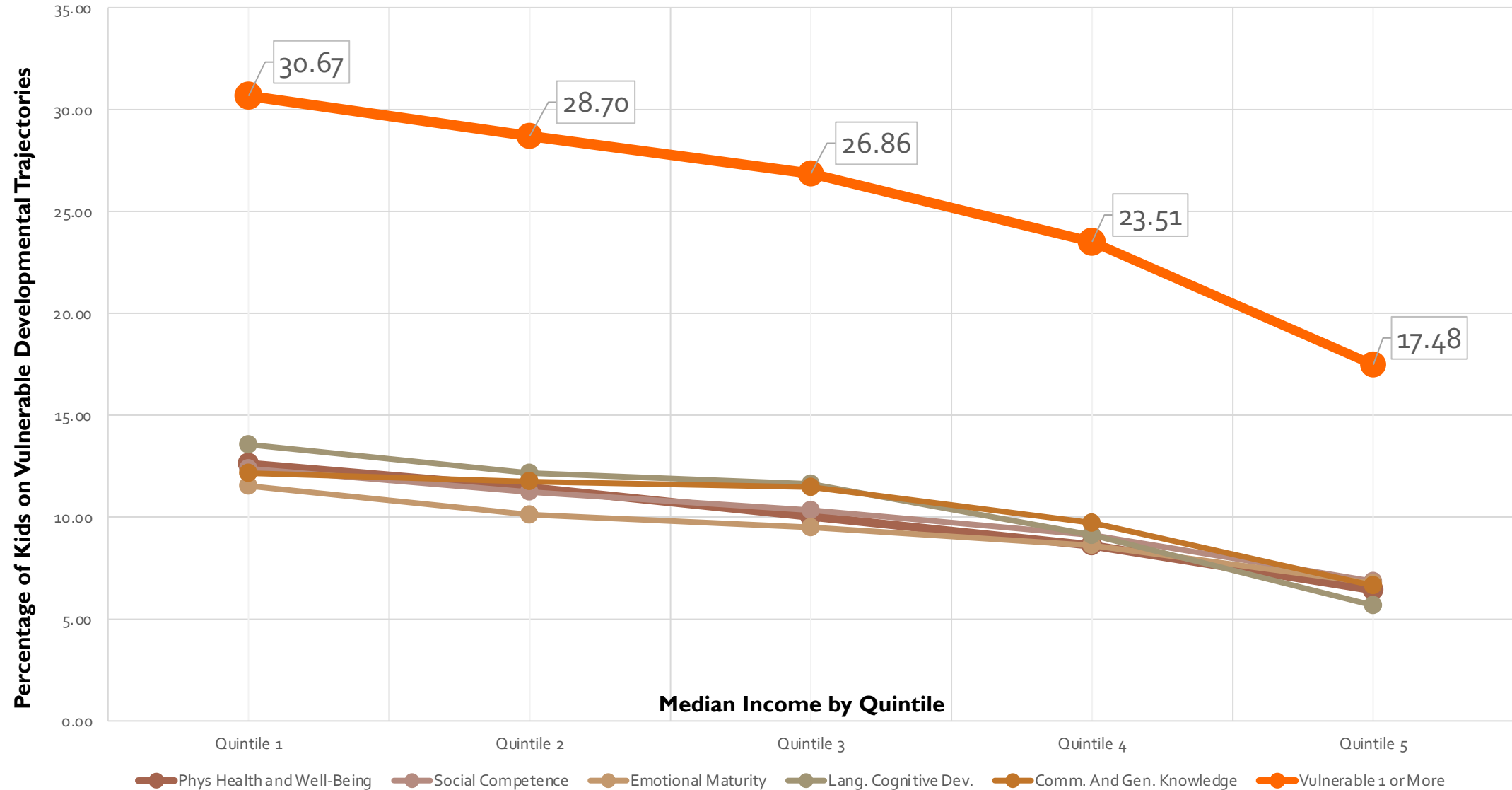
Moving beyond ethnoracially neutral analyses to advance developmental equity



Poorest

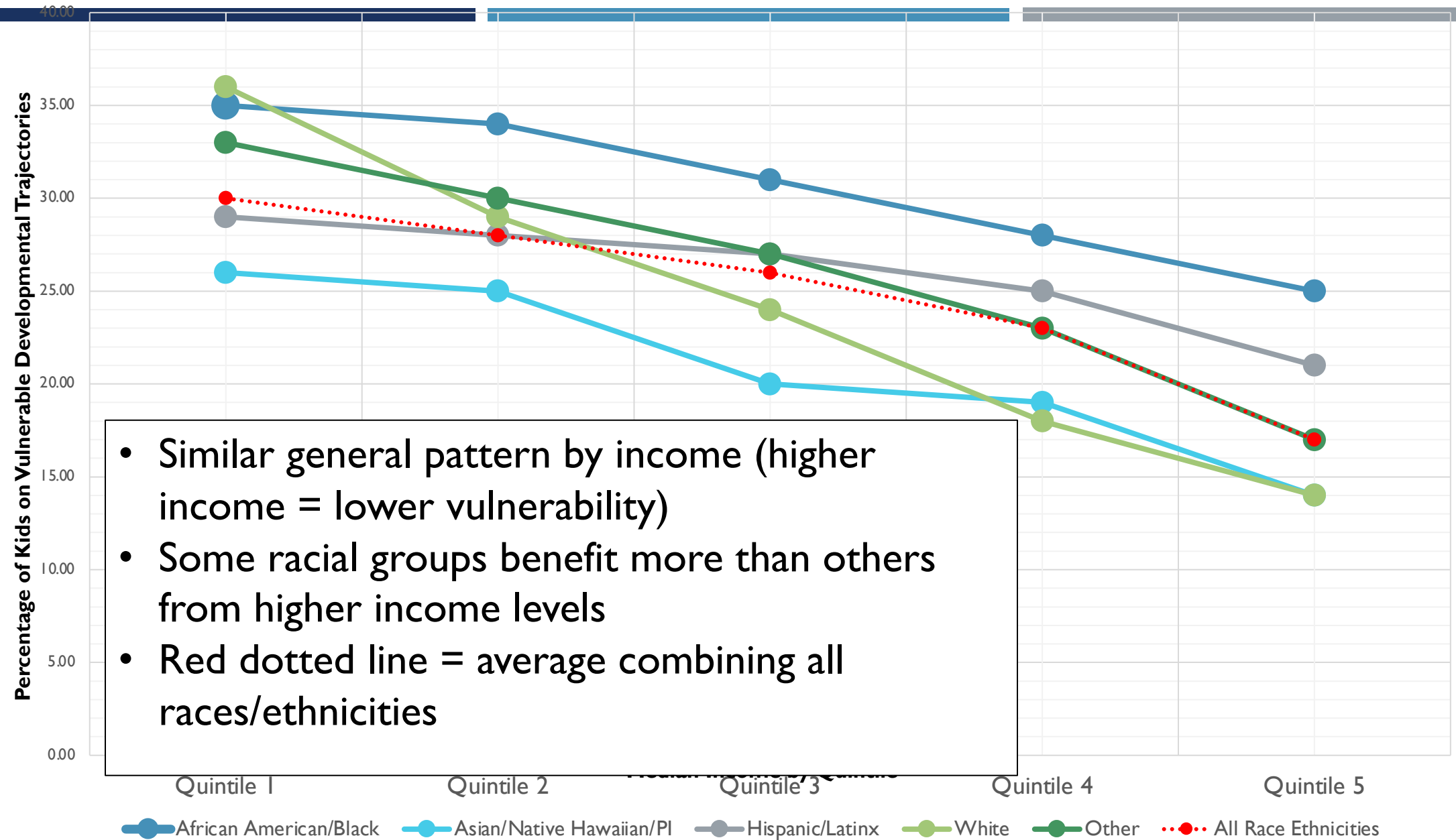
Vulnerability by Domain and Median Income Quintile

Wealthiest



These data suggest a relationship between the percentage of kids on vulnerable developmental trajectories and median income for the census tracts in which they reside.

This pattern is noticeable on cumulative assessments and individual developmental domains.



- Similar general pattern by income (higher income = lower vulnerability)
- Some racial groups benefit more than others from higher income levels
- Red dotted line = average combining all races/ethnicities

Calculating a Racial/ethnic Equity Gap (REG)

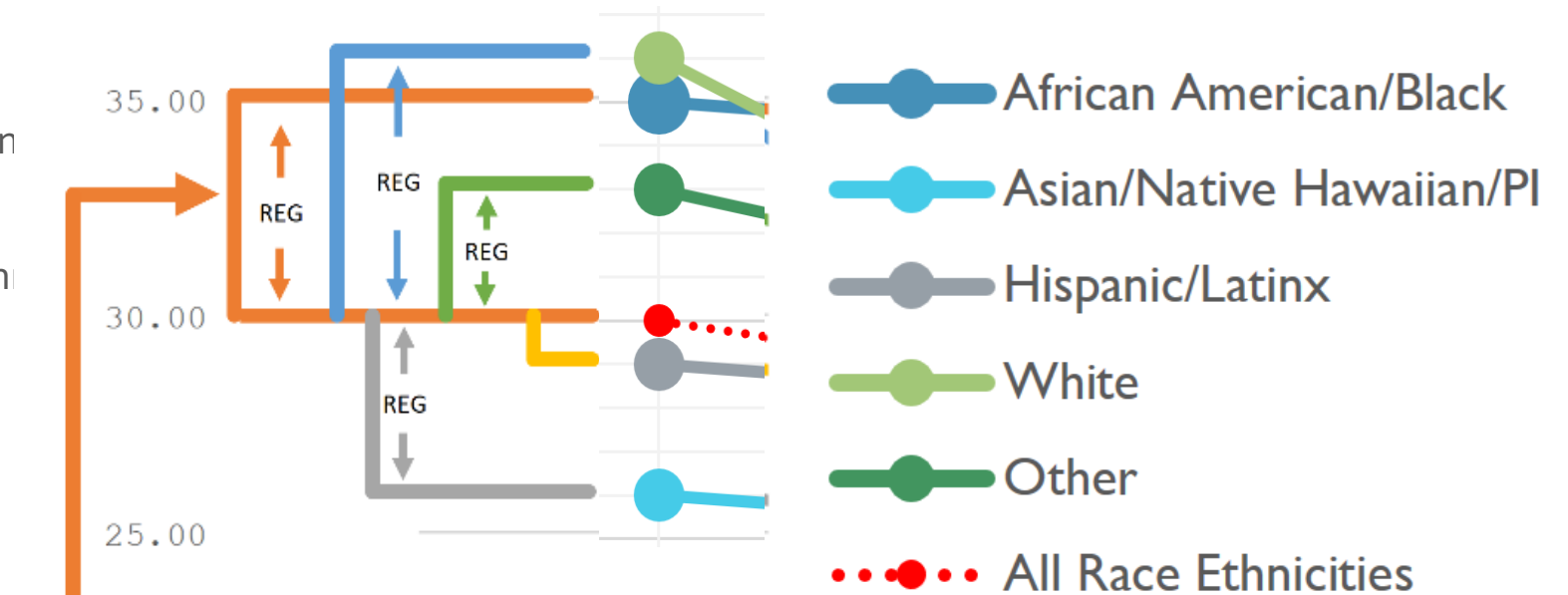
Race/Ethnicity Equity Gap

Derived by calculating the distance between

- % Vulnerable of All Race/ Ethnicities and
- % Vulnerable for each individual Race/Eth across each Median Income Quartile

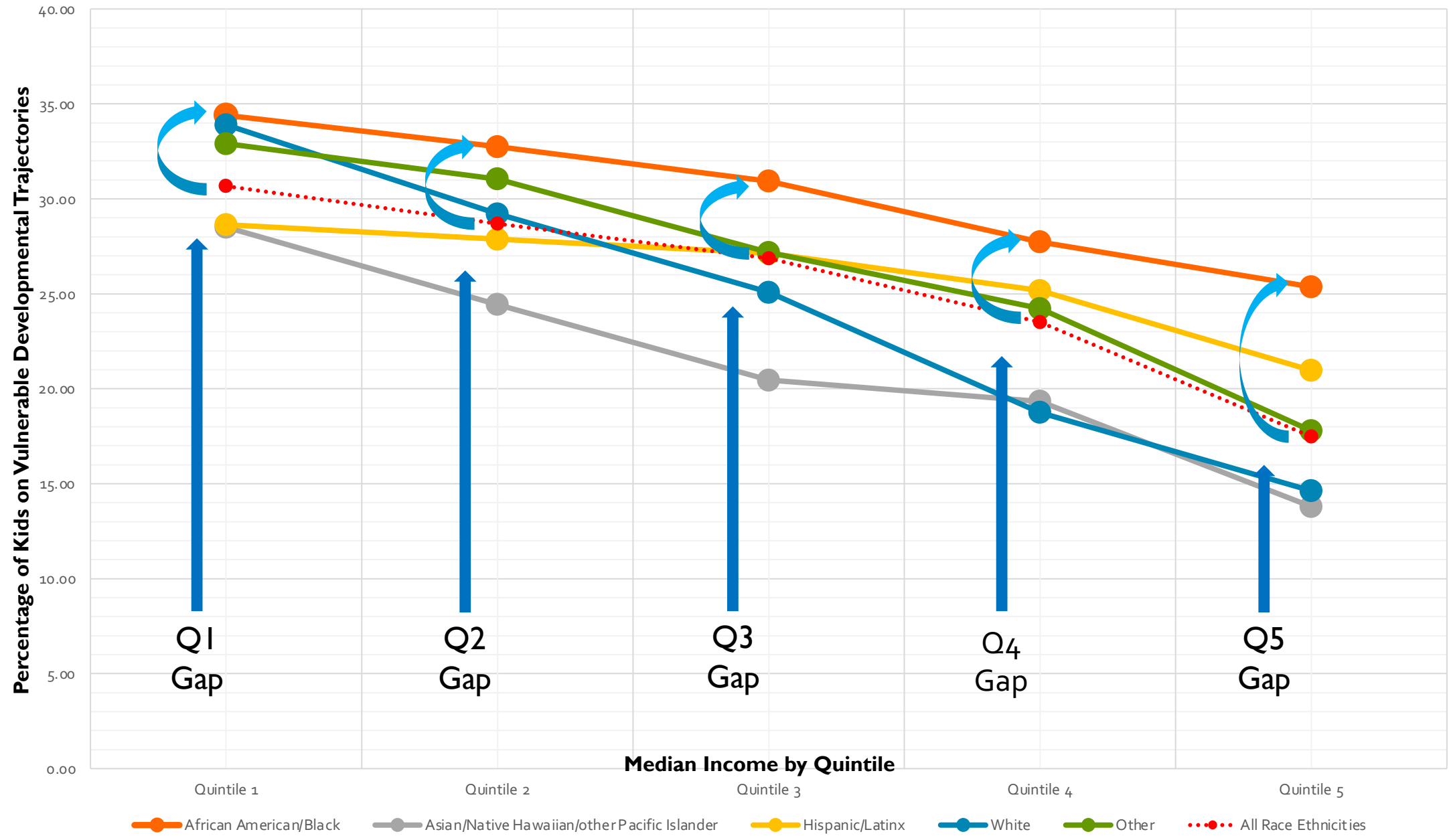
Example:

$$\begin{array}{r} \text{\% Vulnerable All Race/Ethnicities} \\ - \text{\% Vulnerable African American/ Black} \\ \hline \text{REG African American/Black} \end{array}$$

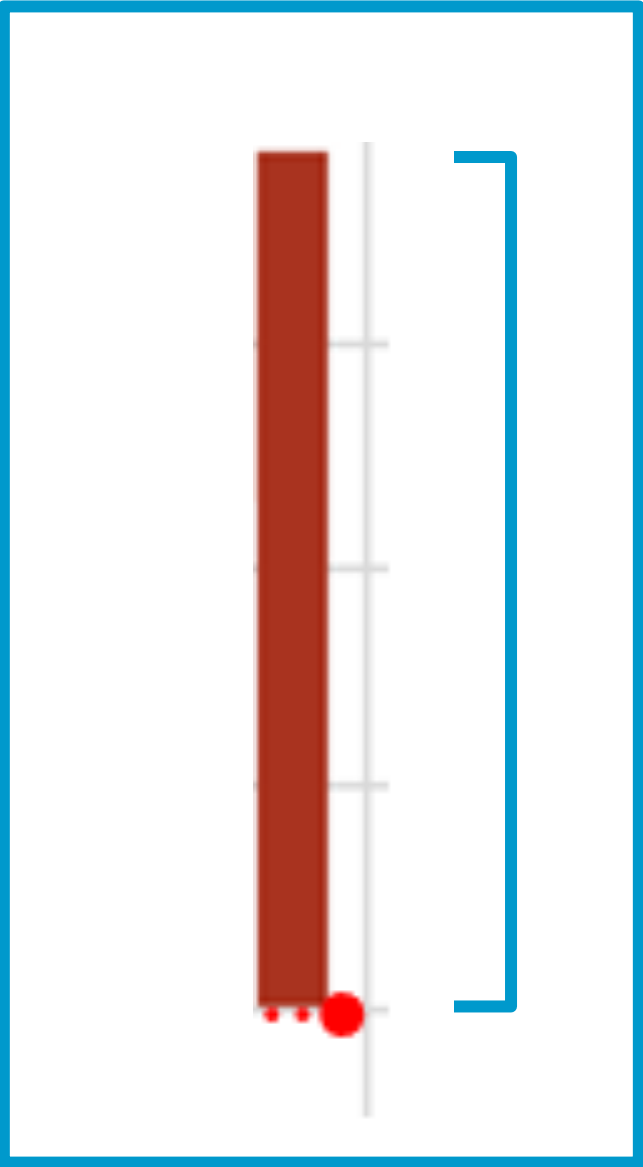
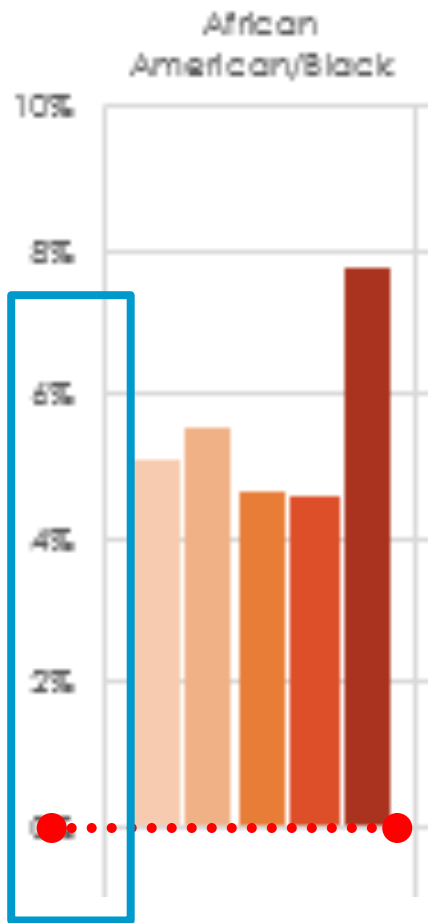


Pct. Vulnerable on 1 or More Domains by Race/Ethnicity and Median Income Quintile

Visualizing the Race/Ethnicity Equity Gap
African American/Black (Example)



Visualizing the Race/Ethnicity Equity Gap



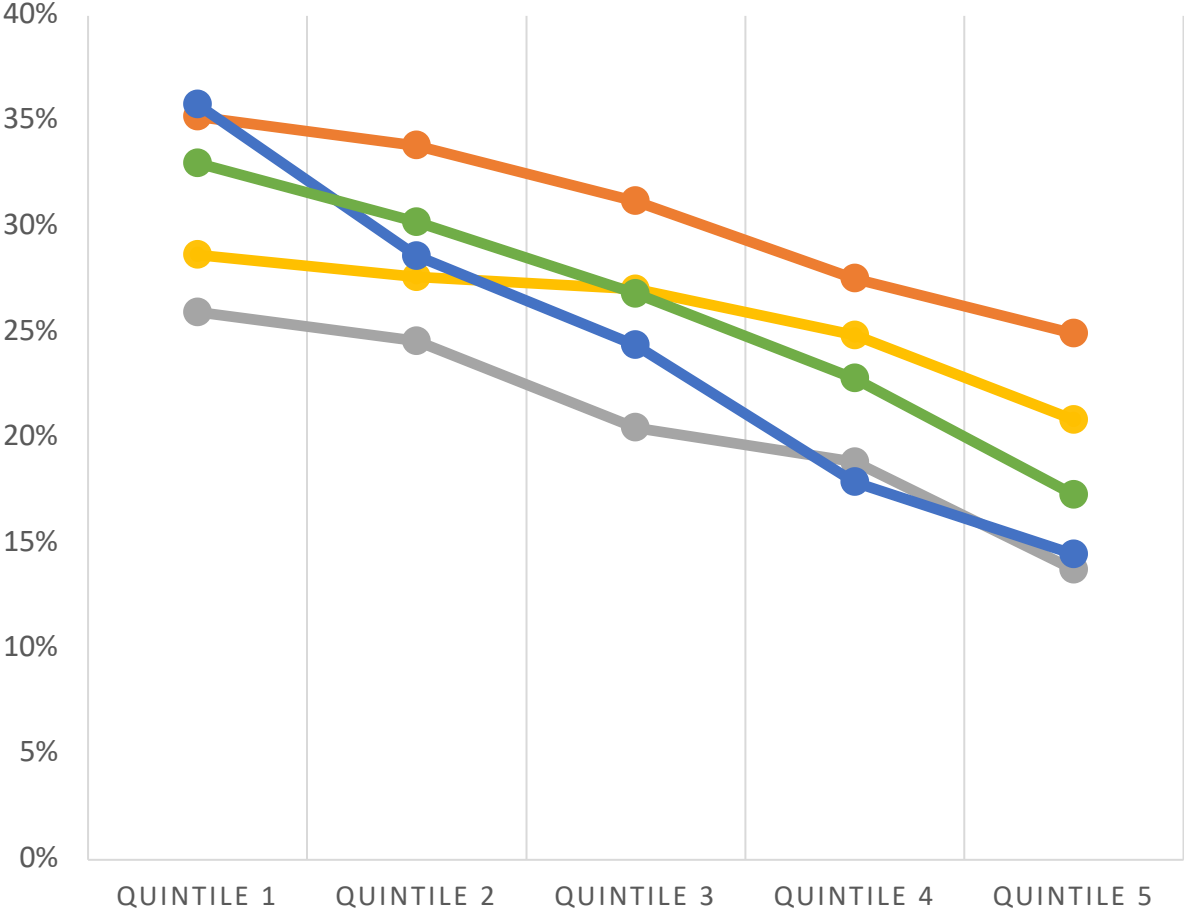
The length of the bar is based on the difference between the African American/Black population and All Ethnoraces.

The red dotted line represents All Ethnoraces (as seen in the line graphs) and is the zero point in these graphs.

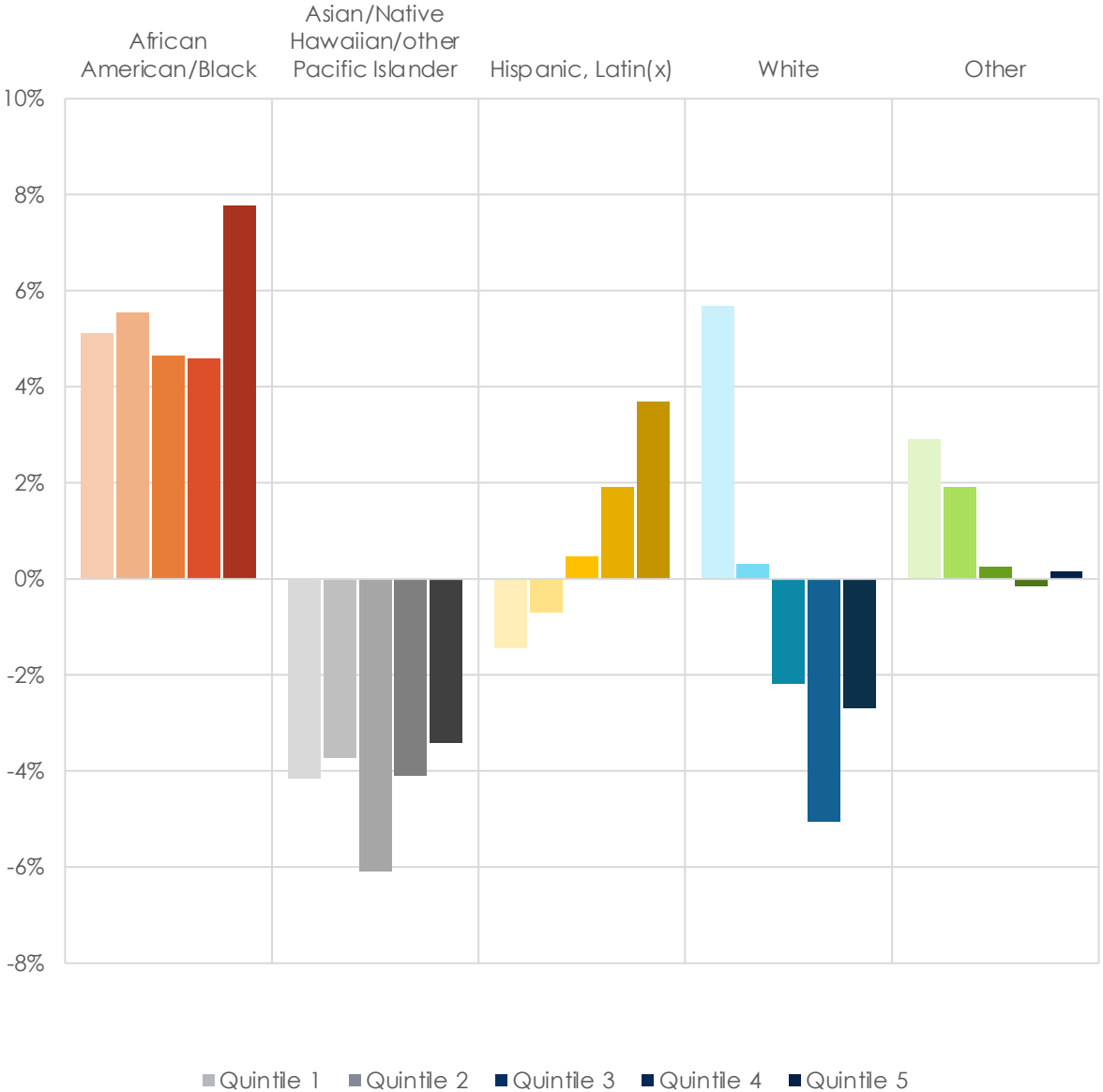
Each bar represents the median income quintile and is distinguished by the shade of green (lighter shades represent lower median income and darker shades represent higher median income).

VULNERABILITY OF CHILDREN ON ONE OR MORE EDI DOMAINS, BY RACE/ETHNICITY AND NEIGHBORHOOD MEDIAN INCOME

- African American/Black
- Asian/Native Hawaiian/Pacific Islander
- Hispanic/Latinx
- White
- Other



QUINTILE-MEAN-CENTERED BAR GRAPH OF VULNERABILITY OF CHILDREN ON ONE OR MORE EDI DOMAINS, BY RACE/ETHNICITY AND NEIGHBORHOOD MEDIAN INCOME



Cautions about ethnoracial equity gaps

Every system is perfectly designed to get the results it gets.

- W. Edwards Deming



Q&A with New Mexico ECECD Deputy Cabinet Secretary, Sara Mickelson

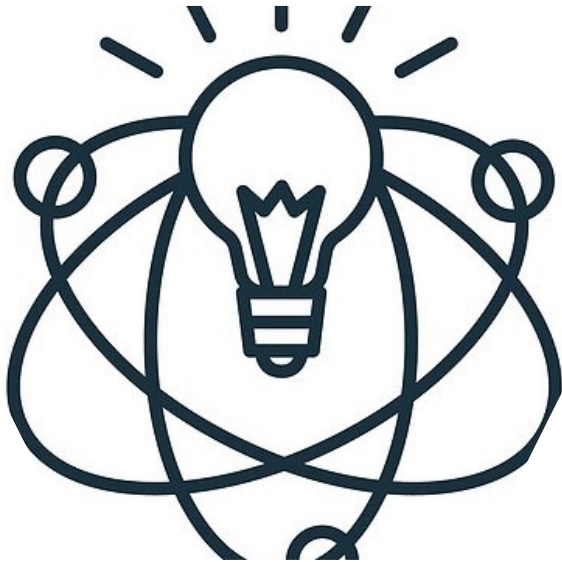


Objective 2. How to harness collective storytelling and collective sensemaking to uncover the community roots of population resilience and flourishing

Objective 3. How to bring this all together to transform your early childhood ecosystems

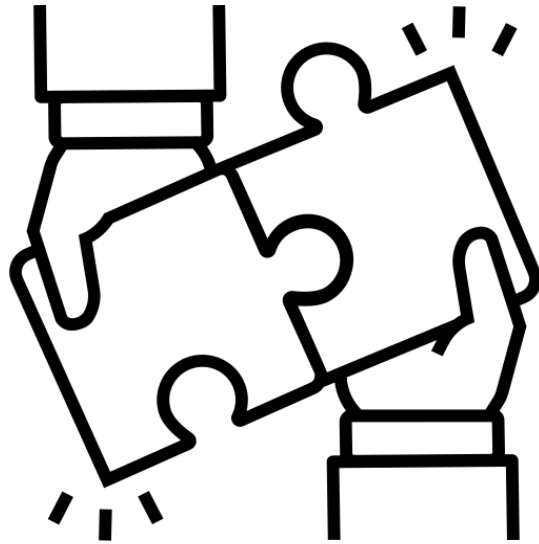


3 Dimensional Community-Led



Innovation

Collaboration



Learning



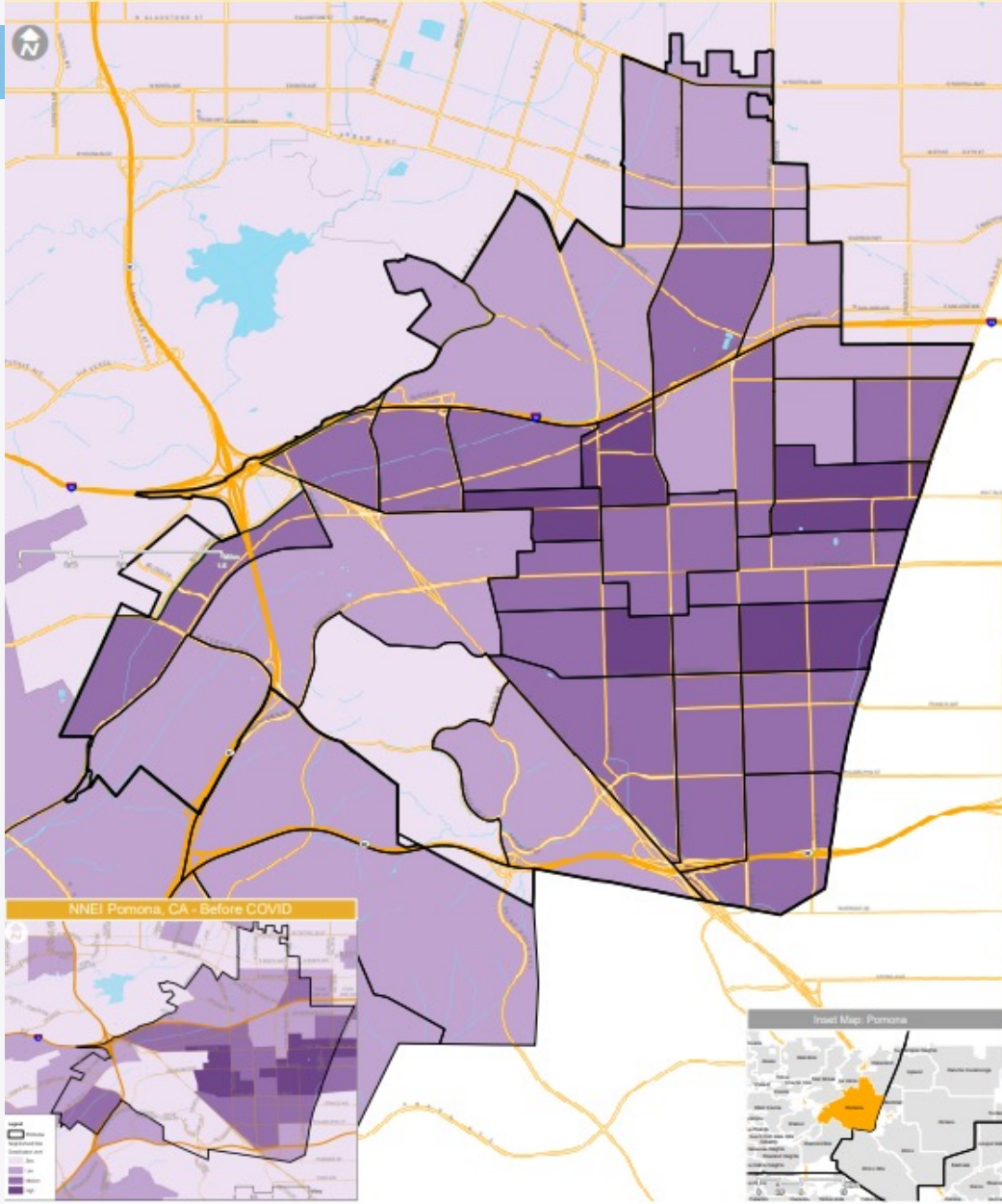


Collective Sensemaking and Community Storytelling

- Community Interviews – Parents and Service System Managers
- Data Chats
- Creative Assemblies
- Ecosystems Mapping
- Three Horizons
- Roadmapping
- Participatory GIS



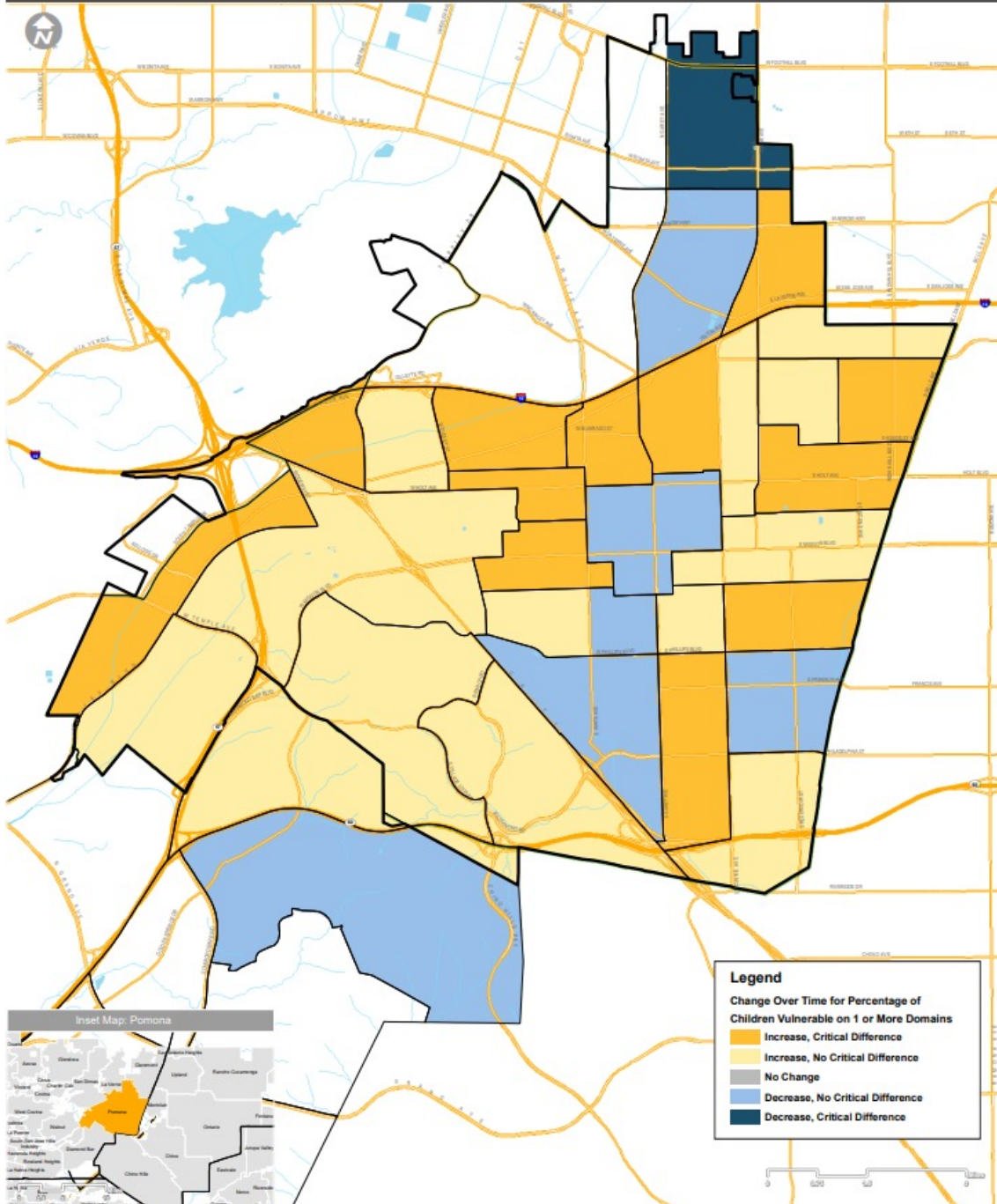
National Neighborhood Equity Index Pomona, CA:
Exploring Patterns of Conditions that Threaten Human Flourishing



We'd like you to help us understand these data.

- What are the stories behind this data?
- How do they connect with your personal lived experiences?





We'd like you to help us understand these data.

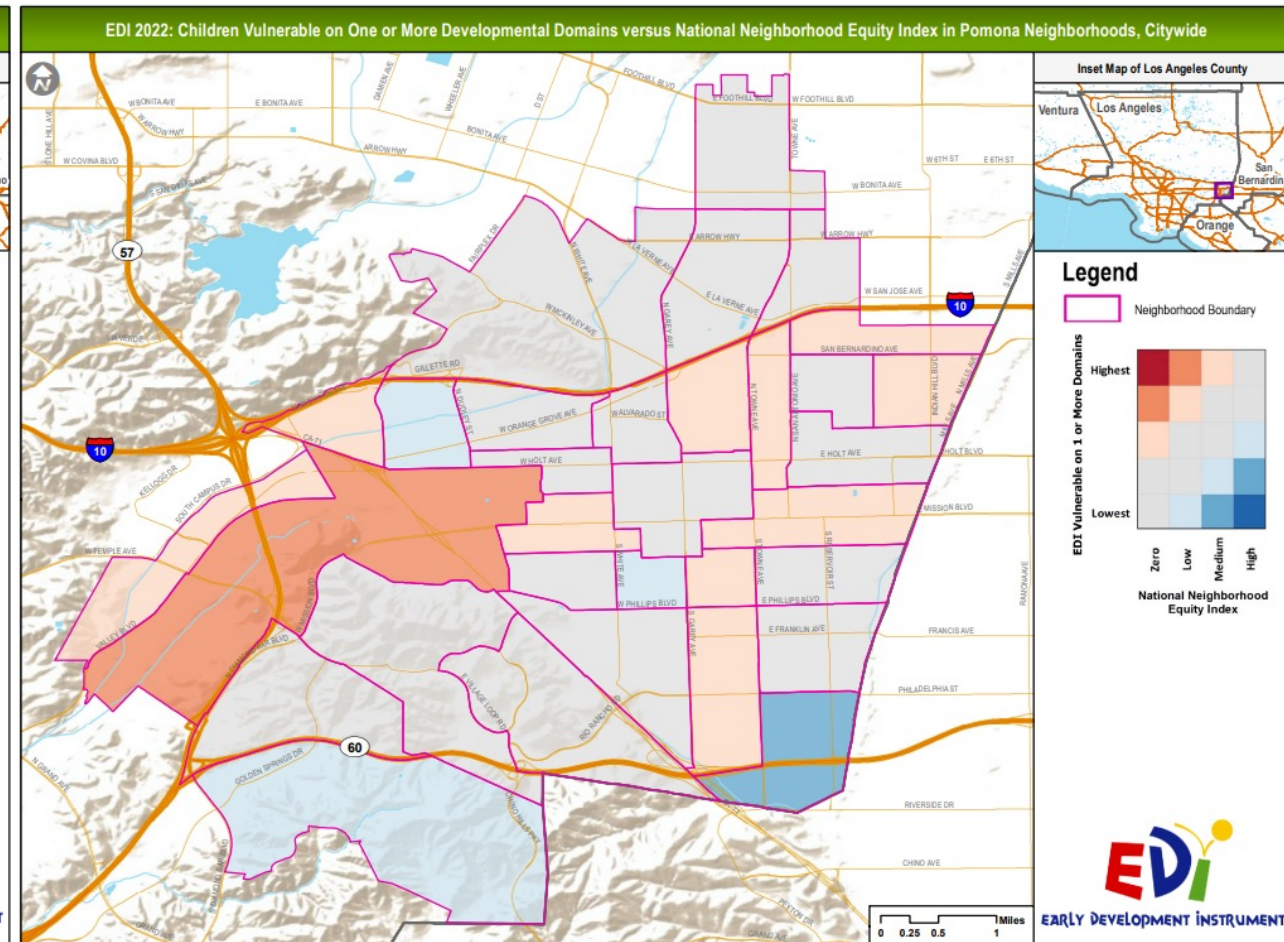
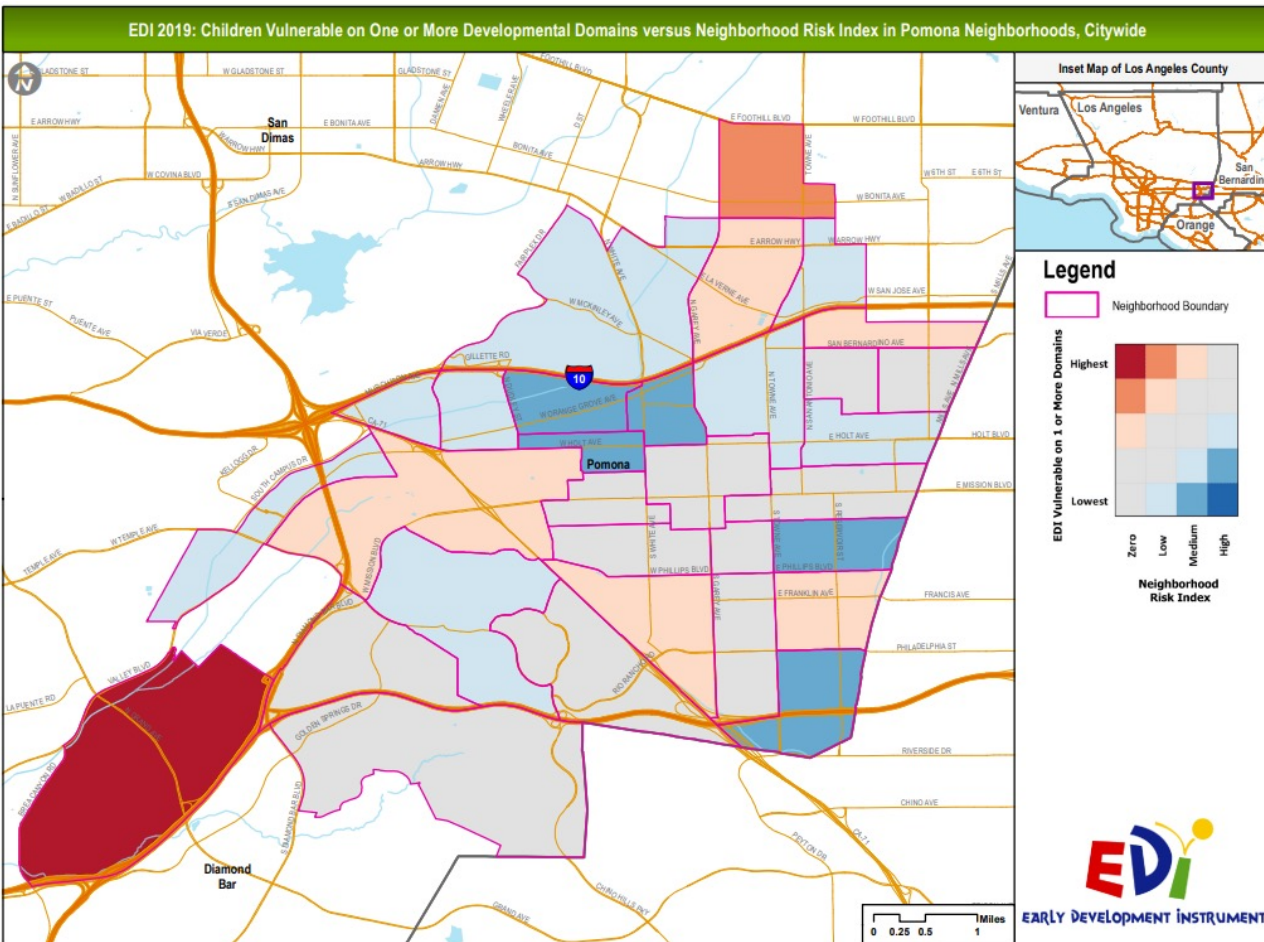
- Are these the results that you were expecting to see, or are they surprising?)
- What further information would be helpful (to help understand what is going on in the lives of the children in Pomona?)



Population Level Resilience

We'd like you to help us understand these data.

- What do you think is driving the resilience patterns?
- Knowing that this data can be tough to think about, what has made you and your family stay in Pomona?
- What makes you hopeful about the future of Pomona?



Approach

Activate Cities:

- Adopting new identity, role and sense of purpose in promoting child well-being

Rapidly Innovate and Improve through Collaboration:

- Networking cities to rapidly innovate, improve, and learn together

Shift Power:

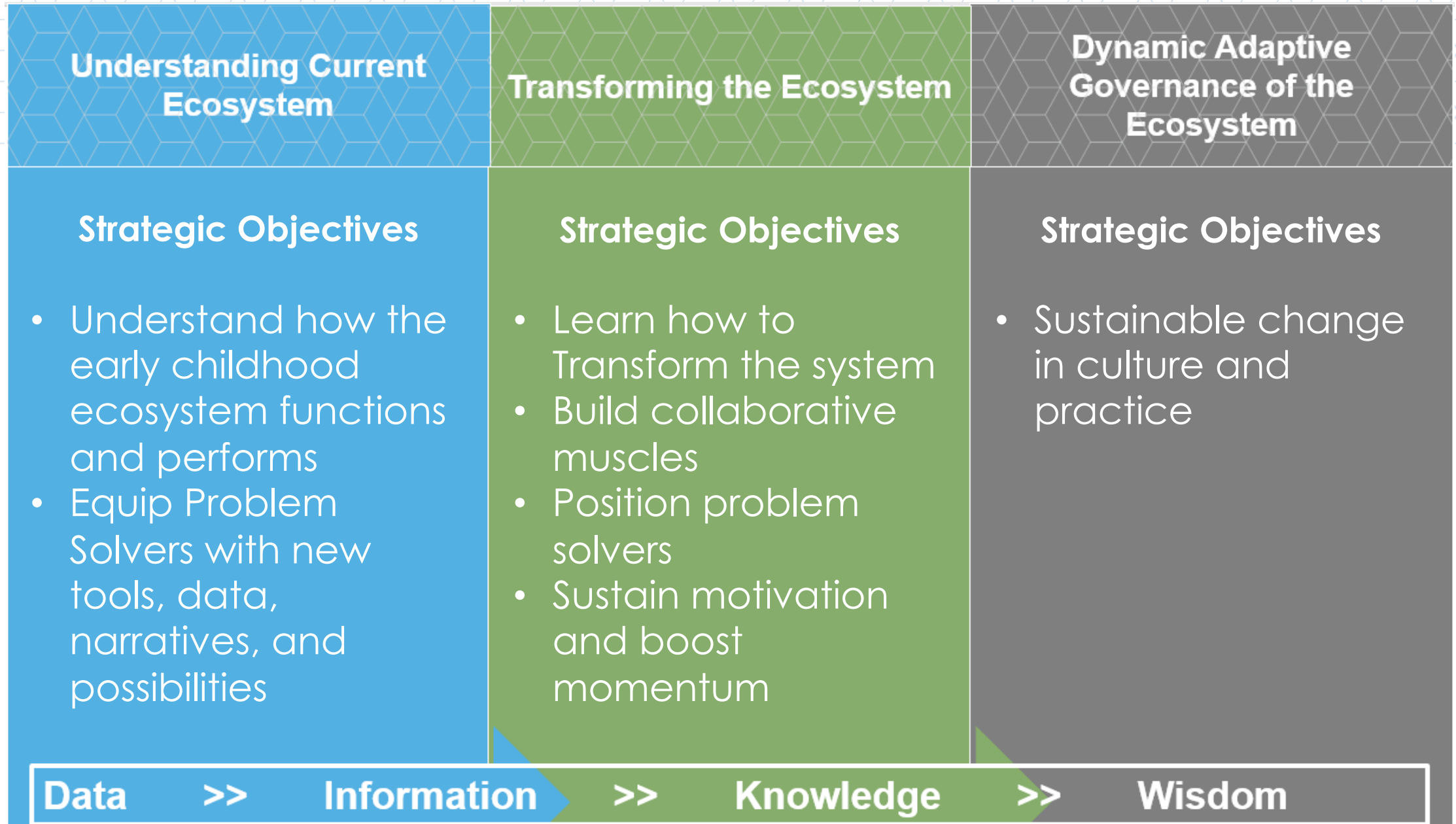
- Embedding community voices into policy, planning, development and city-wide, cross-sector systems improvement processes

Catalyze Sustainable Change:

- Passing policies, re-engineering structures, leveraging new and existing funding sources, and transforming ecosystems so that children thrive and families flourish



Our Process



Understanding Current Ecosystem

- Landscape analysis of existing work
- Key informant interviews
- Community led data walk and analysis of population data
- Community storytelling and radical listening
- Stakeholder engagement

Strategic Objectives

- Understand how the early childhood ecosystem functions and performs
- Equipping Problem Solvers with new tool, data, narrative, possibilities

Transforming the Ecosystem

- Selecting North Star
- Curating Transformation Roadmap
- Designing Learning Process
- Identifying measures
- Building Dashboards
- Launching Plan/Do/Study/Act-innovation/improvement cycles

Strategic Objectives

- Learn how to Transform the system
- Build collaborative muscles
 - Position problems solvers
 - Sustain motivation, boost momentum

Dynamic Adaptive Governance of the Ecosystem

- Power shift to establish adaptive governance strategies
- Culture shift to understand resilience as an emergent property
- Establish long-term financial mechanisms
- Residents valued as sustainable human resource solution

Strategic Objectives

Sustainable change in culture and practice.

Data



Information

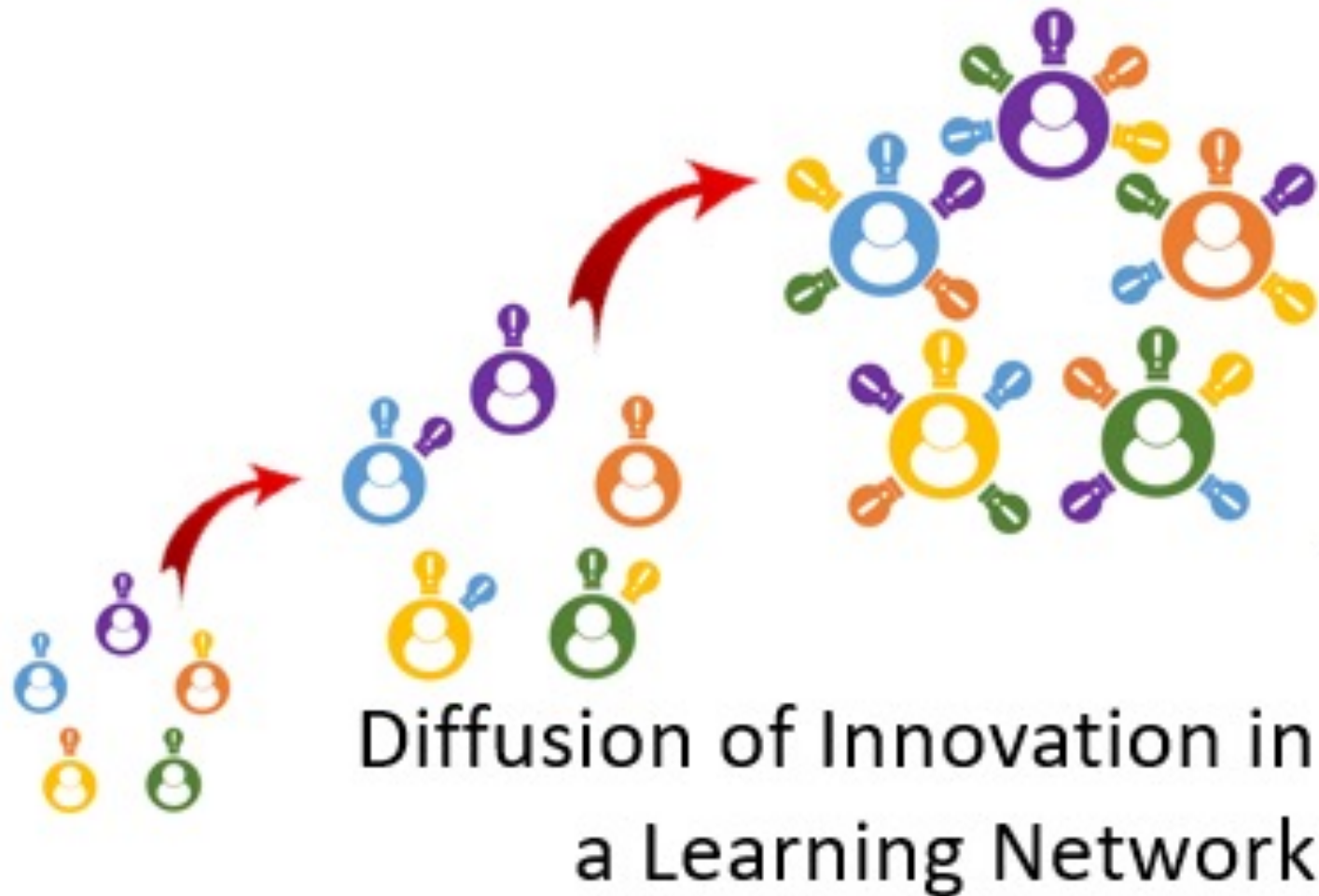


Knowledge



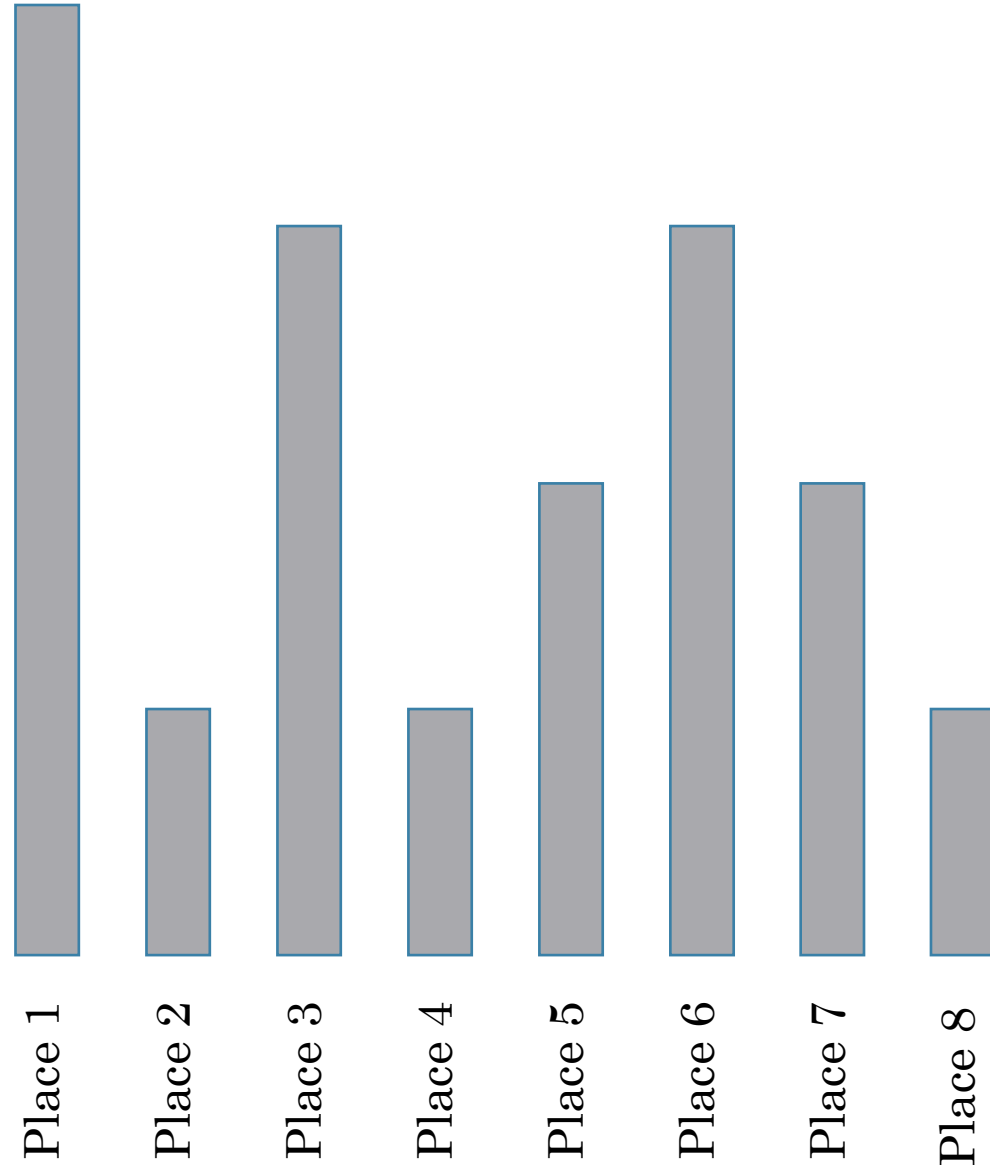
Wisdom

Spreading and scaling things that work



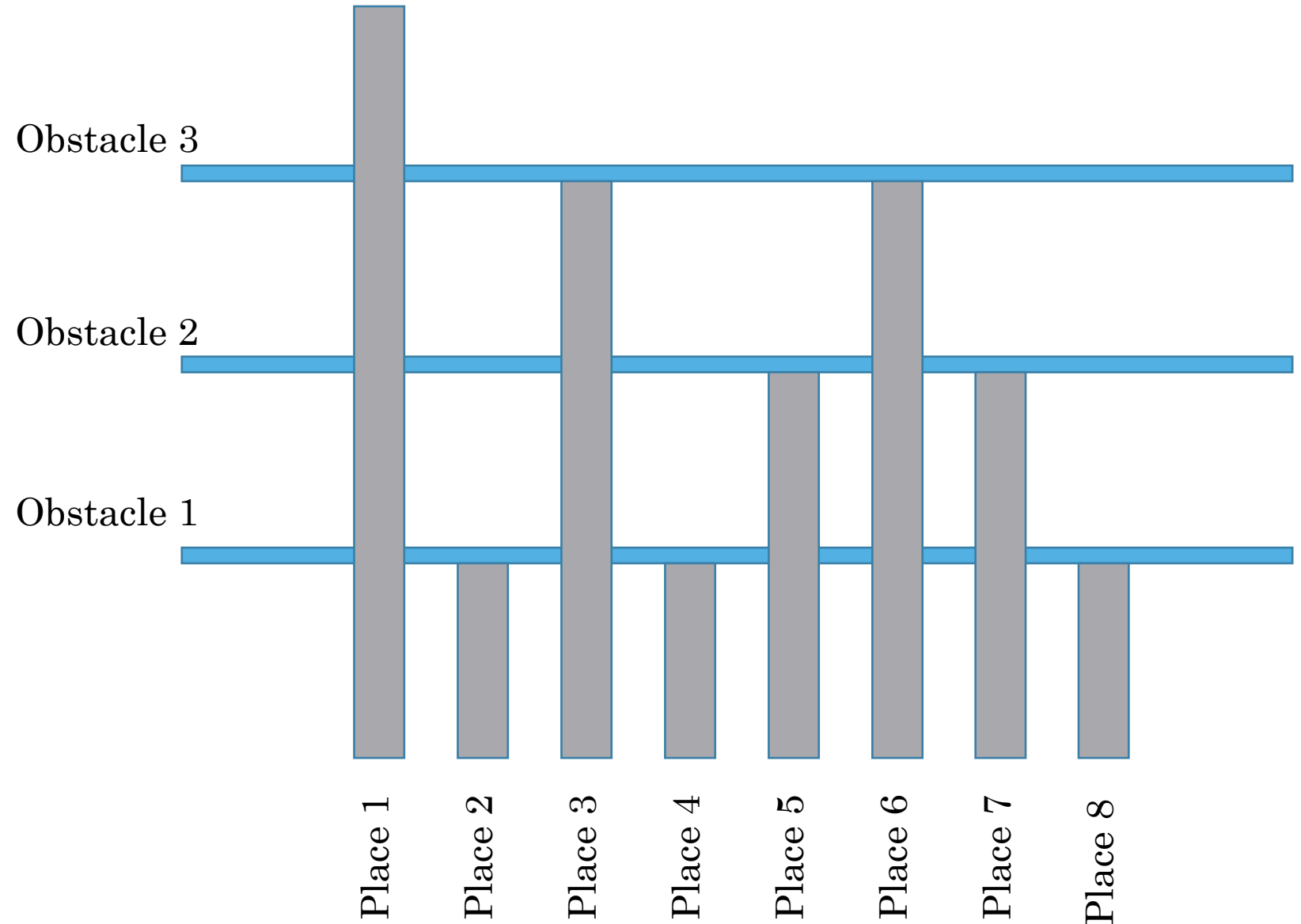
Traditional Place-based Initiatives (PBIs)

Traditional PBIs
usually result in
variegated localized
patterns of success.



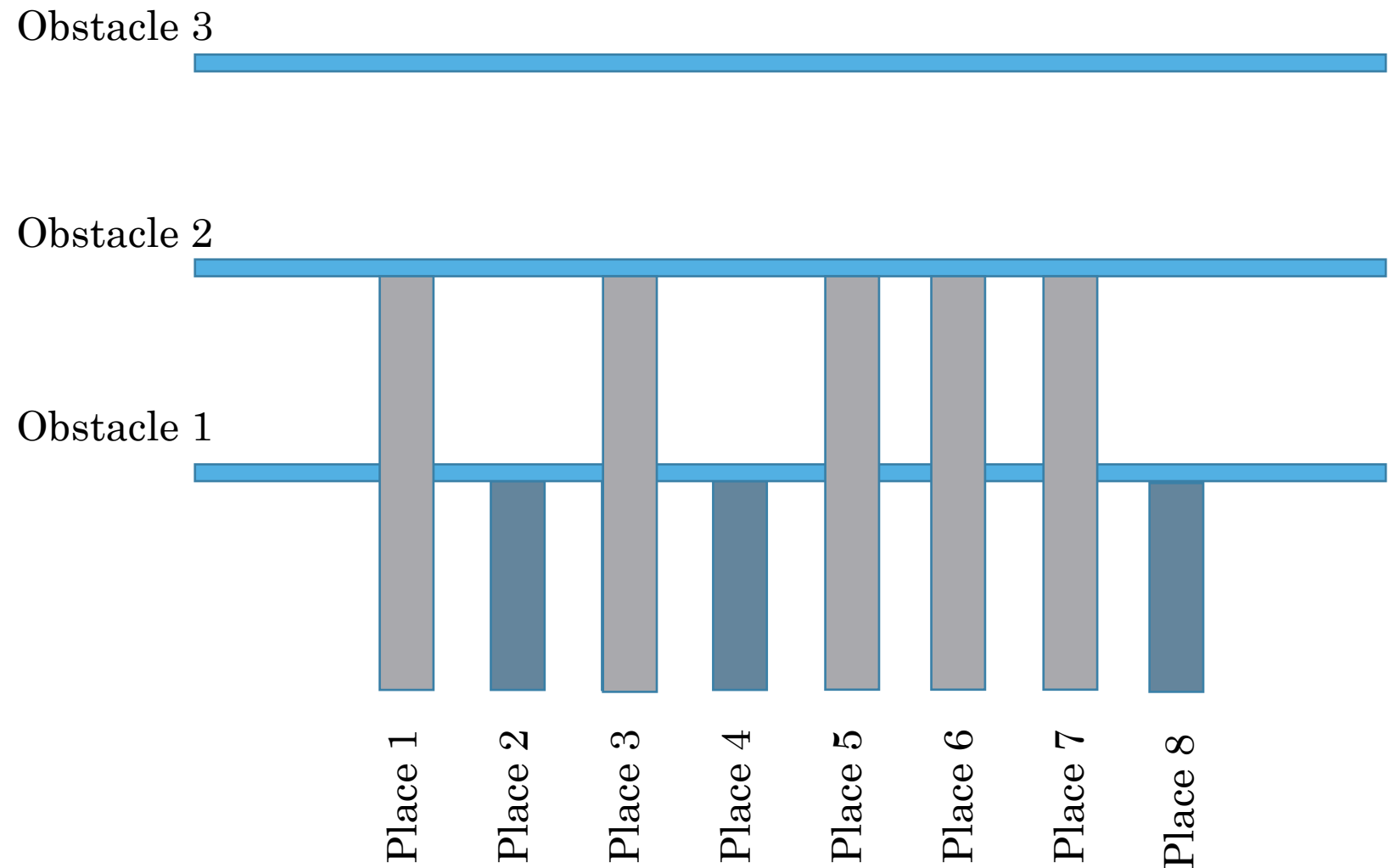
Traditional Place-based Initiatives (PBIs)

However evaluation results often identify universal obstacles. Some just figure out and try novel strategies to get them past the obstacle.



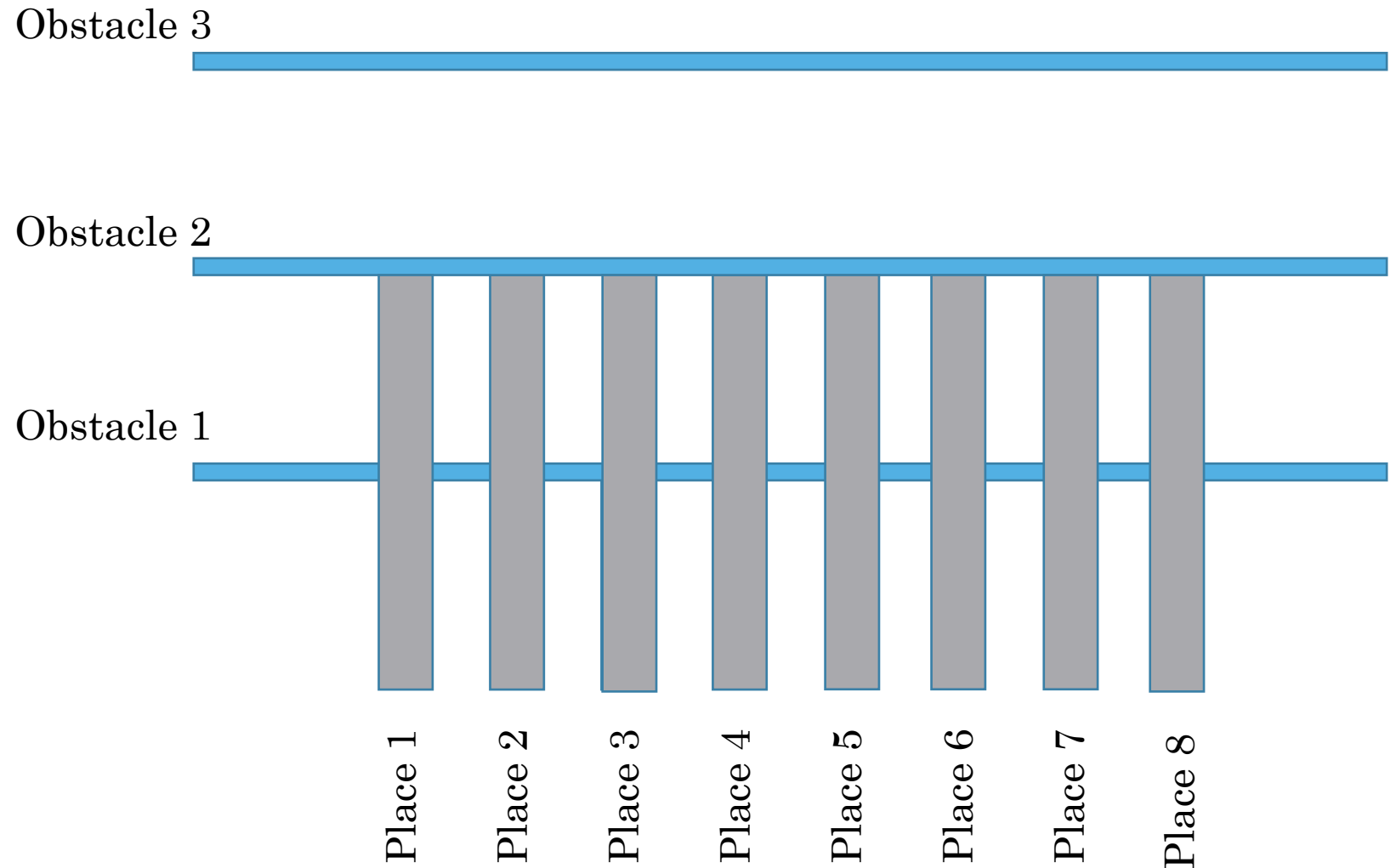
Learning Networks and Innovation

Learning Networks are better suited to rapidly diffuse innovations to spread and scale success in real time



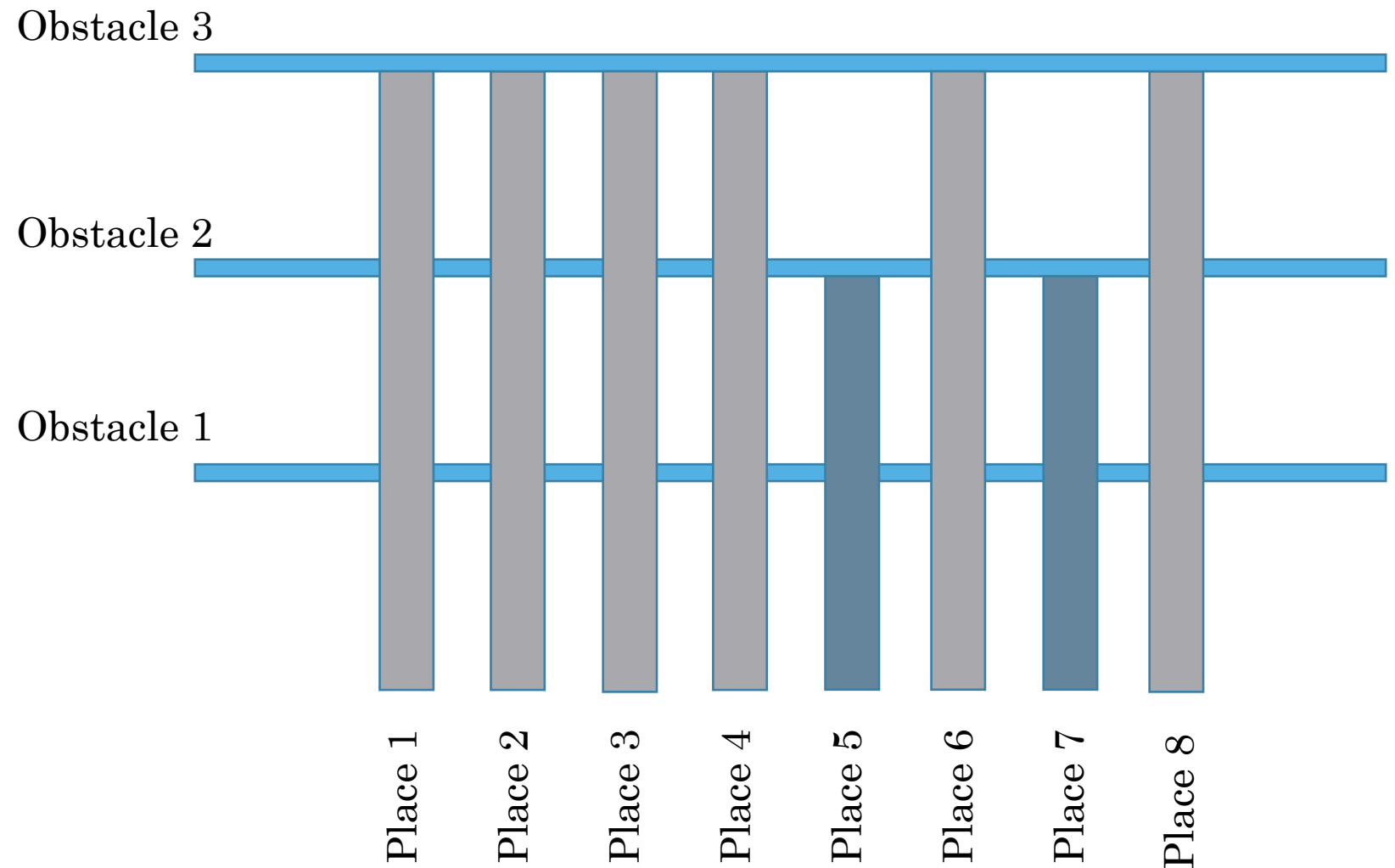
Learning Networks and Innovation

As the process continues, learning community members get better at learning to overcome obstacles. Sites begin to 'share seamlessly' and 'steal shamelessly'.



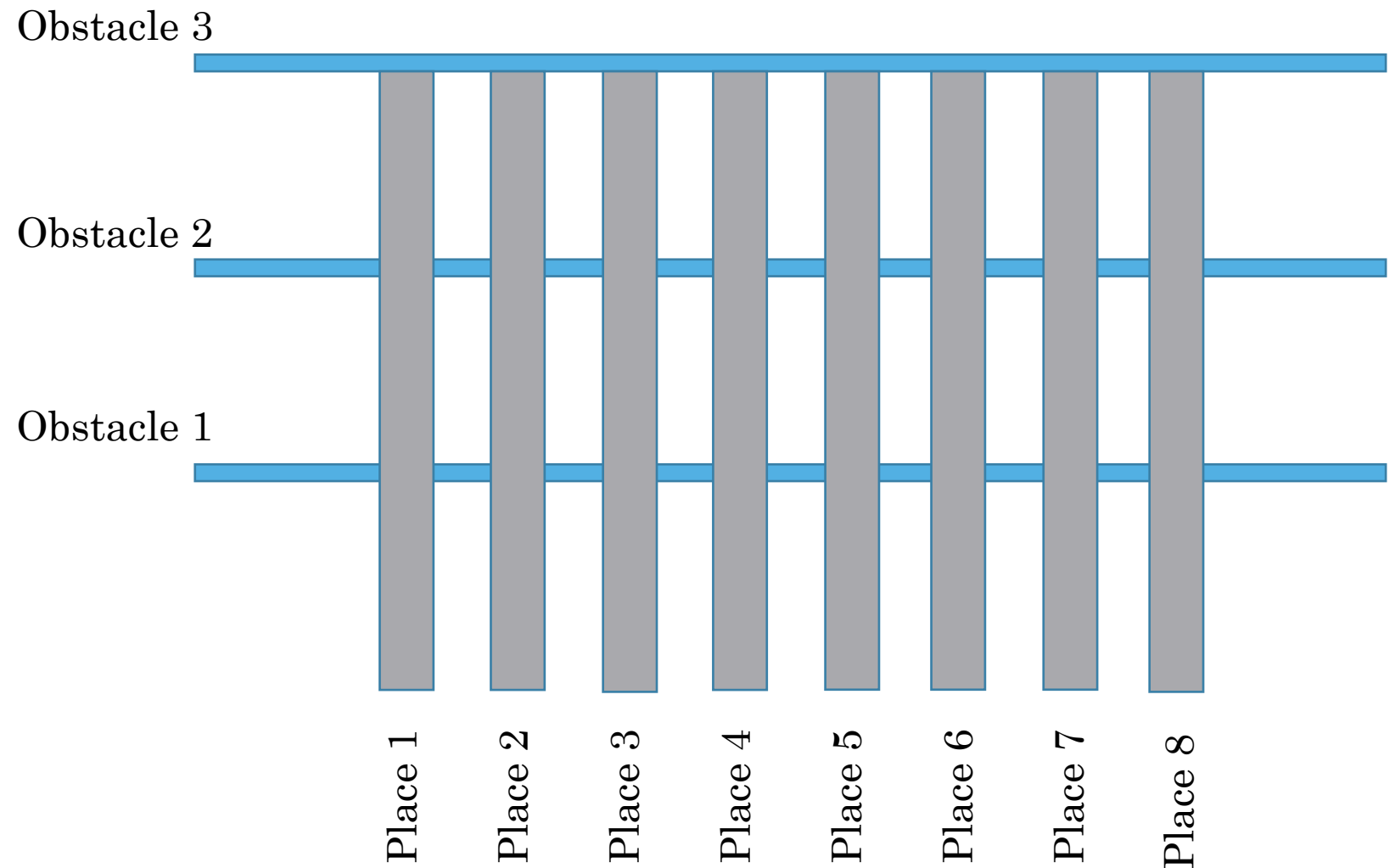
Learning Networks and Innovation

Getting better at learning together...



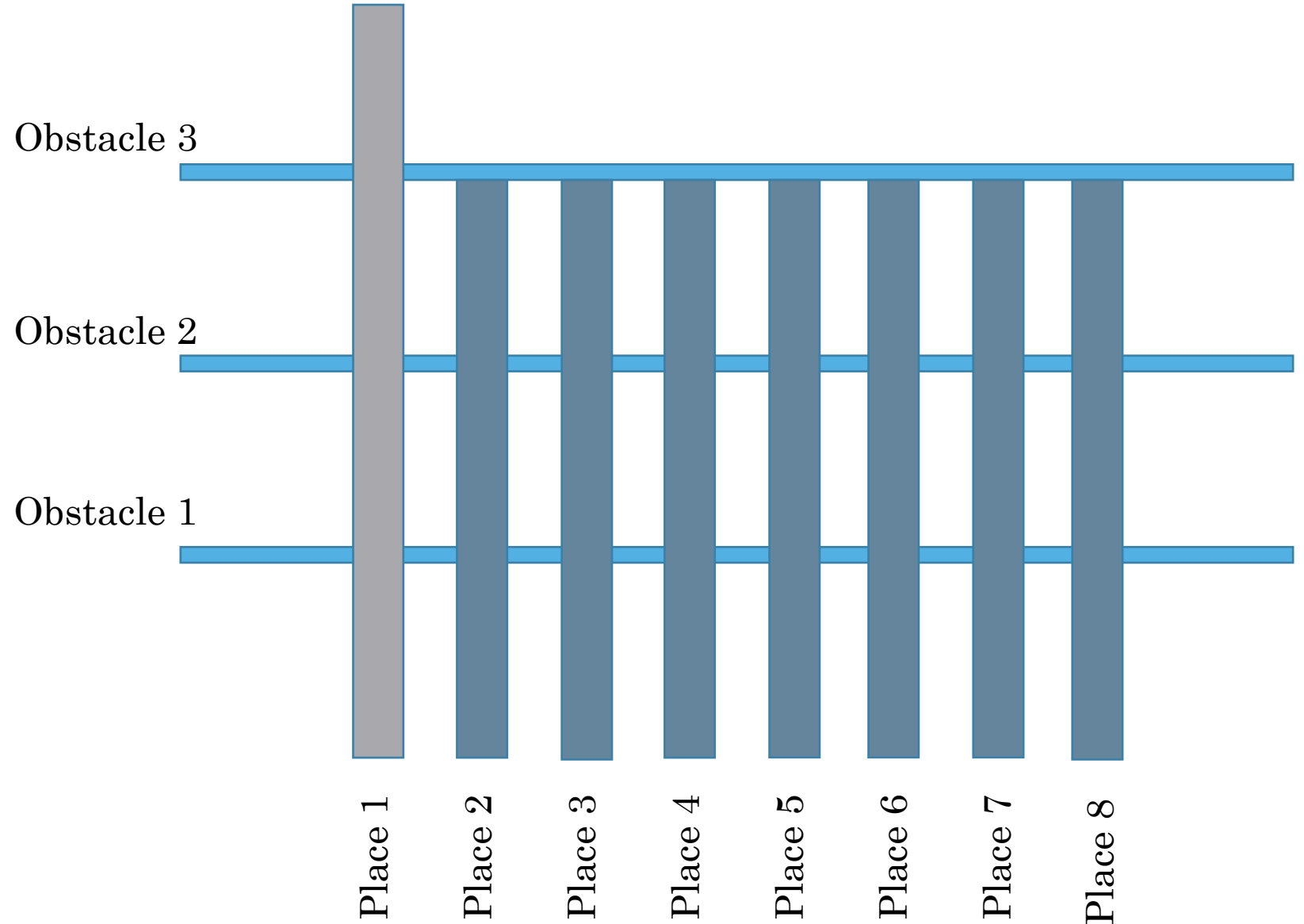
Learning Networks and Innovation

In real time



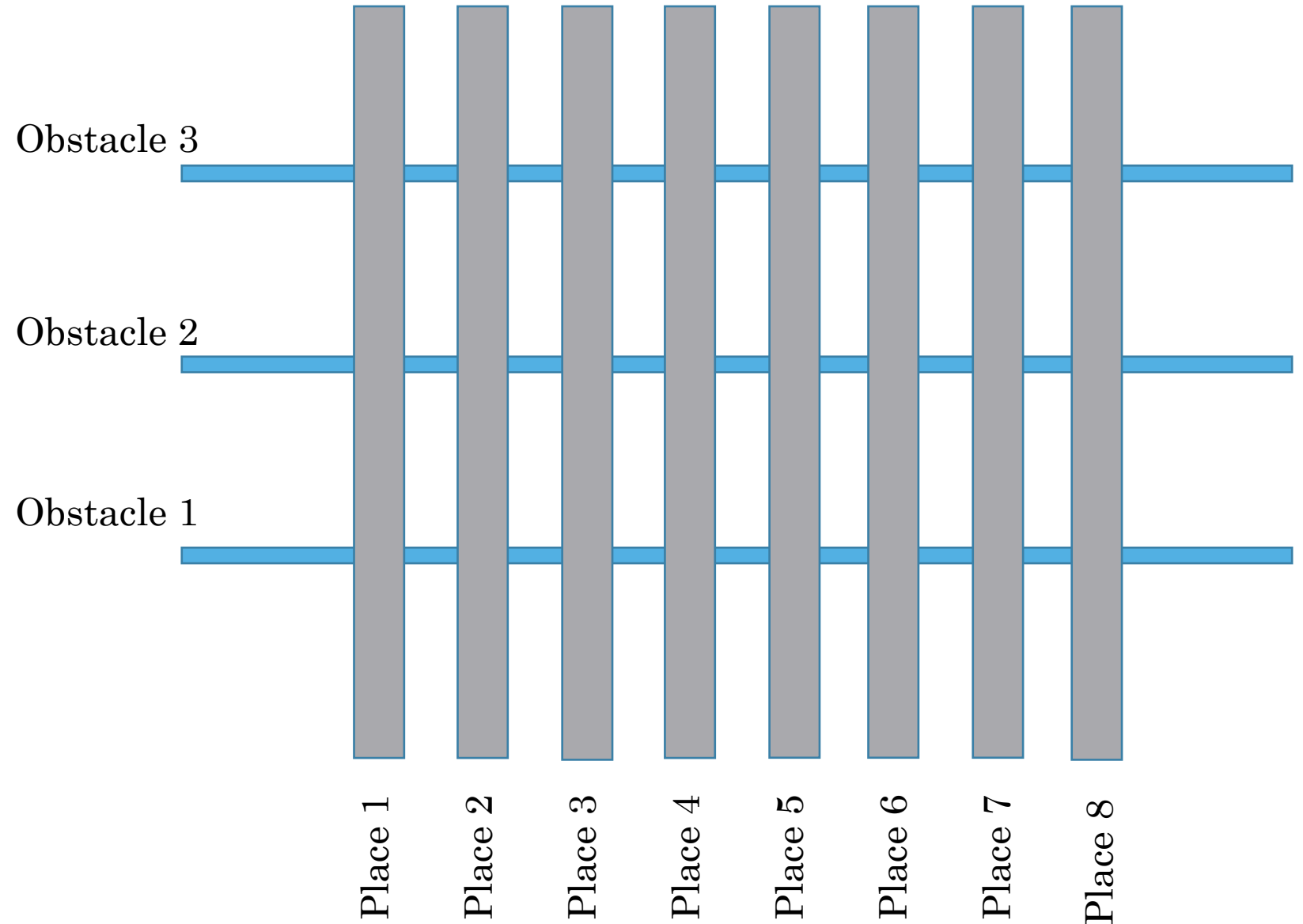
Learning Networks and Innovation

So that All Children Flourish



Learning Networks and Innovation

Regardless of where they live



Q&A with Pomona Mayor, Tim Sandoval



Appendix:

Digging Deeper



The Early Development Instrument



About the EDI



School Readiness

Measures the readiness skills of children when they enter Kindergarten or are in TK/PreK



Kindergarten or PreK

Completed by Kindergarten or PreK teachers on their own students



Online Survey

Measures children's development in 5 key areas with a holistic approach



Community level

Not used to screen, identify or diagnose specific children



5 Developmental Areas of the EDI



These 5 areas of development are known to impact child well-being and academic performance



5 EDI Domains

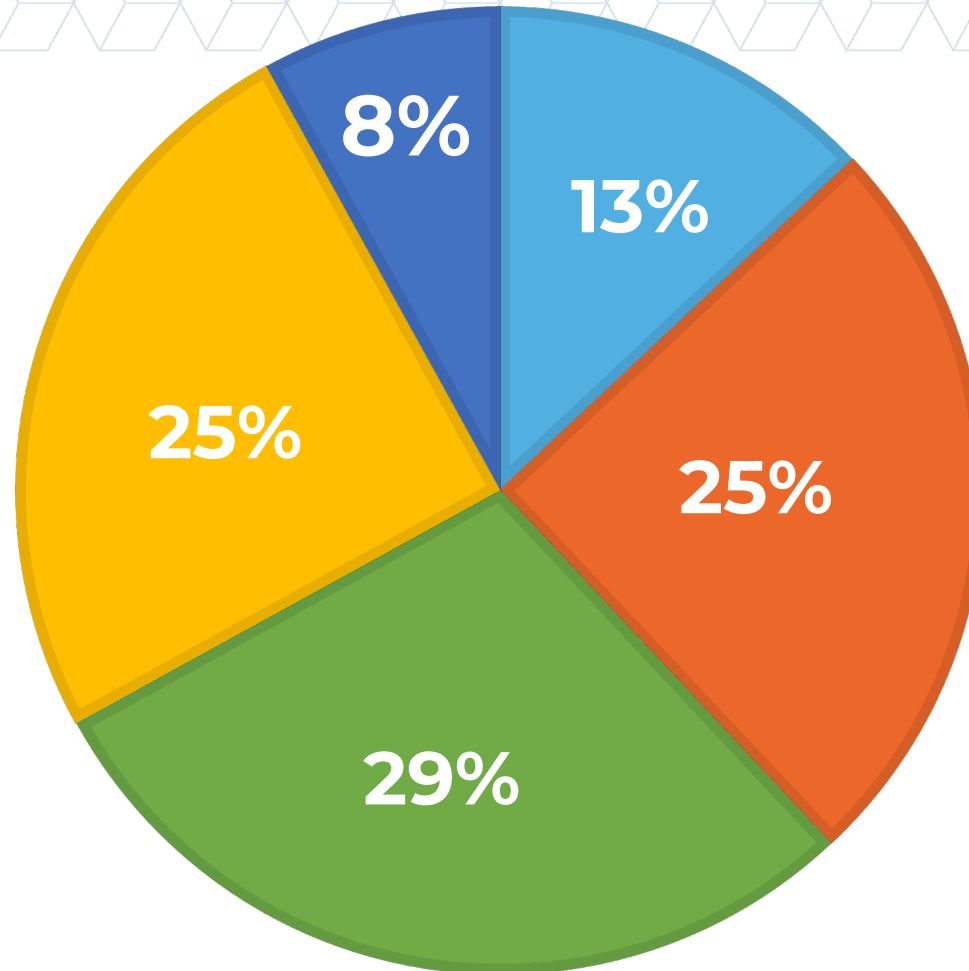
Distribution of survey items

Communication Skills

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Physical Health & Well-Being

Motor skills
Physical readiness

Social Competence

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peers,
Respect for others

Emotional Maturity

Emotional
wellbeing, feeling
sad, fearful, etc.



The National Neighborhood Equity Index (NNEI)



The Opportunity Challenge from our Communities

Neighborhood conditions are impacted by an array of factors

- Need something simple - an index

Considerations

1. Available at the neighborhood level
2. Available consistently and frequently over time
3. Actionable for every neighborhood in the US – not just the big cities



Possible Indices Considered

	Available at small geographic level	Frequently updated	Comprehensive geographic coverage
Human Development Index	X	X	
National Equity Atlas		X	
Opportunity Index	X		X
National Neighborhood Equity Index	X	X	X



National Neighborhood Equity Index (NNEI)

- The NNEI¹ is a measure of socio-economic advantage and adversity at the neighborhood level.
- Consistently available – 5 yr aggregated estimates (US census)
- Covers every census tract in the US and its territories

¹ Developed by Charles Bruner, Child and Family Policy Center



National Neighborhood Equity Index

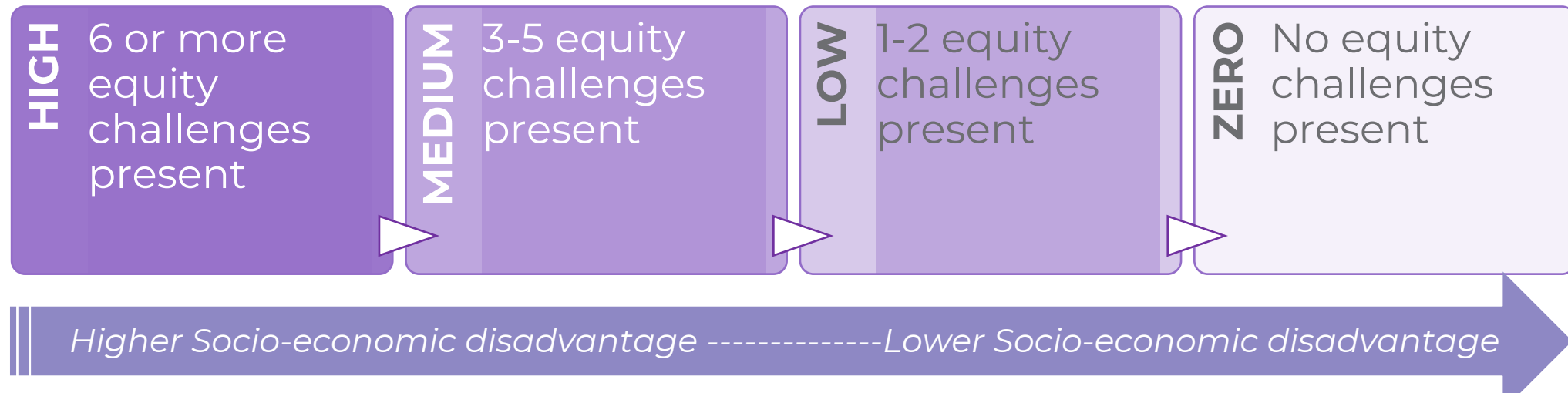
Comprised of eleven (11) indicators from
American Community Survey, US Census

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Social	• % Single Parent Family Households • % Limited English-Speaking Households • % Disconnected Youth (Ages 16-19; Unemployed and not in School) • % Children Enrolled in Preschool/Nursery School
Wealth	• % Owner-occupied Housing • % Households with Interest, Rent, or Dividend Income



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- Neighborhoods are categorized into one of 4 possible levels based on the number of equity challenge indicators present



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Level 2 (Medium)	25% (36,307)
Level 3 (High)	14% (19,933)



Key Finding

Higher levels of neighborhood equity barriers as measured by the NNEI are positively associated with lower well-being as measured by the EDI.



Study Sample Details

- Years Covered: 2015-2018
- 144,957 valid EDI records
- 2,686 census tracts
- Across 11 states and Washington, DC

	Total % (n)
Sex	
Male	51% (73,770)
Female	49% (71,187)
IEP	
Yes	6.7% (9,677)
No	93.1% (134,929)
Not available	0.2% (351)
Ethnorace Group	
African American/Black	10% (14,734)
Asian/Native Hawaiian/Other Pacific Islander	9% (13,257)
Hispanic	57% (82,188)
White	20% (28,623)
Other	4% (6,155)
EDI Outcome	
Low on more than one EDI domain	24% (34,286)
Not low on more than one EDI domain	76% (110,671)



Key Variables

Key Variables

- Dependent variable of interest: low on more than one EDI domain (dichotomized).
- Independent variable of interest: NNEI level (categorical: 0, 1, 2, 3)
- Covariates of interest (from EDI records):
 - Gender(male/female)
 - IEP (yes/no) on EDI
 - Race/ethnicity (categorical: Black/AA, Asian/Native Hawaiian/Other Pacific Islander, Hispanic, White, Other)



What is the strength of the NNEI in predicting early childhood health and development?

Model 1: NNEI and EDI vulnerability

Model 2: NNEI and EDI vulnerability accounting for gender & IEP

Model 3: NNEI and EDI vulnerability accounting for gender & IEP, race/ethnicity

Model 4: NNEI and EDI vulnerability accounting for gender & IEP, race/ethnicity x NNEI

VARIABLES	Model 1	Model 2	Model 3	Model 4
NNEI				
Level 1	1.256	1.282	1.209	1.128
Level 2	1.590	1.565	1.348	1.325
Level 3	1.765	1.751	1.439	1.423

Significant at $p < 0.01$

Significant at $p < 0.05$

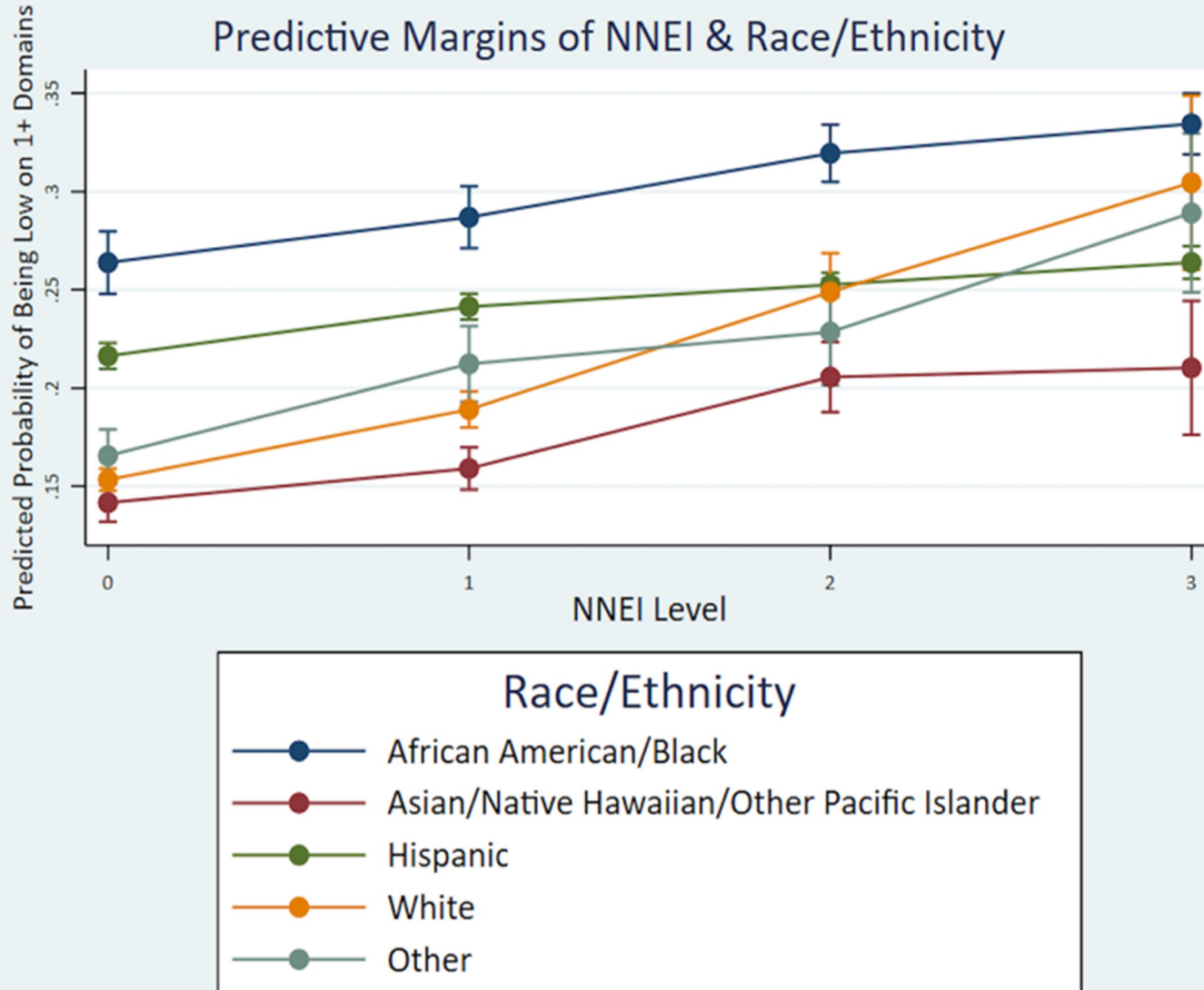
For each model, the odds of being vulnerable on one or more EDI domains increased with each NNEI level.

NNEI was a strong predictor of EDI vulnerability



Results by race/ethnicity

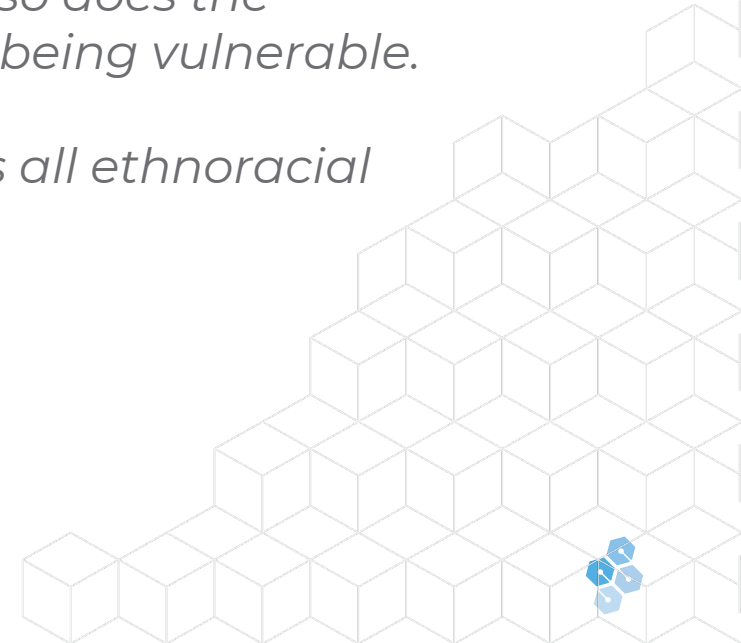
Predictive Margins of NNEI & Race/Ethnicity



- *Interaction between NNEI X Race/ethnicity was statistically significant ($p = 0.0000$.)*

As NNEI levels become worse (higher number of equity challenges), so does the likelihood of being vulnerable.

This is across all ethnoracial groups.



Implications

- Combined use of the National Neighborhood Equity Index and the Early Development Instrument provides a promising approach to identifying and addressing barriers to childhood flourishing.
- Addressing early childhood developmental vulnerabilities may require neighborhood level interventions that tackle local social and structural inequities in addition to family-level and child-centered programs.

