Neighborhood-informed approaches in early childhood to advance racial equity

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Agenda

1. What are neighborhood-informed policies in early childhood and how do they advance racial equity? (Erin)
2. The Child Opportunity Index: Why it is needed, how we built it, what it shows, and how to use it (Clemens)
3. Example Uses of the Child Opportunity Index: Early childhood, health applications (Clemens and Erin)
Until every child thrives, every day, everywhere.

Mobilizing data for equity
About diversitydatakids.org

• For over 10 years, we’ve been developing content (indicators, policy research, methodologies, website tools-maps and charts and databases)

• Our niche: We integrate our dedicated focus on children with a racial/ethnic equity-lens (structural inequality), policy expertise, and unique data power

• Our project is funded to generate content that informs and can be applied in the field, and also to be part of making our data impactful through collaborations

• Main sectors: Health, housing/community development, early care and education (ECE), parental job quality
Introductions: Project Leadership

Dolores Acevedo-Garcia, Director and Principal Investigator
- Racial/ethnic equity in child health, social determinants of health equity, residential segregation and neighborhood inequality, children in immigrant families, housing policy, immigrant policy, national poverty scholar (National Academies of Sciences *Roadmap to Reducing Child Poverty*)

Pamela Joshi, Policy Research Director
- Policy equity assessment, parental job quality, child care and early education, national equity scholar (National Academies of Sciences *Exploring the Opportunity Gap for Young Children 0-8*)

Clemens Noelke, Research Director
- Lead Child Opportunity Index Scientist, structural inequality, advancing equity with neighborhood data, maternal and child health researcher
Equity is not about equal, rather that all children have their specific needs met

Equitable access means the *absence* of systematic unfair disparities between population groups in access to opportunities for healthy development

Equitable policies address the ways that structural factors (e.g. segregation) shape both children’s access *and* their needs/opportunities differentially along racial/ethnic lines
What are neighborhood-informed policies in early childhood, why do they matter, and how do they advance racial equity?
Why do neighborhoods matter for early childhood?

1. Access to early childhood programs happens at the neighborhood level

2. Research shows that having an early care and education (Head Start) center in the immediate neighborhood facilitates access

3. Ensure programs are reaching children facing the ‘triple jeopardy’ of poverty, low neighborhood opportunities, and low neighborhood availability of early childhood resources
What does this have to do with racial equity?

Racial residential segregation can drive unequal access to early childhood resources and to a broader set of neighborhood-based opportunities.
What is residential segregation?

• Segregation is a form of **institutional racial discrimination** that has been reinforced over decades through exclusionary and discriminatory housing policies and practices (e.g. exclusionary zoning, redlining, racial covenants, steering).

• Segregation is an institutional, systemic issue that is outside of the control of any individual child or family, and it is not benign. It can negatively affect children on the basis of their race or ethnicity, above and beyond other factors such as poverty.
What does segregation look like, and how bad is it?

Source: diversitydatakids.org
Low-income children are very racially segregated, just like children overall.

Percent white in neighborhood

Children ages 0-4 with family income below 200% of the federal poverty level.

What does this have to do with racial inequities in early childhood program access?

The groups with the worst neighborhood access are those for whom neighborhood availability matters most (Hispanic, immigrant children)

Unequal “triple jeopardy” of poverty, low neighborhood opportunity, and low Head Start availability

% of poor 3-4 year olds in very low opportunity neighborhood with no Head Start

Intersecting family poverty, neighborhood opportunity, and Head Start availability gives a more complete picture of racial inequities

Racial residential segregation is “bigger than me”
...as an early childhood stakeholder, what can I do about it?

Neighborhood-informed approaches in early childhood policy, programs and practice
Advancing racial equity through neighborhood informed early childhood policies

By Erin Hardy, Pamela Joshi, Madeline Leonardos, Dolores Acevedo-Garcia

09.16.2021

Read the report (PDF)  Read the Executive Summary (PDF)

Neighborhood-informed policies in early childhood

The local availability (defined: immediate neighborhood or within a few miles of home) shapes what children can access with reasonable effort—it is a crucial dimension of access.

Yet, most early childhood policies do not systematically require, incentivize or equip states, grantees, programs to assess what children have access to within a small mile radius.

Neighborhoods are vastly unequal for children of different race/ethnicities (even for low-income children).

Yet, neighborhood factors are not systematically accounted for in funding allocations, eligibility, prioritization, recruitment and targeting in early childhood programs.
There is a foundation to build from

We found levers across all federal early childhood policies and programs reviewed

• Preschool Development Grant Birth Through Five
• Head Start / Early Head Start
• Child Care Development Fund
• Title I Preschool / ESSA
• Maternal, Infant, and Early Childhood Home Visiting
Strengthening neighborhood-informed policies in early childhood

For legislative and policy advocates:

• Support to use existing levers
• Neighborhood resources as part of eligibility criteria and priority groups
• Incentives/requirements for community needs assessments
• Data advocacy: Stronger data systems
• Consider fair access policies, like in housing policy
Advance neighborhood-informed systems and programs in early childhood

For states, grantees, TA providers:

• Systems planning, coordination and community assessments and planning conducted at neighborhood or zipcode level

• Children’s needs assessed based on family resources, neighborhood resources, and programmatic access

• Programmatic levers: Program location targeting, recruitment areas within service areas, priority groups (double and triple jeopardy)

• Communities of practice, sharing of practices/evidence
Resources
Until every child thrives, every day, everywhere.
Mobilizing data for equity
Early childhood COI use case example
Partnership example:
MA Department of Early Education and Care

- Equity analysis of children facing ‘triple jeopardy’: family-, community-, and subsidy system-vulnerability
- Developed maps and neighborhood and city/town level databases for the state
- Mapped the segregation of subsidy income-eligible children statewide
The geography of children ages 0-4
Geography of child care and early education system gaps (regulated care and early education for 0-4 year olds)
The geography of subsidy-eligible children ages 0-4
Geography of subsidy-eligible children

WHITE

BLACK

HISPANIC

Legend
White children
1 Dot = 50 children
CCR&R Boundaries

Legend
Black children
1 Dot = 50 children
CCR&R Boundaries

Legend
Hispanic children
1 Dot = 50 children
CCR&R Boundaries
Geography of subsidized child care and early education system gaps (subsidized care and early education for 0-4 year olds)
Geography of opportunity (Child Opportunity Index)
Partnership example: MA Department of Early Education and Care

- Equity analysis of children facing ‘triple jeopardy’: family-, community-, and subsidy system-vulnerability
- Developed maps and neighborhood and city/town level databases for the state
- Mapped the segregation of subsidy income-eligible children statewide

Figure 7. Percent of Subsidy-Eligible Children Living in Cities/Towns with High Subsidy Gaps and Low Opportunity Levels

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>38%</td>
</tr>
<tr>
<td>White</td>
<td>31%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>63%</td>
</tr>
<tr>
<td>Black</td>
<td>31%</td>
</tr>
</tbody>
</table>

n=18,756, n=10,045, n=5,156, n=1,524
Team, partners and funders

**Principal Investigator**
Dolores Acevedo-Garcia

**Research Director**
Clemens Noelke

**Senior Communications Specialist**
Nomi Sofer

**Scientists and Research Associates**
Brian DeVoe, Nick Huntington, Madeline Leonardos, Nancy McArdle, Robert Ressler, Michelle Weiner, Mikyung Baek (OSU/Kirwan Institute), Jason Reece (OSU)
A few miles away, a world apart in child opportunity

Two Detroit Neighborhoods
<table>
<thead>
<tr>
<th>Selected COI 2.0 indicators</th>
<th>Neighborhood A</th>
<th>Neighborhood B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood poverty rate</td>
<td>52%</td>
<td>5%</td>
</tr>
<tr>
<td>Enrollment in early childhood education</td>
<td>30%</td>
<td>52%</td>
</tr>
<tr>
<td>Lack of green space</td>
<td>60%</td>
<td>39%</td>
</tr>
<tr>
<td>Limited proximity to healthy food</td>
<td>11%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Housing vacancy rate</td>
<td>28%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>
COI 2.0: A metric of child opportunity for all U.S. neighborhoods

Multi-sectoral: 29 indicators capturing three domains of opportunity (education, health and environment, social and economic)

Focus on neighborhood features that matter for children today

Granular data on nearly all U.S. neighborhoods (>72,000 census tracts)

Data comparable across neighborhoods and over time (2010, 2015)
  Data update in progress

Users from academia, media, health, housing, and early childhood education sectors
Why do we need the COI?

1. Compare neighborhood opportunity within and across states
2. Comprehensive measure of neighborhood quality/assets for children
3. One rather than 29 metrics
4. More predictive of outcomes than similar neighborhood metrics
COI 2.0: What is included

And how we built it
### Education

**Early childhood education (ECE)**  
ECE centers within five miles  
NAEYC accredited centers within five miles  
ECE enrollment

**Primary school**  
Third grade reading proficiency  
Third grade math proficiency

**Secondary and post-secondary**  
High school graduation rates  
AP enrollment  
College access/enrollment

**Resources**  
School poverty  
Teacher experience  
Adult educational attainment

### Health and Environment

**Healthy environments**  
Access to healthy food  
Access to green space  
Walkability  
Housing vacancy rates

**Toxic exposures**  
Superfund sites  
Industrial pollutants  
Microparticles  
Ozone  
Heat

**Health care access**  
Health insurance coverage

### Social and Economic

**Economic opportunities**  
Employment rate  
Commute duration

**Economic resource index**  
Poverty rate, public assistance rate, high skill employment, median household income, home ownership

**Family structure**  
Single parenthood
How we built the index

Indicators standardized (converted to z-scores) so that they are on a common scale

Standardized indicators averaged into three domain scores
  Weights capture how strongly each indicator predicts four different health and socio-economic outcomes

Domain scores averaged into one overall score

Scores converted into two easily interpretable metrics
  Child Opportunity Scores, Child Opportunity Levels
COI 2.0 metrics

Child Opportunity Scores

Vary from 1 to 100

To construct them,

we ranked all neighborhoods on domain and overall scores,

grouped neighborhoods into 100 groups containing 1% of the child population each,

and assigned each group a score from 1 (lowest) to 100 (highest)
COI 2.0 metrics

Child Opportunity Levels

5 categories: very low, low, moderate, high, very high

To construct them,

we ranked all neighborhoods on domain average or overall average z-scores
and grouped neighborhoods into 5 categories containing 20% of the child population each
COI 2.0 metrics

Metro-, state- and nationally normed opportunity scores and levels

To compare neighborhoods within one metro area, use metro normed metrics
To compare neighborhoods within one state, use state normed metrics
For all other use cases, use nationally normed metrics
COI 2.0 data and analyses

More data stories at diversitydatakids.org/child-opportunity-index
Child Opportunity Index (COI) 2.0

Child Opportunity Levels
Metro normed

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database.
Black children’s access to neighborhood opportunity

COI 2.0 Child Opportunity Levels (metro normed)
Black or African American children aged 0-17 years

White children’s access to neighborhood opportunity

COI 2.0 Child Opportunity Levels (metro normed)

Non-Hispanic White children aged 0-17 years

Percent of children by race/ethnicity and Child Opportunity Level

Child Opportunity Levels (metro normed)
Children ages 0-17
1,286 census tracts

Percent of children by race/ethnicity and Child Opportunity Level

Child Opportunity Levels (nationally normed)
Children ages 0-17
72,213 census tracts

Life expectancy by Child Opportunity Level

The average number of years a person can be expected to live at birth

Child Opportunity Levels (nationally normed)
65,662 census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; National Center for Health Statistics, United States Small-area Life Expectancy Estimates Project (USALEEP), World Bank.
Percent variance explained across different outcomes

R² statistics from bivariate OLS regressions of neighborhood outcomes on COI 2.0 overall average z-score and three other neighborhood metrics

72,213 US census tracts

SVI = Social Vulnerability Index

Percent variance explained across different outcomes

R^2 statistics from bivariate OLS regressions of neighborhood outcomes on COI 2.0 overall average z-score and three other neighborhood metrics

72,213 US census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database. Chetty et al., Opportunity Atlas. NCHS, 500 Cities and USALEEP. CDC/ATSDR.)
Percent variance explained across different outcomes

R² statistics from bivariate OLS regressions of neighborhood outcomes on COI 2.0 overall average z-score and three other neighborhood metrics

72,213 US census tracts

Median pediatric asthma hospitalizations
in very low opportunity tracts = 9.1 per 1000 children
in very high opportunity tracts = 1.8 per 1000 children

ACSC hospitalization rate per 1,000 children 79.9 in very low opportunity tracts and 31.2 in very high opportunity tracts.
Pediatric Firearm-Related Hospital Encounters During the SARS-CoV-2 Pandemic

Kelsey A.B. Gastineau, MD, Derek J. Williams, MD, MPH, Matt Hall, PhD, Monika K. Goyal, MD, MSCE, Jordee Wells, MD, MPH, Katherine L. Freundlich, MD, Alison R. Carroll, MD, Whitney L. Browning, MD, Kathleen Doherty, MD, Cristin Q. Fritz, MD, MPH, Patricia A. Frost, MD, Heather Kreth, PsyD, Carlos Plancarte, MD, MSc, Shani Barkin, MD, MSHS

Fire-arm related injury ED/hospital encounters in 2020
2020 data from 44 U.S. children's hospitals, patients aged 0-18
48.9% of patients from very low opportunity neighborhoods
5.1% of patients from very high opportunity neighborhoods

Pediatrics, doi.org/10.1542/peds.2021-050223
How to access COI 2.0 data

Questions? Email info@diversitydatakids.org
Interactive map: diversitydatakids.org/maps
Census tract data: data.diversitydatakids.org

diversitydatakids.org
data for a diverse and equitable future

Early Childhood  Income, Work and Family  Neighborhoods

Home  Datasets

Topic
Child Opportunity Index (1)
Demographics (193)
Early childhood (16)
Education (8)
Family (16)
Health (9)
Housing (49)
Income (65)
Neighborhoods (103)
Work (50)

Subtopic
Adults (47)
Age structure (4)
American origin (2)
Ancestry (40)
Arab origin (2)
Asian origin (10)
Car ownership (6)
Children (52)
Citizenship status (6)
College degree (12)
College or graduate school enrollment (1)
Commuting (20)

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Child Opportunity Index 2.0 database
The Child Opportunity Index 2.0 (COI 2.0) is a composite index measured at the census tract level that captures neighborhood resources and conditions that matter for children’s...
Year(s): Data available for 2010 & 2015.

Working adults who are eligible for FMLA unpaid leave (percent) by race/ethnicity
Share of working adults who are estimated to be eligible for unpaid leave under the Family and Medical Leave Act (FMLA), for each specified race/ethnicity category.

Workers commuting 45+ minutes, ages 16+ (percent)
The number of workers aged 16 years and older who did not work at home with a mean travel time from home to work of 45 minutes or longer divided by the number of workers aged 16...
Using the COI to increase equity

Share your own story at diversitydatakids.org/impact-stories
Using the COI

Research
  Measuring community assets, needs, and opportunities
  Measuring inequities in access to neighborhood opportunity

Raising awareness

Advocacy

Decision making
  Place-based targeting of investments, services, purchases, hiring, and more
Opportunity and subsidized housing

Economy

What shapes a kid’s opportunities? Researchers say look to the neighborhood.

We Tried to Find the Most Equal Place in America. It Got Complicated

Childhood Opportunity Varies Dramatically by Neighborhood
Community Health Needs Assessments (CHNAs)

Affordable Care Act (ACA) requires non-profit hospitals to conduct CHNAs every three years

CHNAs must include an assessment of community health needs and identify strategies for health improvement

Growing focus on social determinants of health and health equity
Lurie Children’s Hospital, Chicago, 2019 CHNA

Focus on health equity and social determinants of health in CHNA and implementation plan

Map geography of opportunity and highlight racial/ethnic inequities in access to opportunity

Discuss and quantify link between neighborhood opportunity and pediatric health outcomes

Identify neighborhoods that are both low opportunity and have a high burden of disease for investment

Geography of opportunity

Neighborhoods with low and very low opportunity are predominantly found on Chicago’s South and West sides.
Geography of opportunity and residential segregation

Black children are 15 times more likely than White children to live in very low opportunity neighborhoods.
Link between opportunity and pediatric health outcomes

All priority health outcomes show a strong opportunity gradient

ED visits and hospitalization rates per 100,000 for children aged 0-19

- **Asthma**
  - 2016: 4500
  - 2017: 4700
  - 2018: 5000

- **Mental Health**
  - 2016: 4000
  - 2017: 4200
  - 2018: 4500

- **Complex Chronic Conditions**
  - 2016: 2000
  - 2017: 2200
  - 2018: 2500

- **Intentional Injury**
  - 2016: 1000
  - 2017: 800
  - 2018: 600

- **Child Maltreatment**
  - 2016: 250
  - 2017: 275
  - 2018: 300

Lurie Children’s Hospital, Chicago, 2019 CHNA

Implementation plan identifies strategic priorities for health improvement

- Neighborhoods: Belmont Cragin, Austin
- Priorities: Social determinants of health, care access, chronic conditions, mental health, violence

Proposes specific strategies and investments

- For example, “increase ‘anchor mission’ activities – hiring, purchasing, investment, and workforce development.”

Examples of investments and programs

- **Hiring**: health care internship program for 200 high school students; hired 275 staff members from low/very low opportunity neighborhoods
- **Procurement**: tracked spending by ZIP code, spent $1.5m on vendors/suppliers in low/very low opportunity neighborhoods; raised $500k in small business grants
- **Impact investing**: Raised $6m with local Community Development Financial Institutions (CDFIs)

Thank you!

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data for a diverse and equitable future

Try our interactive map at diversitydatakids.org/maps
Outcomes used for constructing weights

Socio-economic outcomes from Opportunity Atlas (Chetty et al.), 2015

Mean household income rank in adulthood (parents at median of parent income distribution)

Probability of living in a low poverty census tract in adulthood (parents at median of parent income distribution)

Summary health outcomes from 500 Cities Project (CDC, RWJF), 2015

Mental health not good for 14 or more days among adults

Physical health not good for 14 or more days among adults
**Indicator weights by domain**

Weights sum to one in each domain

**Health & Environment**
- Health insurance coverage: 0.19
- Housing vacancy rate: 0.18
- Access to healthy food: 0.15
- Access to green space: 0.10
- Heat exposure: 0.08
- Microparticle concentration: 0.08
- Ozone concentration: 0.06
- Walkability: 0.05
- Superfund sites: 0.05
- Industrial pollutants: 0.05

**Social & Economic**
- Economic resource index: 0.32
- Single parenthood: 0.28
- Employment rate: 0.27
- Commute duration: 0.13

**Education**
- Adult educational attainment: 0.14
- School poverty: 0.14
- Reading proficiency: 0.12
- Math proficiency: 0.12
- High school graduation rate: 0.09
- AP course enrolment: 0.08
- ECE enrolment: 0.08
- College access and enrolment: 0.08
- Teacher experience: 0.06
- ECE centers: 0.05
- High-quality ECE centers: 0.05
Life expectancy by Child Opportunity Score

The average number of years a person can be expected to live at birth

Child Opportunity Scores (nationally normed)

65,662 census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; National Center for Health Statistics, United States Small-area Life Expectancy Estimates Project (USALEEP), World Bank.
Limited physical activity

Percentage respondents aged 18+ not reporting leisure time physical activity in past month

Child Opportunity Scores (nationally normed)
26,889 census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; NCHS, 500 Cities.
Obesity

Percentage respondents aged 18+ with a BMI ≥ 30

Child Opportunity Scores (nationally normed)

26,889 census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; NCHS, 500 Cities.
Diabetes prevalence

Percentage respondents aged 18+ ever diagnosed with diabetes

Child Opportunity Scores (nationally normed)

26,889 census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; NCHS, 500 Cities.
Child Opportunity Index (COI) vs. Opportunity Atlas

**Child Opportunity Index**

- Composite index based on 29 indicators covering three domains
- Focus on contemporary features of neighborhoods linked to healthy child development by previous research
- Incorporates OA (and 500 Cities data) to improve predictive validity

**Opportunity Atlas (Chetty et al. 2018)**

- Estimates of long-term effects of growing up in different neighborhoods on, e.g., household income rank, marital status, and incarceration in adulthood
- Effects of neighborhoods as they were 15-20 years ago
- No information about features of neighborhoods generating these effects