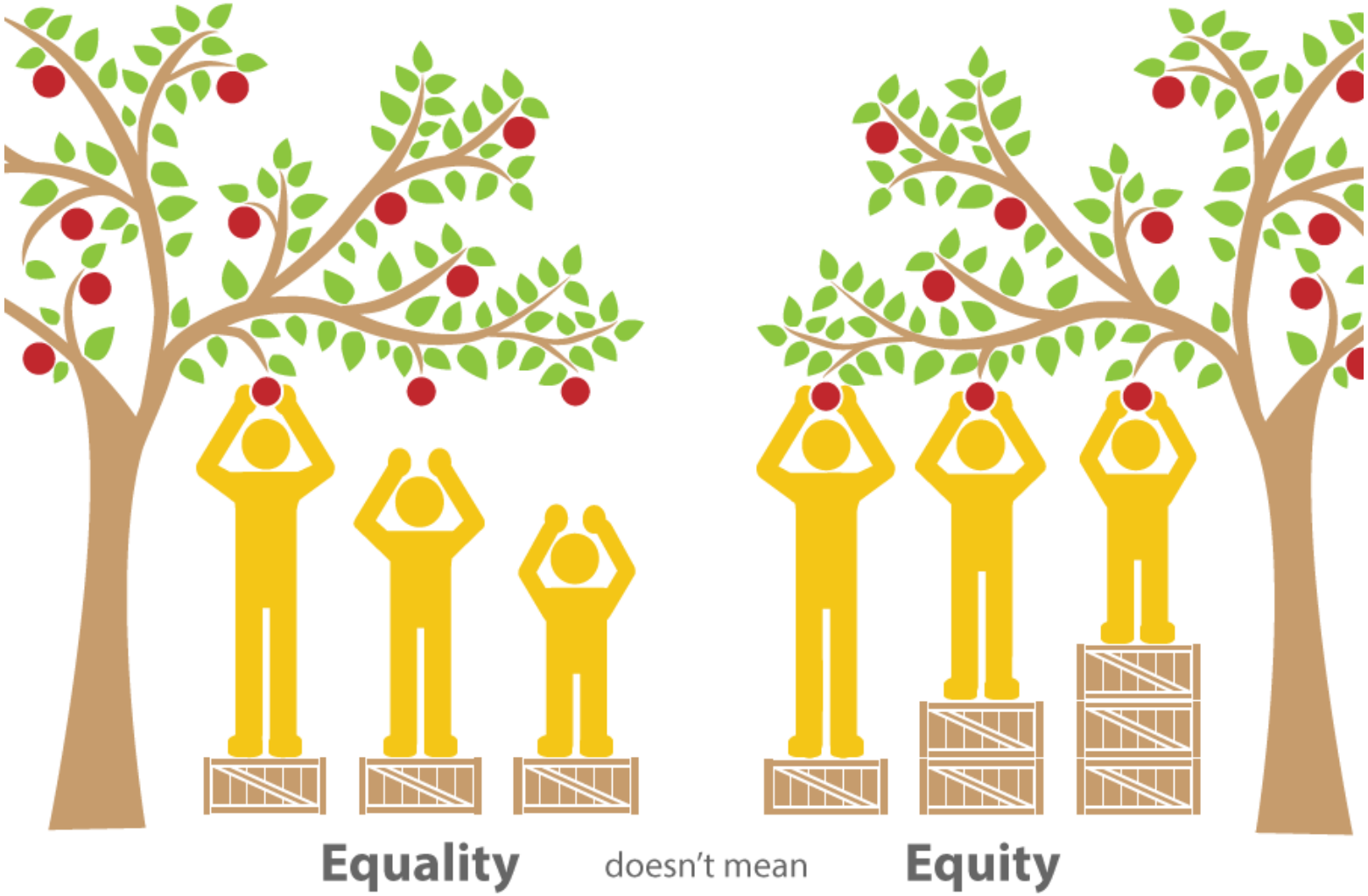
Healthy Chicago 2.0: Utilizing and Maximizing Data and Research

Nikhil Prachand
Director of Epidemiology
March 4, 2016

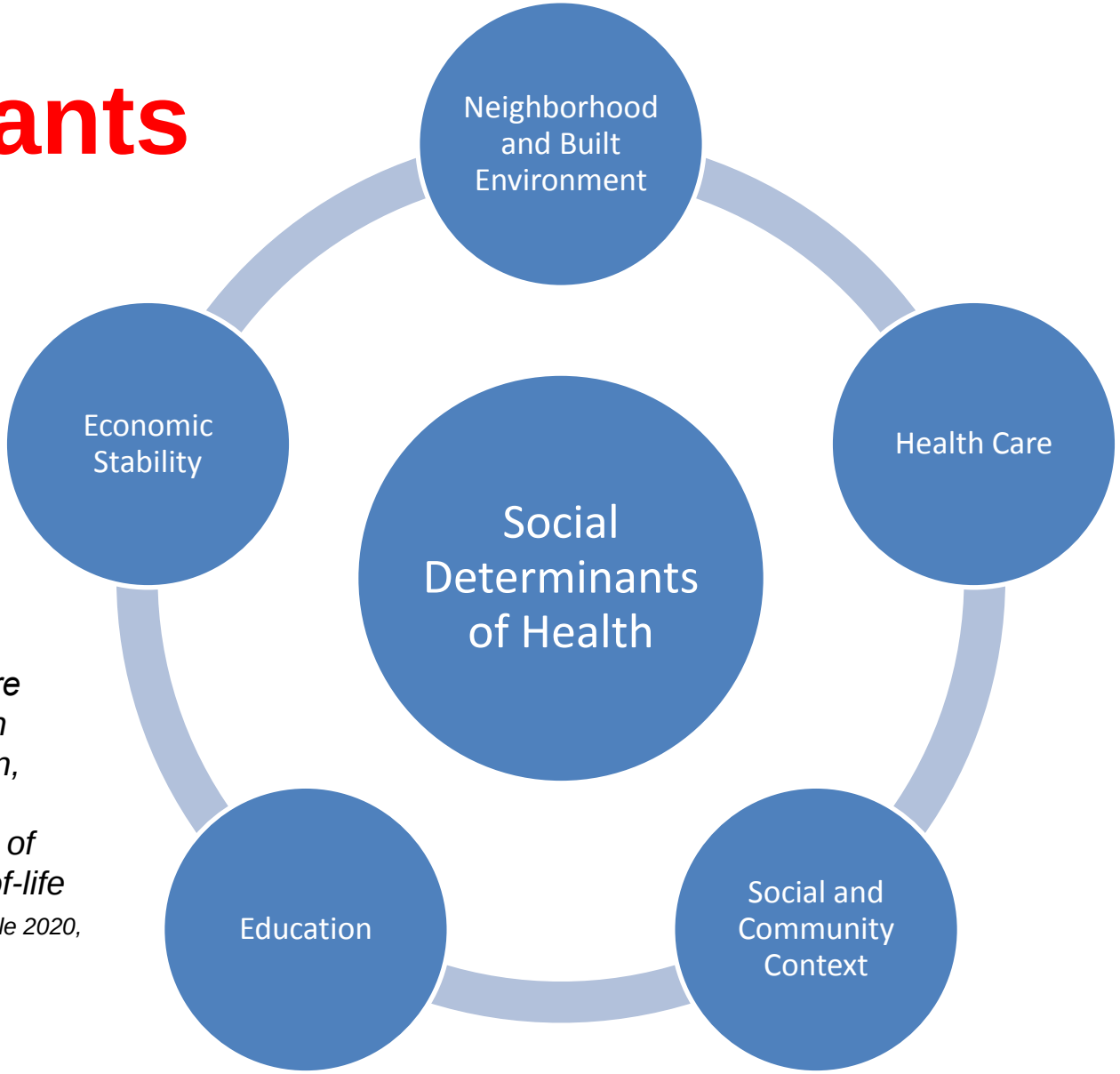
Healthy Chicago 2.0 Vision

"A city with strong communities and collaborative stakeholders, where all residents enjoy equitable access to resources, opportunities and environments that maximize their health and well-being"

Focus on Health Equity

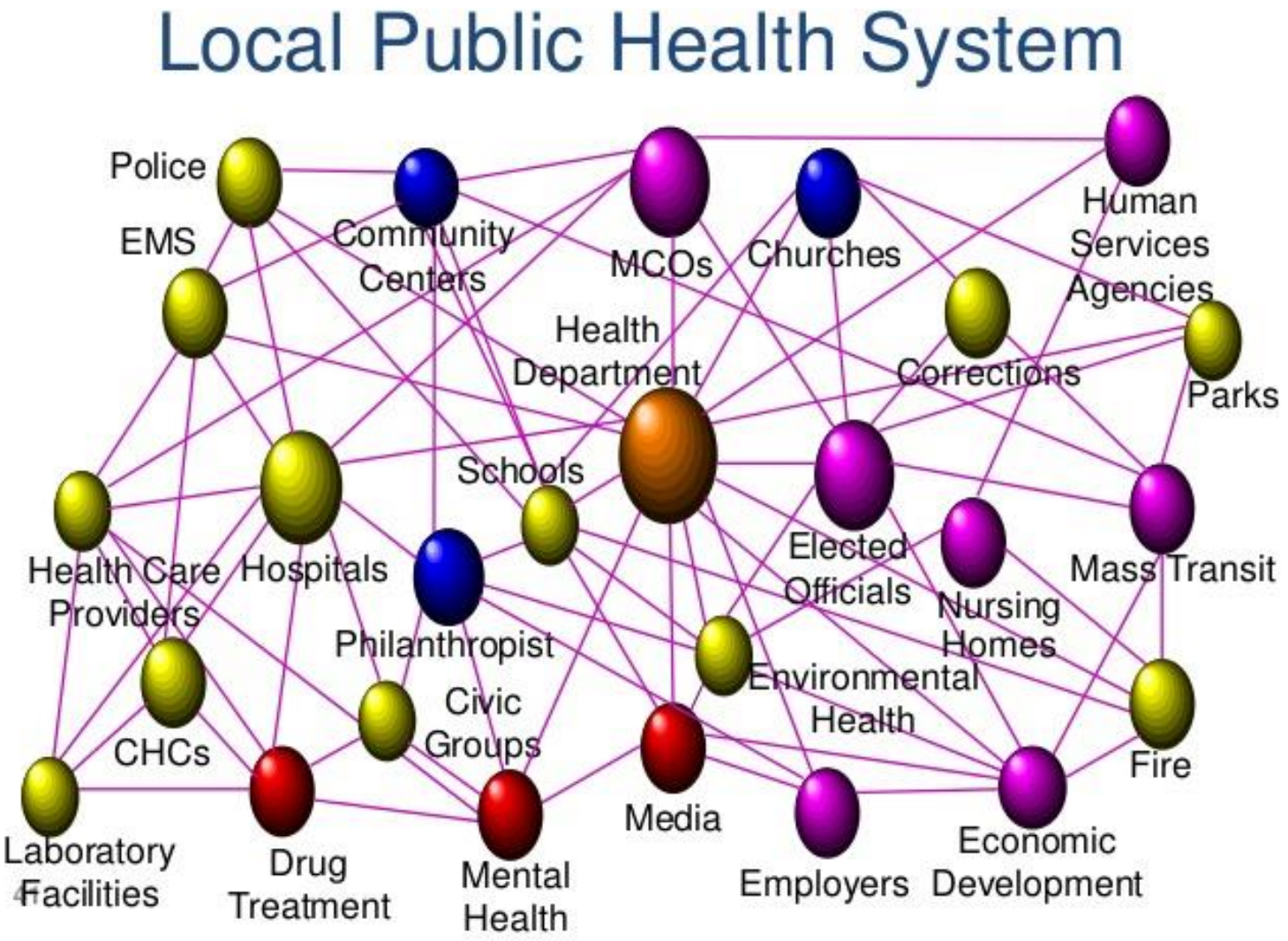


Social Determinants of Health



"Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks." *(Healthy People 2020, CDC)*

Health-In-All Policies



Timeline, 2014-2016

Community Health Status Assessment

- **CDPH and HC2 Data Committee worked to acquire and analyze over 60 datasets**

- **Produced a data compendium that was used by action teams to develop priority areas and identify priority populations**

- **Over 240 data indicators were created, of which 75 became measurable objectives for the plan**

Action Areas

Health Conditions

- Behavioral Health
- Child & Adolescent Health
- Chronic Disease
- Infectious Disease
- Violence & Injury

Root Causes

- Access to healthcare
- Education
- Environment & Community Conditions
  (housing, economic development, education opportunity, safety)

Essential Supports

- Data & Research
- Partnerships & Community Engagement

Addressing Action Areas

- **32** *goals*
- **82** *measurable objectives*
- **216** *strategies*
  - *Many cross-cutting*
  - *Involve multi-sector partnerships*

GOAL 1 Improve Chicago's built environment and transportation so that residents can live and age well in healthy communities

Objectives

- Increase the percentage of adults who walk, bike, or take public transportation to work by 10%
- Increase percentage of people who feel safe in their community*

Strategies

- Continue implementation of *Chicago's Pedestrian Plan* and institutionalize Chicago's Complete Streets Policy and CDOT's Pedestrian First modal hierarchy by prioritizing pedestrians in the planning, design, operations and maintenance of the built environment
- Continue to implement the Streets for Cycling Plan 2020, Chicago's bikeway network plan, and adopt an updated, policy-based, citywide bike plan that includes equity, health and economic development
- Foster partnerships between bike share and public health providers to identify local needs and health inequities in support of equitable planning and increased use of the Divvy program
- Improve the public transit system by investing in CTA and Metra commuter railroad modernization that ensures full accessibility for riders of all ages and abilities
- Promote the *Make Way for People* program and encourage art and programmed activities in public spaces
- Continue the Large Lot Program to make city-owned vacant land available to current property owners
- Examine ways to encourage and fund development near transit that includes mix land use
- Implement the *Age Friendly Chicago* plan, which incorporates emerging Aging in Community policies and guidelines

Action Areas

Health Conditions

- Behavioral Health
- Child & Adolescent Health
- Chronic Disease
- Infectious Disease
- Violence & Injury

Root Causes

- Access to healthcare
- Education
- Environment & Community Conditions
  (housing, economic development, education opportunity, safety)

Essential Supports

- Data & Research
- Partnerships & Community Engagement

Utilizing and Maximizing Data and Research

Goal 1: Assure equitable access to quality data

Goal 2: Public health research will be coordinated and disseminated widely

Goal 1: Assure equitable access to quality data

- **Improving data access is an integral part of Healthy Chicago 2.0**
- **There is much traditional and non-traditional health data that needs to be liberated and shared to fully understand and help address the root causes of health inequity**
- **Needs tools to ensure that policymakers, researchers, and residents have the opportunity to utilize high quality and timely data**
- **Implementation team will be developed to make an action plan and identify owners of strategies**

Goal 1: Assure equitable access to quality data

- **Launch citywide public health data partnership in 2016**
  - **Begin with HC2 data partners**
  - **Demonstrate value of non-traditional data in measuring impact on health**
  - **Demonstrate value of timely data**
  - **Identify new potential sources of data that measure root causes of health inequity**
  - **Conduct an environmental scan of health data and data systems**

Goal 1: Assure equitable access to quality data

- **Launch citywide public health data partnership in 2016**
  - **Begin with HC2 data partners**
  - Demonstrate value of non-traditional data in measuring impact on health
  - Demonstrate value of timely data
  - Identify new potential sources of data that measure root causes of health inequity
  - Conduct an environmental scan of health data and data systems

Data Sources

- City of Chicago
  - *Public Health*
    - *Healthy Chicago Survey*
    - *Communicable Disease*
    - *Environmental Permitting & Inspection*
    - *Food Safety*
    - *Immunization*
    - *Lead*
    - *HIV/STI*
    - *TB*
  - Chicago Fire Department
  - Chicago Housing Authority
  - Chicago Park District
  - Chicago Police Department
  - Chicago Public Library
  - Chicago Public Schools
  - Chicago Transit Authority
  - 311
  - Buildings
  - Cultural Affairs
  - Business Affairs
  - Emergency and Management Communication
  - Family & Support Services
  - Planning and Development
  - Transportation
- Greater Chicago Food Depository
- National Association for the Education of Young Children
- Infobase
- Cook County
  - *Department of Public Health*
  - *Medical Examiner's Office*
  - Assessor's Office
  - Chicago Board of Election Commissioners
- State of Illinois
  - Department of Human Services
    - WIC/Cornerstone
  - Healthcare and Family Services
    - Early Intervention
  - Department of Public Health
    - Behavioral Risk Factor Surveillance
    - Illinois Cancer Registry
    - Vital Records
    - Hospital/ED Discharge Data
  - Illinois EPA
  - Alcohol and Substance Abuse
  - State Board of Education
- United States Government
  - Department of Labor
  - Department of Agriculture (USDA)
  - Department of Education
  - Census Bureau
  - Centers for Disease Control & Prevention
  - Housing & Urban Development (HUD)
  - Oceanic and Atmospheric Administration (NOAA)
  - Postal Service (USPS)

Data Sources

- **City of Chicago**
  - ***Public Health***
    - ***Healthy Chicago Survey***
    - ***Communicable Disease***
    - ***Environmental Permitting & Inspection***
    - ***Food Safety***
    - ***Immunization***
    - ***Lead***
    - ***HIV/STI***
    - ***TB***
  - Chicago Fire Department
  - Chicago Housing Authority
  - Chicago Park District
  - Chicago Police Department
  - Chicago Public Library
  - Chicago Public Schools
  - Chicago Transit Authority
  - 311
  - Buildings
  - Cultural Affairs
  - Business Affairs
  - Emergency and Management Communication
  - Family & Support Services
  - Planning and Development
  - Transportation

- Greater Chicago Food Depository
- National Association for the Education of Young Children
- Infobase – Retail/Marketing

- **Cook County**
  - ***Department of Public Health***
  - ***Medical Examiner's Office***
  - Assessor's Office
  - Chicago Board of Election Commissioners

- **State of Illinois**
  - Department of Human Services
    - WIC/Cornerstone
  - Healthcare and Family Services
    - Early Intervention
  - **Department of Public Health**
    - **Behavioral Risk Factor Survey**
    - **Illinois Cancer Registry**
    - **Vital Records**
    - Hospital/ED Discharge Data
  - Illinois EPA
  - Alcohol and Substance Abuse
  - State Board of Education

- **United States Government**
  - Department of Labor
  - Department of Agriculture (USDA)
  - Department of Education
  - **Census Bureau**
  - **Centers for Disease Control & Prevention**
  - Housing & Urban Development (HUD)
  - Oceanic and Atmospheric Administration (NOAA)
  - Postal Service (USPS)

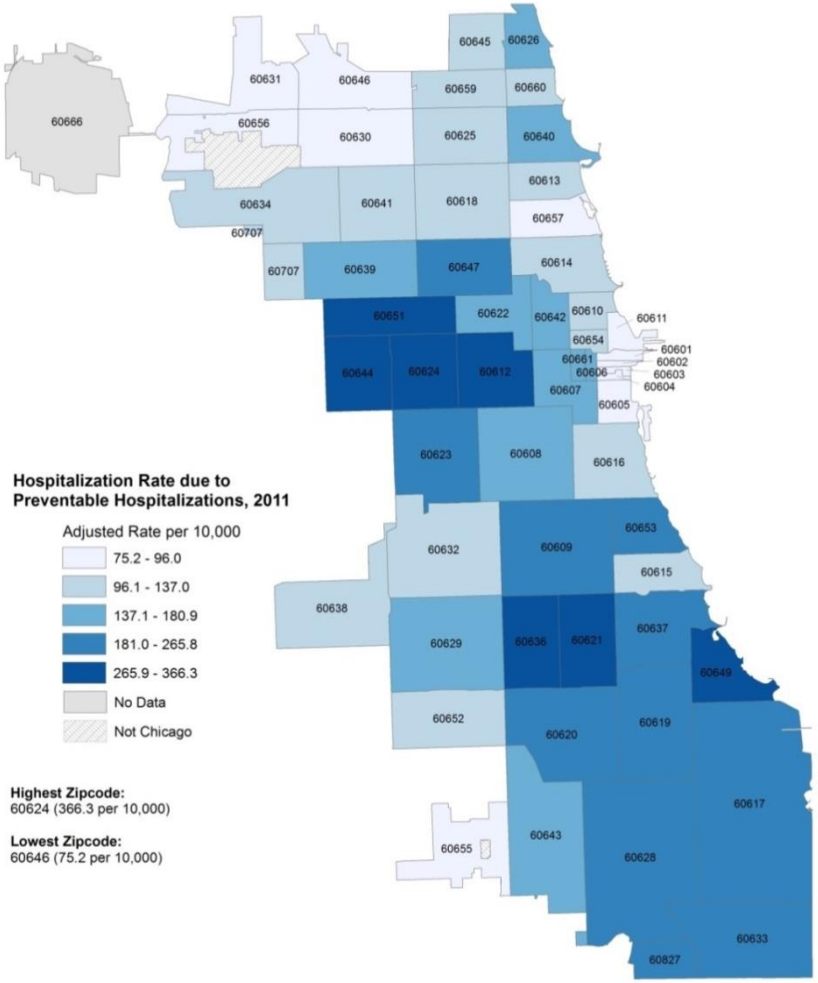
Goal 1: Assure equitable access to quality data

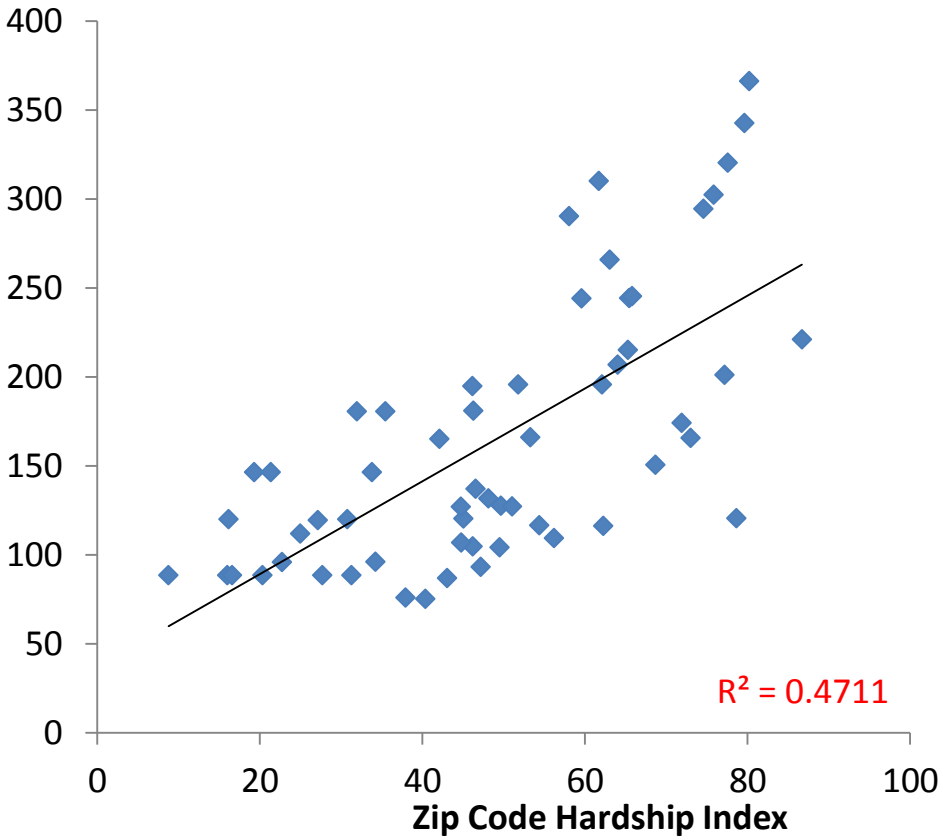
- **Launch citywide public health data partnership in 2016**
  - Begin with HC2 data sources
  - **Demonstrate value of non-traditional data in measuring impact on health**
  - **Demonstrate value of timely data**
  - Identify new potential sources of data that measure root causes of health inequity
  - Conduct an environmental scan of health data and data systems

Evaluating Chicago Clean Indoor Air Act using IDPH Hospital Discharge Data

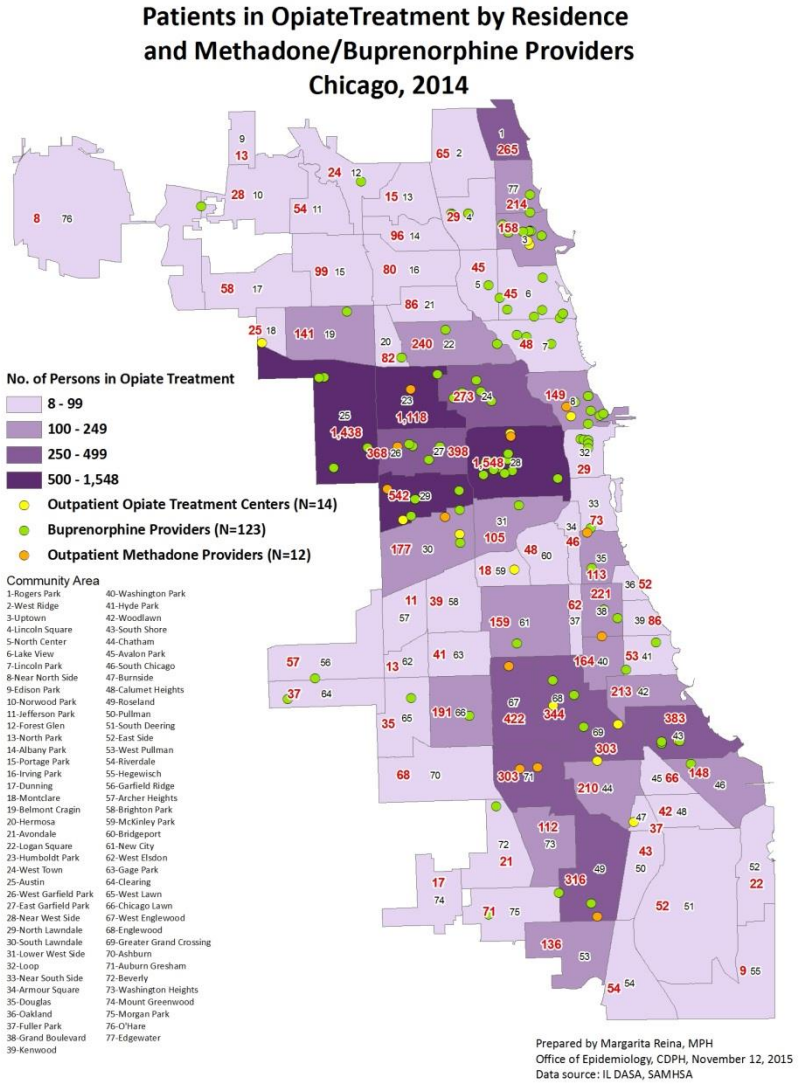
	AGE ADJUSTED RATE (per 10,000)												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Trend
Acute MI	22.2	22.0	22.1	22.0	21.0	**20.1**	**18.4**	**17.8**	**17.4**	**16.8**	**17.0**	**15.9**	2000-2003 ↔ (p=0.98) 2003-2007 ↓ (p=0.01) 2007-2011 ↔ (p=0.051)
Stroke	33.3	32.8	32.1	30.1	30.7	29.0	30.0	27.8	28.0	28.3	27.8	27.6	2000-2011 ↓ (p<0.001)

Exploring the Relationship between Preventable Hospitalizations and Economic Hardship

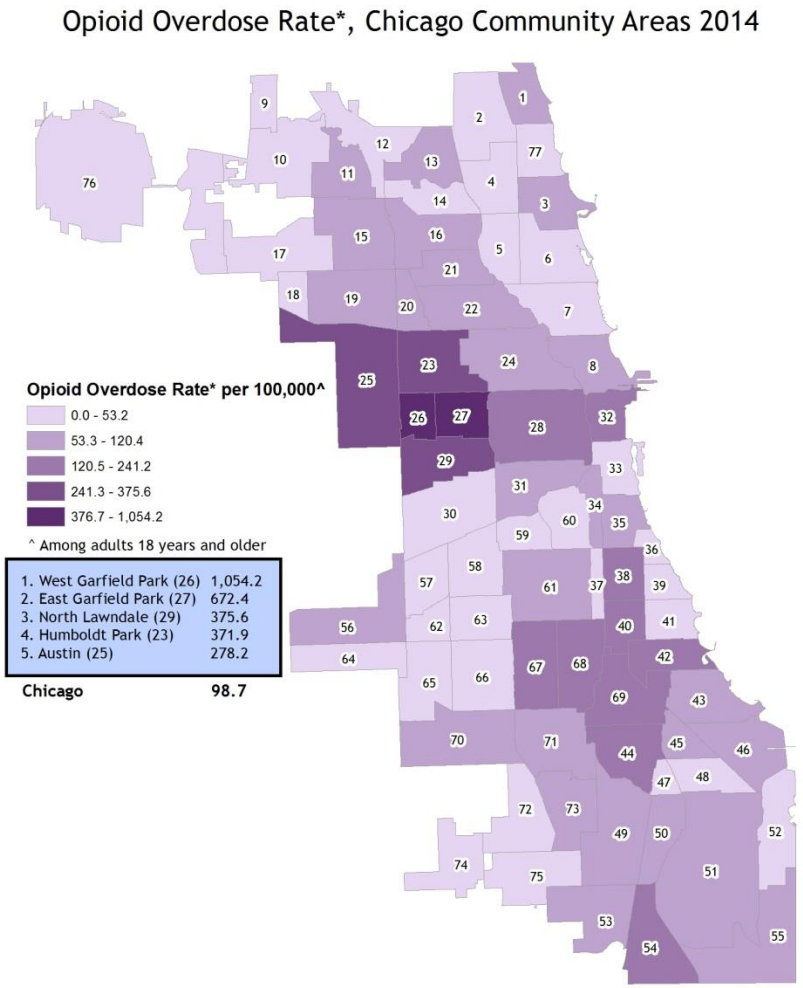




Identifying Opiate Treatment Deserts using CFD Ambulance Run Data



Prepared by Margarita Reina, MPH
Office of Epidemiology, CDPH, November 12, 2015
Data source: IL DASA, SAMHSA



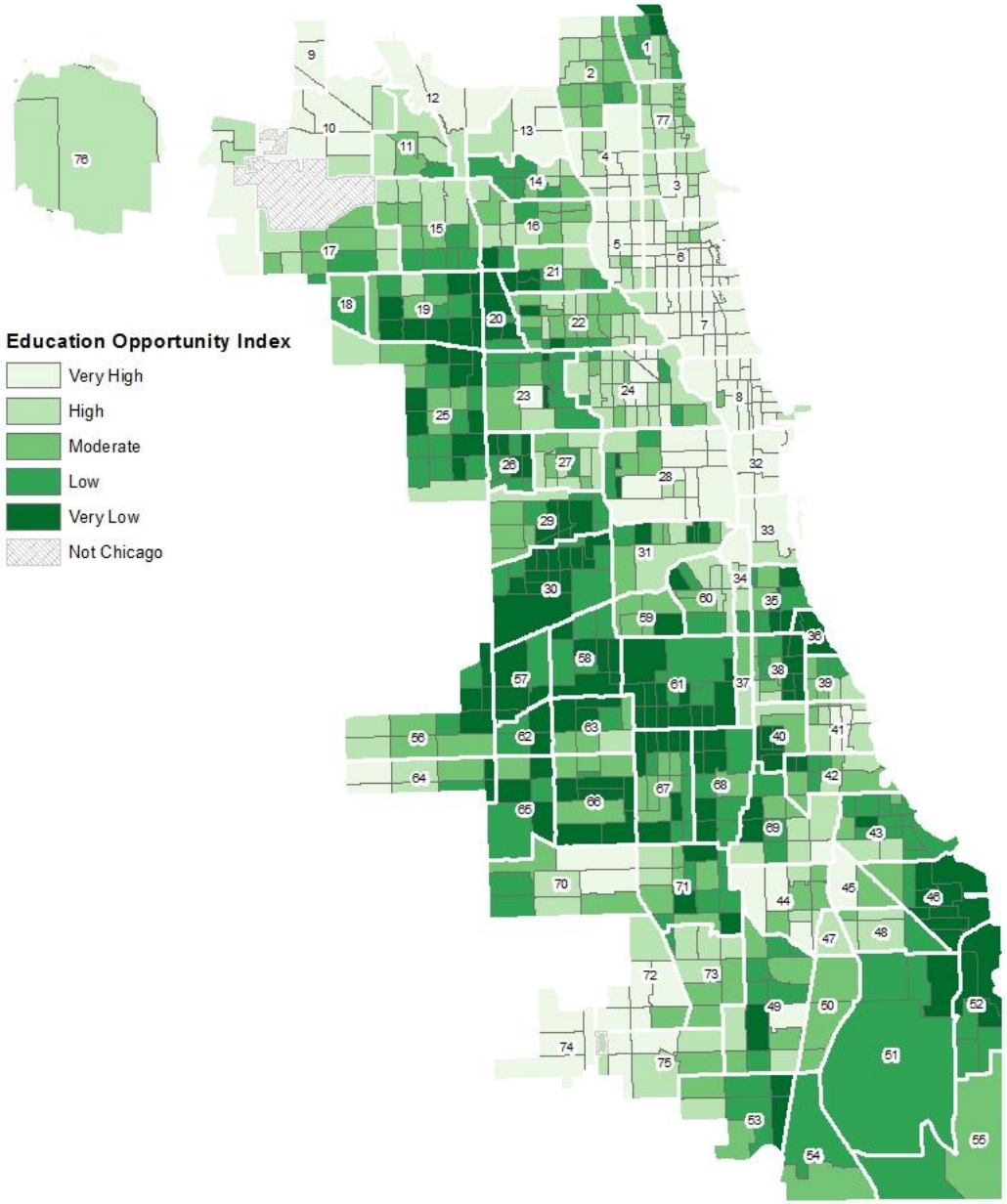
Prepared by Margarita Reina, MPH
Chicago Department of Public Health, Office of Epidemiology
February 16, 2016

*Based on CFD ambulance runs to suspect opioid overdose where Narcan was administered.

Source: Chicago Fire Department, 2014
US Census, 2010

Measuring Neighborhood Educational Opportunity

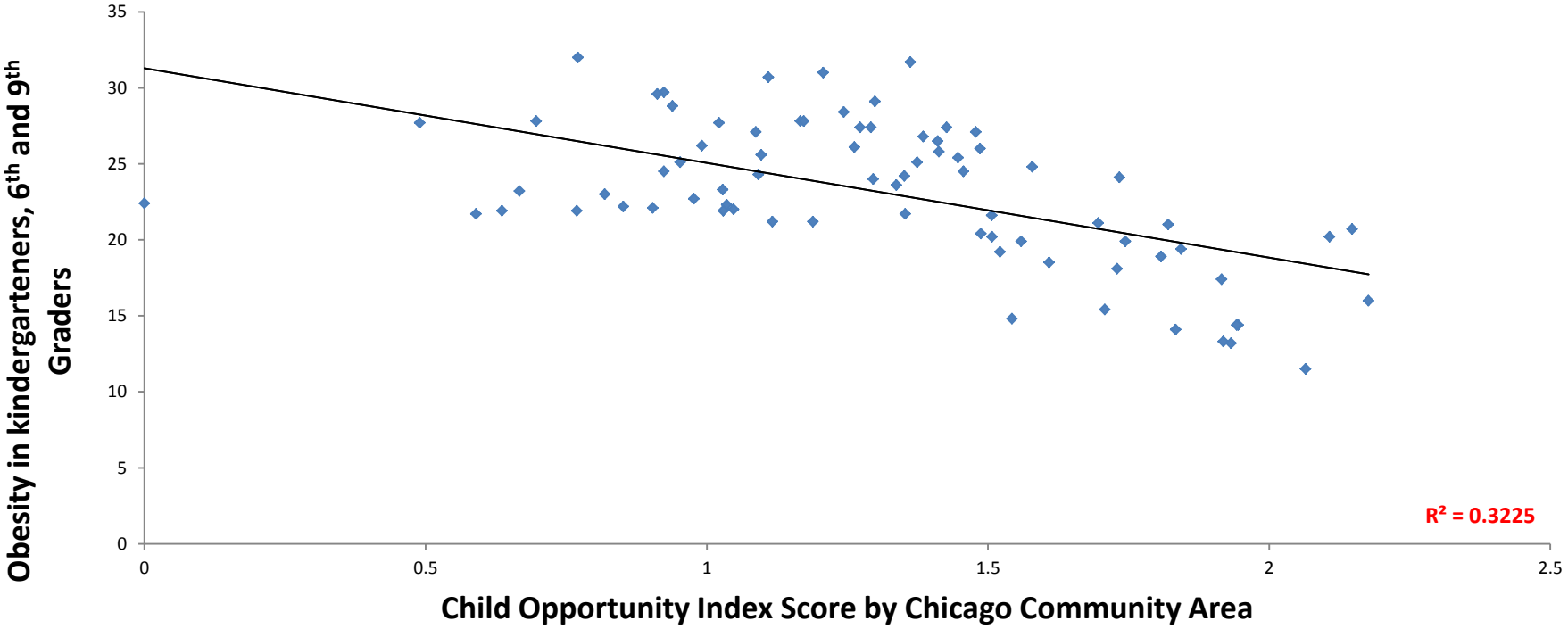
- Adult educational attainment
- Student (school) poverty rate
- Reading proficiency rate
- Math proficiency rate
- Early childhood education neighborhood participation patterns
- High school graduation rate
- Proximity to high-quality early childhood education centers
- Proximity to early childhood education centers of any type



- *State Board of Education*
- *US Census*
- *Chicago Public Schools*
- *NAEYC (Accreditation body)*

Source: Kirwan Institute and Brandies University, 2014

Educational Opportunity and Obesity



Obesity among CPS kindergarteners, sixth and ninth graders is greater in children with less educational opportunity.

Source: Kirwan Institute and Brandies University, 2014; Chicago Public Schools, 2012-2013

Measuring Overall Child Opportunity by Neighborhood

Educational

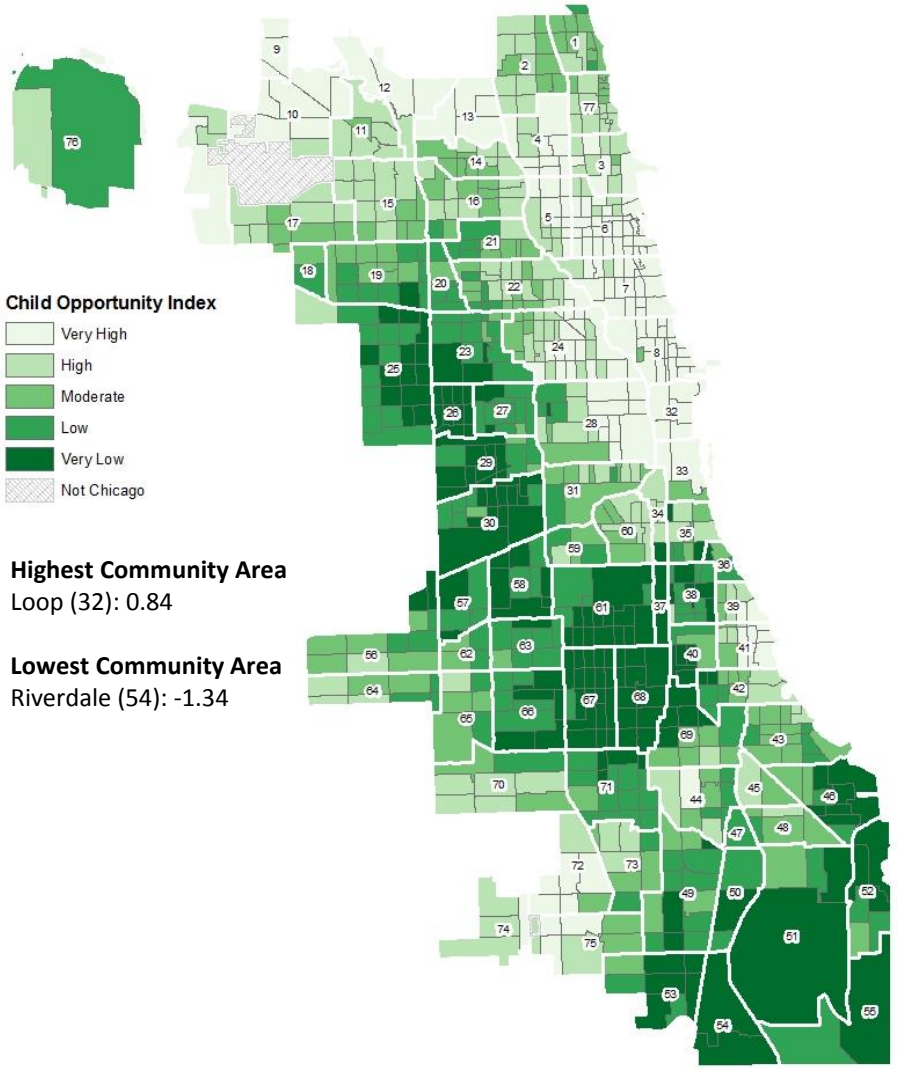
- Adult educational attainment
- Student (school) poverty rate
- Reading proficiency rate
- Math proficiency rate
- Early childhood education neighborhood participation patterns
- High school graduation rate
- Proximity to high-quality early childhood education centers
- Proximity to early childhood education centers of any type

Health and Environmental

- Retail healthy food index
- Proximity to toxic waste release sites
- Volume of nearby toxic release
- Proximity to parks and open spaces
- Housing vacancy rates
- Proximity to health care facilities

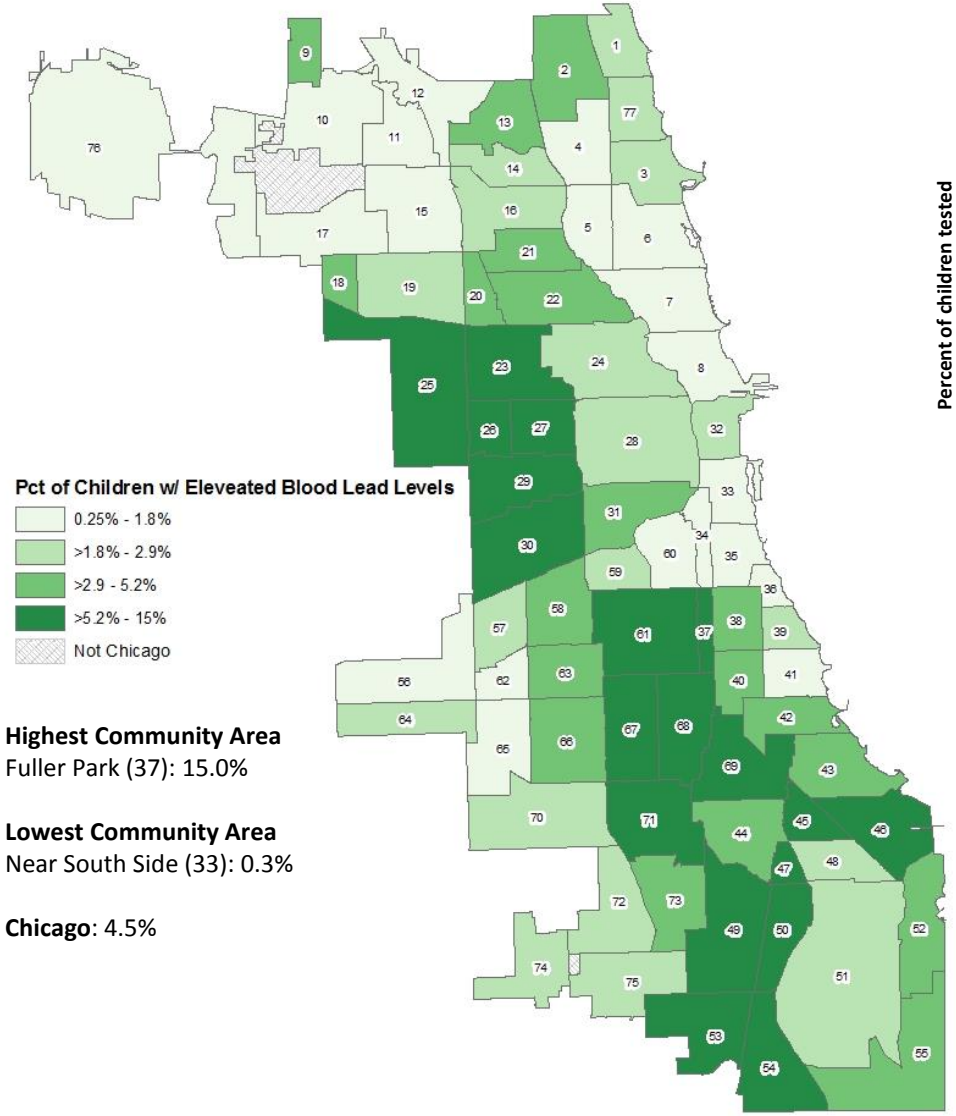
Economic

- Neighborhood foreclosure rate
- Poverty rate
- Unemployment rate
- Public assistance rate
- Proximity to employment



Source: Kirwan Institute and Brandies University, 2014

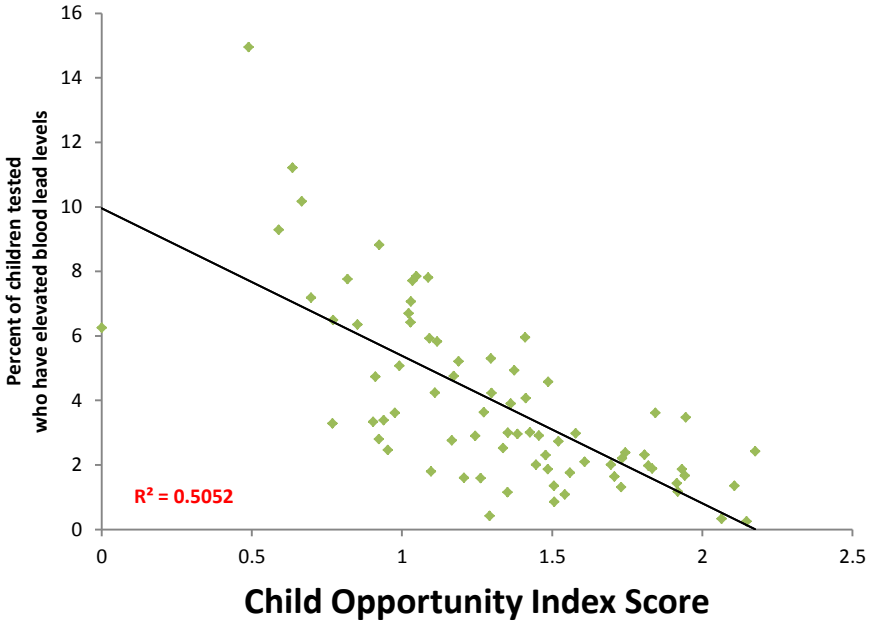
Elevated Blood Lead Level and Child Opportunity



Highest Community Area
Fuller Park (37): 15.0%

Lowest Community Area
Near South Side (33): 0.3%

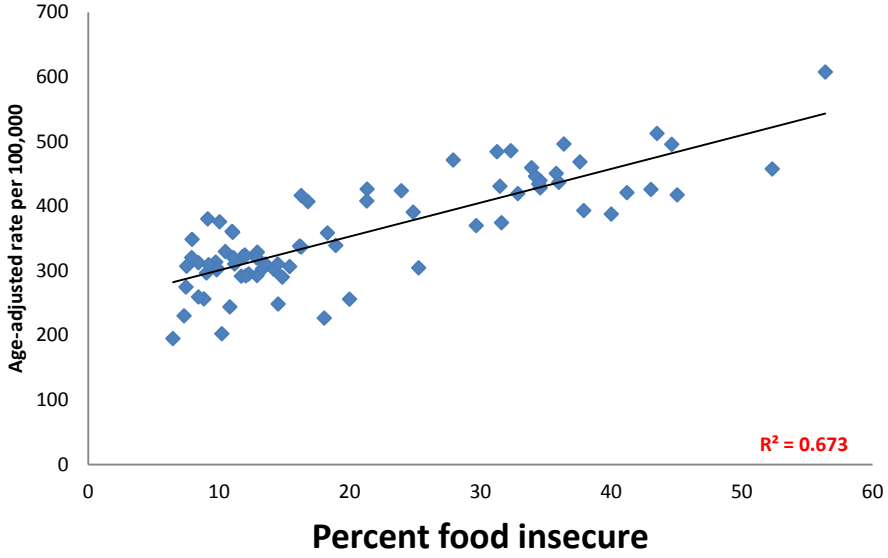
Chicago: 4.5%

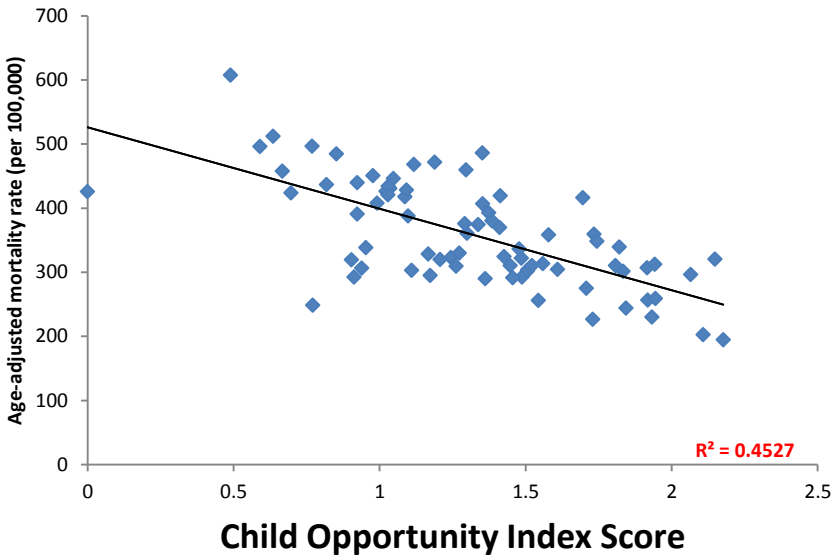


Communities with less opportunity have higher percentages of children with elevated blood lead levels.

Source: Kirwan Institute and Brandies University, 2014; Chicago Department of Public Health, Lead Poisoning & Prevention, 2014

Diet-related Mortality, Food Insecurity and Child Opportunity





Diet-related mortality rates are higher in communities with more food insecurity and less opportunity.

Source: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files, 2007-2011; Greater Chicago Food Depository, 2012; Kirwan Institute, Brandeis University, 2014

Goal 1: Assure equitable access to quality data

- **Launch citywide public health data partnership in 2016**
  - Begin with HC2 data partners
  - Demonstrate value of non-traditional data in measuring impact on health
  - Demonstrate value of timely data
  - **Identify new potential sources of data that measure root causes of health inequity**
  - **Conduct an environmental scan of health data and data systems**

Data Gaps/Opportunities

- Hospital/Clinic Systems/EHR
- Academic institutions/Clinical Research
- Criminal Justice/Legal Sector
- Public/Private Insurance
- Business Development
- Built Environment/Engineering
- Social Media/Internet/IOT
- Technology/Communication

- Legislative/Revenue
- Community-based organizations
- Policy/Advocacy Groups
- Philanthropies/Charities
- Private Education
- Faith Communities
- Recreational/Entertainment
- Financial/Private Capital Sector
- Real Estate

Established data partnership will work with CDPH and implementation team to form the foundation for a data sharing network

Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network by 2020**
  - **Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations**
    - **Legal/regulatory**
    - **HIPAA/Privacy**
    - **Ethics of not sharing**

    - **CDPH plans to make a public use dataset available from the first two rounds of the Healthy Chicago Survey by 2017**

Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network**
  - Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations
  - **Leverage existing informatics initiatives to build a data sharing infrastructure**
    - **Chicago Health Atlas**
    - Chicago Data Portal
    - Open Grid
    - Plenar.io

www.chicagohealthatlas.org/map/deaths_breast_cancer_in_females#/?year=2006

Customize and control Google Chrome

Chicago Health Atlas

Home | Map | Places | Hospitals | Partners | About

Chicago Statistics

Conditions

- Births
- Chronic Disease
- Crime
- Deaths
  - All causes | All causes in females | All causes in males | Alzheimers disease | Assault (homicide) | ✔ Breast cancer in females
  - Cancer (all sites) | Colorectal cancer | Coronary heart disease | Diabetes-related | Firearm-related | Infant mortality | Injury, unintentional
  - Kidney disease | Liver disease and cirrhosis | Lung cancer | Prostate cancer in males | Stroke | Suicide
- Environmental Health
- Infectious Disease

Resources

- Affordable resources

Health Insurance

- All Uninsured
- Uninsured By Age
- Uninsured By Income
- Uninsured By Nativity
- Uninsured By Race
- Uninsured By School Enrollment

Hospital Admissions

- Hospital Admissions Inpatient
- Hospital Admissions Outpatient

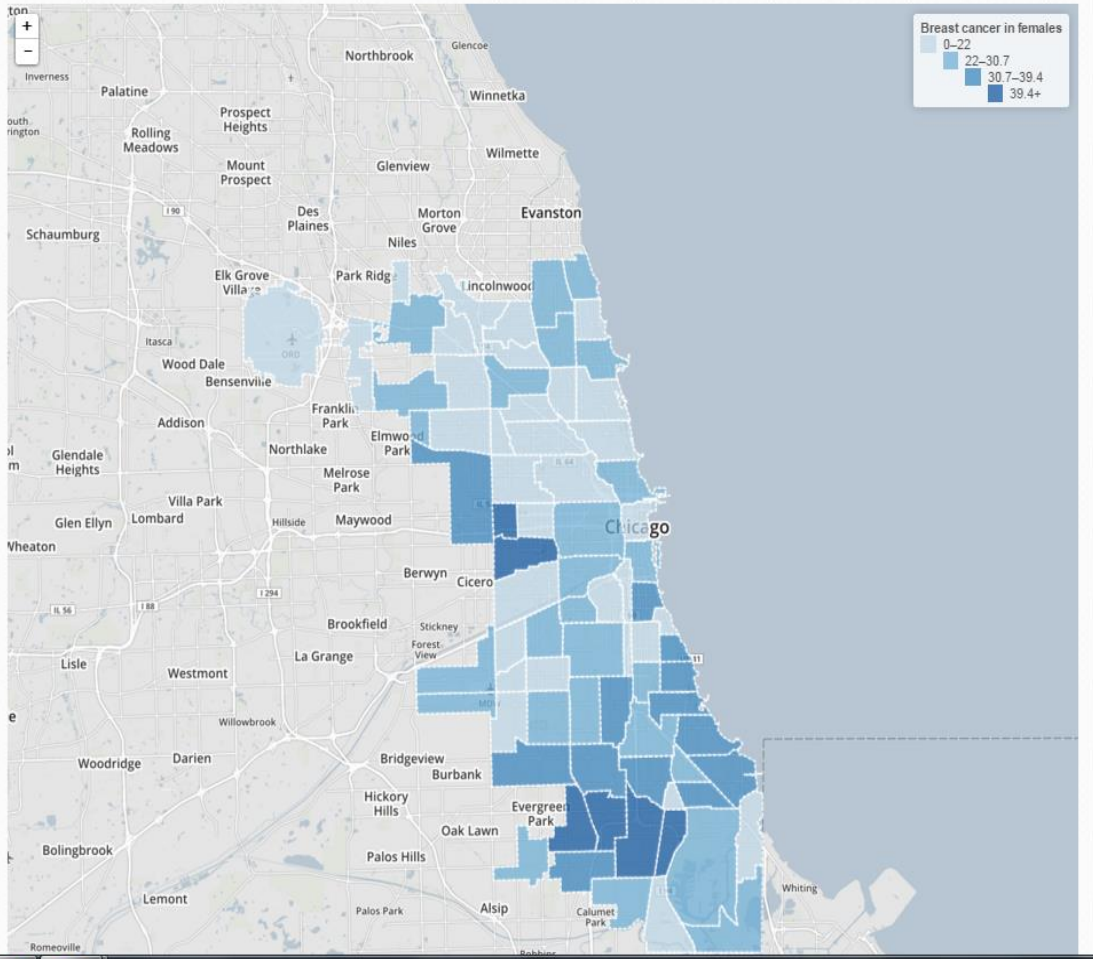
Other

- Demographics
- Healthcare Providers

Breast cancer in females 2006 - 2010

Adjusted death rates per 100,000 residents from breast cancer in females by Chicago community area from 2006 - 2010

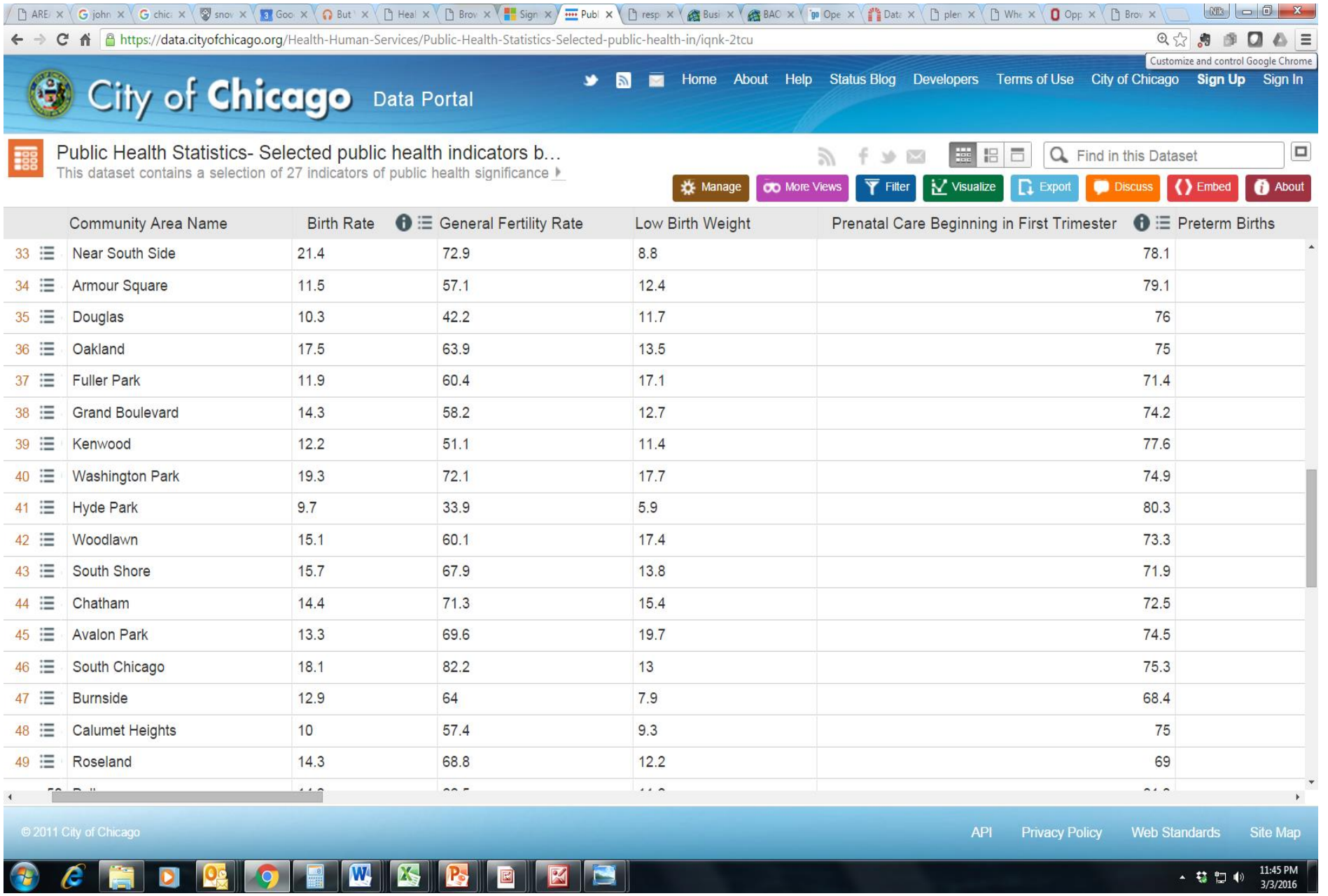
Source: Chicago Department of Public Health | Data |



11:28 PM
3/3/2016

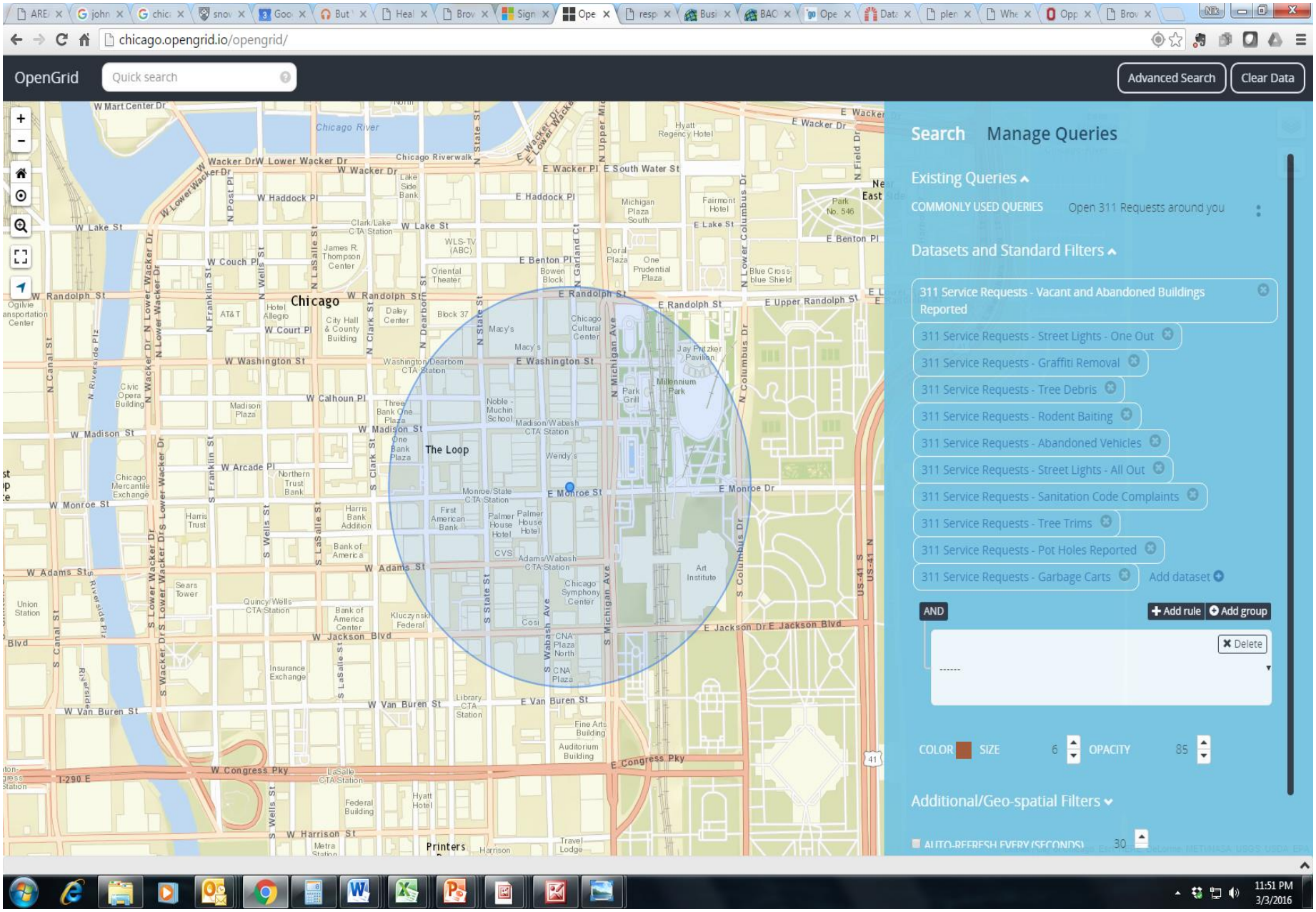
Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network**
  - Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations
  - **Leverage existing informatics initiatives to build a data sharing infrastructure**
    - Chicago Health Atlas
    - **Chicago Data Portal**
    - Open Grid
    - Plenar.io


https://data.cityofchicago.org/Health-Human-Services/Public-Health-Statistics-Selected-public-health-in/iqnk-2tcu
City of Chicago Data Portal
Home About Help Status Blog Developers Terms of Use City of Chicago Sign Up Sign In
Public Health Statistics- Selected public health indicators b...
This dataset contains a selection of 27 indicators of public health significance
Find in this Dataset
Manage More Views Filter Visualize Export Discuss Embed About
Community Area Name Birth Rate General Fertility Rate Low Birth Weight Prenatal Care Beginning in First Trimester Preterm Births
33 Near South Side 21.4 72.9 8.8 78.1
34 Armour Square 11.5 57.1 12.4 79.1
35 Douglas 10.3 42.2 11.7 76
36 Oakland 17.5 63.9 13.5 75
37 Fuller Park 11.9 60.4 17.1 71.4
38 Grand Boulevard 14.3 58.2 12.7 74.2
39 Kenwood 12.2 51.1 11.4 77.6
40 Washington Park 19.3 72.1 17.7 74.9
41 Hyde Park 9.7 33.9 5.9 80.3
42 Woodlawn 15.1 60.1 17.4 73.3
43 South Shore 15.7 67.9 13.8 71.9
44 Chatham 14.4 71.3 15.4 72.5
45 Avalon Park 13.3 69.6 19.7 74.5
46 South Chicago 18.1 82.2 13 75.3
47 Burnside 12.9 64 7.9 68.4
48 Calumet Heights 10 57.4 9.3 75
49 Roseland 14.3 68.8 12.2 69
© 2011 City of Chicago
API Privacy Policy Web Standards Site Map
11:45 PM
3/3/2016

Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network**
  - Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations
  - **Leverage existing informatics initiatives to build a data sharing infrastructure**
    - Chicago Health Atlas
    - Chicago Data Portal
    - **Open Grid**
    - Plenar.io


chicago.opengrid.io/opengrid/
OpenGrid
Quick search
Advanced Search
Clear Data
Search
Manage Queries
Existing Queries
COMMONLY USED QUERIES
Open 311 Requests around you
Datasets and Standard Filters
311 Service Requests - Vacant and Abandoned Buildings Reported
311 Service Requests - Street Lights - One Out
311 Service Requests - Graffiti Removal
311 Service Requests - Tree Debris
311 Service Requests - Rodent Baiting
311 Service Requests - Abandoned Vehicles
311 Service Requests - Street Lights - All Out
311 Service Requests - Sanitation Code Complaints
311 Service Requests - Tree Trims
311 Service Requests - Pot Holes Reported
311 Service Requests - Garbage Carts
Add dataset
AND
Add rule
Add group
Delete
COLOR
SIZE
6
OPACITY
85
Additional/Geo-spatial Filters
AUTO-REFRESH EVERY (SECONDS)
30
Chicago
The Loop
Chicago River
11:51 PM
3/3/2016

Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network**
  - Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations
  - **Leverage existing informatics initiatives to build a data sharing infrastructure**
    - Chicago Health Atlas
    - Chicago Data Portal
    - Open Grid
    - **Plenar.io**

plenar.io/explore#detail/dataset_name__in=311_unified_data%2Ccase_data_from_san_francisco_311_sf311%2C311_service_requests_tree_debris%2C311_service_requests_tree_trims%2C311_se

Plenar.io alpha

Home Explore API Examples Add data About Login

< back to Explorer

City of Chicago: 311 Service Requests - Graffiti Removal

Start date: 01/01/2014

End date: 03/03/2016

Aggregate by: Week

Map grid resolution: 100 meters

Filters + Add filter

Select a field... | = | Enter a value...

IN | 311_unified_data,case_data_

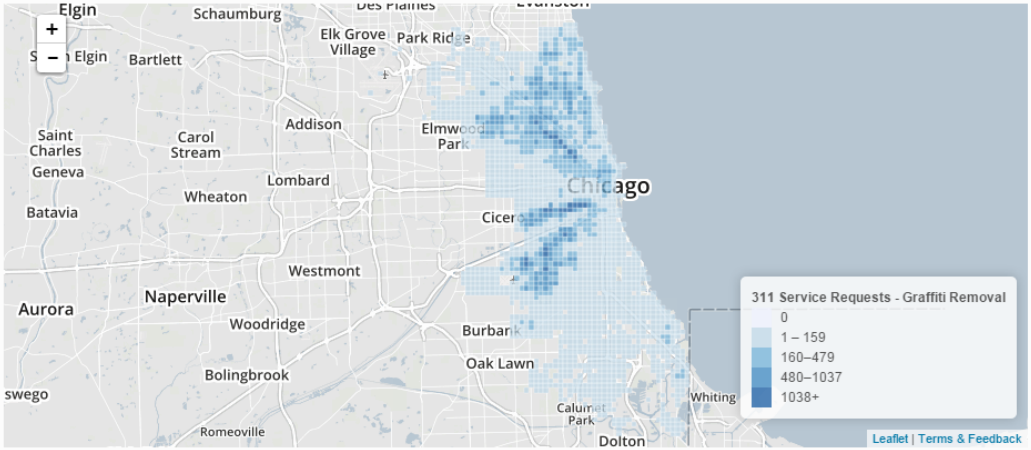
Refine query | Download

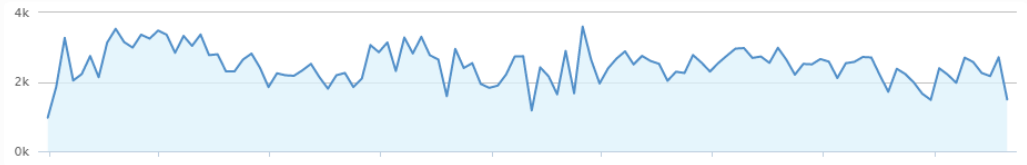
API queries

View the API queries that are used on this page. Read the API docs.

- /v1/api/grid/…
- /v1/api/detail-aggregate/…
- /v1/api/detail/…
- /v1/api/fields/…

283,552 records





Dataset details

Name:	311 Service Requests - Graffiti Removal
Attribution:	City of Chicago
Source:	http://data.cityofchicago.org/api/views/hec5-y4x5/rows.csv?accessType=DOWNLOAD
View:	http://data.cityofchicago.org/api/views/hec5-y4x5/rows
Time span	**90 years** (2/5/1926 - 3/2/2016)

12:01 AM 3/4/2016

Goal 1: Assure equitable access to quality data

- **Establish a functional public health data sharing network**
  - Address barriers to data sharing by proposing new inter and intra-jurisdictional policies and working to change regulations
  - **Leverage existing informatics initiatives to build a data sharing infrastructure**
    - Chicago Health Atlas
    - Chicago Data Portal
    - Open Grid
    - **Plenar.io**
  - **Landscape scan will be required**

Assuring equitable access to quality data

- **Demonstrating value of population data to measure and monitor health will help commit partners to this effort**
- **Stubborn challenges lie ahead in overcoming barriers to data sharing**
- **Building a secure, electronic data sharing network requires significant resources**

Implementation Healthy Chicago 2.0

- Launch in March
- CDPH and stakeholders to further develop work plans and identify implementation teams
- Implementation teams will work to identify strategy owners and develop action plans
- CDPH will monitor implementation and progress
- Publish annual Healthy Chicago 2.0 updates

Healthy Chicago Partnerships

WEISS
Ann & Robert H. Lurie Children's Hospital of Chicago
STREET WISE
cease fire
Chicago Community Oral Health Forum
LISC Chicago
RESPIRATORY HEALTH ASSOCIATION of Metropolitan Chicago
Consortium to Lower Obesity in Chicago Children
clocc
Roseland Community Hospital
MERCY Mercy Hospital & Medical Center
Saint Anthony Hospital
Planned Parenthood of Illinois
AIDS FOUNDATION OF CHICAGO
Metro Chicago
Walgreens
ALLIANCE OF CHICAGO Community Health Services, LSC
Thorek Memorial Hospital
HealthConnect One
ICAH
ceed
CITY COLLEGES of CHICAGO
ROOSEVELT UNIVERSITY
Trust. Heal. Care.
THE UNIVERSITY OF CHICAGO MEDICAL CENTER
HOUSING and ECONOMIC DEVELOPMENT
Woodlawn Network of Woodlawn
american Academy of Pediatrics Illinois Chapter
Illinois Health Matters
Breast Cancer Quality Screening and Treatment Initiative Advisory Board
H.A.S. Healthcare Alternative
COOK COUNTY HEALTH & HOSPITALS SYSTEM CCHHS
THE RESURRECTION PROJECT
SWOP
UIC SCHOOL OF PUBLIC HEALTH
tvvtr The Women's Treatment Center
family & support services
ChangeLab Solutions
ENLACE CHICAGO
Logan Square NEIGHBORHOOD ASSOCIATION
Quad Communities Development Corporation
Chicago Commission on Human Relations
TRILOGY BEHAVIORAL HEALTHCARE
beyond pink Chicago
ALIVE & THRIVE
Chicago Family Health Center
GREATER AUBURN-GRESHAM DEVELOPMENT CORPORATION
PHAB
Near West Side CDC
Carita
RUSH UNIVERSITY MEDICAL CENTER
CPS
HBO
NACCHO
CHICAGO CITY COUNCIL
Thresholds
HEARTLAND HEALTH CENTERS HEALTHCARE FROM THE HEART
Bickerdike
SAFER PEST CONTROL PROJECT
PHMC
Illinois Children's Healthcare Foundation
LET'S MOVE!
WORLD SPORT CHICAGO
Great Cities Institute UIC
CHICAGO CDA DEPARTMENT OF AVIATION
Illinois Alliance to Prevent Obesity
UNIVERSITY OF ILLINOIS Hospital & Health Sciences System
Mile Square Health Center
CCARES
Advocate Illinois Masonic Medical Center
DEPARTMENT OF INNOVATION & TECHNOLOGY
GADS HILL CENTER
CHICAGO PARK DISTRICT
CHANGE. CHICAGO HOUSING AUTHORITY
DCASE
MOPD
CHICAGO BACP BUSINESS AFFAIRS CONSUMER PROTECTION
WASHINGTON PARK consortium
CHICAGO FIRE DEPT.
CHICAGO POLICE
PUBLIC HEALTH
BlueCross BlueShield of Illinois
Health & Disability Advocates
Mount Sinai
Beacon Therapeutic
DCC CHITREC
CTSA
THE CHICAGO COMMUNITY TRUST
Claretian Associates
The Otho S. A. Sprague Memorial Institute
BUILDING A HEALTHIER CHICAGO
MICHAEL REESE HEALTH TRUST
Northern Illinois Public Health Consortium, Inc.
CDOT CHICAGO DEPARTMENT OF TRANSPORTATION
UNIVERSITY OF ILLINOIS Hospital & Health Sciences System

When it’s better for everyone, it’s better for everyone
- Eleanor Roosevelt