Community Health Workers as Population Health Solutions

America's Essential Hospitals Webinar

Sharon Homan, PhD, President, Sinai Urban Health Institute

Helen Margellos-Anast, MPH, Director, Community Health Innovations

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Presentation Outline

- Setting
- Problem
- Solution
- Scaling, Integration and Expansion of CHW Model
- Discussion

The Setting

Chicago: An Urban Health Challenge

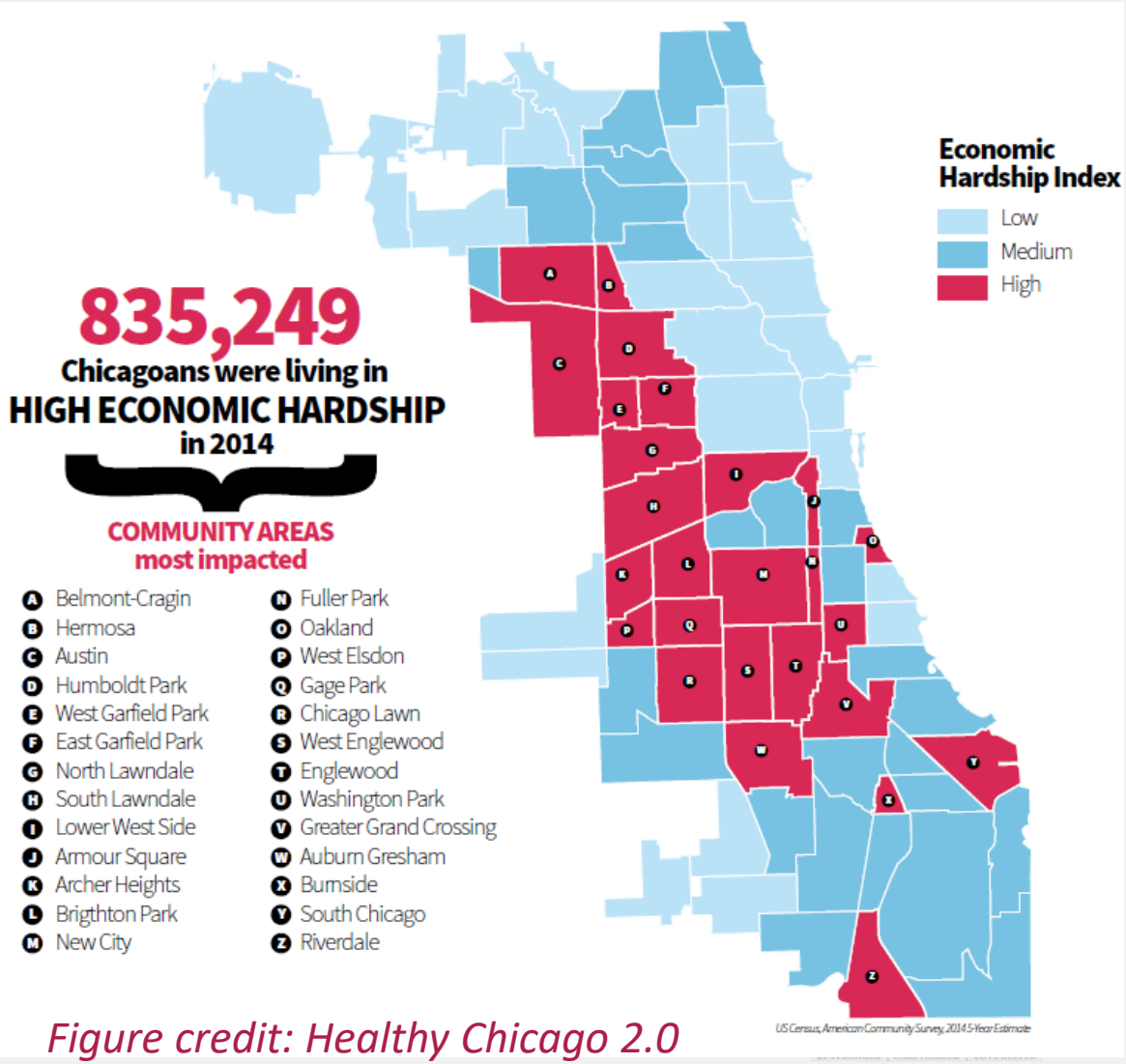


Figure credit: Healthy Chicago 2.0

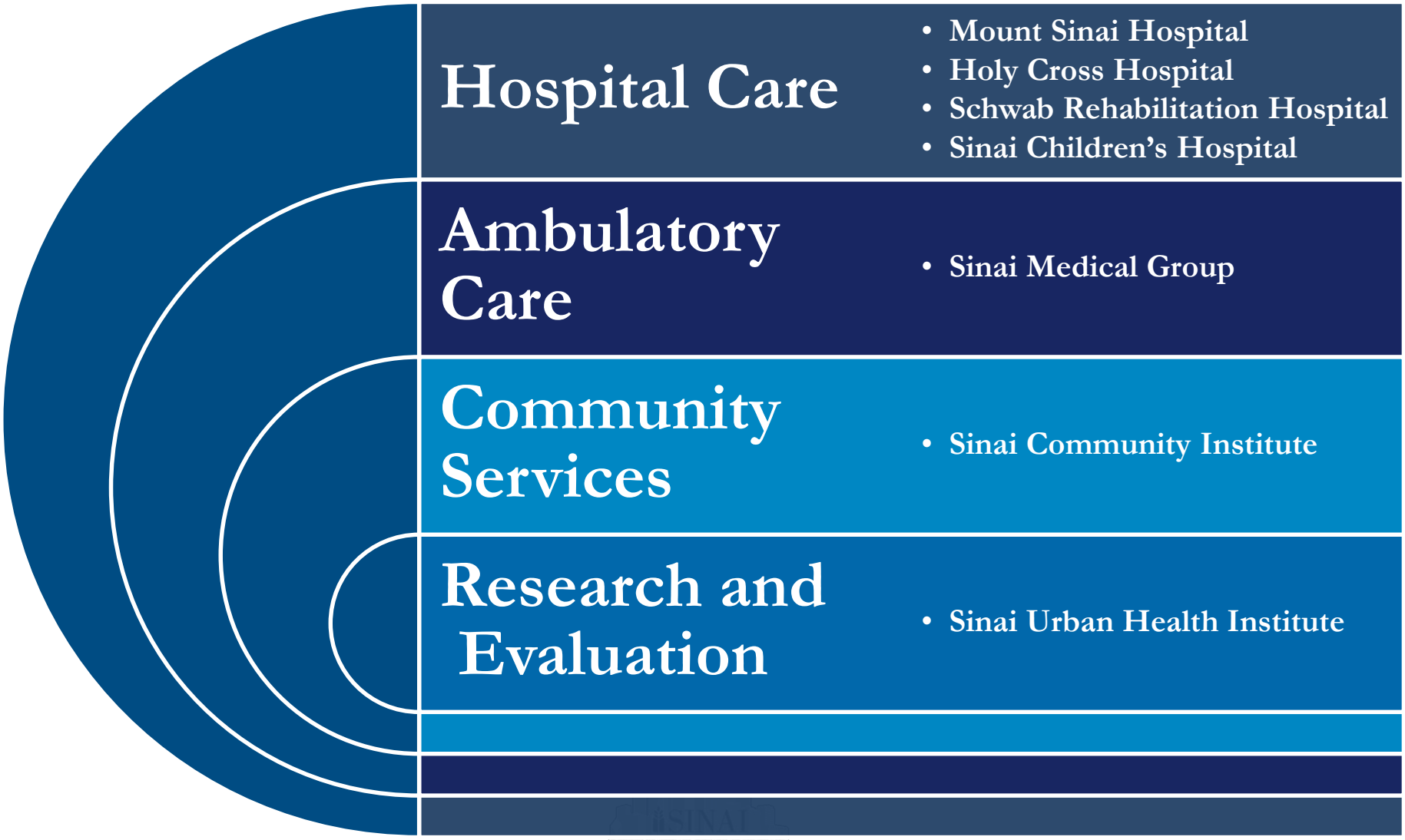
- Roughly 3 million persons
  - ~ 1/3 Black
  - ~ 1/3 Hispanic
  - ~ 1/3 White
- Low median household income= $46,877
- Among most segregated US cities
- Poverty concentrated on the west and south sides

Sinai Health System: Largest Safety Net System in Chicago

As one of the 325 **America's Essential Hospital** members, we:

1. Are ***vital*** to our communities, economically and socially challenged communities in West and South Chicago
2. Provide ***essential*** primary care through trauma care, disaster response, health professional training, research, public health programs, and other services
3. ***Innovate and adapt*** to lead the broader health care community toward more effective and efficient care

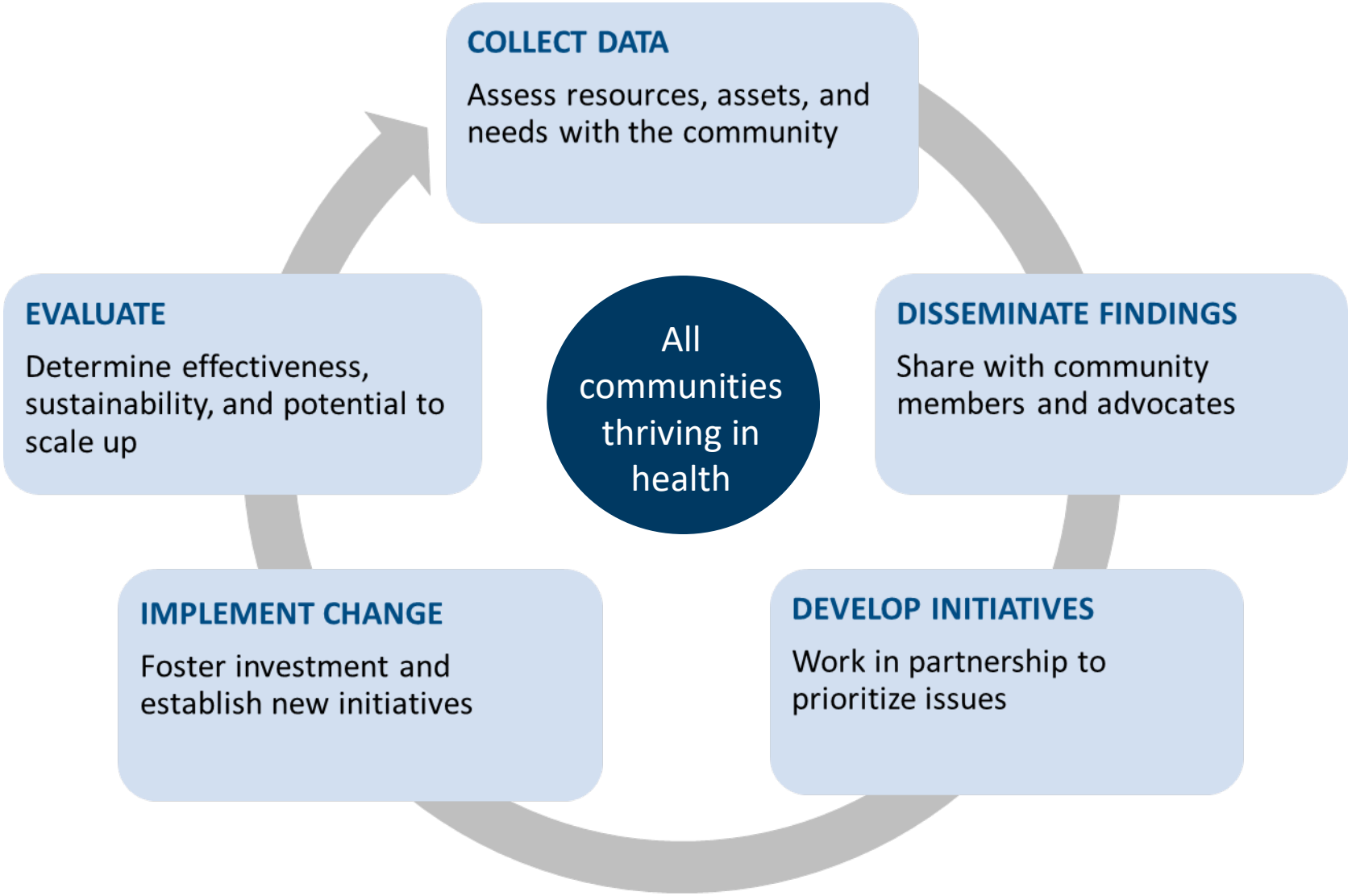
Sinai Health System



Sinai Urban Health Institute: Who We Are

- Leaders in ***development, implementation*** *and* ***evaluation of innovative approaches to population health***
- Committed to promoting health via
  - ***Community partnership***
  - ***Data-driven research***
  - ***Innovative health interventions***
- Holistic in our approach, recognizing health that extends beyond hospital walls – **We meet people *where they are***

Sinai Urban Health Institute: Our Model



The Problem

Urban Health Care Situation

1. Serious **mortality and health disparities persist** in Chicago's communities and nationally

2. **Disparities relate to race, education, income** and other adverse social and environmental determinants

3. **Limited access to quality care**, **barriers navigating health systems**, and **unmet health and social needs** affect well-being

4. Essential health systems are **disproportionately affected financially** by:
   - high readmission rates
   - lack of preventive care
   - low patient engagement
   - overuse of emergency health services

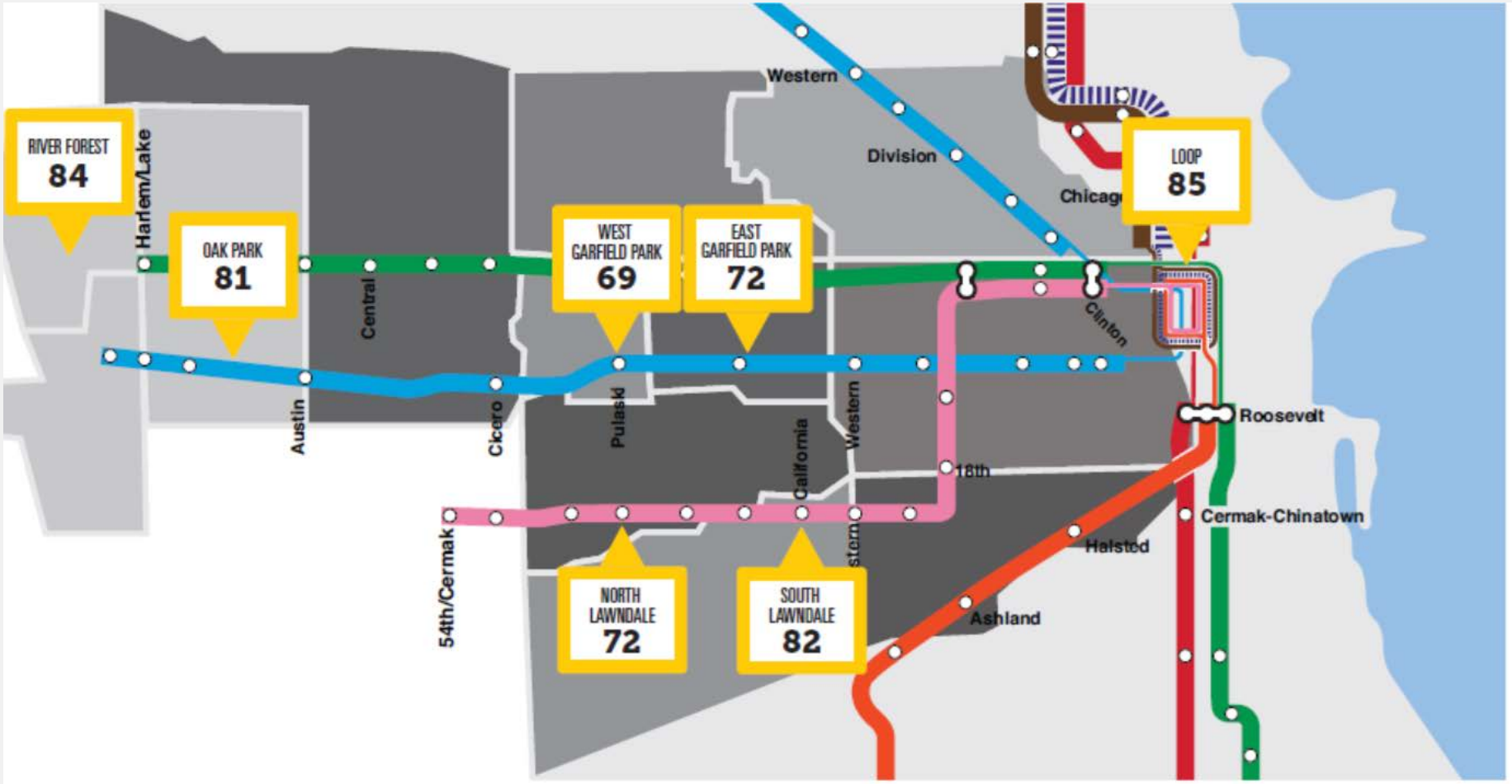
J. Racial and Ethnic Health Disparities
DOI 10.1007/s40615-014-0052-0

Black:White Health Disparities in the United States and Chicago: 1990–2010

Bijou Hunt · Steve Whitman

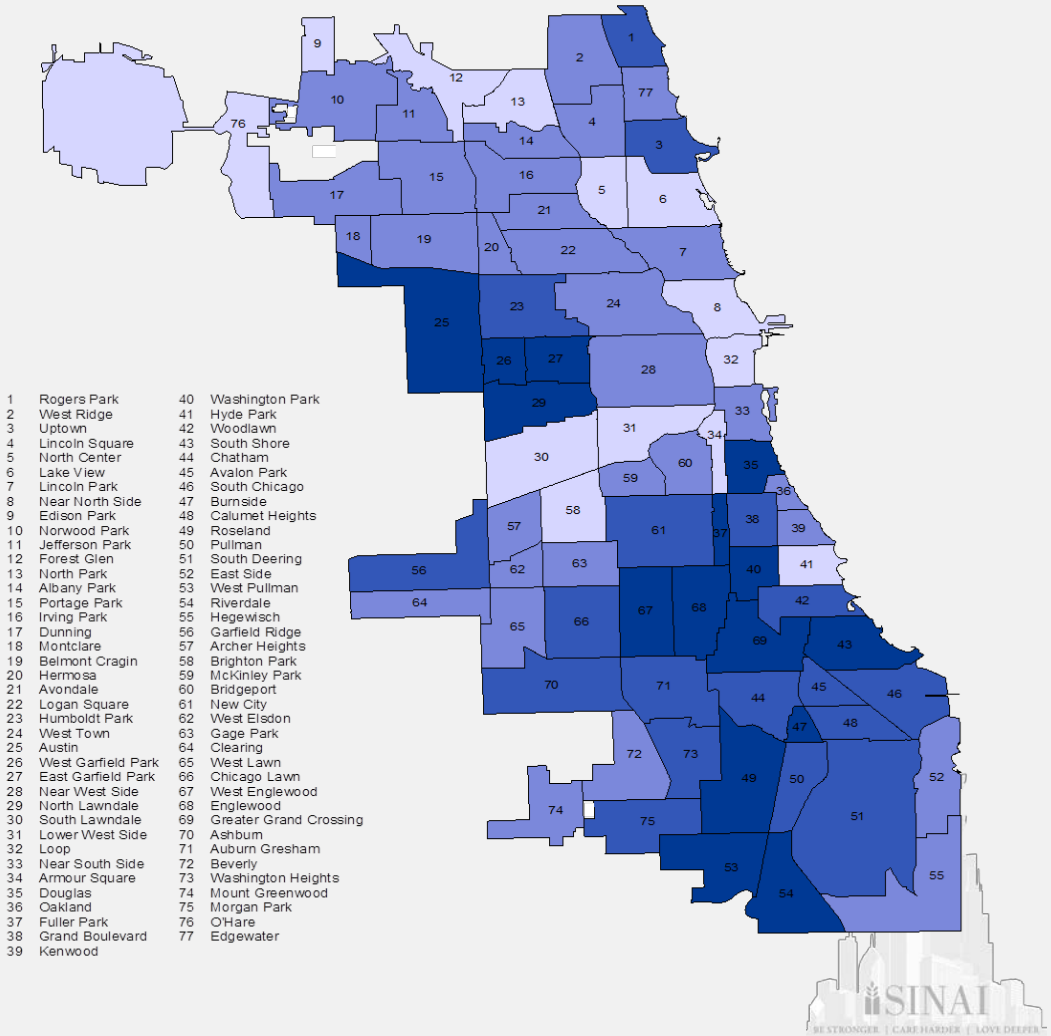
Results Disparities between non-Hispanic Black and non-Hispanic White populations widened for 8 of the 17 health status indicators examined for the USA (6 significantly), whereas in Chicago the majority of disparities widened (9 of 17, 4 significantly). The mortality gap is responsible for more than 60,000 excess Black deaths per year in the USA. *Conclusions* Despite substantial effort and funds aimed at meeting the Healthy People 2010 goal of eliminating health disparities, minimal progress has been made.

Our Local Situation:
16-Year Life Expectancy Gap Across L Stops



Reference: West Side Total Health Collaborative, *What We Heard. Coming Together to Improve Health and Wellness on the West Side,* July 2017 Update, p 4.

Our Local Situation:
SUHI Analysis of Chicago Life Expectancy Gap



Life Expectancy (in years)

- Fourth Quartile (68 - 72)
- Third Quartile (73 - 76)
- Second Quartile (77 - 80)
- First Quartile (81 - 84)

Chicago Life Expectancy: 77

U.S. Life Expectancy: 78

Map Source: Sinai Health System, 2012 . Data Source: Chicago Department of Public Health, Vital Records 2005-2007

www.sinaisurvey.org

Apps | Sinai Outlook | Sinai Portal | Data Sources | Sinai Intranet | American FactFinder | Payflex | Statistical tests in St... | Statistical Tests in SAS | Sinai Password Reset

Create a WiX site!

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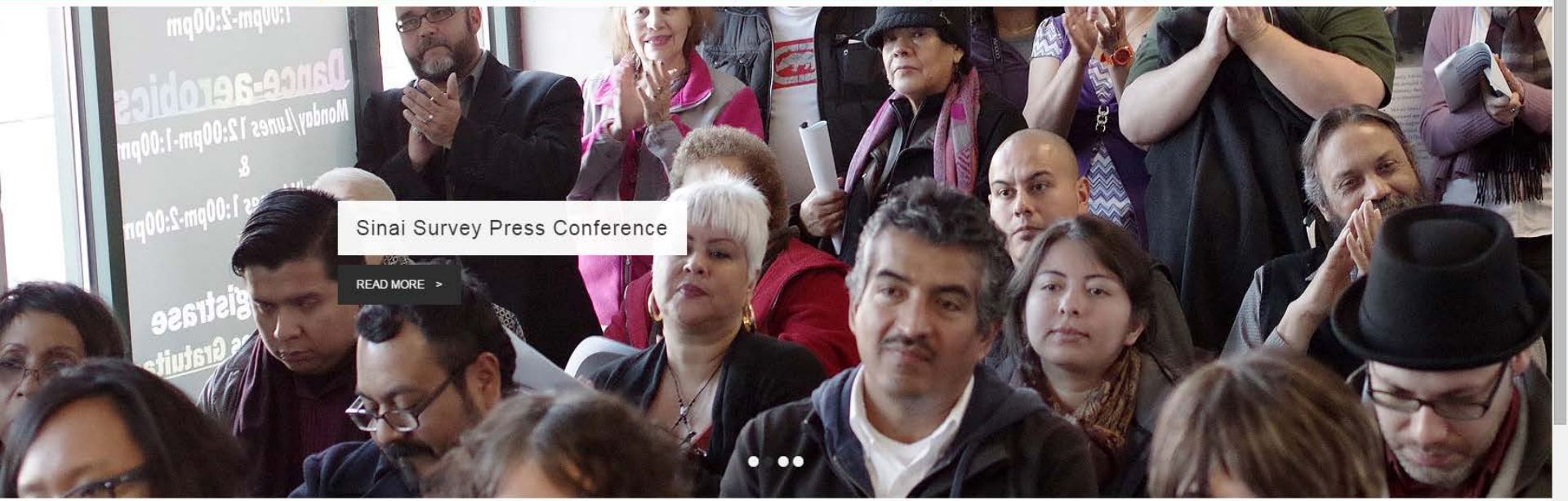
A proud member of Sinai Health System

SINAI COMMUNITY HEALTH SURVEY

HOME | ABOUT THE SURVEY | COMMUNITY ENGAGEMENT | FOR SURVEY PARTICIPANTS | RESULTS AND INTERVENTIONS | CONTACT



Sinai Community Health Survey

Combating Disparities with Local Data

The Sinai Urban Health Institute, along with several community partners, is conducting a survey in 9 diverse Chicago communities. The purpose of the survey is to:

1. Document the health status of Chicago communities

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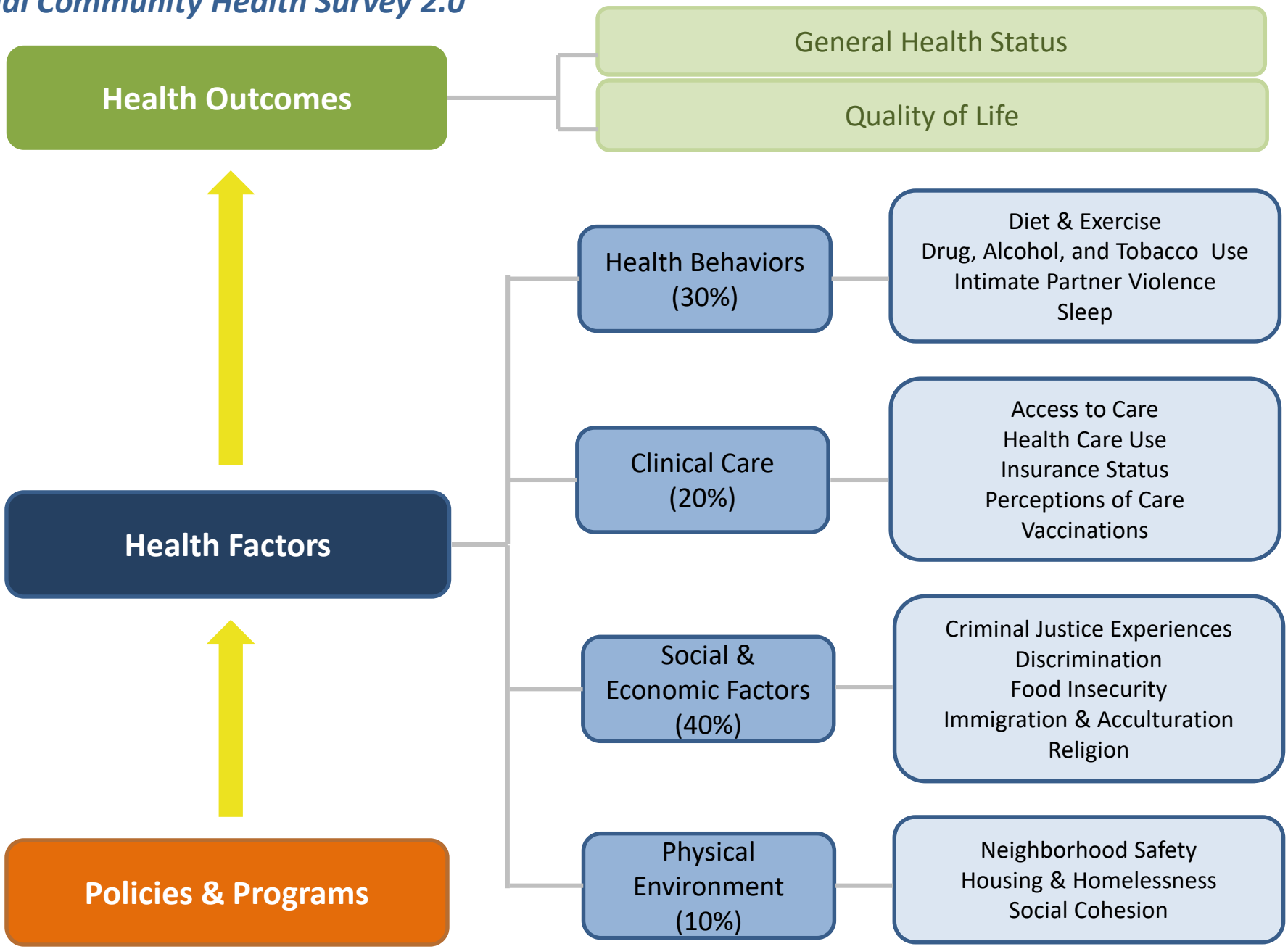
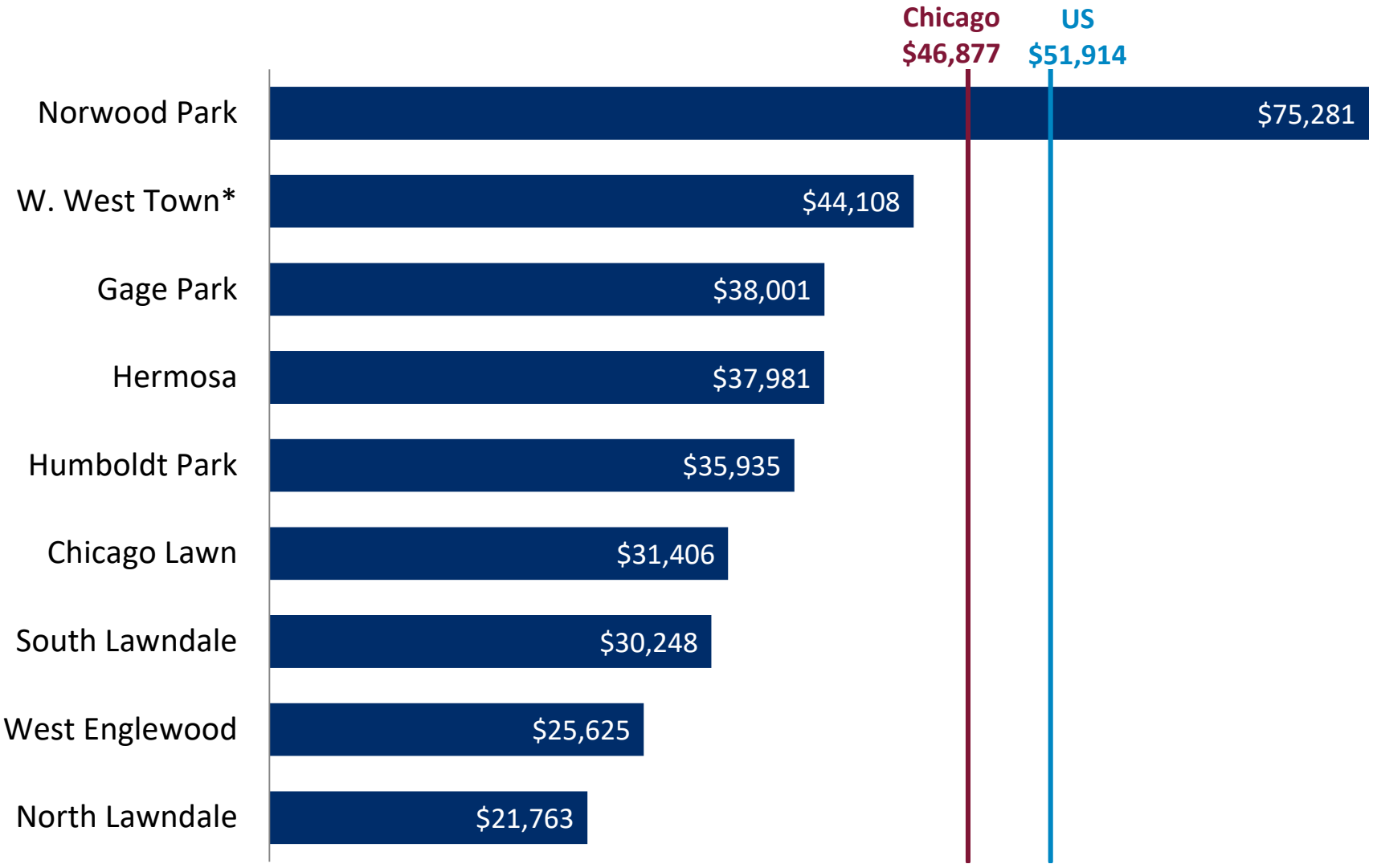
Sinai Community Health Survey 2.0



Full topic list available at www.sinaisurvey.org

Adapted County Health Rankings model

Low Income Associated with Poor Health in South and West Sides of Chicago



Barriers to Healthy Eating in North Lawndale

This brief video explores barriers to healthy eating in North Lawndale, a predominantly African American community on the west side of Chicago.

PTSD in North Lawndale

SINAI COMMUNITY HEALTH SURVEY 2.0

What is Post-Traumatic Stress Disorder (PTSD)?

A disorder triggered by a terrifying experience, such as abuse, an assault, or witnessing a shooting

1 in 4 North Lawndale adults have current signs of PTSD

PTSD may:

Common signs

ANYONE can develop PTSD

What you can do

Contact a professional

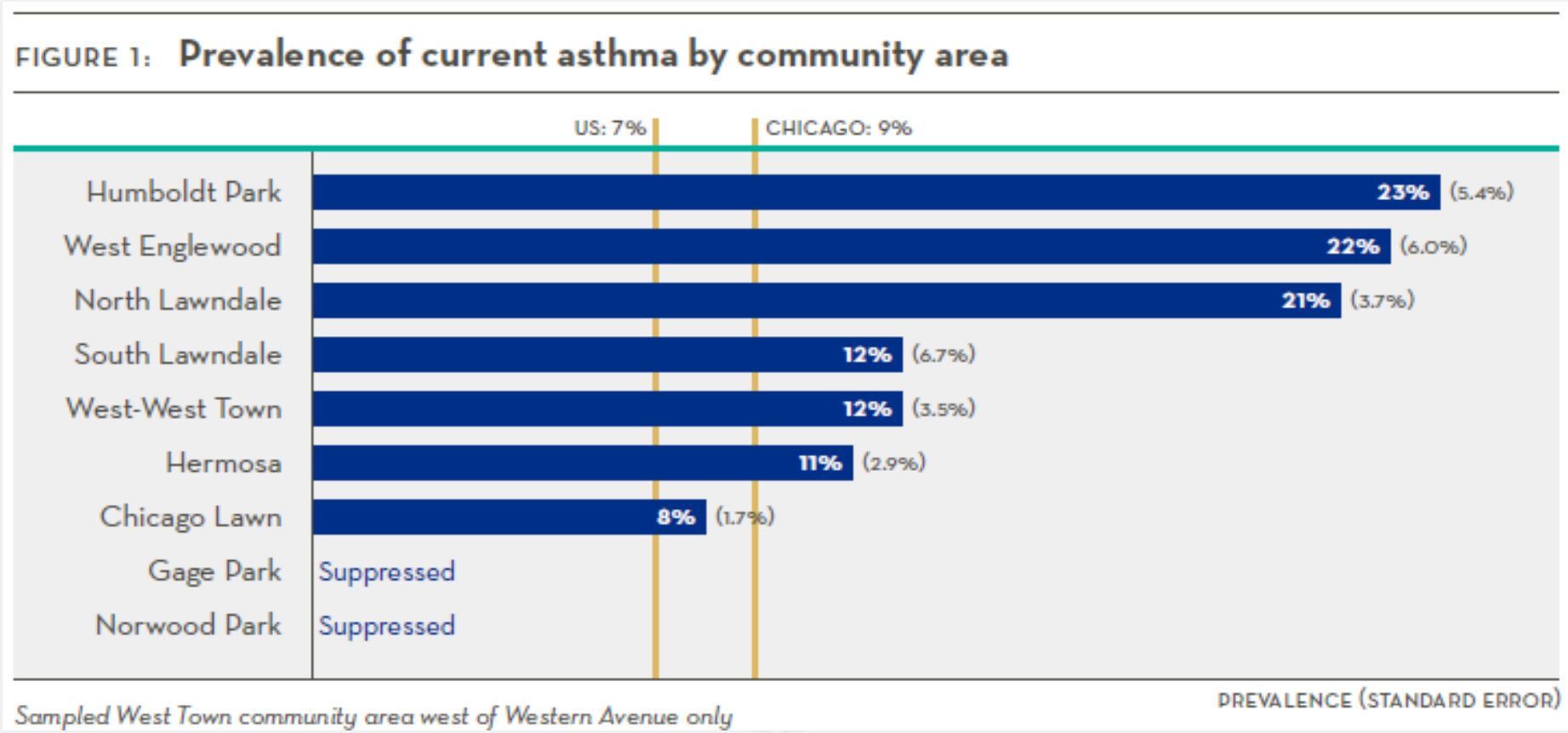
Mount Sinai Hospital
Behavioral Health
1500 S. Fairfield Ave
773-257-6672

Talk to a loved one, friend, or someone in your faith community

Suicidal thoughts?
Call 1-800-273-8255
or text 741741

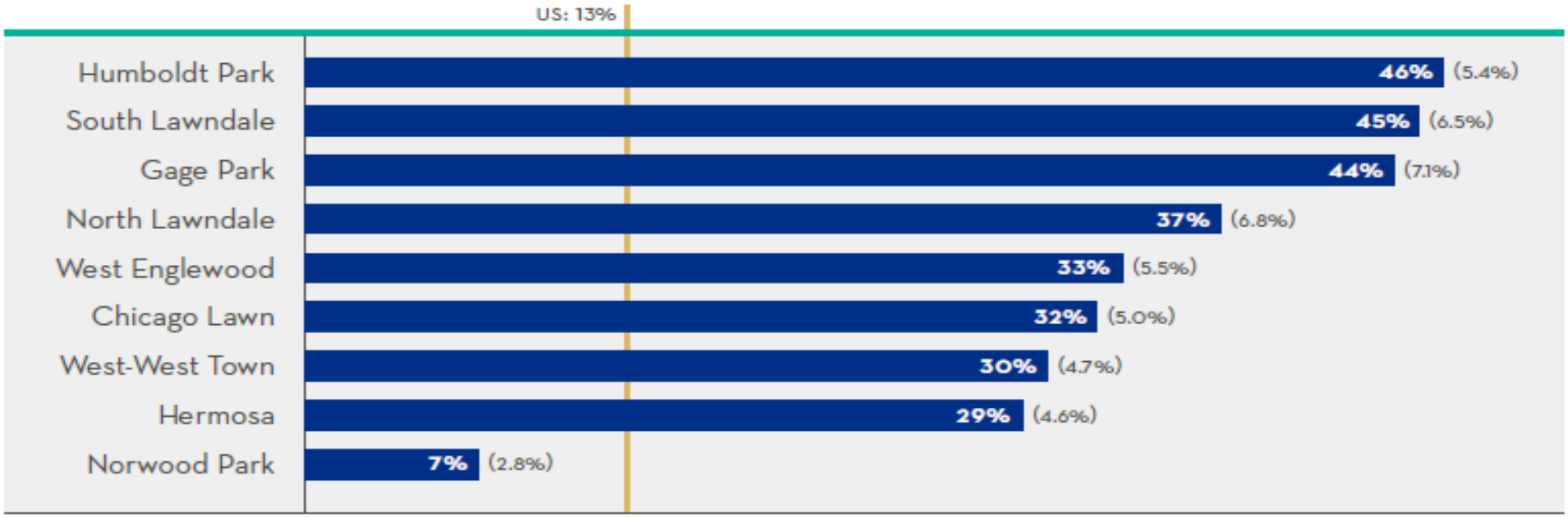
For more info on health in your community, visit www.sinaisurvey.org

In three communities, asthma affects 1 in 5 adults



In three communities, nearly 1 out of 2 households was food insecure

FIGURE 1: **Prevalence of household food insecurity in past year by community area**



Sampled West Town community area west of Western Avenue only

PREVALENCE (STANDARD ERROR)

Sinai Survey 2.0: Takeaways

- Important differences in community health status

Health needs to be tackled neighborhood by neighborhood

- Alarming health inequities continue to exist and demand attention

Helping all individuals attain optimal health requires understanding of social factors that impact health

The Solution

Community Health Workers

Frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served

American Public Health Association CHW Section: http://apha.org/apha-communities/member-sections/community-health-workers

Some other names…

- CASE MANAGER
- COACH
- COMMUNITY ADVOCATE
- COMMUNITY CARE COORDINATOR
- COMMUNITY ENGAGEMENT SPECIALIST
- COMMUNITY HEALTH ADVISOR
- COMMUNITY HEALTH ADVOCATE
- COMMUNITY HEALTH AIDE
- COMMUNITY HEALTH EDUCATOR
- COMMUNITY HEALTH PROMOTER
- COMMUNITY HEALTH REPRESENTATIVE
- COMMUNITY HEALTH WORKER
- COMMUNITY ORGANIZER
- COMMUNITY WORKER
- COMPAÑEROS EN SALUD
- FAMILY HEALTH ADVOCATE
- HEALTH WORKER
- HELPER/SUPPORTER
- HOME VISITOR/SUPPORT WORKER
- LAY HEALTH ADVISOR
- LAY HEALTH EDUCATOR
- OUTREACH SPECIALIST
- OUTREACH WORKER
- PARENT EDUCATOR
- PARENT SUPPORT PARTNER
- PATIENT ADVOCATE
- PATIENT EDUCATOR
- PATIENT NAVIGATOR
- PEER COUNSELOR
- PEER HEALTH ADVISORY
- PEER LEADER
- PEER SUPPORT SPECIALIST
- PEER/TEEN EDUCATOR
- PROMOTOR(A) DE SALUD
- PUBLIC HEALTH AIDE
- RESEARCHER

Why CHWs?

- Research has proven effectiveness of CHWs in reducing costs, improving outcomes and increasing client engagement and satisfaction
- CHWs address health and social inequities, bridging gap between communities/individuals and service providers
- CHWs increase knowledge and self-sufficiency through outreach, navigation, education, informal counseling, social support and advocacy

Sinai Community Health Initiatives: CHW Model

"…It may be the very fact that CHWs are not 'experts' (i.e., that they most likely do *not* differ in terms of education, power, or social capital from their clients) that makes them most effective." Arvey AR, Fernandez ME AJPH: 102 (9).

- CHWs are agents of change who are hired from the target community
  - Knowledge of the community and passion to help others
- Extensive multi-dimensional training that includes cultural humility, motivational interviewing, goal-setting, disease management, etc.
- CHW interventions tailor to people's health-related needs
- Hire the right people, train them effectively, supervise them appropriately, and CHWs can be transformative

SUHI CHW Interventions - Overview

- Implementing and evaluating impact of CHW-led interventions since 2000
- SUHI CHW Interventions (past and current)
  - Asthma (child and adult)
  - Breast Health
  - Diabetes
- Continued efforts to test CHW role in new ways, scale effective programs, and integrate
- Amassed considerable expertise in hiring, training, supervision of CHWs

Sinai Asthma Initiatives: Overview
Why Asthma?

25%

Percentage of African American children in Chicago who have asthma, roughly 1 in 4. [1-2]

9x

The number of visits to the ED by African American children as compared to white children in Chicago.[3]

35%

The number of Chicago's children who had missed at least 1 day of school due to asthma in the past two weeks, when surveyed. [6]

48%

Percentage of African American children living in Westside Chicago communities who live with a smoker. [1-2]

2x

The prevalence of asthma in Chicago's African American children as compared to the rest of the US. This is double the national average. [1-2]

6x

The number of hospitalizations of African American children compared to their white counterparts. [3]

3 in 4

The number of students with asthma who do not have documentation on file with their schools, and that means they cannot receive formal support to manage asthma attacks at school. [5]

80%

Percentage of African American children on the West side who had no controller medication in the home. [1-2]

8x

The rate at which African American people in Chicago with asthma die as compared to their white counterparts. [4]

60%

Percentage of African American children on the West side who had been to the ED due to asthma in the past year. [1-2]

Sinai Asthma Initiatives: Overview

- Since 2000, Sinai/SUHI has implemented a series of 9 CHW-led interventions
- Rationale
  - High prevalence, morbidity and mortality in communities Sinai serves
- Goals:
  - (1) decrease asthma-related morbidity and mortality;
  - (2) improve quality of life;
  - (3) decrease costs
- CHW-led, intense, individualized, home-based
  - 3-12 months
  - Focus on improving medical management and reducing triggers

Sinai Asthma Initiatives: Building the Model

Program/Study Name	Population	Years	Funder	Published
Pediatric Asthma Intervention 1	Children coming to ED, hospitalized or seeing pulmonologist	2000-2002	Michael Reese Health Trust	Yes
Pediatric Asthma Intervention 2	African American children on west side	2004-2006	Illinois Dept. of Pub. Hlth.	Yes
Controlling Pediatric Asthma through Collaboration & Educ.	Children in 6 Illinois communities with high asthma hosp. rates	2006-2009	Illinois Dept. of Pub. Hlth.	Yes (book chapter)
Healthy Home, Healthy Child	Children on west side with poorly controlled asthma	2008-2011	CDC	Yes (book chapter)
Helping Children Breathe & Thrive in Chicago Public Housing	Children with poorly controlled asthma in 6 CHA developments	2011-2013	HUD	Yes

Sinai Asthma Initiatives: Building the Model

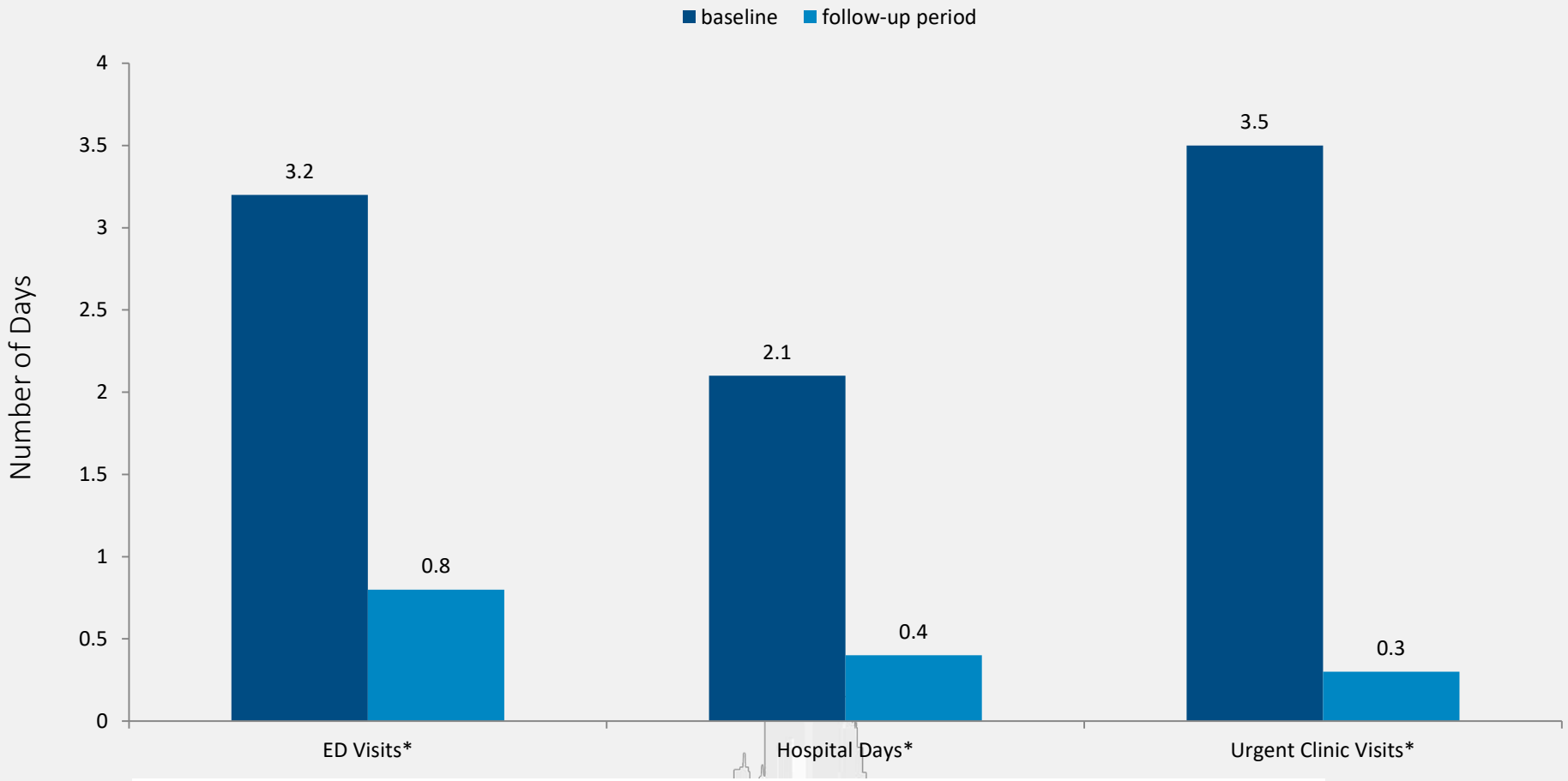
Program/Study Name	Population	Years	Funder	Published
Helping Chicago's Westside Adults Breathe & Thrive	Adults with poorly controlled asthma on the west and southwest side	2013-2016	HUD	Yes (methods)
HCWABT – Long-term effectiveness	Adults with poorly controlled asthma on the west and southwest side	2015-2018	HUD	n/a
Asthma CarePartners	Children and adults with poorly controlled asthma, referred by health plan	2011-present	Various	No
CHICAGO Plan	Children 5-11 years visiting 6 area EDs for asthma	2014-2017	PCORI	Yes (results forthcoming)

Asthma CarePartners (2011-present): An Innovative Care Management Collaboration

- Contractual partnerships to embed CHW model into healthcare delivery
- Serves patients/members (children and adults) with moderate to severe uncontrolled asthma
- 3-12 month CHW-centered home visit intervention
  - Asthma education, home environmental assessment, medical device training
  - Development and teaching of Asthma Action Plan
  - Regular assessments of asthma control via ACT
- Consistent and thorough evaluation

ACP FHN Outcomes: Health Resource Utilization

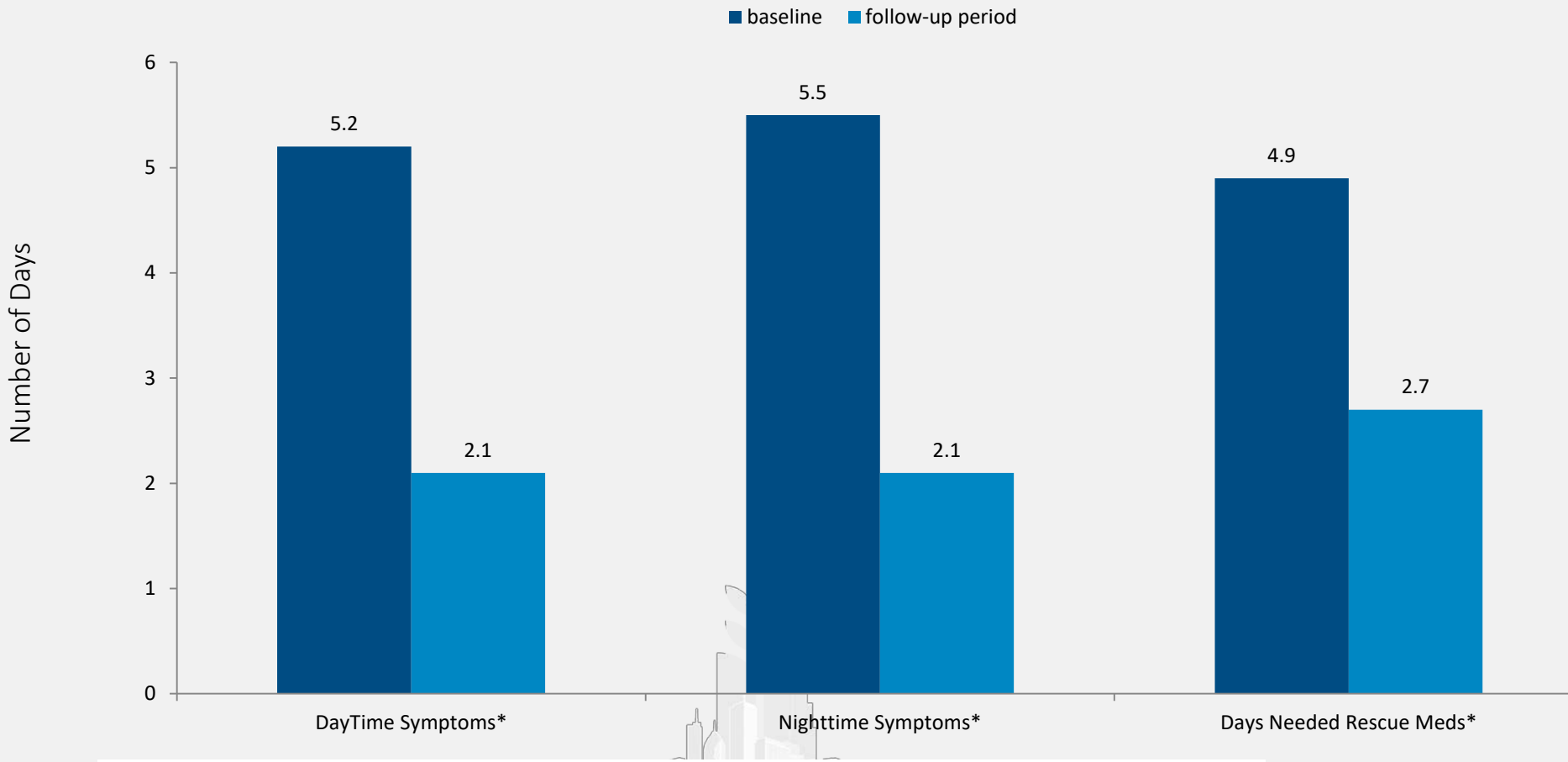
Figure 1: Asthma-related Health Resource Utilization in the Year Prior to and During the Intervention (n=156)



*Statistically significant difference found ($p<0.05$) using Wilcoxon signed-rank non-parametric test

ACP FHN Outcomes: Symptom Frequency

Figure 2: Symptom Frequency in the past 2 weeks at Baseline vs. Average During Follow-up Year (n=157)



*Statistically significant difference found ($p<0.05$) using Wilcoxon signed-rank non-parametric test

Sinai Asthma Initiatives: Key Lessons

- CHWs are immensely effective in establishing relationships of trust with the families they serve
- Issues that impede on a family's ability to manage asthma are complex and often require varying areas of expertise
- Consistent evidence of improved asthma control
  - Asthma ED visits and hospitalizations ↓ by 50-80%
  - ↓ in symptom frequency
  - Improved quality of life
- CHW approach is associated with significant cost-savings
  - $3-$8 saved per dollar spent

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Impact on Asthma Quality Indicators

- CHW is liaison between client and provider
- CHW supports client in obtaining proper medications
- Medication education, monitoring and support regarding adherence are key elements of the program
- Asthma Control Test (ACT)
- Asthma Action Plan signed by PCP
- Asthma education
- Reduced asthma-related admissions and emergency department visits
- Readmission rates for asthma reduced

To Whom It May Concern:

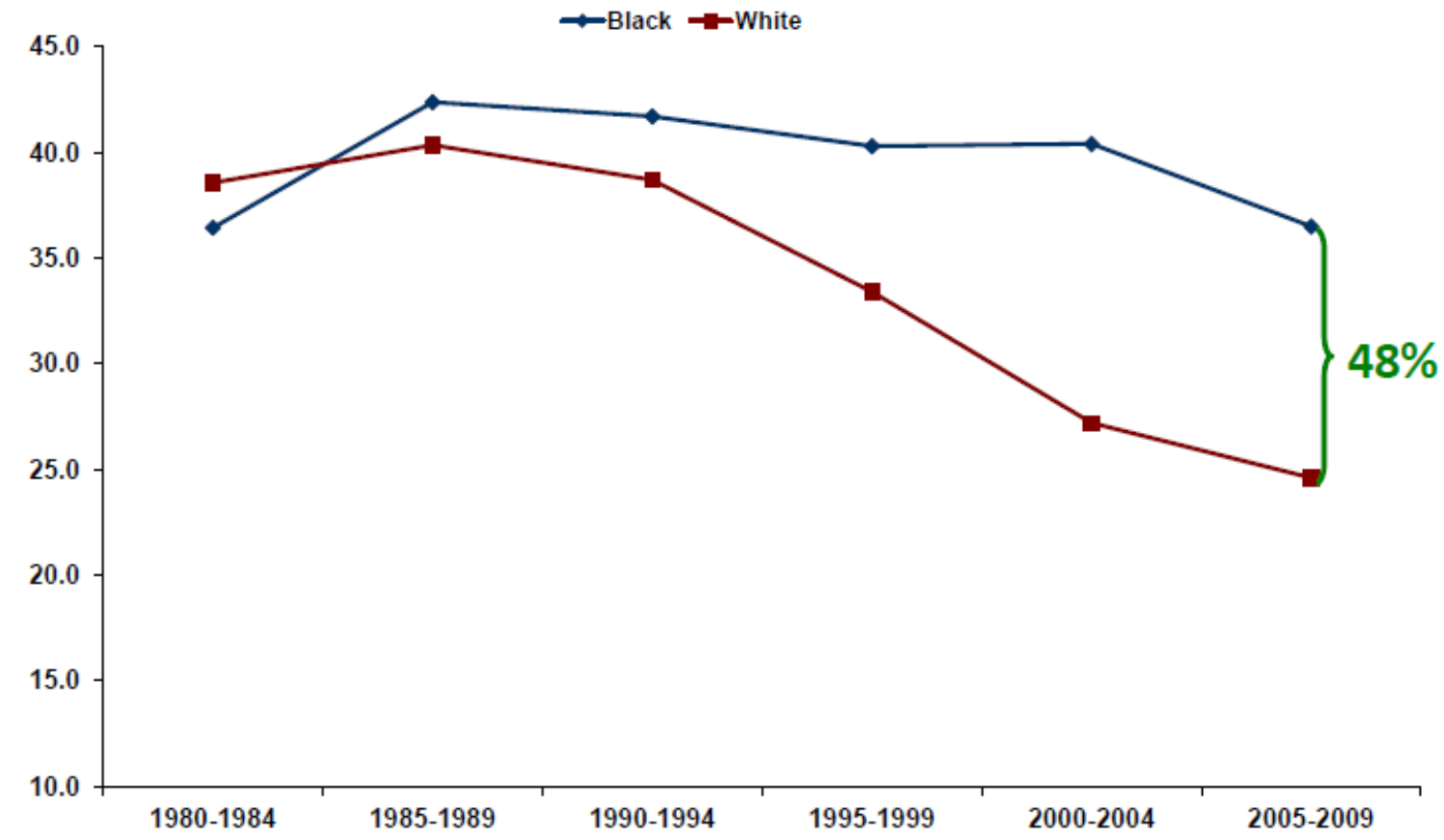
My name is _____. I am a first year participant of Mount Sinai's Asthma Intervention Program, under the instruction of Ms. Kim Artis. The purpose of this letter is to inform you how much of a positive impact this program and Ms. Artis has had on my life and well-being.

To begin, I have been an asthma patient since the age of 18 months. I am 37 years old now. In that time, I have learned a great deal about my condition, but it wasn't until Ms. Artis began conducting home visits with me that I learned the true meaning of controlling my asthma. On day one, Ms. Artis enlightened me on the fact that some of my biggest triggers were literally "right under my nose." Electronic air fresheners placed throughout my home were silently aggravating my asthma, so Ms. Artis challenged me to remove them, and note the difference in my symptoms, and episodes of wheezing. I followed her advice, and by our next visit, I was able to document a significant change. I have not used my plug-in air fresheners since then.

Ms. Artis also demonstrated the importance of using my inhaled medications and spacer correctly. She took the time to demonstrate the process step by step, then had me to do the same to insure that all or most of my control and rescue medications were reaching my lungs. One of the most intriguing lessons she taught me is how to make my own cleaners and disinfectants from everyday household items such as white and cider vinegar and baking soda. Not only are the cleaners environmentally friendly and easy to create, they are also extremely economical. I no longer need to wear a mask during house cleaning. Ms. Artis explained the importance of reducing and eliminating dust, as well as proper ventilation, and laundering pillowcases, sheets, and other bedding.

I attribute my new found knowledge of asthma care and control to Ms. Artis. In addition to having a penchant for professionalism, punctuality and accuracy, she also displays compassion for humankind. Her vibrant personality, infectious smile, and ability to understand and relate to her clients is just a microcosm of the truly wonderful person and instructor she is. I have a fervent, unequivocal

Sinai Breast Health Navigation: Overview
Why Breast Health?



Age-Adjusted Female Breast Cancer Mortality for Chicago, Per 100,000 Population

Prepared by The Sinai Urban Health Institute

CHWs and Breast Health Navigation

Helping Her Live Community-Based Navigation (since 2007)

- Goal: Improve breast cancer outcomes and reduce disparities among women in west and southwest sides of Chicago
- Strategy: CHWs provide outreach, education and navigation in community settings
- Outcomes: Educated 15,000+ women, navigated 4,300+ women to mammograms
- Serves as model for other organizations in Chicago and nationally

CHWs and Breast Health Navigation

Mount Sinai Hospital Clinical Navigation Program (since 2005)

- **Goal:** Navigate women through diagnosis and treatment
- **Strategy:** Patient navigators (i.e., CHWs) monitor mammograms and follow-up on abnormal mammograms. Navigate through diagnostic and treatment process.
- **Outcomes:** Monitored 91,000+ mammograms, facilitated follow-up for 10,000+ women with abnormal images, assisted 300+ women with obtaining cancer treatment.
- **Key Outcome**: Prior to 2005, 30% of women with abnormal mammogram did not return for further diagnostics or treatment; has been reduced to < 5%

CHWs and Diabetes Management

Controlling Hyperglycemia Among Minority Populations (CHAMP) (2015-2017)

- Randomized control trial of mHealth and CHW interventions among minority adults with diabetes to:
  - Decrease uncontrolled hyperglycemia
  - Increase use of primary care
  - Increase diabetes knowledge and self-management behaviors
- CHAMP builds upon prior diabetes interventions
  - Lawndale Diabetes Project (2011 – 2015)
  - Block by Block North Lawndale Diabetes Action Program (2009-2011)

Diabetes Continuous Glucose Monitoring Project (2018-?)

- CHWs integrated into Diabetes clinic
- Conduct HRA screening which include SDOH; follow-up via home visits and connect to resources to address SDOH

Do CHWs work – other evidence

- Published literature and systematic reviews support the utility of CHWs in improving health status and reducing cost
- Cochrane Reviews, 2005 and 2010
  - Positive associations between CHW interventions and childhood immunization, some infectious diseases, improving TB treatment outcomes, breastfeeding promotion, and reducing child morbidity and mortality when compared to usual care

Viswanathan et al., Med Care, 2010;48(9):792-808. Lewin et al., Cochrane Database Syst Rev. 2005;25(1):CD004015. Lewin et al., Cochrane Database Syst Rev. 2010;17(3): CD004015.

Community Health Workers

The Community Preventive Services Task Force (CPSTF) recommends interventions that engage community health workers for the following.

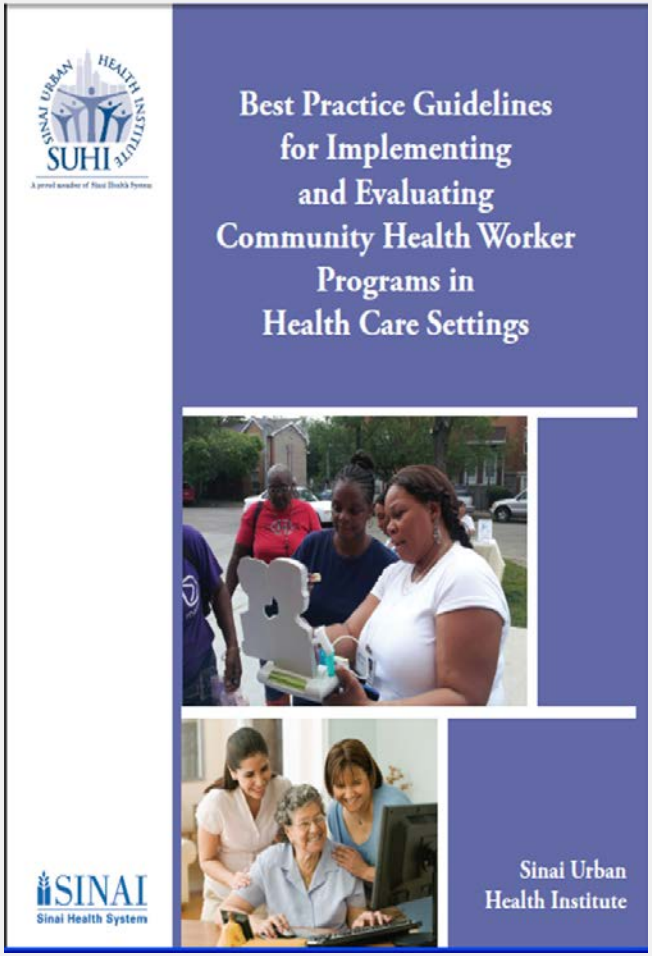
- Cardiovascular Disease Prevention
  - Recommended based on strong evidence of effectiveness in improving blood pressure and cholesterol when community health workers are engaged in a team-based care model.
  - Cost-effective
- Diabetes Prevention
  - Recommended based on sufficient evidence of effectiveness in improving blood glucose level control and weight-related outcomes among people at increased risk for type 2 diabetes.
  - Cost-effective
- Diabetes Management
  - Recommended based on strong evidence of effectiveness in improving blood glucose level and lipid control and reducing health care use among patients who have type 2 diabetes.
  - Cost-effective

Scaling, Integration and Expansion of CHW model

CROWD

Center for CHW Research, Outcomes and Workforce Development

- SUHI has amassed wealth of information on how best to:
  - Hire, train, and supervise CHWs
  - Integrate CHWs into health care systems
- ***CHW Best Practice Guidelines***[1] report
- **Nationally recognized** expert in implementation and evaluation of the CHW Model
- CHW **consulting and training center**
  - Direct service and consulting



1. Gutierrez Kapheim M and Campbell J. Best Practice Guidelines for Implementing and Evaluating Community Health Worker Programs in Health Care Settings. Chicago, IL: Sinai Urban Health Institute, January 2014.

Taking CHW model in new directions

- Further integration within Sinai Health System
  - Diabetes Continuous Glucose Monitoring Project
  - Transitions of Care
    - Emergency Department
    - Inpatient
  - Primary care/health plans
    - Locate patients/members without health risk assessment or preventive services and connect them to care
- Building/Testing model in new areas
  - Primary prevention of lead poisoning
  - Mental Health
  - SDOH screening

Questions & Discussion

See: www.sinai.org/content/sinai-urban-health-institute-0

Or contact: Helen.Margellos@sinai.org

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