

Can a neighborhood-level housing initiative improve population-level health measures?: **Maybe!**



Deena Chisolm, PhD

Vice President for Health Services Research

Director, Center for Innovation in Pediatric Practice

The Abigail Wexner Research Institute at Nationwide Children's Hospital

Professor of Pediatrics and Public Health, The Ohio State University

@BeingDrDeena #PolicySummit



NATIONWIDE CHILDREN'S

When your child needs a hospital, everything matters.

About Nationwide Children's



MORE THAN
1.4 MILLION PATIENT
VISITS FROM ALL
**50 STATES AND
52 COUNTRIES**



Provide more than
**\$114 MILLION IN
CHARITY CARE**
and community benefit
services annually



THREE-TIME MAGNET
designation for nursing excellence



AMERICA'S LARGEST
neonatal network and provider of
inpatient pediatric surgeries*



The Research Institute at
Nationwide Children's Hospital
IS ONE OF THE TOP 10
NIH-funded freestanding
pediatric research facilities
in the U.S.



102,991 DONORS
raised more than
\$107.2 MILLION

ZERO HERO
Committed to achieving
zero preventable harm





EDUCATION



**WORKFORCE
DEVELOPMENT**



**SAFE & ACCESSIBLE
NEIGHBORHOODS**

**HEALTHY NEIGHBORHOODS
HEALTHY FAMILIES**



AFFORDABLE HOUSING



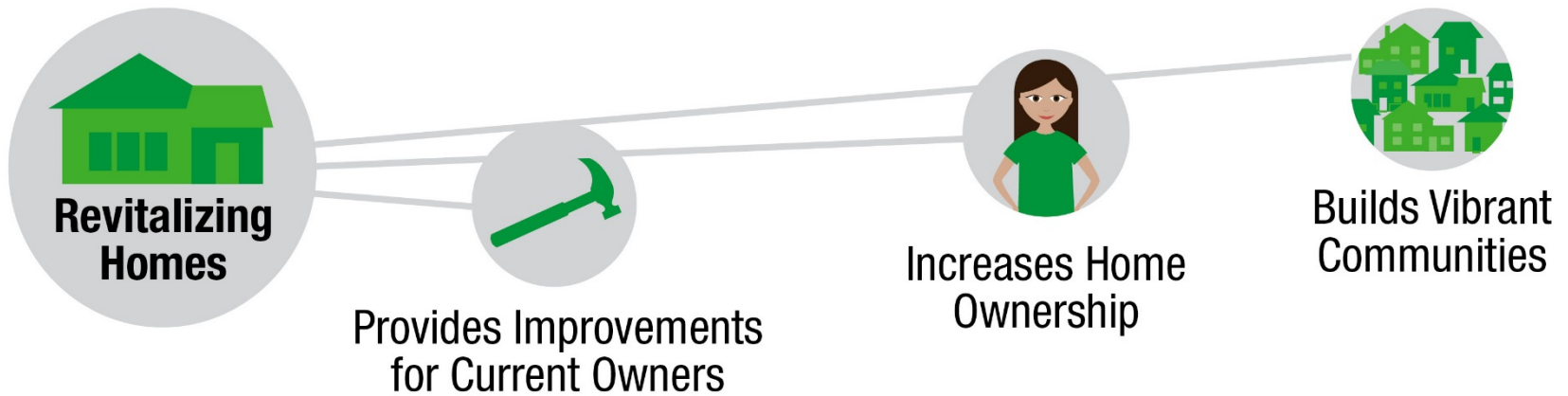
HEALTH & WELLNESS



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Healthy Homes

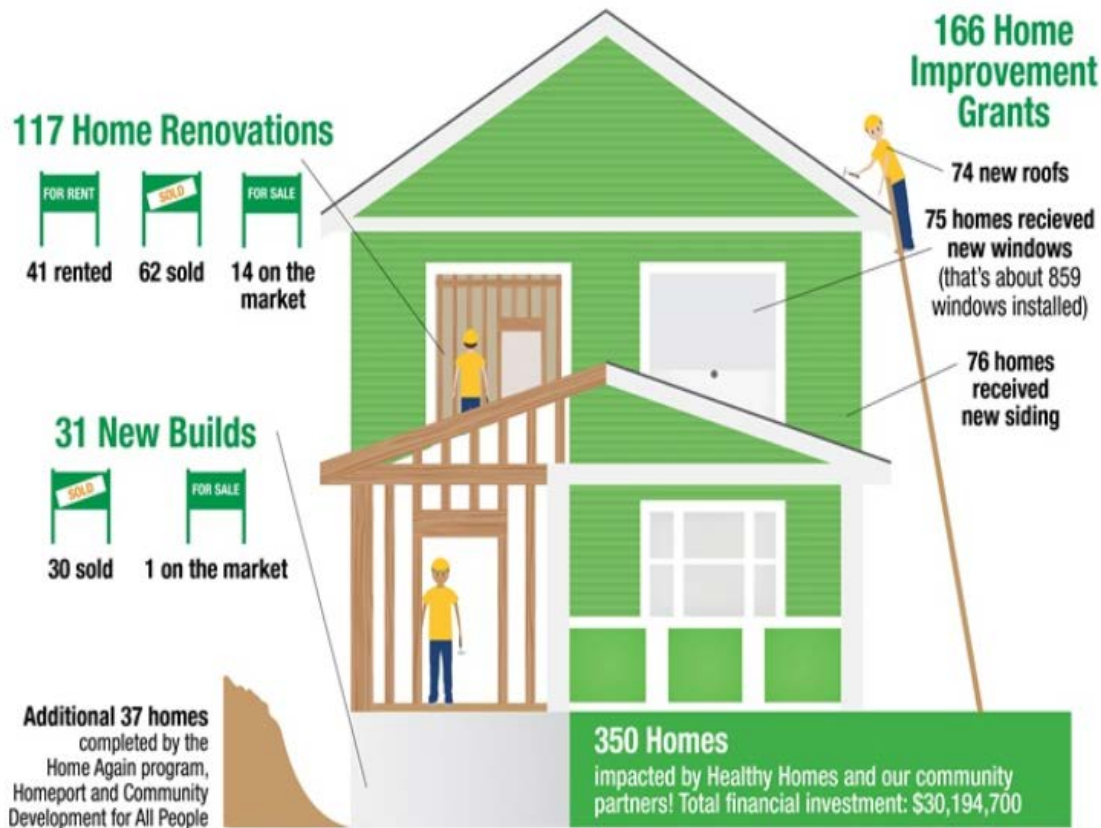


Improving the Neighborhood We Call Home

Healthy Homes

An affordable housing initiative aimed at revitalizing housing in the neighborhoods around Nationwide Children's. Focusing on blighted homes, Healthy Homes and its partners builds, rehabilitates and repairs homes.

Check out our progress from kick off in 2008 through today!



Our focus on partnerships and collaboration has fueled our effectiveness in our community. We are extremely grateful for our collaborators.



Healthy Homes



Before



After

Residences at Career Gateway

58

units of affordable housing
combined with onsite
workforce development
training



Healthy Neighborhoods, Healthy Families.

Financial Partners

- **Community Development for All People-** Community Housing Development Organization.
 - **City of Columbus-** Supports Healthy Homes financially with Homes Funds, Neighborhood Stabilization Funds (NSP), Land Bank Properties.
 - **United Way Of Central Ohio -** Supports Healthy Homes financially to promote housing renovation and home repair grants.
 - **Affordable Housing Trust-** Partner supports acquisition of properties and financial support.
 - **Franklin County Land Bank –** Partner supports the acquisition process and financial assistance.
 - **Southside Renaissance Partners–** Local investors committed to neighborhood improvements.
-

In-Kind Supporters

- **Turner Construction-** Over 100 volunteers annually support of the Healthy Homes-Home Repair Grant program.
- **Columbus Board of Realtors Community Volunteer Day-** Nearly 70 realtors participated in beautification efforts on Heyl Avenue.
- **United Way Community Care Day –** Representatives of GenNext participated in community day of volunteerism to beautify HNHF properties.
- **Keller Williams Realty Collaborative -**Over 130 realtors participated in an HNHF neighborhood clean-up and home beautification service day.
- **Wexner Service Corps–** Provided youth volunteers to landscape renovated properties.



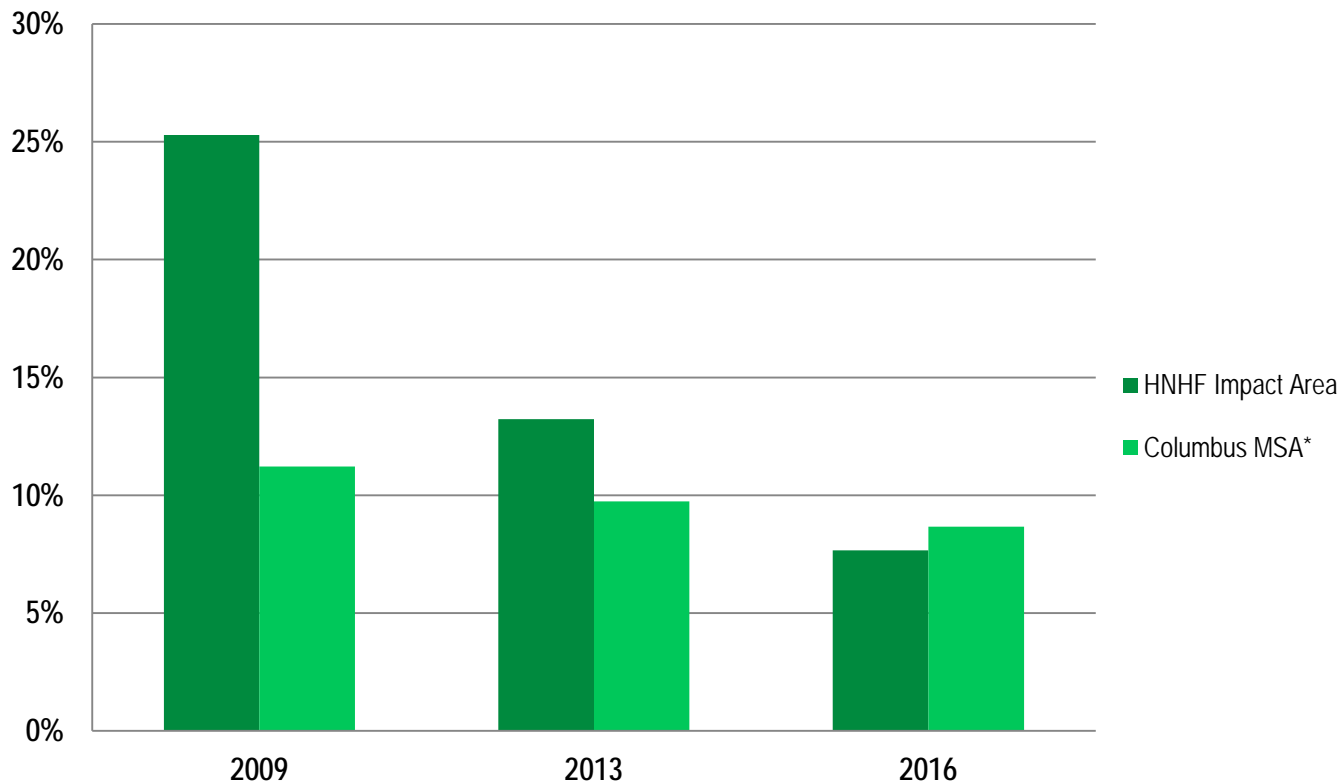
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Community Changes



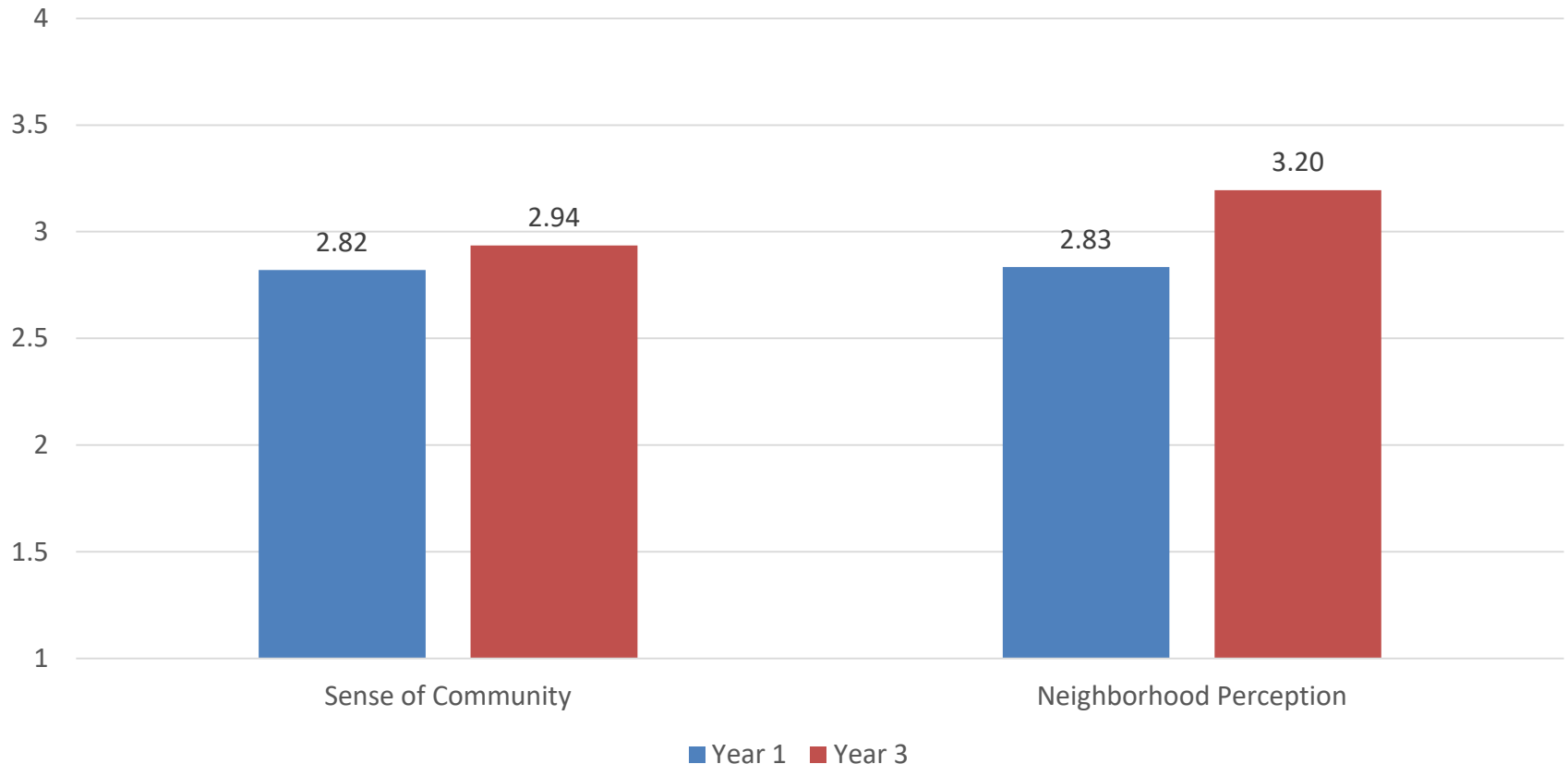
Vacancy Rate 2009 - 2016



*Source: American Community Survey 1-year Estimates for 2009, 2013, & 2015



Panel Survey of Community Perceptions



Preliminary Results: FoodNest Study

What have we
learned about
health?

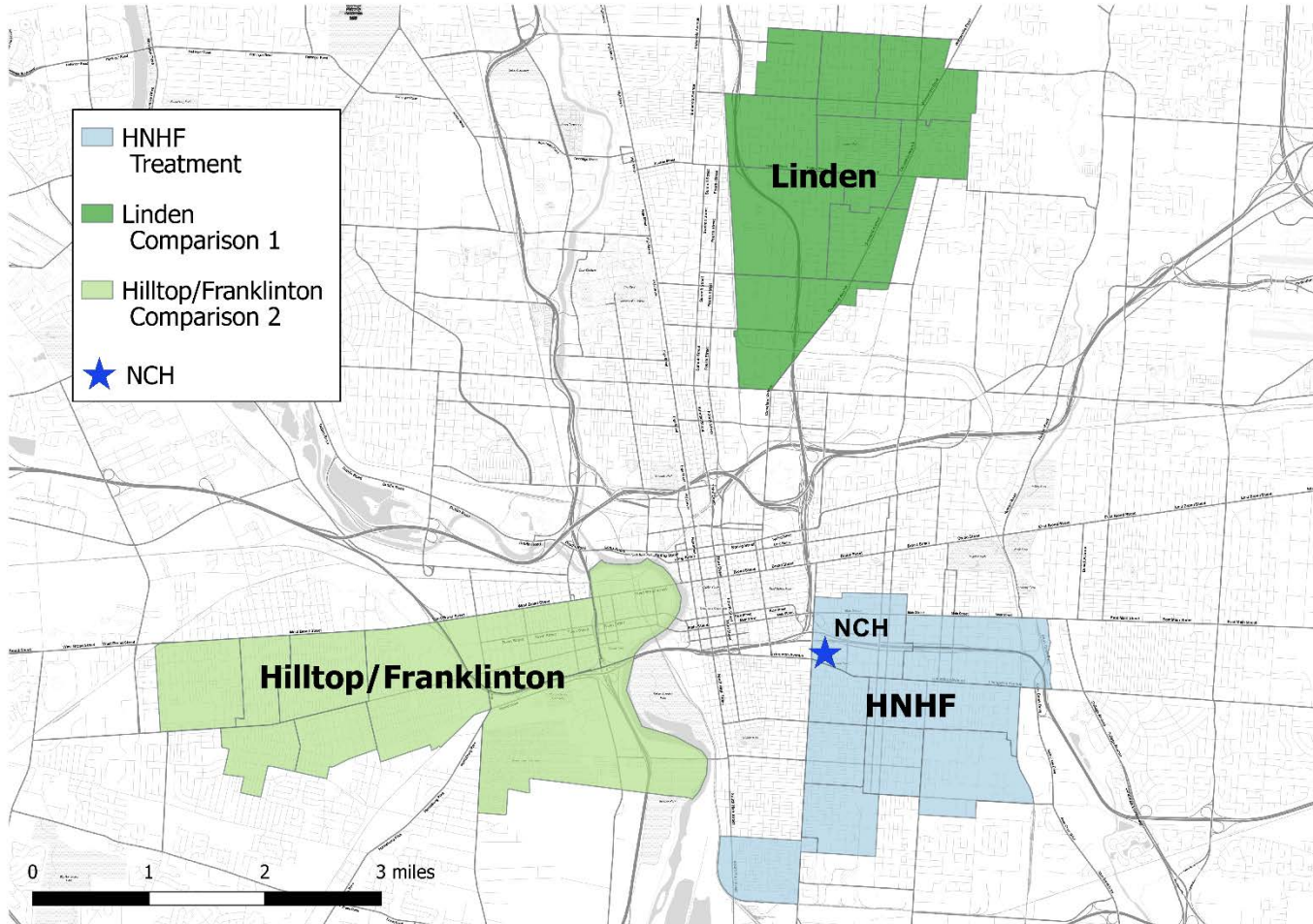


Comparison Neighborhood Identification

Propensity Score Modeling

- Probability that a non-treatment neighborhood is similar at baseline
- Balances the distribution of key variables that are similar for both treated and comparison areas
 - How do you define a “neighborhood”?
 - Innovative part of analysis was incorporation of local-level variables, along with census-based measures
 - Digitized Tax Parcel Data
 - HMDA Loan Information
 - CPD Crime Data
 - Redlining Maps
 - Eviction/Foreclosure Rates
 - Vacancy Data

Comparison Results



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Propensity Score Modeling Variables

	Modeling Variable	HNHF	Linden	Hilltop/ Franklinton	Franklin County
Demographics	NDI	1.43	1.26	1.55	-0.07
	Population Density (per sq. mile)	6,463	5,568	6,479	4,384
	% Black	64.1%	57.2%	27.0%	23.4%
Crime	Total Crime Rate (per 100 population)	23.5	19.0	23.1	8.1
	Property Crime Rate (per 100 population)	6.4	5.4	6.9	2.6
	Violent Crime Rate (per 100 population)	2.0	1.6	1.9	0.5
Housing	Median Sale Price per SQFT (06-09)	\$38.10	\$47.83	\$42.19	\$93.12
	% Condition Below Average (Res Props)	19.3%	14.8%	16.3%	5.3%
	% Rent	54.9%	50.6%	55.2%	43.7%
	Median Year Built	1943	1948	1947	1968
	Median Home Value	\$80,110	\$70,433	\$70,933	\$158,220
Housing Instability	% Mortgages Foreclosed	13.2%	13.6%	11.7%	6.9%
	% Vacant Buildings	13.8%	15.7%	8.8%	4.3%
	Eviction Rate (per 100 renter homes)	10.69	10.65	9.96	5.48
Housing Discrimination	Mortgage Racial Bias Index	3.80	2.27	2.46	3.93
	% Redlined	12.1%	16.8%	17.1%	3.9%
Environmental	TRAP 150m	3,368	1,842	4,715	5,109

Health Care Utilization Data

- Medicaid claims data (Partners for Kids)
 - Encounter level dataset including primary and secondary diagnoses, dates admitted and discharged
 - Monthly Member level dataset including eligibility status, residential address, sex, and age of patient
 - Data for inpatient (IP) and emergency department (ED) encounters were used
- 2-Year Time periods
 - August 2008- July 2010 = pre-intervention
 - August 2015 – July 2017 = post-intervention

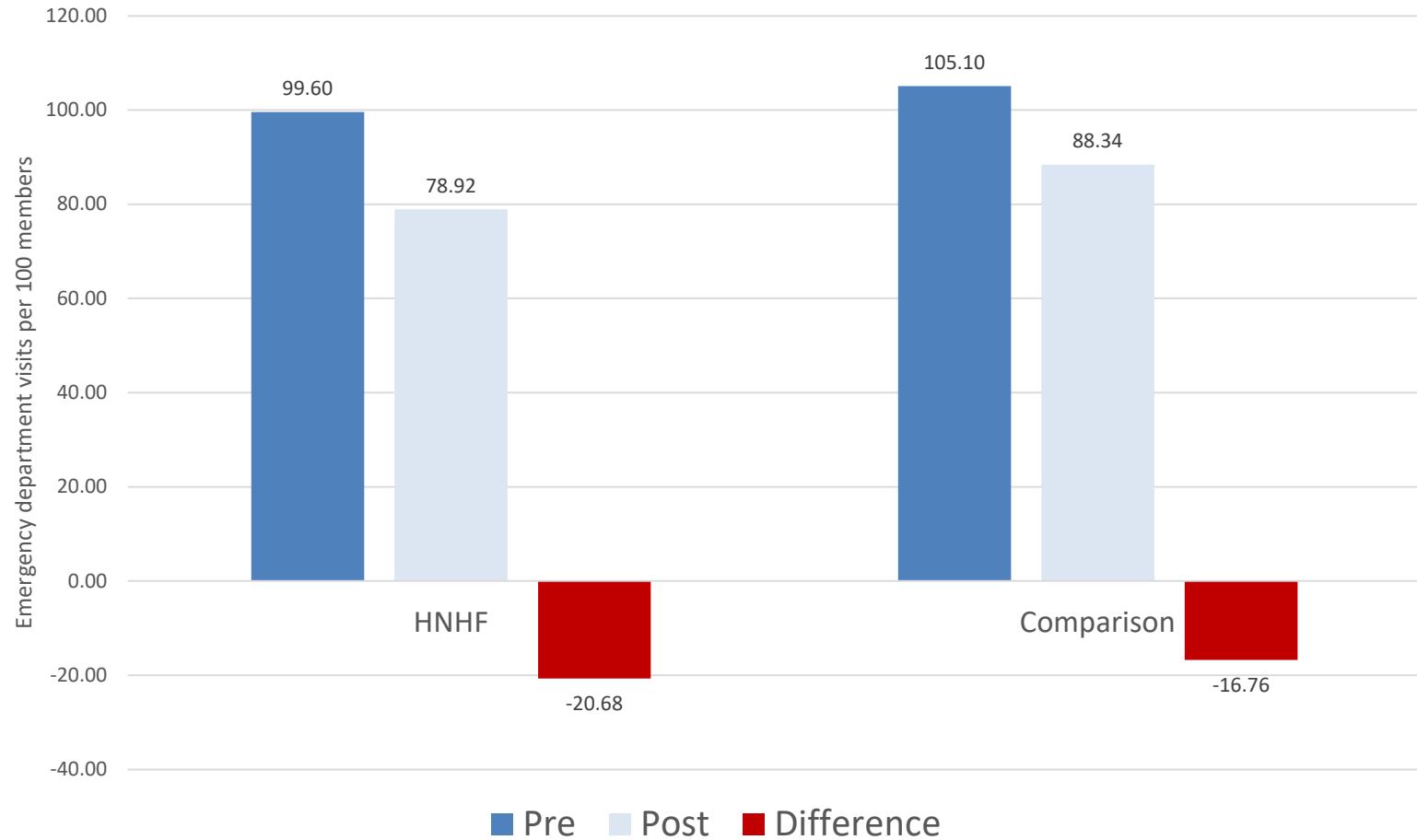
Health Care Utilization Analysis

- Rates
 - # of ED and IP encounters in the pre- and post-intervention time periods for each area were determined using the PFK data
 - Using eligibility data from the PFK, the rates of 2 year visits per 100 eligible members were calculated, along with avg LOS for those admitted
 - % change between two time periods calculated
- Difference in Differences Modeling
 - Difference in Differences modeling was utilized to examine if utilization changes were significant due to the investment
 - Parallel trend assumption
 - Absent the treatment, ED and IP encounters should trend the same
 - Any significant difference can be attributed to the treatment
 - Sensitivity analysis using different aggregations of census tracts

Emergency Department Utilization



Emergency Department Visits



Health Care Utilization Pre- and Post- Intervention – # ED Visits

HNHF

	Visits	Members	Visit Rate
pre-intervention	9,854	9,894	99.6
post-intervention	7,835	9,928	78.9
change (post-pre)	-2,019	34	-20.7
percent change	-20.5%	0.3%	-20.8%

Comparison

	Visits	Members	Visit Rate
pre-intervention	20,944	19,927	105.1
post-intervention	19,416	21,978	88.3
change (post-pre)	-1,528	2,051	-16.8
percent change	-7.3%	10.3%	-15.9%

Health Care Utilization Pre- and Post- Intervention – # ED Visit DID

Total	Predicted Visit Count		
	Pre	Post	Difference
HNHF	1.00	0.78	-0.22
Comparison	1.06	0.88	-0.18
Difference	-0.06	-0.09	-0.033 .

Predictive margins are predicted visit counts for each member

Health Care Utilization Pre- and Post- Intervention – # ED Visit Rates

Linden

	Visits	Members	Visit Rate
pre-intervention	7,751	8,623	89.9
post-intervention	6,841	9,329	73.3
change (post-pre)	-910	706	-16.6
percent change	-11.7%	8.2%	-18.4%

Hilltop/Franklinton

	Visits	Members	Visit Rate
pre-intervention	13,193	11,304	116.7
post-intervention	12,575	12,649	99.4
change (post-pre)	-618	1,345	-17.3
percent change	-4.7%	11.9%	-14.8%

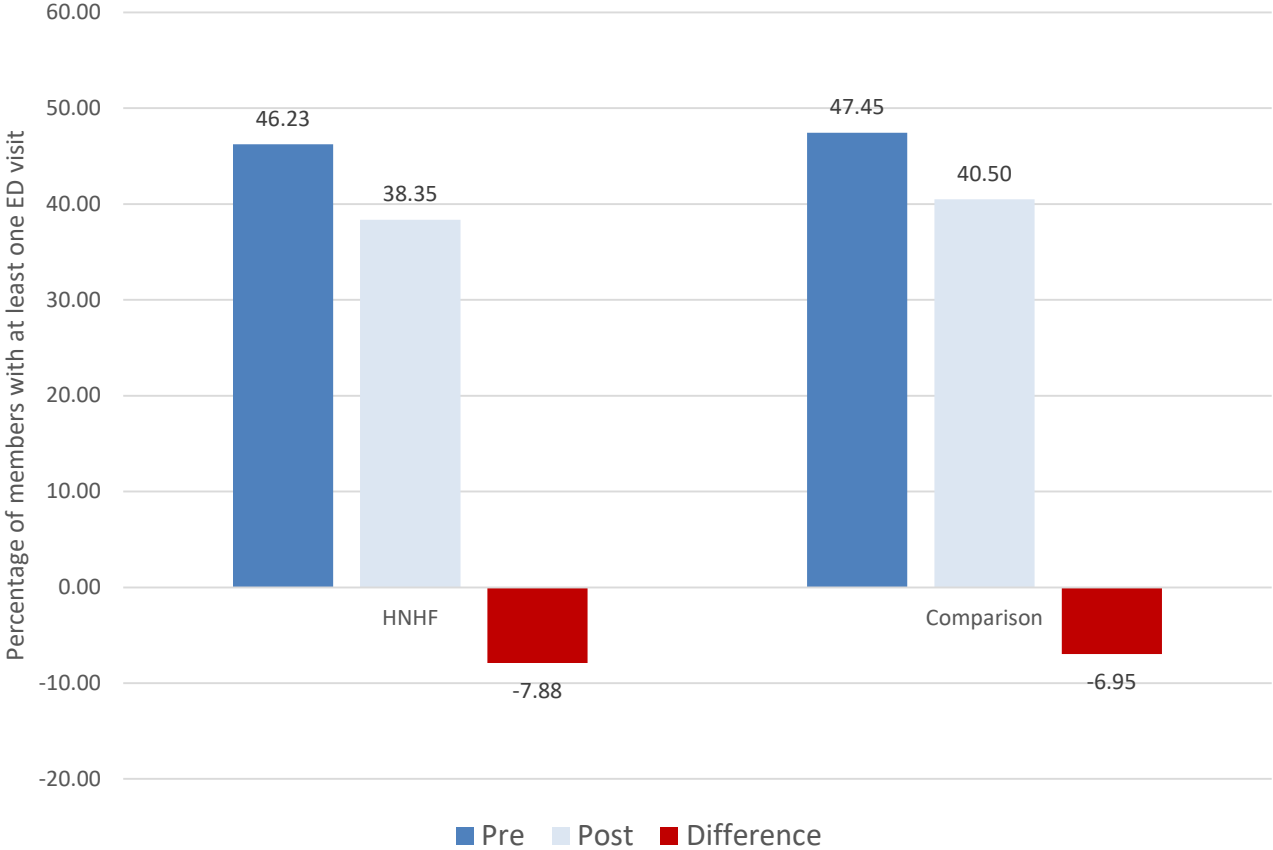
Health Care Utilization Pre- and Post- Intervention – # ED Visit DID

Linden	Predicted Visit Count		
	Pre	Post	Difference
HNHF	1.07	0.86	-0.202
Linden	0.97	0.80	-0.174
Difference	0.10	0.06	-0.027

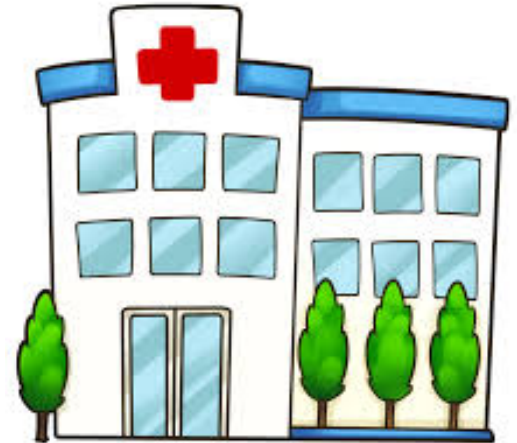
Hilltop/Franklinton	Predicted Visit Count		
	Pre	Post	Difference
HNHF	0.98	0.77	-0.207
Hilltop/Franklinton	1.14	0.97	-0.172
Difference	-0.17	-0.20	-0.035*

Predictive margins are predicted visit counts for each member

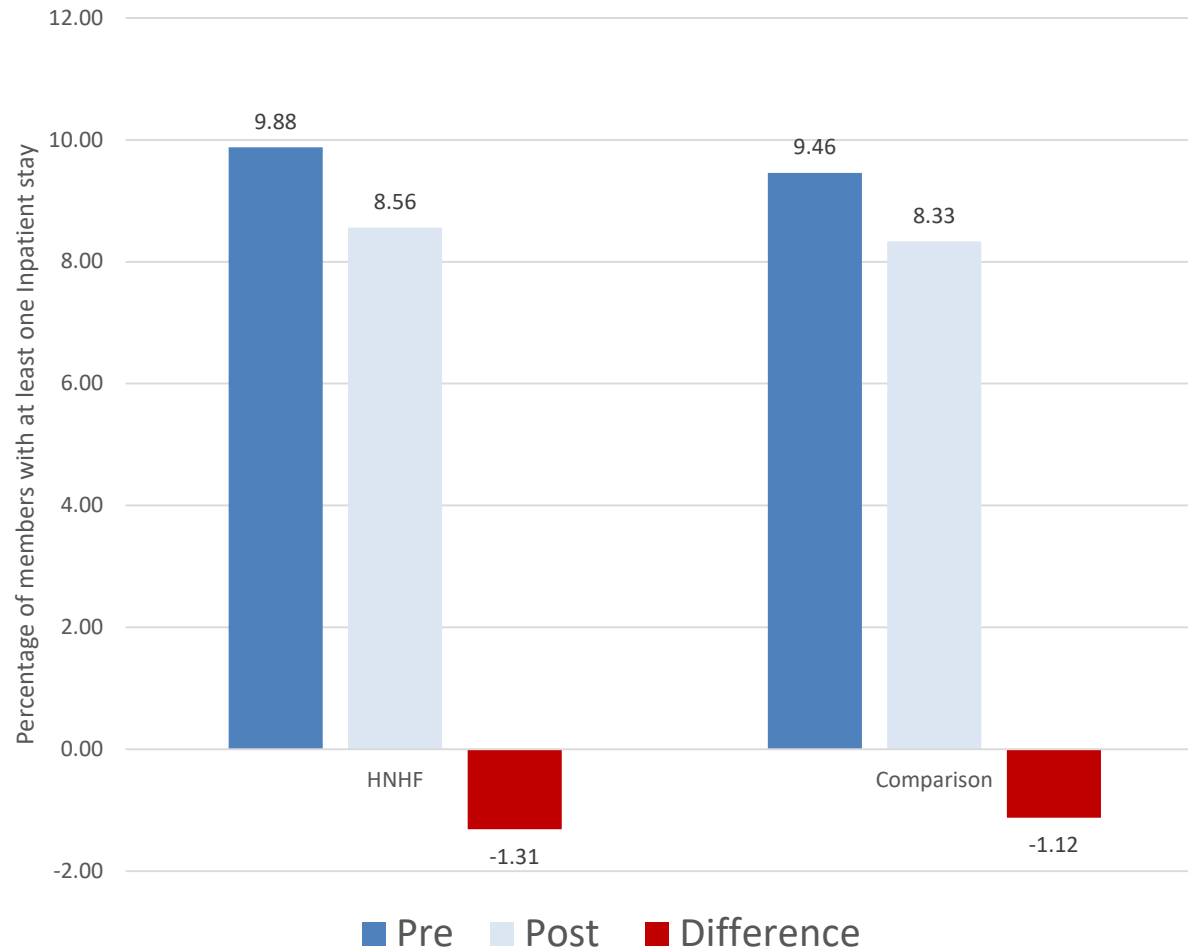
Any ED Use



Inpatient Utilization



Inpatient admission rate



Health Care Utilization Pre- and Post- Intervention – IP Utilization Probability

HNHF

	Admit	Members	Admit Rate
pre-intervention	972	9,842	9.9
post-intervention	846	9,881	8.6
change (post-pre)	-126	39	-1.3
percent change	-13.0%	0.4%	-13.3%

Comparison

	Admit	Members	Admit Rate
pre-intervention	1,875	19,822	9.5
post-intervention	1,824	21,884	8.3
change (post-pre)	-51	2,062	-1.1
percent change	-2.7%	10.4%	-11.9%

Health Care Utilization Pre- and Post- Intervention – IP Utilization Probability DID

	Predicted Probabilities		
	Pre	Post	Difference
HNHF	0.096	0.088	-0.0080
Comparison	0.090	0.087	-0.0035
Difference	-0.006	-0.001	-0.0045

Health Care Utilization Pre- and Post- Intervention – IP Utilization Probability

Linden

	Admit	Members	Admit Rate
pre-intervention	849	8,576	9.9
post-intervention	731	9,285	7.9
change (post-pre)	-118	709	-2.0
percent change	-13.9%	8.3%	-20.5%

Hilltop/Franklinton

	Admit	Members	Admit Rate
pre-intervention	1,026	11,246	9.1
post-intervention	1,093	12,599	8.7
change (post-pre)	67	1,353	-0.4
percent change	6.5%	12.0%	-4.9%

Health Care Utilization Pre- and Post- Intervention – IP Utilization Probability DID

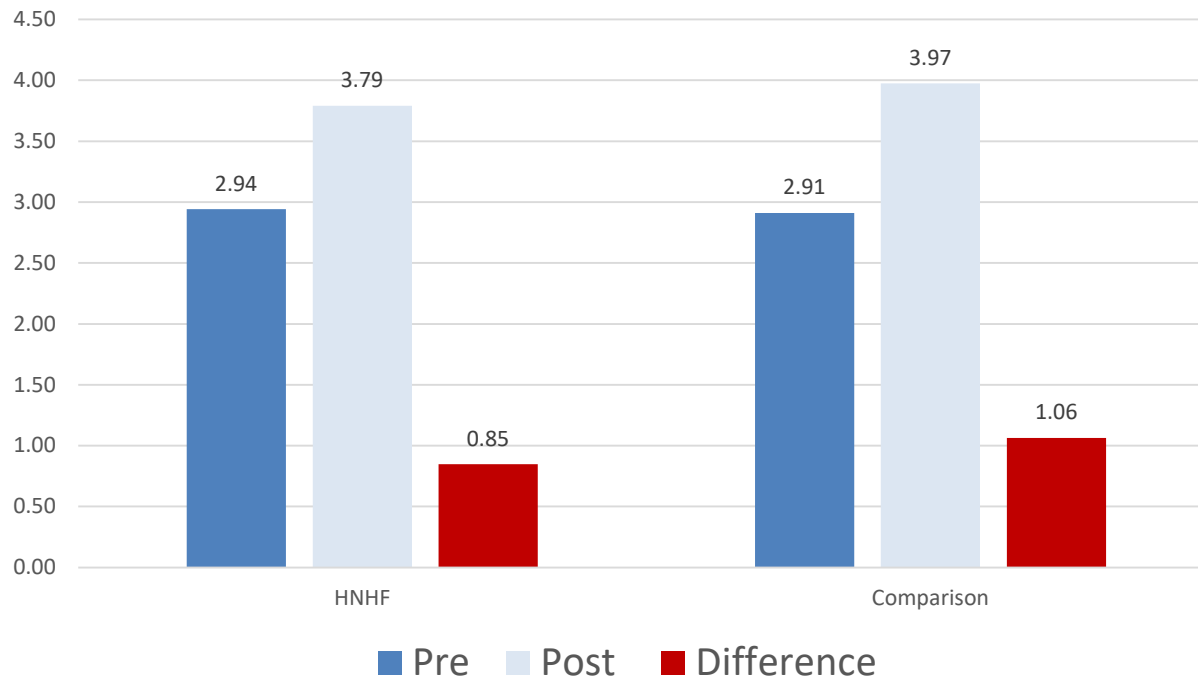
Linden	Predicted Probabilities		
	Pre	Post	Difference
HNHF	0.092	0.089	-0.003
Linden	0.093	0.083	-0.010
Difference	0.001	-0.006	0.007

Hilltop/Franklinton	Predicted Probabilities		
	Pre	Post	Difference
HNHF	0.097	0.087	-0.010
Hilltop/Franklinton	0.086	0.088	0.003
Difference	-0.011	0.002	-0.013*

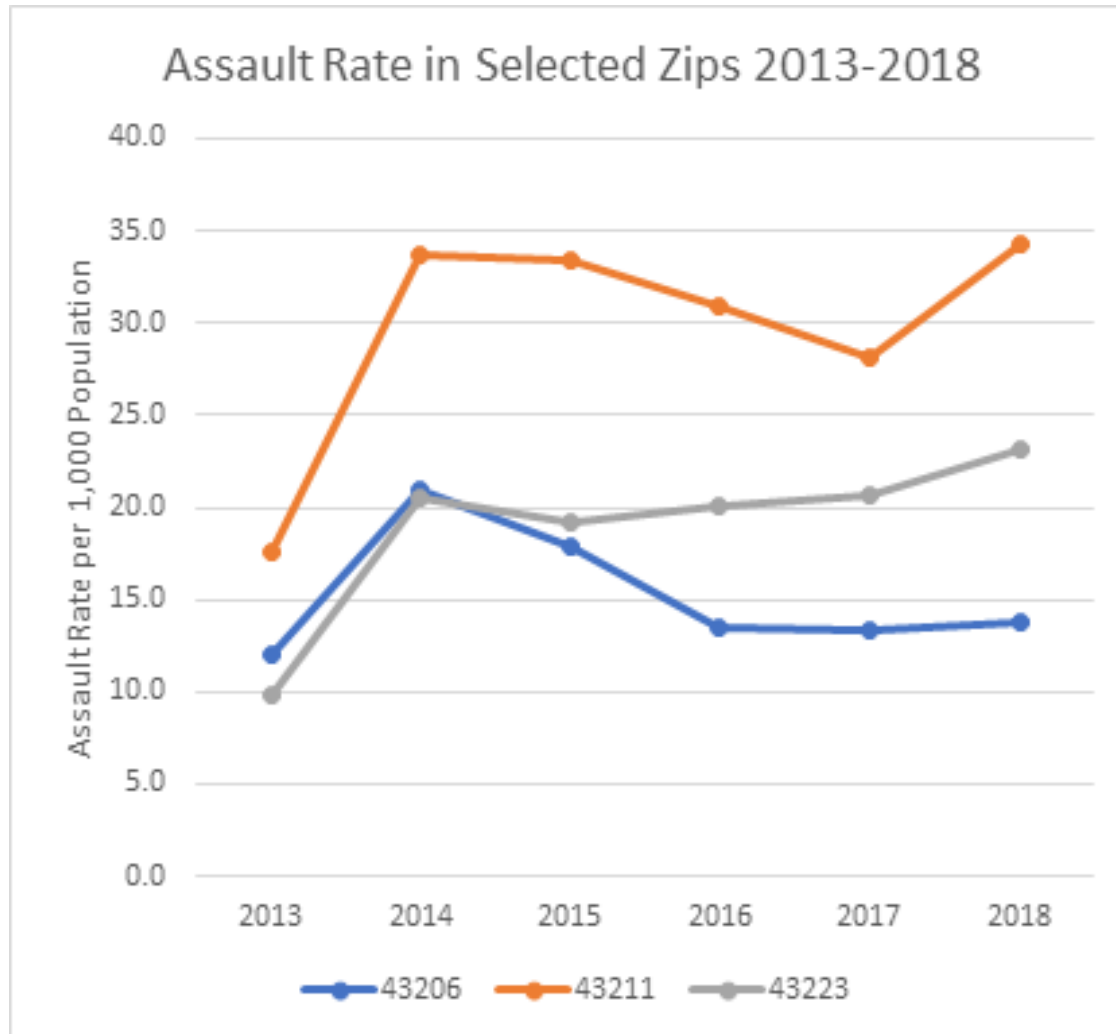
Health Care Utilization Pre- and Post- Intervention – IP LOS Rates

* Only admitted members

Difference in Avg. LOS



Next Steps - Crime



Thank You!

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Deena.Chisolm@NationwideChildrens.org

@BeingDrDeena



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