

Community Health Improvement Through Broadband Technology: Promise & Perils

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Cleveland & Cuyahoga Health Resource

Because Community Health Data Matters



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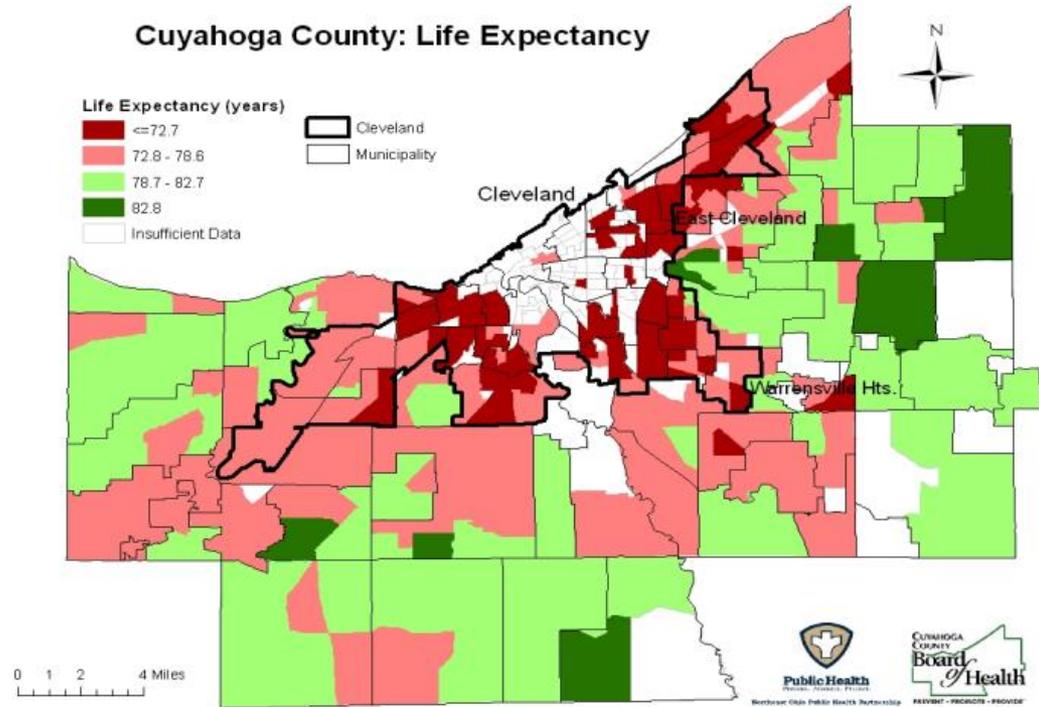
HBO documentary explores 24-year difference in life expectancy between Lyndhurst and Cleveland's Hough neighborhood



By Harlan Spector, The Plain Dealer

on May 05, 2012 at 11:00 PM, updated May 06, 2012 at 12:22 AM

24-year gap
in life
expectancy



http://www.saintlukesfoundation.org/wp-content/uploads/2013/06/PM-Accomplishments-Report_FINAL.pdf



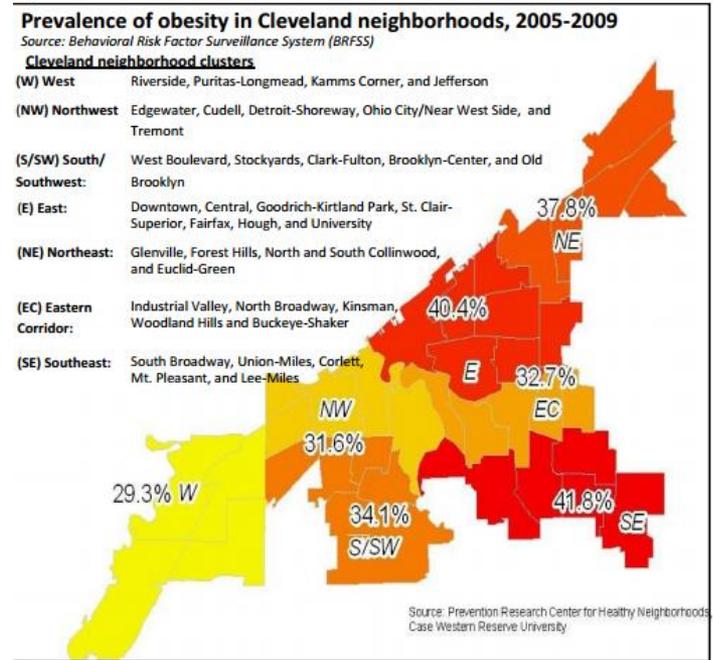
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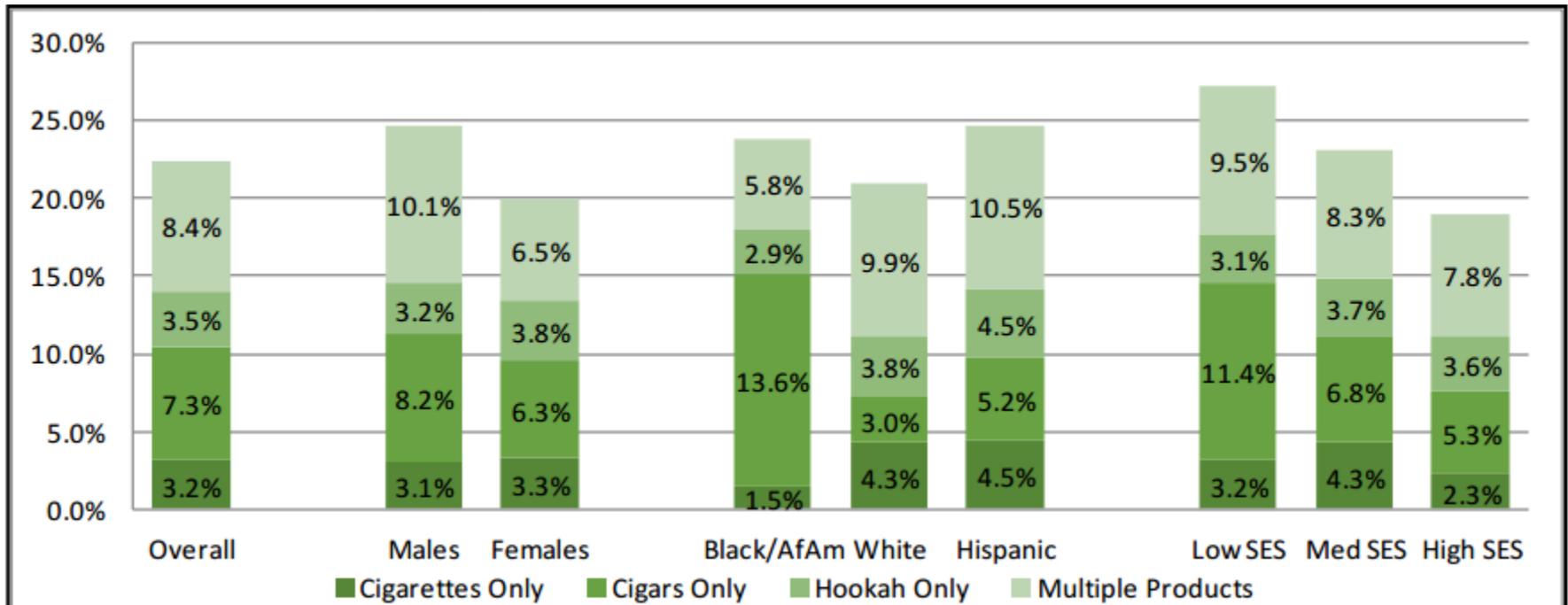
Significant Obesity & Hypertension Prevalence & Disparities, 2005-9

	Prevalence: Hypertension	Prevalence: Obesity
30-49	40.5% (1)	26.1%*
50-64	37.8%	51.8%*
65+	32.2%	67.4%*
Gender male	30.7%	34.1%
female	39.5% (2)	37.3%
Race white	28.5%	32.9%
black/Af Am	42.3% (3)	40.8%†
other	35.2%	28.0%



Behavioral Risk Factor Surveillance Survey, Cuyahoga County; Prevention Research Center for Healthy Neighborhoods, Bruckman, et al, 2012.

Significant Tobacco Use & Disparities, 2011-13, Cuyahoga County Youth

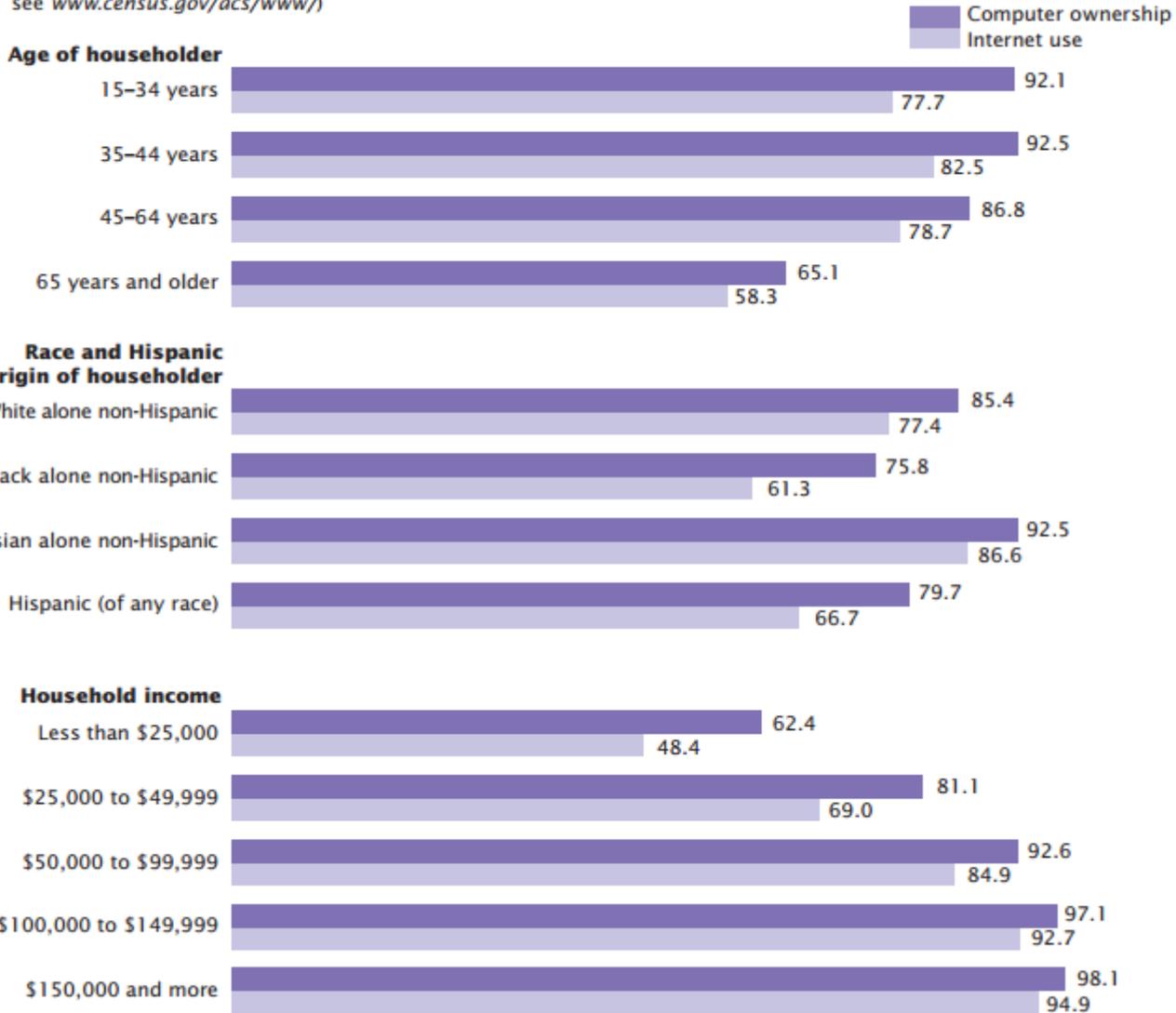


**Youth Risk Behavior Surveillance Survey, CWRU Prevention
Research Center for Healthy Neighborhoods, Trapl, et al, 2014**



Percentage of Households With Computers and Internet Use: 2013

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Disparities in Computer ownership/Internet Use

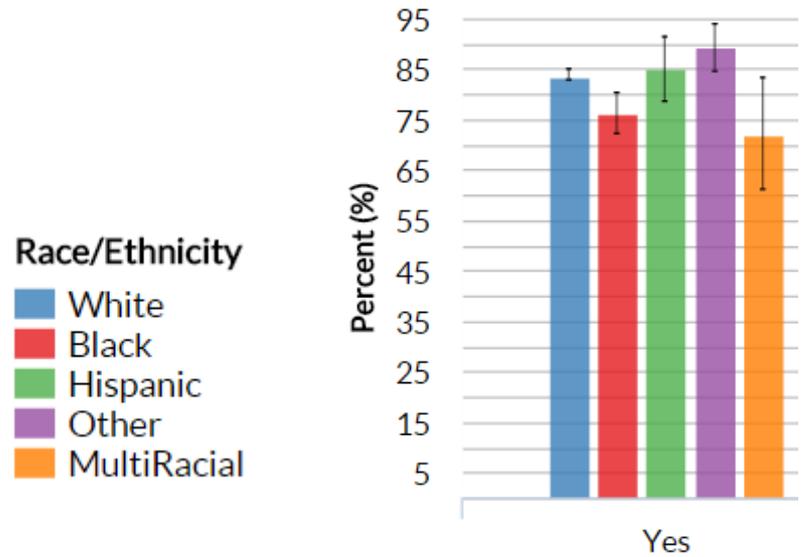
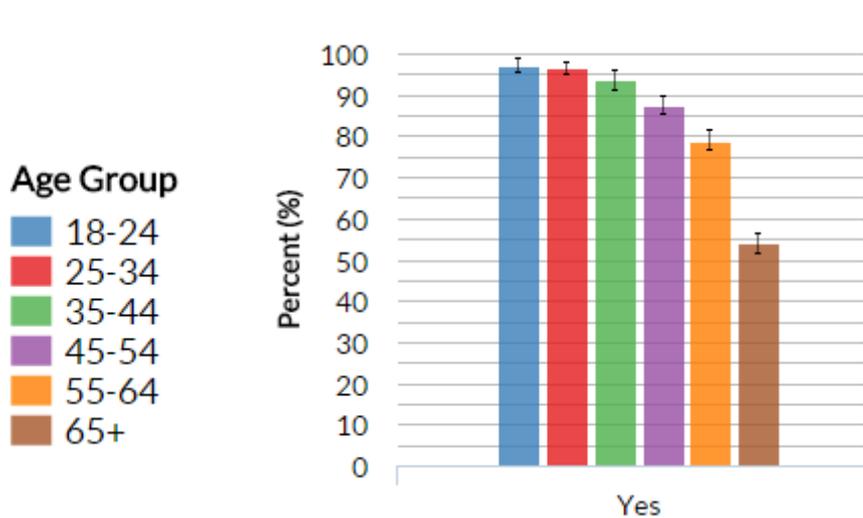
American Community Survey 2013, US
Bureau of the Census



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Disparities in Internet Use in last 30 days by Age and Race/Ethnicity, Ohio

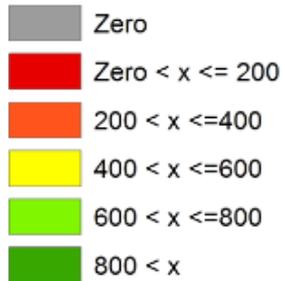


Behavioral Risk Factor Surveillance System, Ohio, 2014

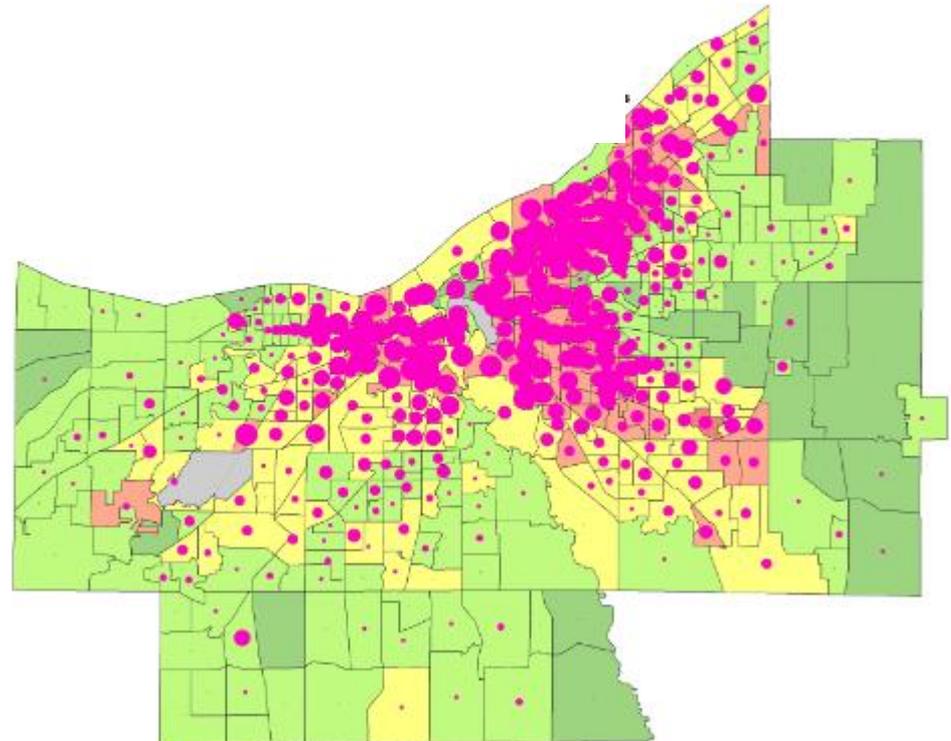


Disparities in Households with High Speed Internet* & Poverty**

Connections per 1000 households



% living in poverty



*FCC 477 Survey 2014; **NEOCANDO,
prepared by M. Kucmanic, healthdatamatters.org, CWRU

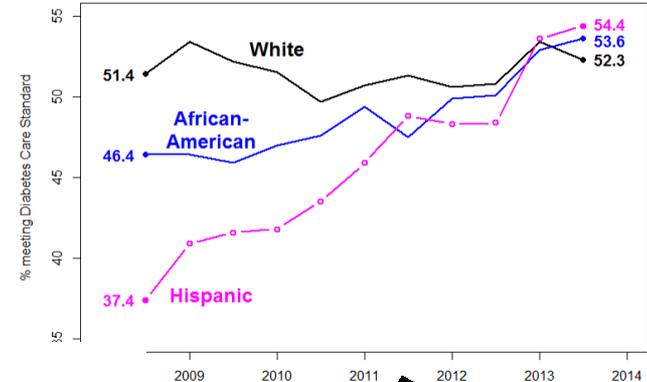


Addressing Health Disparities through EHR Monitoring, Reporting & Sharing Best Practices

Better Health's Triple Aim Approaches and Results

- Approaches:** Using data to identify and disseminate best practices for important conditions
 - “Positive deviants” celebrated, their work disseminated
- Results:** Widely recognized improvement:
 - Care for adults with chronic conditions
 - Disparities in care across multiple dimensions
 - Preventable hospitalizations

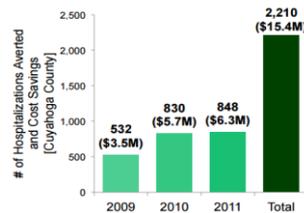
Reducing Racial Disparities in Diabetes Care



Reducing Preventable Hospitalizations 2009-11: Cuyahoga Co. vs Other Large Counties

AVERTED: 2,200 HOSPITALIZATIONS \$15.4 MILLION IN COSTS

Averted Hospitalizations Increased Each Year



Academy Health, 2013



Estimated Savings in Total Costs of Care, per person, per year (\$) (MEDICAL MUTUAL)

	Red Carpet Care (RCC) Enrollees (n = 67)	Control Patients (n = 44)
REDUCTION, per person, per year	\$ 5,098.56	\$ 364.20

- Difference = \$4,734.36 pppy (394.53 pppm)
- Across 67 RCC patients, one year savings were \$317,200.



http://betterhealthpartnership.org/pdfs/lc_presentations/2015_10/lc_xvii_cebul_100915.pdf

Phone image courtesy “Patient Contact After Discharge” Cleveland Medical Hackathon 2015



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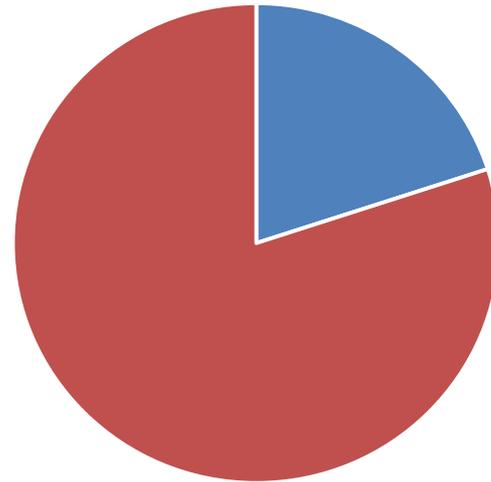
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CLEVELAND
MEDICAL
HACKATHON

Community Health & Wellness Track: Where to look for solutions?

Determinants of Health Outcomes



- Clinical Care
- Everything else

<http://www.countyhealthrankings.org/our-approach>



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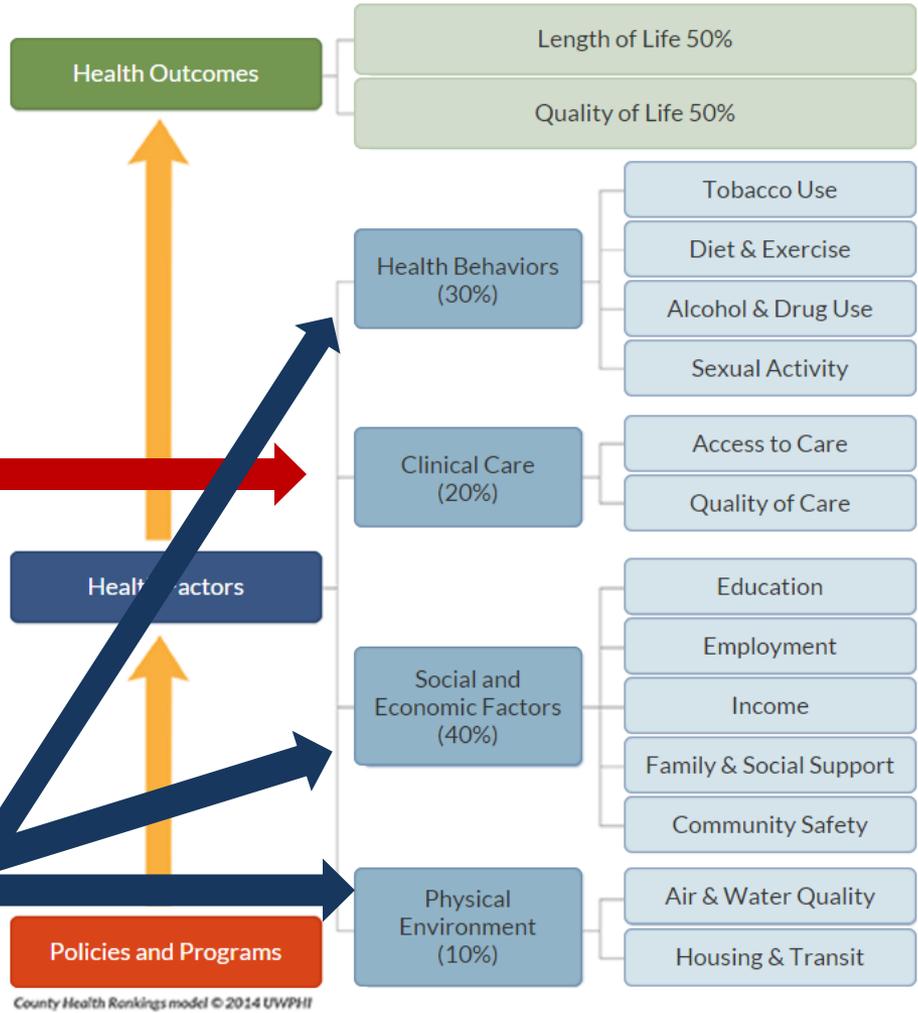


CLEVELAND MEDICAL HACKATHON

Tracks

- Patient Safety
- Identity Management
- Patient Activation

Community Health & Wellness



<http://www.countyhealthrankings.org/our-approach>

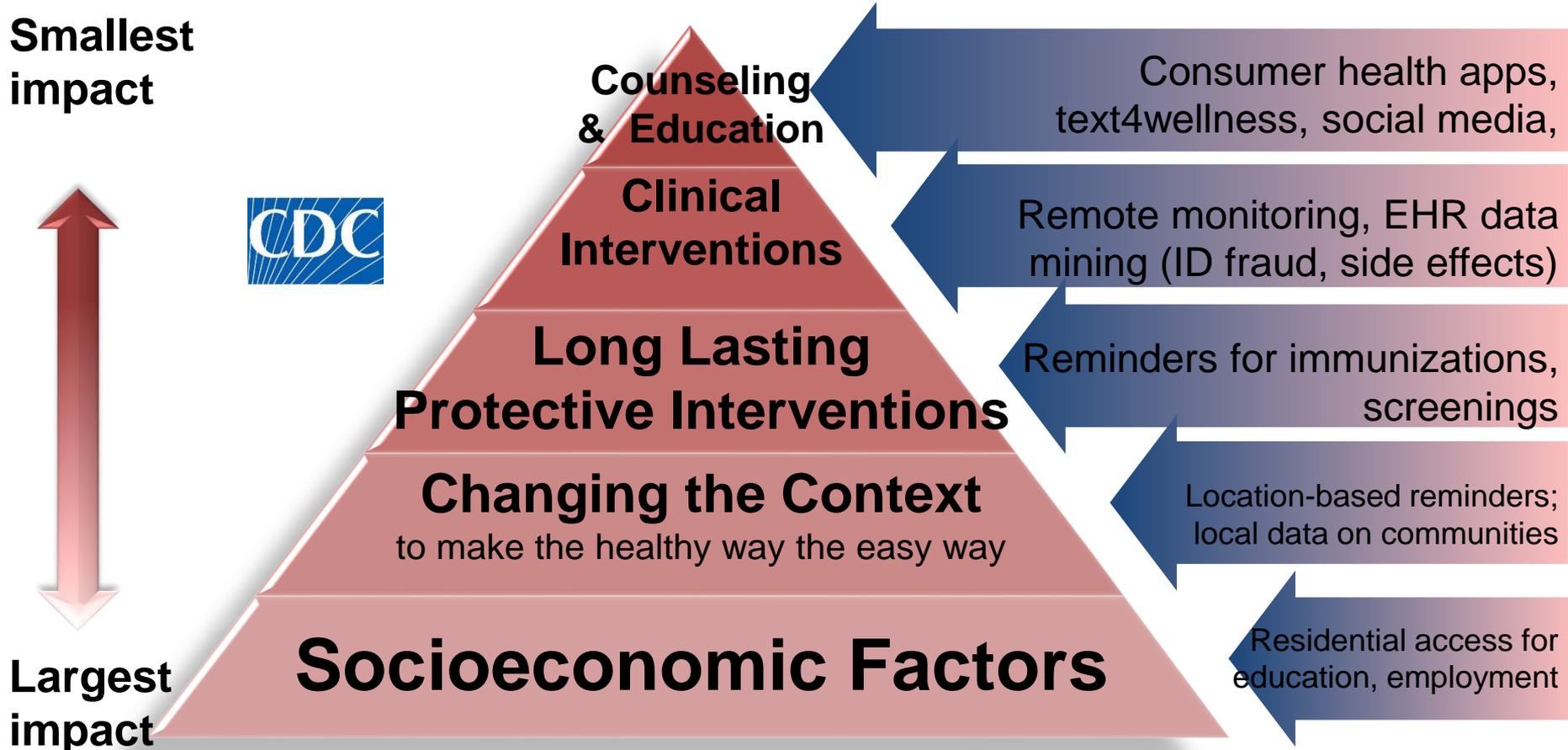


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Population Health Impact Pyramid & Technology



Better living through data

Welcome to NEO CANDO

NEO CANDO, Northeast Ohio Community and Neighborhood Data for Organizing, is a free and publicly accessible social and economic data system of the Center on Urban Poverty and Community Development, a research institute housed at Case Western Reserve University's Mandel School of Applied Social Sciences. NEO CANDO allows users to access data for the entire 17 county Northeast Ohio region, or for specific neighborhoods within Cleveland.



Home | Data Access | Community Profiles | Reports and Briefs | Contact Us | Help | About NEO CANDO | About the Poverty Center

Get Started

NEO CANDO 2010+ social and economic data

This updated version of NEO CANDO incorporates data from the 2010 Census and American Community Survey. Additional data sources will be added as they become available. It operates faster, provides updated geographies, and enables on-demand mapping using Google maps. Preparation of NEO CANDO 2010+ was completed by the Northeast Ohio Data Collaborative, a unique partnership between Case Western Reserve University, The Cleveland State University Maxine Goodman Levin College of Urban Affairs, and The Center for Community Solutions and made possible by the generous financial support of several local governments and foundations.

NEO CANDO historical social and economic data

The previous version of NEO CANDO is based on geographies defined by the 2000 Census and incorporates social and economic, crime, and property data. NEO CANDO historical data will continue to have data in Census 2000 geographies, and currently provides information from more data sources than NEO CANDO 2010+.

NEO CANDO property data

Parcel-level data for Cuyahoga County is available through the NEO CANDO property data tool. These data are collected from a variety of sources including the Cuyahoga County Auditor and the Cuyahoga County Clerk of Courts.

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Social and Economic Data

1 County	2 Geographic Level
Ashland	Census Tract
Ashtabula	City/Village
Columbiana	Cleveland Planning District
Cuyahoga	Cleveland Ward
Erie	County
Geauga	Cuyahoga Council District
Huron	Cuyahoga Region
Lake	DCFS Geo-District

Subject Category Filter	3 Available Variables
Population (POP)	Households with income \$40,000
Poverty and Income (POV)	Households with income \$45,000
Households and Families (FAM)	Households with income \$50,000
Education (EDU)	Households with income \$60,000
Employment and Transportation (EMP)	Households with income \$75,000
Residential Mobility (MOB)	Households with income \$100,000
Housing - Census (HOU)	Households with income \$125,000
Crime - Cleveland Police (CPD)	Households with income \$150,000

Add variables to report Search for variables [Help](#)

4 Report Variables

- Median family income, 2012 5-yr est (ACS 2012 5-year)
- Persons with income below 100% of poverty, percent, 2012 5-yr est (ACS 2012 5-year)
- Female-headed families with children < 18 living below poverty, percent, 2012
- Population aged 0-4 living below poverty, percent, 2012 5-yr est (ACS 2012 5-yr)
- Poverty rate, 2012 5-yr est (ACS 2012 5-year)

neocando.case.edu



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Better health through data



Health
OVERVIEW



Health
ACTION



Health
DATA



Health Data
RESOURCES



Check Your
HEALTH RISK



- United Way 2-1-1 calls for help (>250K/year)
- Cuyahoga County Medical Examiner Public Death Records 2007 – 2015
- Broadband access by census tract

➤ www.healthdatamatters.org



Inspiration: >250K calls/year to United Way 2-1-1 referral line

2-1-1 DASHBOARD

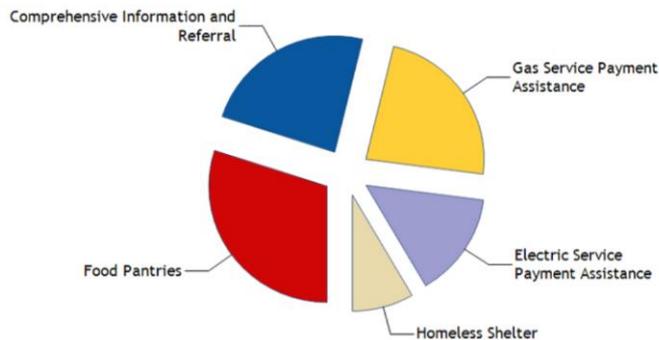
United Way of Greater Cleveland



Service Trends Prior 24 Hours

click slice for more information

Top 5 Service Requests



Trending Up

- Case/Care Management (+400%)
- Home Rehabilitation Loans (+400%)
- Section 8 Housing Choice Vouchers (+400%)
- County Jails (+300%)
- Home Health Aide Services (+300%)

Top 5 ZIP Codes

- 44105 (14,073, -5.82%)
- 44102 (12,130, -8.41%)
- 44120 (10,537, -9.15%)
- 44108 (9,924, -10.62%)
- 44104 (9,512, -15.11%)

Comprehensive Information and Referral 2-Year Trends



18,206 needs in 2013-2014 16,803 needs in 2014-2015 Total change -1,403: -7.71%

<http://211oh.org/trending/>

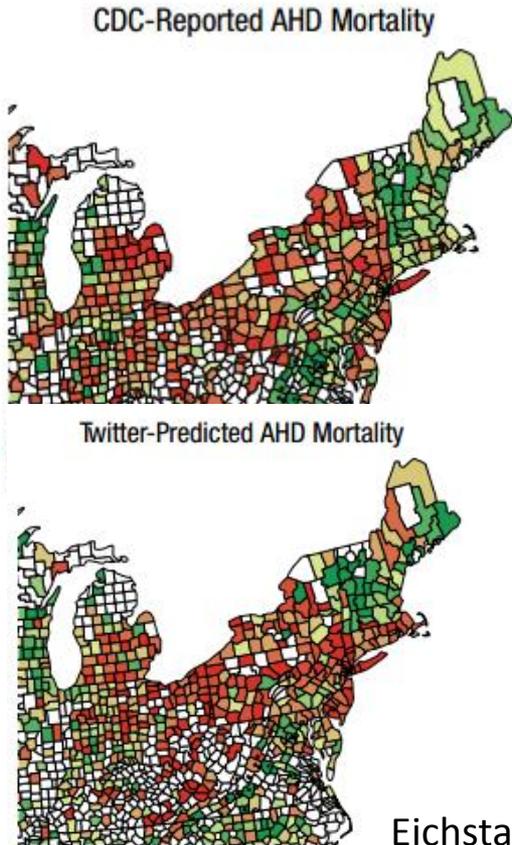


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Psychological language on Twitter predicts county-level heart disease mortality



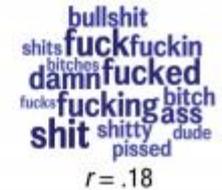
POSITIVE LANGUAGE

NEGATIVE LANGUAGE

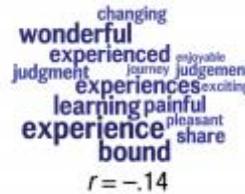
Skilled Occupations



Hostility, Aggression



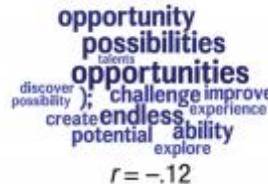
Positive Experiences



Hate, Interpersonal Tension



Optimism



Boredom, Fatigue

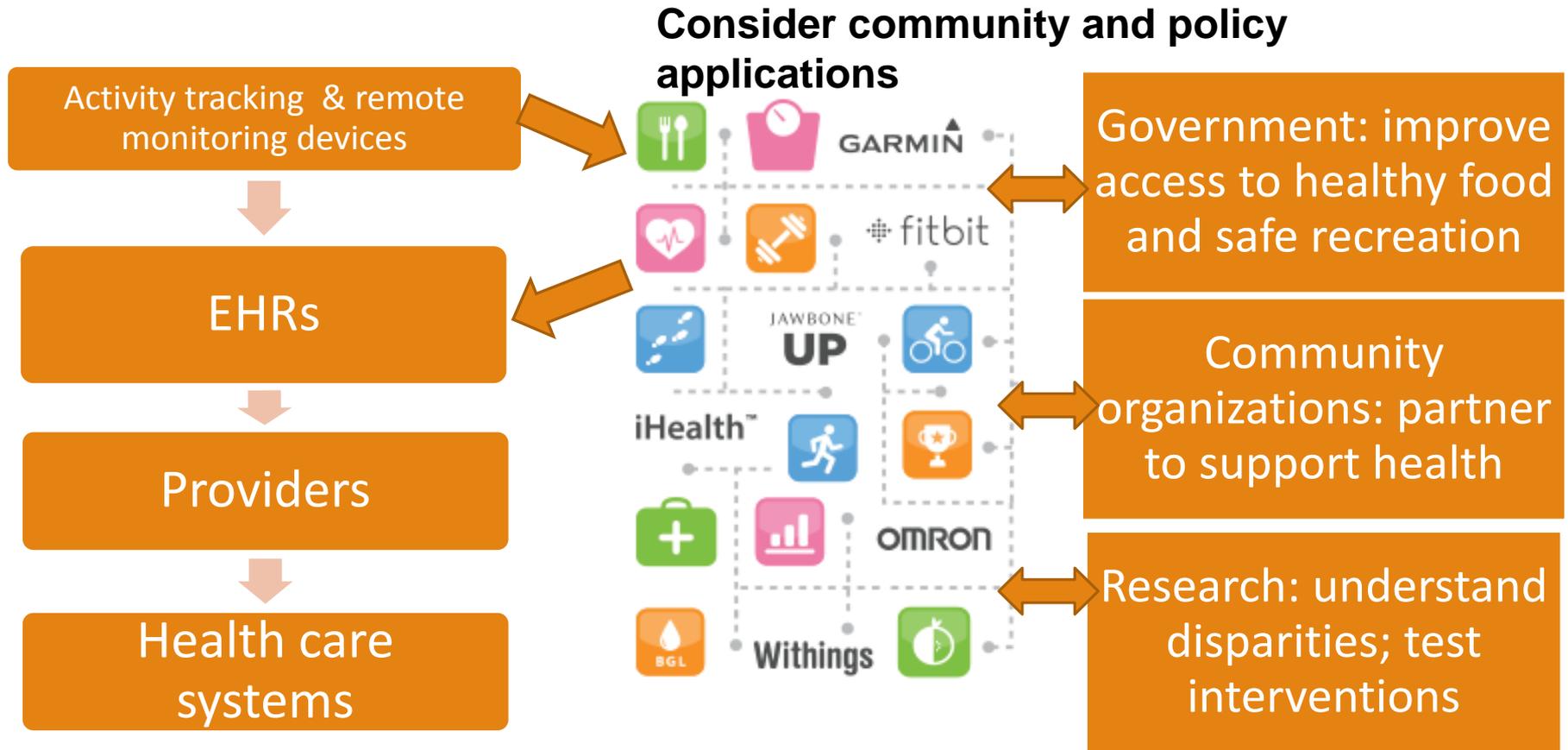


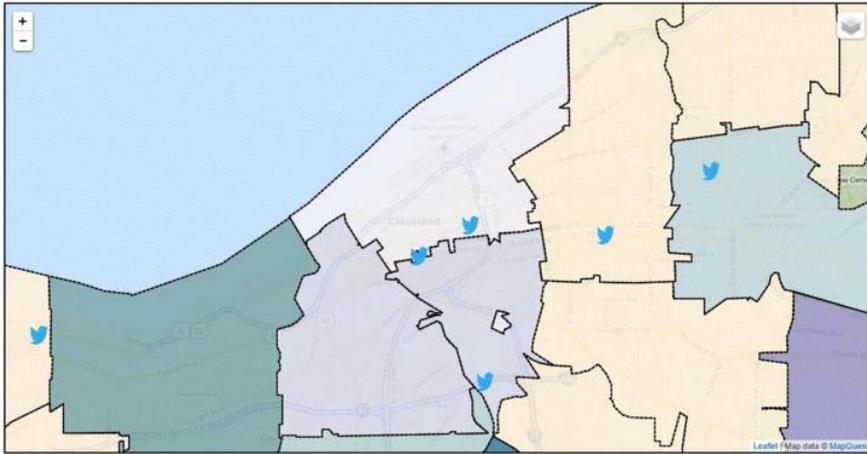
Eichstaedt, Psych Sci <http://pss.sagepub.com/content/26/2/159.full.pdf+html>





VALIDIC Aggregates data from many activity tracking and home monitoring devices





PROJECT: COMMUNITY HEALTH PULSE



THIRD PLACE WINNER: THE WATERSHED HEALTH PROJECT



SECOND PLACE WINNER: NEO+NATAL



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Cleveland's first medical hackathon points way to better community health -- but a new business model is needed: Amy R. Sheon, Scott Frank and Christopher Kippes (Opinion) **THE PLAIN DEALER** October 11, 2015

AMY R. SHEON,
SCOTT FRANK
AND CHRISTOPHER KIPPES

Cleveland's first Medical Hackathon brought together more than 200 idealistic, adrenaline-fueled competitors Sept. 26 at the Global Center for Health Innovation to tackle challenges created or solved by health-related data.

With support from generous sponsors, participants were encouraged to create new applications, competing for prizes, jobs and exposure to potential investors.

Will such innovations improve Clevelanders' health?

Residents of some local neighborhoods die 24 years earlier than residents living just eight miles away. Infant mortality in some areas of Cleveland is higher than in some poor African nations. Due in part to the tragic legacy of redlin-

ing and other discriminatory real estate practices over the last century, socioeconomic factors are an important contributor to local health disparities. National estimates suggest that health care accounts for only about 20 percent of such differences.

Poor health of some in our region is a significant barrier to economic growth for all, contributing to high unemployment, worker absenteeism and disability costs. PolicyLink, a national research and action institute advancing economic and social equity, just estimated that if unemployment were 4 percent or below for all area residents, Cleveland's economy would be \$8.3 billion stronger, with 61,500 fewer residents living in poverty.

Health care innovations directed primarily at employed Ohioans will not address some of the underlying causes of health among so many in

region. Therefore, the Cleveland & Cuyahoga Health Resource sponsored a Community Health and Wellness Track at Cleveland's Medical Hackathon. Competitors were encouraged to use local community health data to create solutions focused on ways that social, economic, environmental and behavioral factors affect health. We sought, for example, solutions to make it easier to buy and cook healthy food, to find safe places and companions for recreation and to engage supportive resources such as churches and community organizations to reduce smoking, gun violence and substance use and to improve chronic illness management.

Community health solutions won two of the Hackathon's top

prizes. One solution was implemented results from 30 days to one day. Another enables community health workers to generate personalized recommendations for women at the highest risk for infant death. Another seeks to predict when and where violent deaths or drug overdoses might occur based on calls to United Way's 2-1-1 help line or social media posts.

But will these innovations see the light of day?

Health care organizations employ programmers and developers who could sustain or expand hackathon apps focused on improving the health care system. Startups and corporations are eager to do so as well when there is a large customer base. However, public health departments and community organizations generally lack resources needed to fund

them. Existing business models don't work well for applications that prevent illness or strengthen communities.

At the Hackathon, it became clear that innovation must come to public health, and that public health perspectives must come to medical innovation. But how?

Those focused solely on medical innovation may want to seek out public health and community perspectives so that great ideas stand a chance to make real change. Public health professionals and community members can make their needs known to innovators such as those at Open Cleveland, our local Code for America brigade of volunteers building tools to improve communities; visit "Maker Faires" and meetups for inspiration; or participate in competitions such as the upcoming

Health, investors pumped \$6.5 billion into 459 health technology startups across the country, many of which originated at hackathons. This year, \$6.9 billion has been spent on 551 such deals.

Community health products developed at the Cleveland Medical Hackathon might represent just the breakthroughs needed to address our infant mortality crisis and record-setting health disparities. By innovating to improve health for all, we have an opportunity for our city to top lists we'd like to be on.

Sheon and Frank are co-directors of Cleveland & Cuyahoga Health Resource. Frank is also the director of the Shaker Heights Health Department. Kippes is director of epidemiology, surveillance and informatics



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Cleveland public health innovation Meetup

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http://www.cleveland.com/opinion/index.ssf/2015/10/clevelands_first_medical_hacka.html



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Thank you!

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