

# Leveraging Health Data Utilities for Public Health

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Indiana Department of Health

#Together4Health2022



# About Us

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## INDIANA HEALTH INFORMATION EXCHANGE

- 501(c)(3) supporting organization
- Purpose is to support the missions of several key Indiana stakeholders, including the Indiana Department of Health
- Statewide HIE for Indiana

## INDIANA DEPARTMENT OF HEALTH

- Seeks to help every Hoosier reach optimal health regardless of where they live, learn, work, or play
- Core values include health equity, communication, innovation, and integrity



What is a Statewide  
**Health Data Utility?**

# What is an HDU?

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- What is a Health Data Utility?
- How is it different from a Health Information Exchange?
- And why the heck do I care?

... Let's take those in order

# What is a Health Data Utility?

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- A Health Data Utility (HDU) is an emerging concept
- An HDU is an organization that serves the health data / analysis needs of its state – both the private-sector (healthcare providers, payers, employers) and State government
  - Therefore... HDUs must have cooperative relationships with State government... and any other sector they serve
- HDUs are not-for-profit organizations (or possibly state-government run)
- There are many organizations that exist across the country, including IHIE, that resemble the HDU model

# How is it different from an HIE?

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**HIE**



**HDU**

- Everyone here knows what an HIE is and does... secure exchange, curation, analysis of health data (etc.)
- But in each state, there are many programs, functions, and needs requiring the secure exchange, curation, and/or analysis of health data not typically performed by the HIE.
- Increasingly, these functions are being aggregated into a single statewide not-for-profit organization... a statewide health data utility (HDU)

# HDU versus HIE

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## HDUs do what HIEs do ... plus a broad set of things HIEs don't

- Common thread: the need being met involves **health/healthcare data**

## What HIEs do

- Traditionally, HIEs aggregate and exchange clinical data... usually from physicians and hospitals... usually in support of direct patient care

## HDUs can also... Support broad health data aggregation and analysis needs

- Perform statewide healthcare quality measurements
- Serve as a statewide All-Payer Claims Database
- Support health policy decision-making
- Support and coordinate with the State Prescription Drug Monitoring Program
- Support automated statewide public health surveillance and communicable disease reporting

# Why the heck do I care?

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A statewide HDU can benefit...

## Patients/Individuals

- Ensure your doctor has your data (like your lab results)
- Enhance the content of whatever patient portal/app you choose to use
- Help hold down the cost of healthcare

## Healthcare Organizations

- Support safety of healthcare by informing decision-making with information
- Support healthcare quality by making the patient's information available
- Reduce redundant/unnecessary care

## Government (and therefore taxpayers)

- Support public health
- Support quality and cost of Medicaid
- Support policy analysis

## Health Promotion

- Support health promotion organizations and initiatives with data and analysis
- Provide information and analysis for health needs assessments



How HDUs Can  
(and DO)  
**Support Public Health**

# COVID-19 Response

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# One Learning of the Pandemic...

## "Strategic Value for Public Health"

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- The pandemic shined light on the value of having a ready data-sharing infrastructure and means to analyze and share data – with public health authorities and back to the provider community
- Statewide HIEs present a number of unique characteristics that make them **highly valuable in support of public health**:
  - Routinely incorporate data from many different types of organizations
  - Structurally, they are non-profits with public or public-private governance
  - A core competency of an HIE is to maintain an enterprise master patient index (EMPI), which is necessary to aggregate the records of a single patient or a statewide population
- ONC's Health Information Technology Advisory Committee had a hearing in 2020 and 2021 regarding the role of HIEs in support of public health

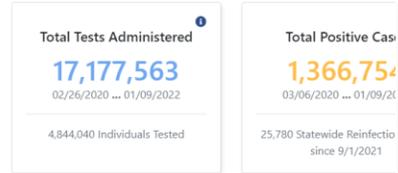


# COVID-19 Data Reporting Now

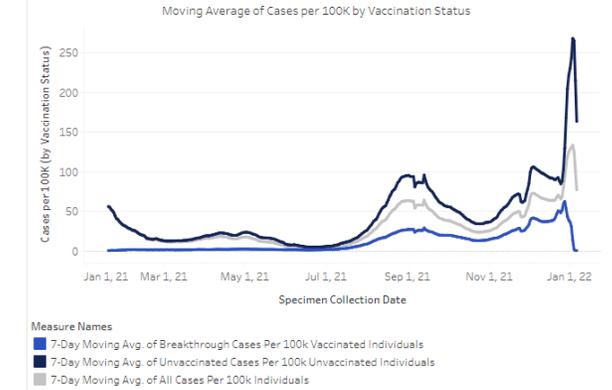
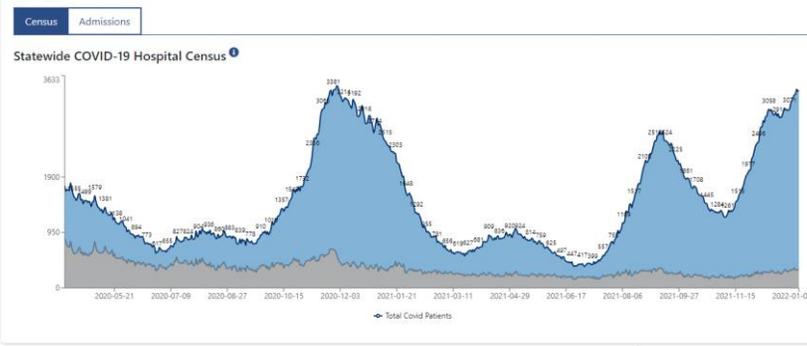
## Newly Reported Confirmed COVID-19 Counts



## Total Confirmed COVID-19 Counts

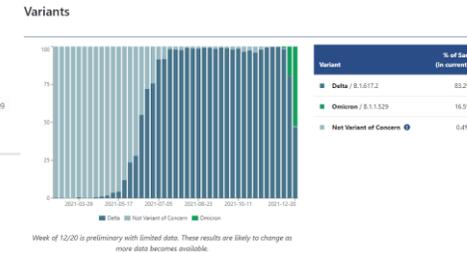
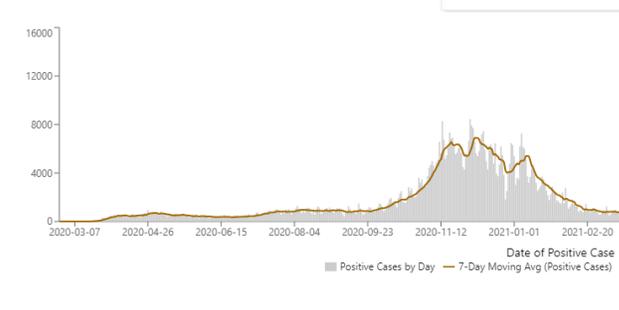


## Hospitalizations



## Positive Cases

## Statewide Positive Cases by Day



## Indiana COVID-19 Vaccination Dashboard

Updated Monday through Friday by 5:00 PM EST. Data current as of 01/10/2022 at 5:00 AM EST.

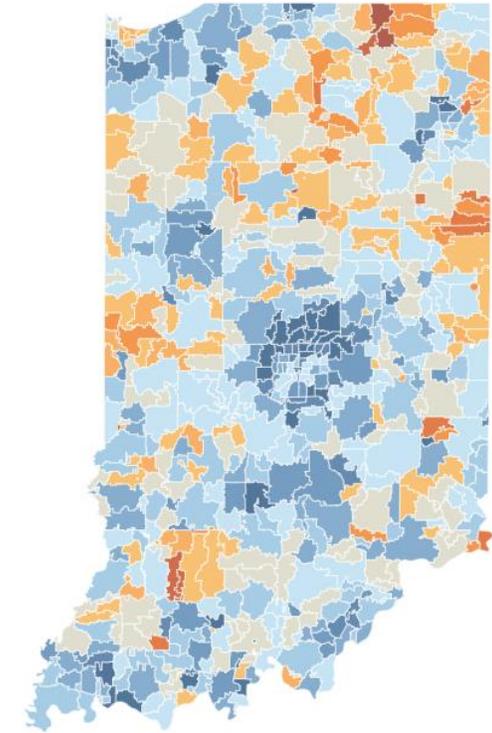
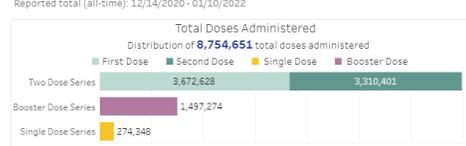
### Newly Reported Vaccinations

Reported within the past 24 hours



### Total Vaccinations

Reported total (all-time): 12/14/2020 - 01/10/2022





# Indiana COVID-19 Home Dashboard

Below results are as of 04/07/22, 11:59 PM. Dashboard updates by 5 p.m. every Monday, Wednesday, and Friday.

[Return to Landing Page](#)

- CASES**
- DEATHS
- TESTS

Page Filter

Timeframe  
Previous Month

## 7-Day Average COVID-19 Counts (Previous Month Total Counts in Italics)

<b>Cases</b> <b>167 (↓16)</b> <i>5,658 Total Count</i>	<b>Reinfections</b> <b>12.4% of Cases</b> <i>771 Total Count</i>	<b>Deaths</b> <b>3 (↓3)</b> <i>207 Total Count</i> <i>13 Probable Deaths</i>	<b>Tests Administered</b> <b>9,830 (↓2,161)</b> <i>341,164 Total Count</i>
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## County Distribution

Select a county (or counties) to filter whole page.

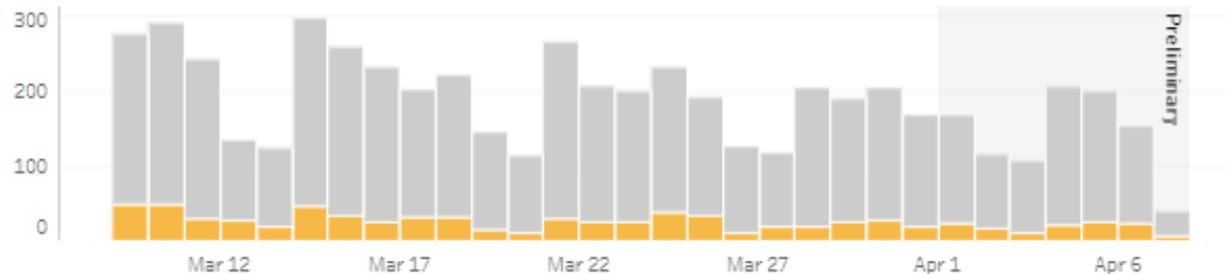
[Click here for CDC COVID reporting by county.](#)

Metric (Filters Map Only)  
Per 10k

## Statewide Cases for Previous Month

By Specimen Collection Day

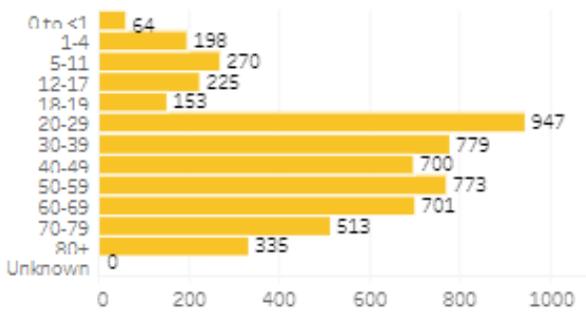
■ First Infection ■ Reinfection



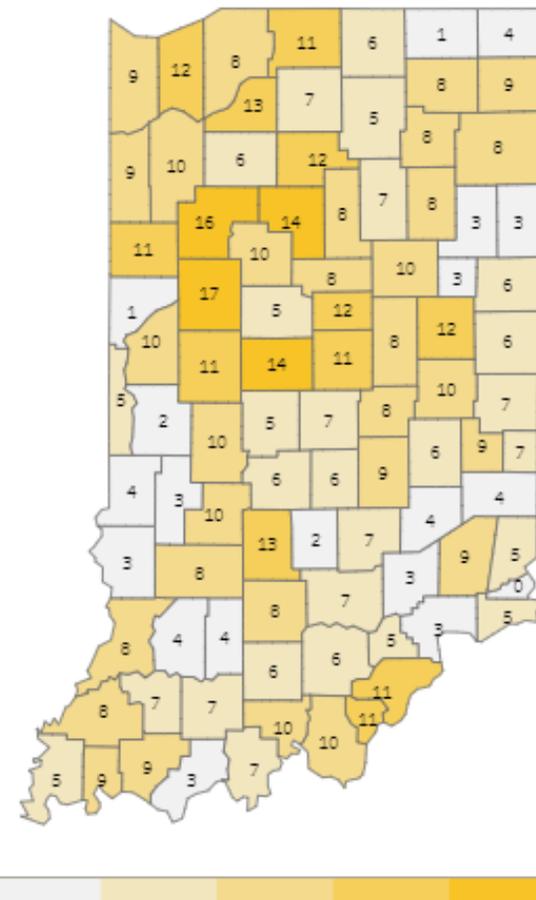
## Statewide Case Demographics

Demographic Age

Total



Per 10,000 Residents



All numbers are provisional and reflect only those reported to IDOH. Numbers should not be characterized as a comprehensive total and may change as more data is reported.



# Indiana COVID-19 Home Dashboard

Below results are as of 04/07/22, 11:59 PM. Dashboard updates by 5 p.m. every Monday, Wednesday, and Friday.

[Return to Landing Page](#)

CASES

DEATHS

TESTS

Page Filter

Timeframe

Previous Month

## 7-Day Average COVID-19 Counts *(Previous Month Total Counts in Italics)*



## County Distribution

Select a county (or counties) to filter whole page.

[Click here for CDC COVID reporting by county.](#)

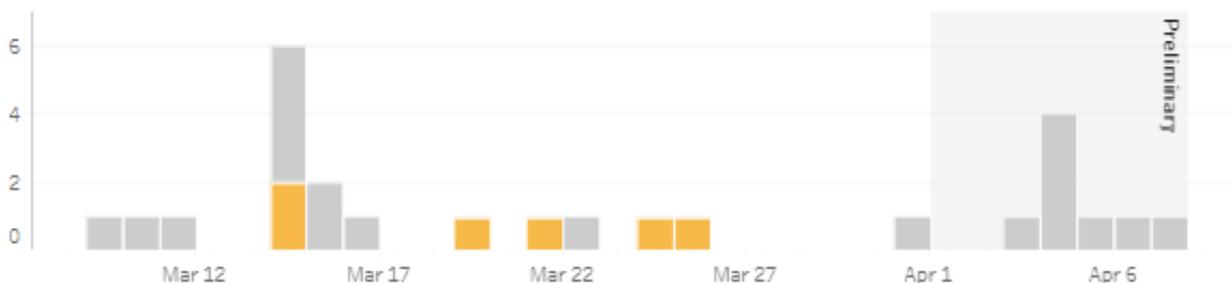
Metric (Filters Map Only)

Per 10k

## Ripley County Cases for Previous Month

By Specimen Collection Day

■ First Infection ■ Reinfection



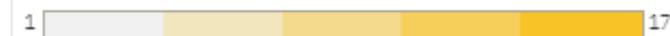
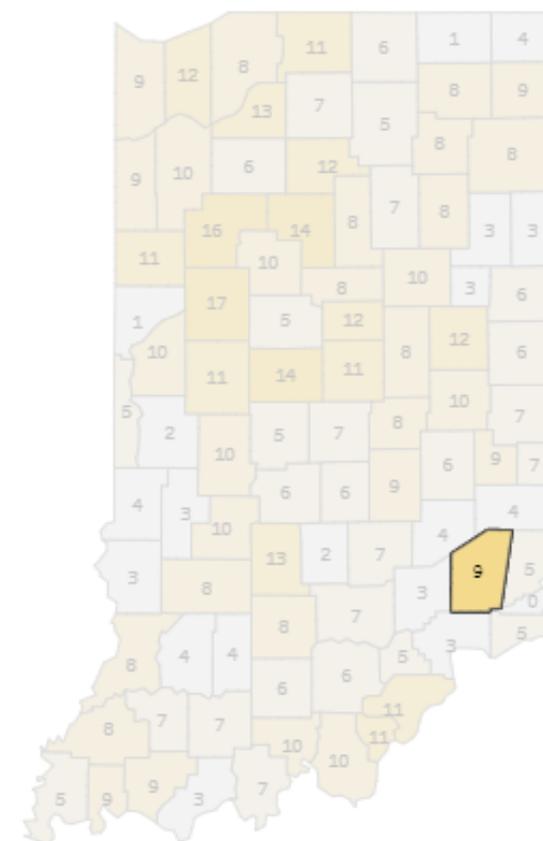
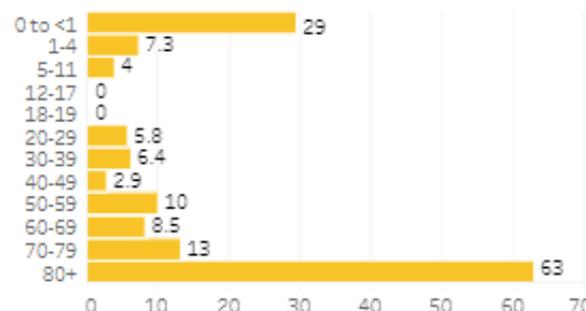
## Ripley County Case Demographics

Demographic Age

Total



Per 10,000 Residents





# Indiana COVID-19 Home Dashboard

Below results are as of 04/07/22, 11:59 PM. Dashboard updates by 5 p.m. every Monday, Wednesday, and Friday.

[Return to Landing Page](#)

**CASES** DEATHS TESTS

## 7-Day Average COVID-19 Counts *(Previous Year Total Counts in Italics)*

<b>Cases</b> <b>4 (↓1)</b> <i>27,450 Total Count</i>	<b>Reinfections</b> <b>14.3% of Cases</b> <i>1,992 Total Count</i>	<b>Deaths</b> <b>0 (No Change)</b> <i>265 Total Count</i> <i>22 Probable Deaths</i>	<b>Tests Administered</b> <b>288 (↓3)</b> <i>286,249 Total Count</i>
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## County Distribution

Select a county (or counties) to filter whole page.

[Click here for CDC COVID reporting by county.](#)

Page Filter

Timeframe

Previous Year

Metric

(Filters Map Only)

Per 10k

## Elkhart County Cases for Previous Year

By Specimen Collection Week

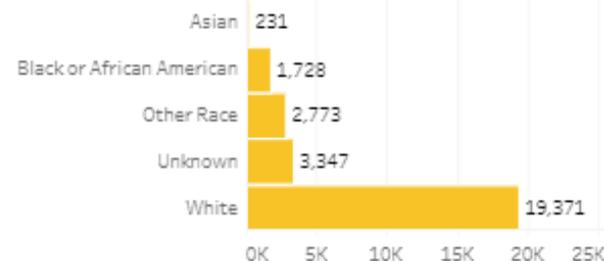
■ First Infection ■ Reinfection



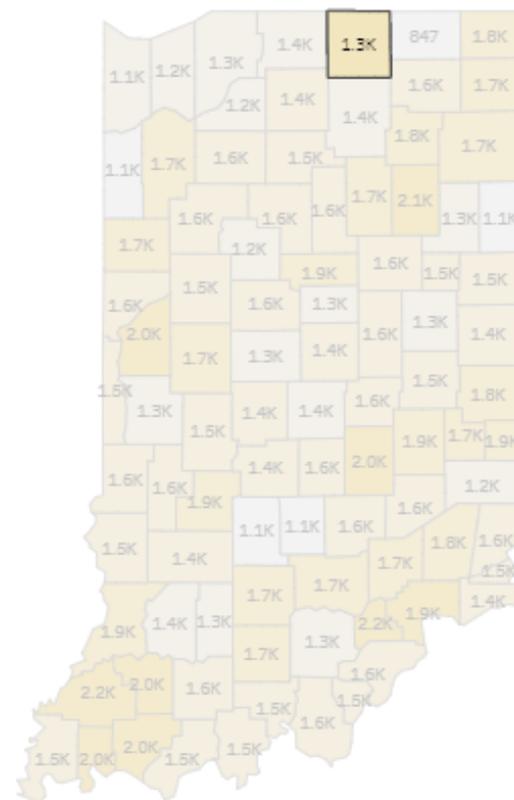
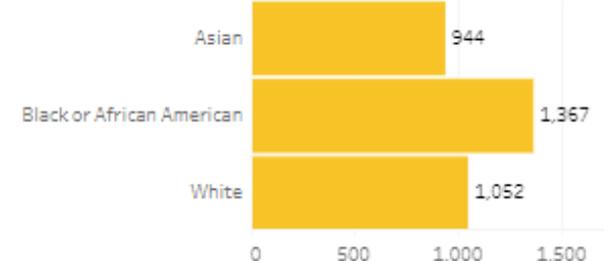
## Elkhart County Case Demographics

Demographic Race

Total



Per 10,000 Residents



All numbers are provisional and reflect only those reported to IDOH. Numbers should not be characterized as a comprehensive total and may change as more data is reported.

# Surveillance

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Surveillance data are crucially important to inform policy changes, guide new program interventions, sharpen public communications, and help agencies assess research investments.

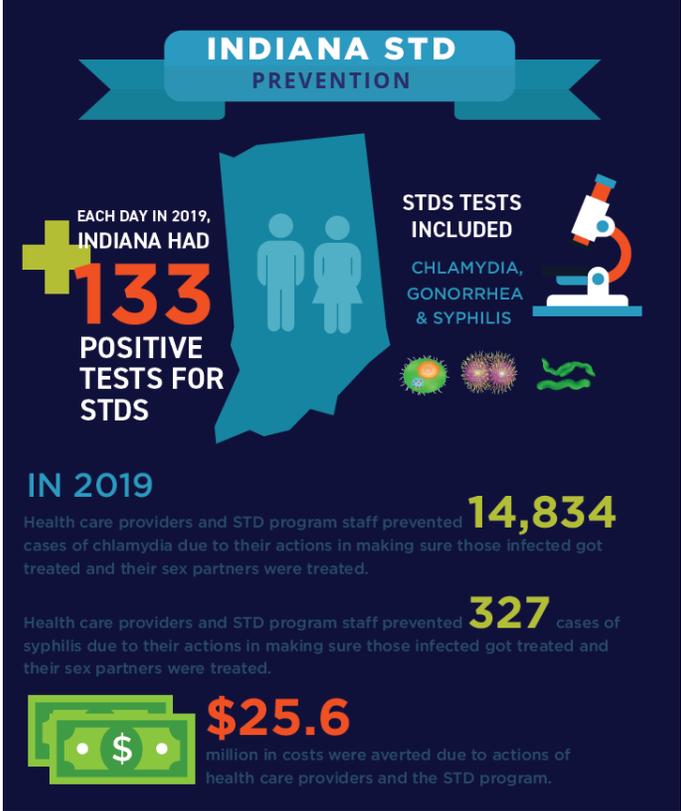
”

—CDC Improving Surveillance Report

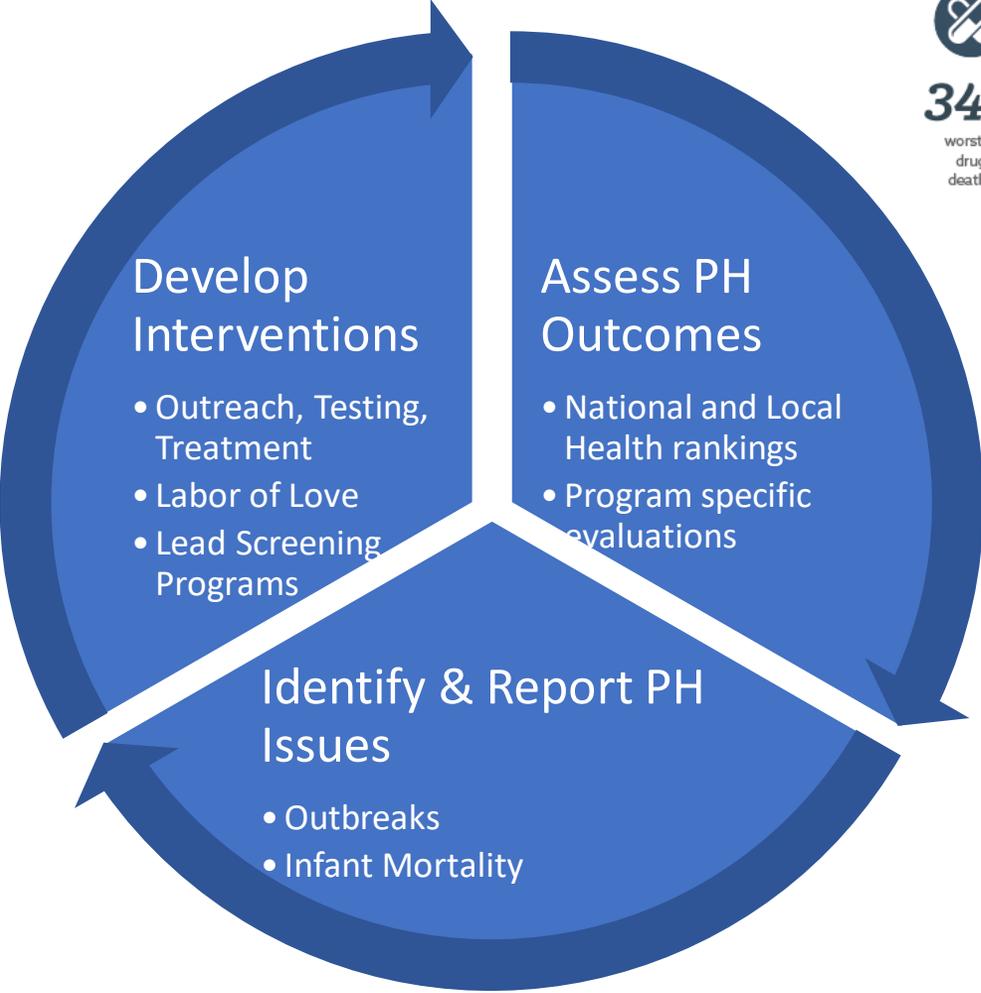


# Data is the backbone of public health

## Program Development & Reporting



## Health Rankings

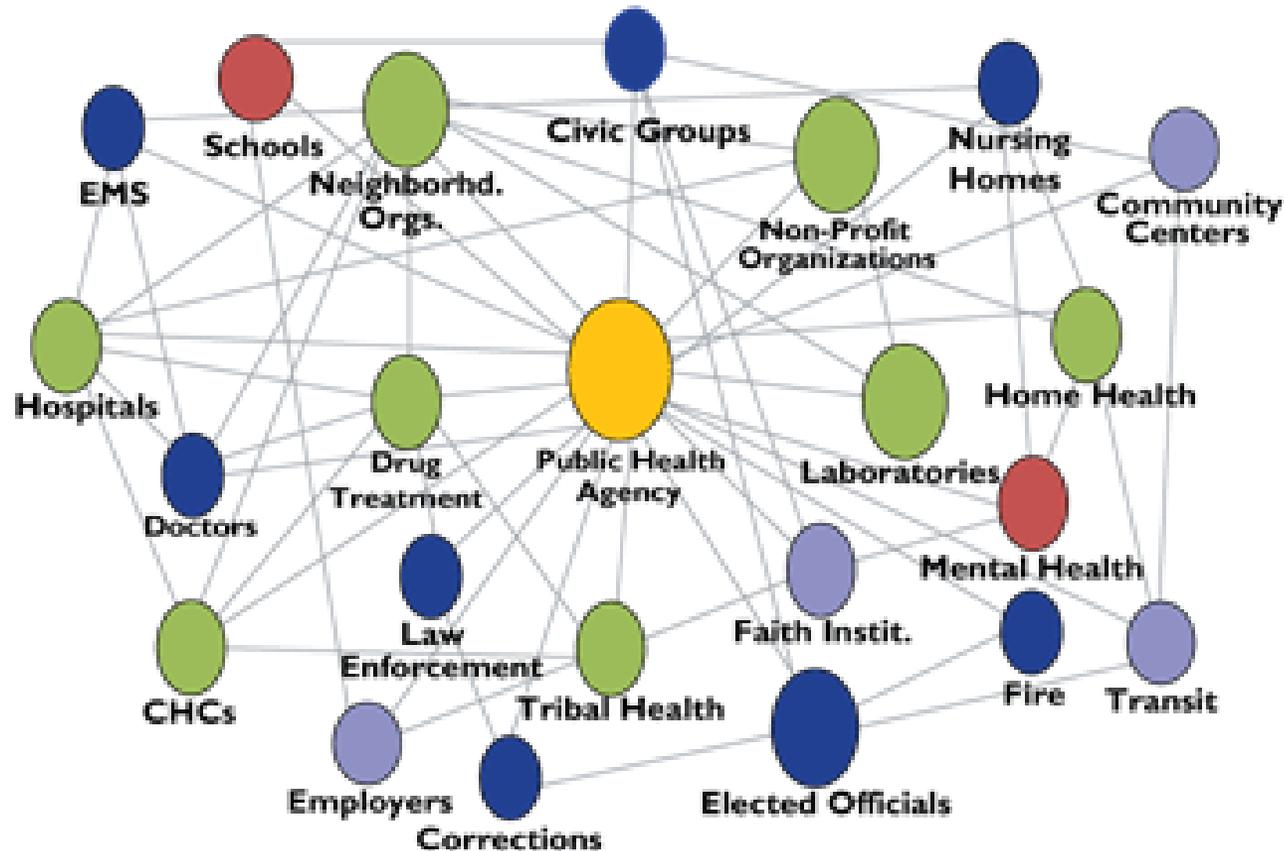


*“Data are the building blocks of population health narratives – stories that emerge from data—that help the nation contextualize what drives or impedes health.”<sup>1</sup>*

<sup>1</sup> Charting a Course for an Equity-centered Data system: Recommendations from the National Commission to Transform Public Health Data Systems, pg. 7

# Public Health Data Encompasses Provider and Community Stakeholders

The Public Health System- 80-90% of the determinants of health are not related to healthcare.



*“It's impossible to fix what isn't measured. We have an opportunity now to create data infrastructure that is centered on equity and that creates fair and just opportunities for everyone.”*

*Dr Richard. E Besser*

# Current systems environment prohibits ability to fully leverage public health data

- Public Health data and systems are historically siloed by disease condition, federal funding source, reporting requirements, or other factors.
- Systematically IDOH Consists of 100 plus applications – 50% of these systems contain crucial public health data.
- There is no centralized data environment to share data or as system or record/source of truth.

## Core Pillars of Public Health Data

- Case Reporting -> eCR electronic reports directly from electronic health records
- Lab Reporting -> ELR electronic reports directly from laboratory management systems
- Syndromic Surveillance
- Electronic Vital Records -> National System birth and death data
- National Notifiable Disease Surveillance System -> 120 diseases & conditions under surveillance

# Transparent Dashboards of Viral Surveillance



## Indiana Influenza Dashboard

All data will be updated weekly beginning Friday, October 15, 2021. Data as of April 8, 2022.  
Observed Current Week - March 27, 2022 - April 2, 2022

WEEKLY OVERVIEW

SYNDROMIC SURVEILLANCE

SENTINEL SURVEILLANCE

VIROLOGIC SURVEILLANCE

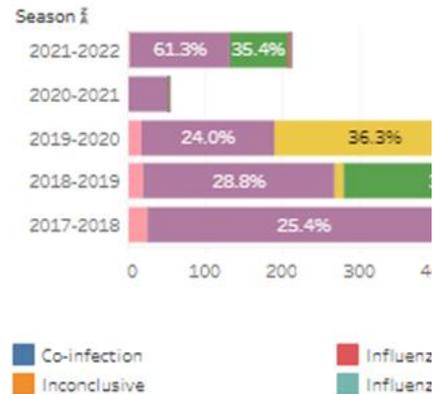
### Laboratory

Many respiratory viruses commonly circulate during the same time as influenza, with similar symptoms. The ILI activity being reported is due to influenza or another respiratory virus. The primary laboratory is the Indiana Department of Health.

### Circulating Influenza Viruses Detected by IDOH Laboratory for Current Week

Specimen	Count
Co-infection	0
Inconclusive	1
Influenza A Unsubtypable	2
Influenza A/H1N1pdm	0
Influenza A/H3	20
Influenza B	0
Negative	5
Unsatisfactory	0
<b>Total</b>	<b>28</b>

### Circulating Influenza Viruses Detected by IDOH Laboratory for Current Week



## Region 2: Midwest

### Percent Positive

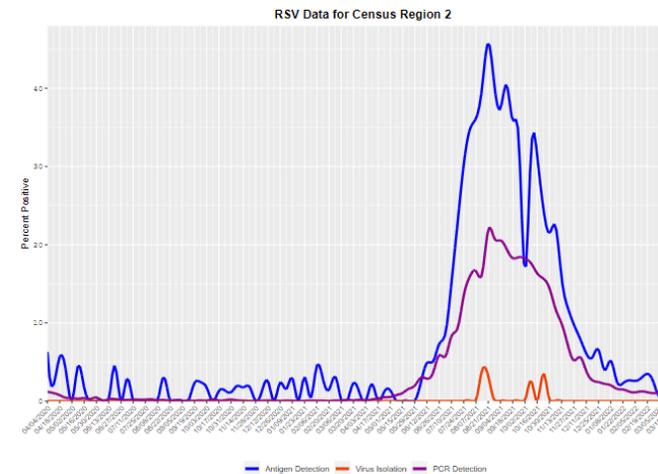


Table: Midwest United States percent positive RSV tests, by week

The gray line and gray bars indicate weeks when the data may be less complete.

### Detections

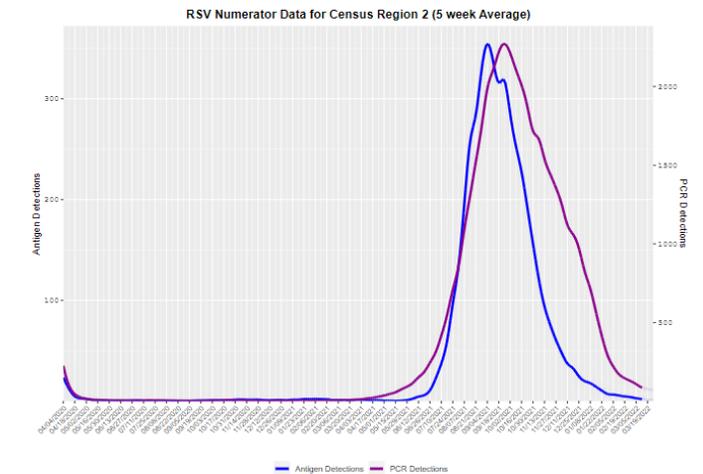


Table: Midwest United States RSV detections, by week

The gray line and gray bars indicate weeks when the data may be less complete.

# AI: Disease Surveillance and Triggers

- The upper bound for undiagnosed HIV infections in Scott County peaked at 126 around Jan 10, 2015.
- An earlier public health response could have substantially reduced the total number of HIV infections (estimated to have been 183–184 infections by Aug 11, 2015).
- Initiation of a response on Jan 1, 2013, could have suppressed the number of infections to 56 or fewer, averting at least 127 infections; whereas an intervention on April 1, 2011, could have reduced the number of infections to ten or fewer, averting at least 173 infections.

**FOR IMMEDIATE RELEASE**  
February 25, 2015

**CONTACT: Amy Reel**  
( 317) 431-3792

[areel@isdh.in.gov](mailto:areel@isdh.in.gov)

## **HIV OUTBREAK IN SOUTHEASTERN INDIANA**

INDIANAPOLIS—State health officials announced today a quickly spreading outbreak of HIV in the southeastern portion of the state. There have been 26 confirmed and four preliminary HIV positive cases since mid-December. The large majority of cases are linked through injection drug abuse of the prescription drug, opiana, in addition to a small number of cases linked through sexual transmission. Opana is a powerful opioid painkiller containing oxycodone. It is more potent, per milligram, than Oxycodone.

"It's very concerning to me that most of the individuals who have tested HIV positive have only recently contracted the virus," said State Health Commissioner Jerome Adams, M.D., M.P.H. "Because prescription drug abuse is at the heart of this outbreak, we are not only working to identify, contact and test individuals who may have been exposed, but also to connect community members to resources for substance abuse treatment and recovery."

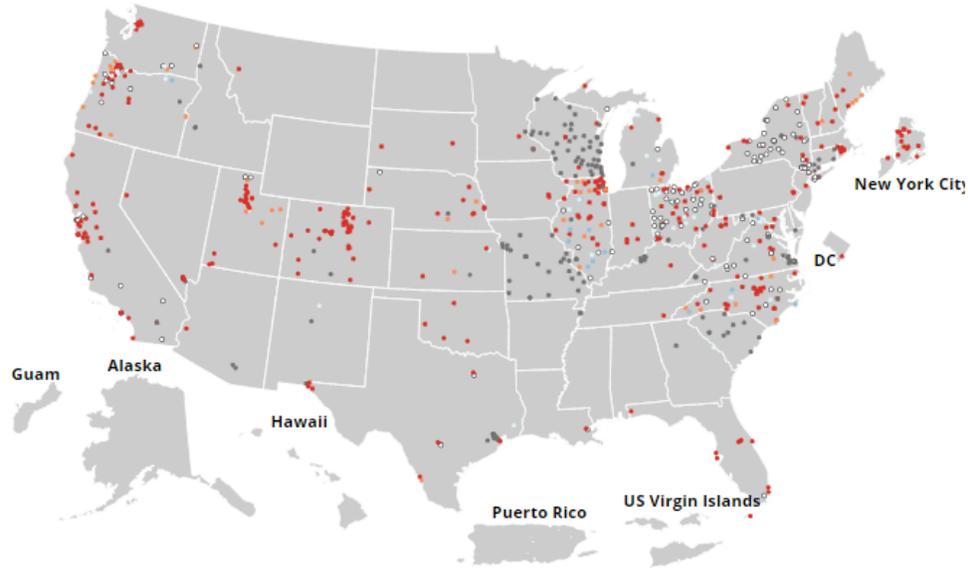
State health officials are working closely with local health departments, health care providers and others to contain the spread of HIV in southeastern Indiana. Disease intervention specialists are in the area, interviewing each newly identified HIV positive individual to obtain information about needle sharing and sex partners, as well as recommending care coordination services, medical care and HIV prevention information.

State health officials recommend that all Hoosiers know their HIV status through testing at a health care facility. Hoosiers in the southeastern portion of the state, especially individuals who have engaged in high-risk behavior such as needle sharing and unprotected sex, are advised to get tested and then re-tested after about two to three months because HIV can take up to three months to appear in a person's system.

To help reduce risk of HIV infection, avoid:

- injection drug use;
- sharing or re-using needles;
- engaging in unprotected sex; and,

# Wastewater



Percent of wastewater samples with detectable SARS-CoV-2 in the last 15 days by site, United States

15-day detection % category	Num. sites	% sites	Category change in last 7 days
Non-Detect	123	22	-8%
1% to 19%	0	0	N/A*
20% to 39%	14	3	-59%
40% to 59%	50	9	-9%
60% to 79%	46	8	-35%
80% to 100%	317	58	-14%

Total sites with current data: 550

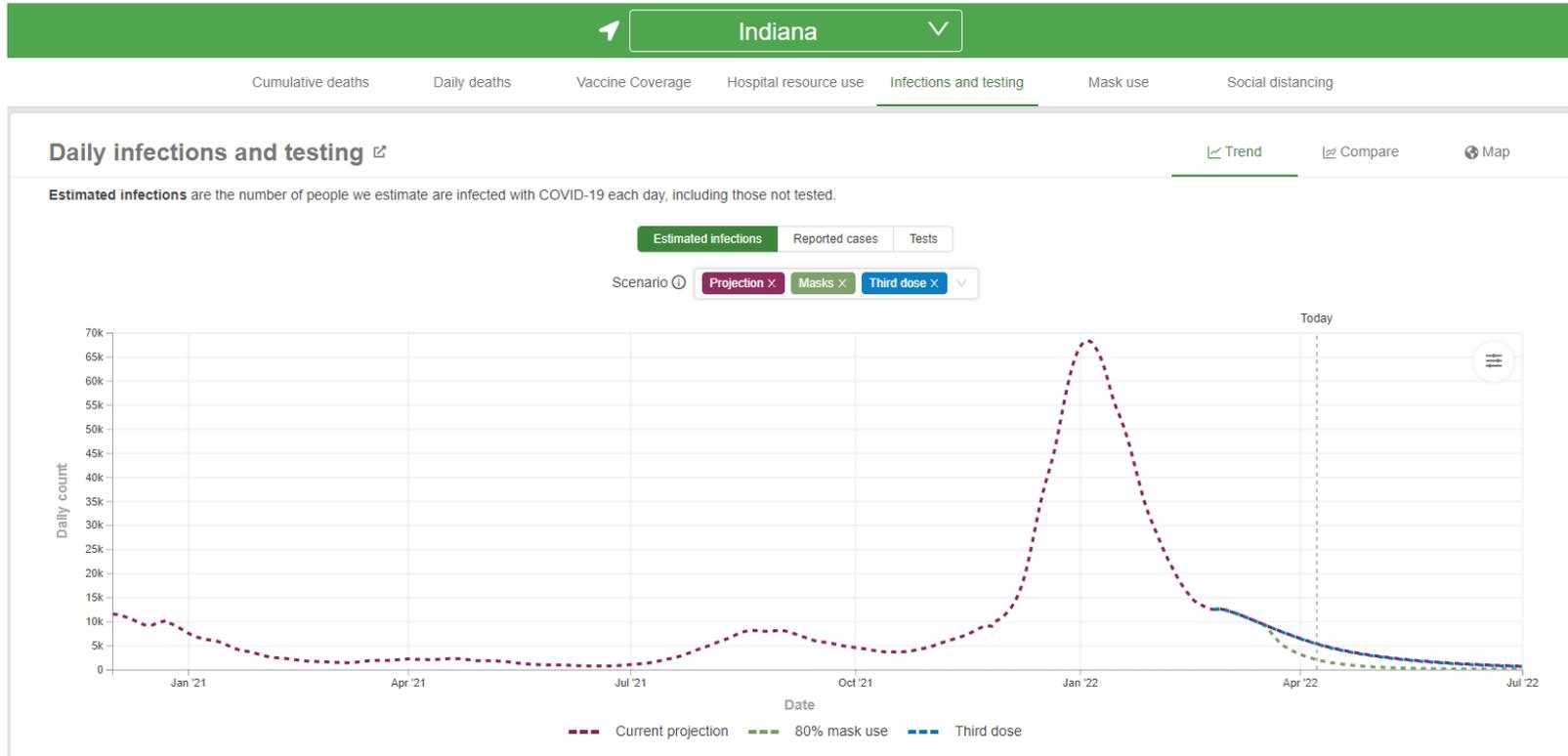
Total number of wastewater sampling sites: 747

[How is the percent of wastewater samples with detectable SARS-CoV-2 in the last 15 days calculated?](#)

Select legend categories to filter points on the map.

Non-detect  Less than 20%  20% to 39%  40% to 59%  60% to 79%  80% to 100%

# Modeling



# Disparity, Duplicity, and Dependence

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- Only some of the hospitals/hospital systems and few local health departments have entire data analytic teams to build out dashboards and modeling- MOST DO NOT
- Every hospital and local health department that does this work is doing it in a silo deriving the data from the same or similar resources and there is not sharing between them
- Hospitals and local health departments recognized that they were affected by what was going on in their greater community, beyond their walls and borders

# Quality Improvement



# Utilize HDU To Support Quality Care

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- Peripartum triggers and direction to care
- Antibiotic resistance notification
- Outbreak notification
  - Hepatitis A
  - Syphilis HIV

# Improving Maternal and Infant Outcomes

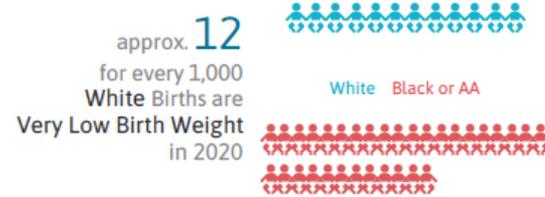
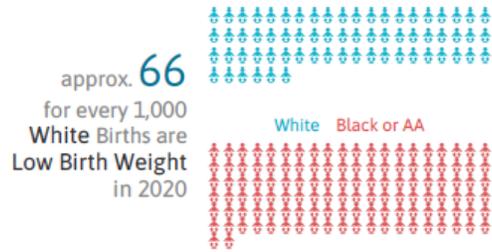
## Prenatal Care



In 2020, Black or African American mothers were **1.9 times** more likely to Not receive prenatal care in the 1st Trimester

	2019		2020	
	1st Trimester		1st Trimester	
White	7 per 10 White babies	2 times	8 per 10 White babies	1.9 times
Black or AA	8 per 10	1.6x	9 per 10	1.4x
Other	7 per 10	2.2x	7 per 10	2.2x
Hispanic				

## Low & Very Low Birth Weight



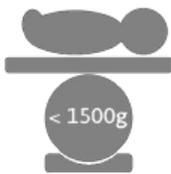
### Low Birth Weight



In 2020, Black or African American babies were **1.8 times** more likely to be born with a Low Birth Weight (less than 2500 grams)

	2019	2020
White	White	White
Black or AA	1.6 times	1.8 times
Other		
Hispanic		

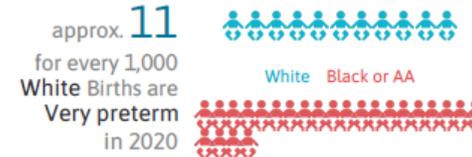
### Very Low Birth Weight



In 2020, Black or African American babies were **2.8 times** more likely to be born with a Very Low Birth Weight (less than 1500 grams)

	2019	2020
White	White	White
Black or AA	2.5 times	2.8 times
Other		
Hispanic	1.2 times	

## Preterm Birth



### Very Preterm

In 2020, Black or African American babies were **2.3 times** more likely to be born Very preterm (28-31 weeks)

	2019	2020
White	White	White
Black or AA	2 times	2.3 times
Other		
Hispanic		

### Extremely Preterm

In 2020, Black or African American babies were **2.9 times** more likely to be born Extremely preterm (22-27 weeks)

	2019	2020
White	White	White
Black or AA	2.9 times	2.9 times
Other		1.2 times
Hispanic	1.9 times	

## Marion County Population



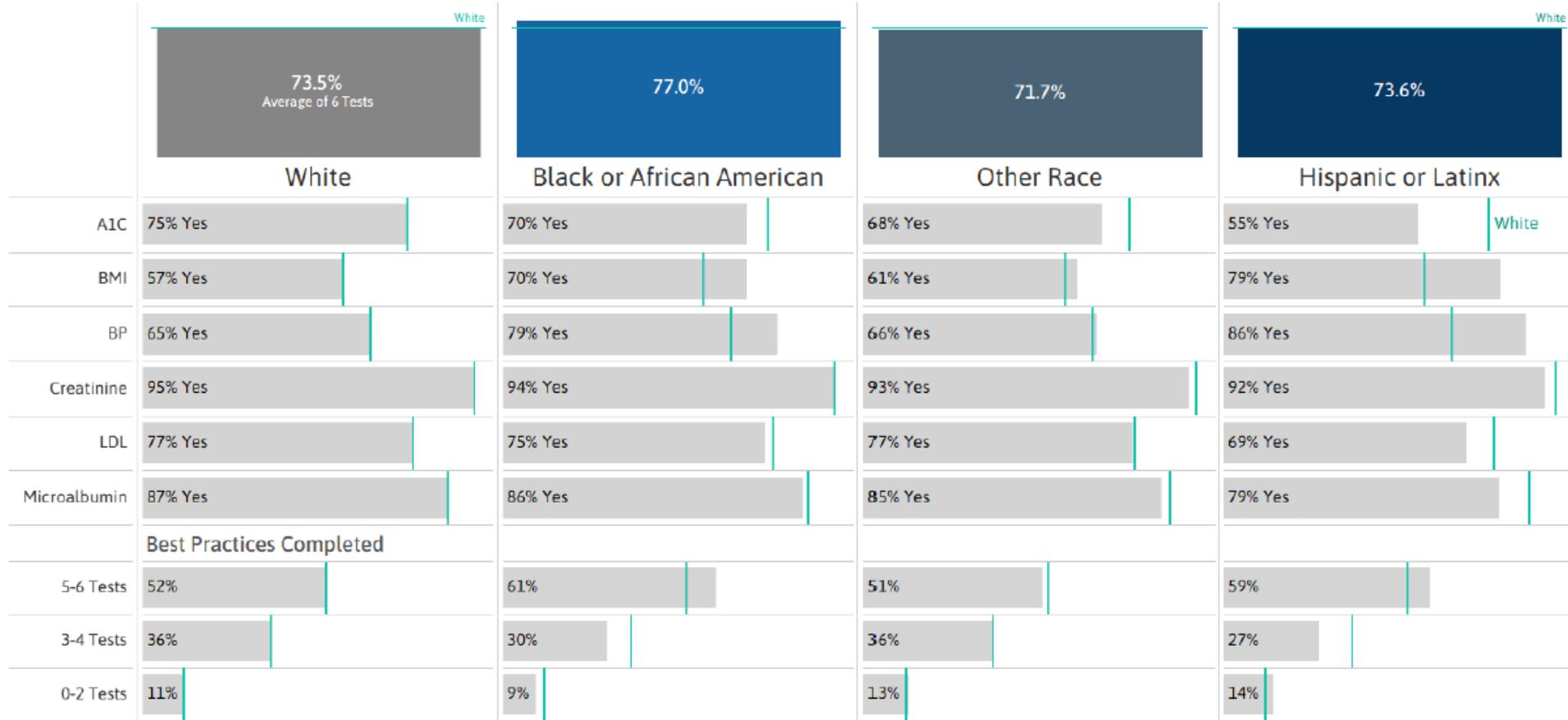
## Health Systems' Diabetic Patients in Marion County



Marion County residents who have diagnosed diabetes and were treated by the five health systems during 2019 and 2020

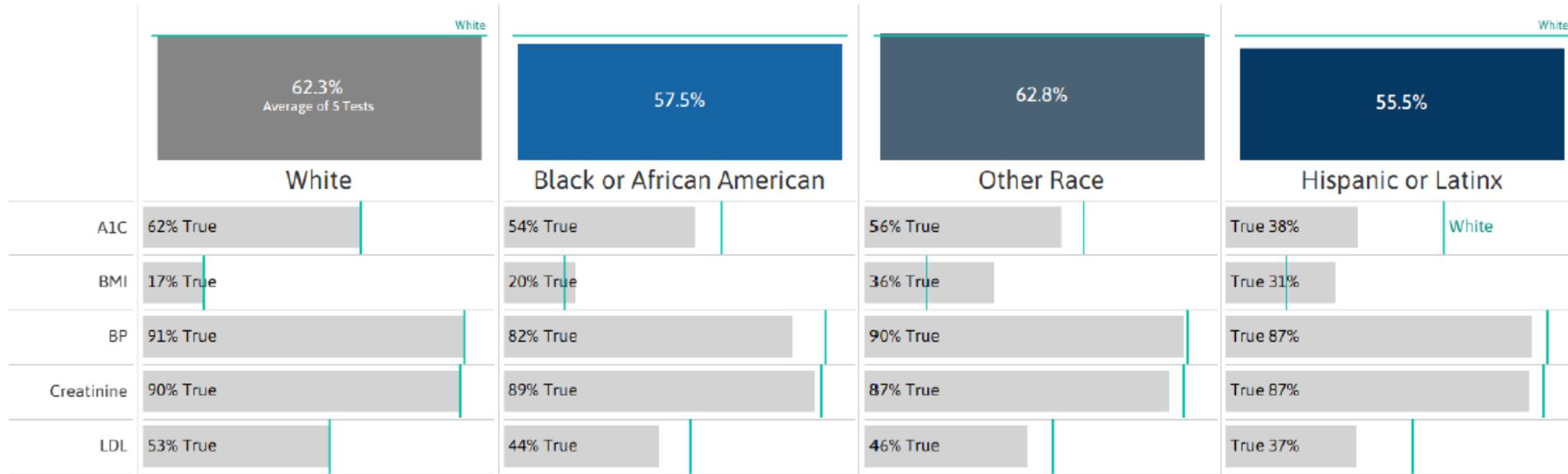
# Diabetic Care Best Practice Rates

for Health Systems' Marion County Patients



# Diabetes Control Rates

for Health Systems' Marion County Patients



# How is Indiana Responding?

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# Public Health and Health Outcomes

HDU plays a role in recognizing SDOH and taking steps to address its...



What **Makes** Us Healthy



What We **Spend** On Being Healthy



Figure from Bipartisan Policy Center. (2012). What Makes Us Healthy vs. What We Spend on Being Healthy. Retrieved from <https://bipartisanpolicy.org/report/what-makes-us-healthy-vs-what-we-spend-on-being-healthy/>

# Indiana Community Analysis of COVID-19 in Black Communities

- Peripartum triggers and direction to care
- Antibiotic resistance notification
- Outbreak notification
  - Hepatitis A
  - Syphilis HIV

# Objectives

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1. To better understand COVID-19 in Indiana's Black communities
2. To illustrate the level of access and uptake of COVID-19 vaccinations in Black communities
3. To provide additional perspective on the relationship between race and key COVID-19 data points

Note: While these slides include several Black communities, they do not represent all Black Hoosiers

All data current as of March 10, 2021

# Statewide Demographic Distribution

Race	% of Indiana Population
White	83.6%
Black or African American	9.3%
Other Race	4.8%
Asian	2.2%

# COVID-19 Testing, Incidence, Hospitalization, and Mortality

Statewide

**At a statewide level, Black Hoosiers are getting vaccinated at a lower rate per capita than White or Asian Hoosiers**



**NOTE: The “Other” race category is overrepresented in these visuals as racial groups and selection into them vary across NBS, vaccine, and Census data**

# Marion County (Indianapolis) Demographic Distribution

Race	% of Marion County Population	% of Indiana Population
White	62.3%	83.6%
Black or African American	27.7%	9.3%
Other Race	6.9%	4.8%
Asian	3.1%	2.2%

# Marion County Mortality and Hospitalization Rates

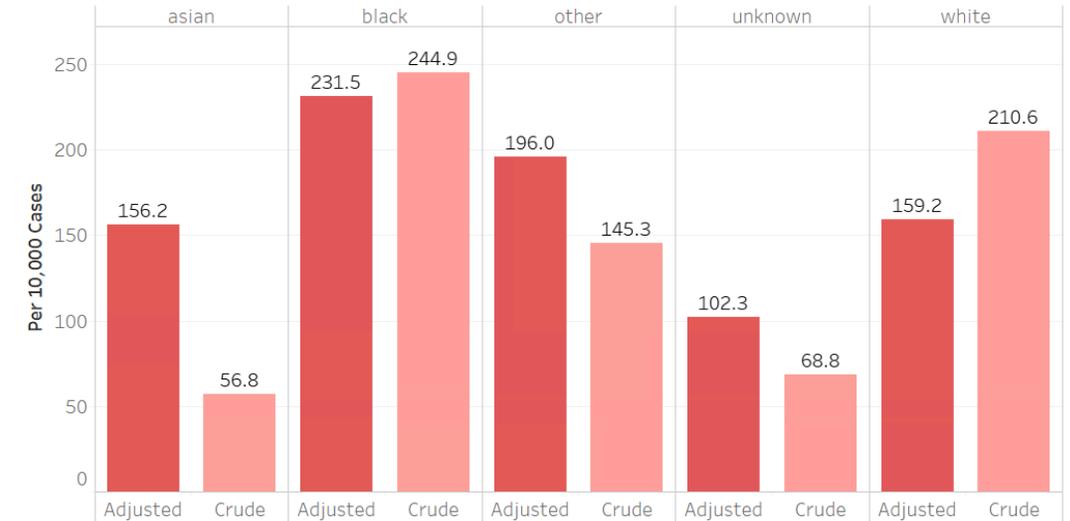
## Mortality & Hospitalization Rates for Marion County by Race - Data as of March 10th

\*Crude rates describe the burden of health outcomes in a population and should not be used to compare health outcomes between populations. Adjusted rates account for differences in age and gender distribution for each population to compare health outcomes.

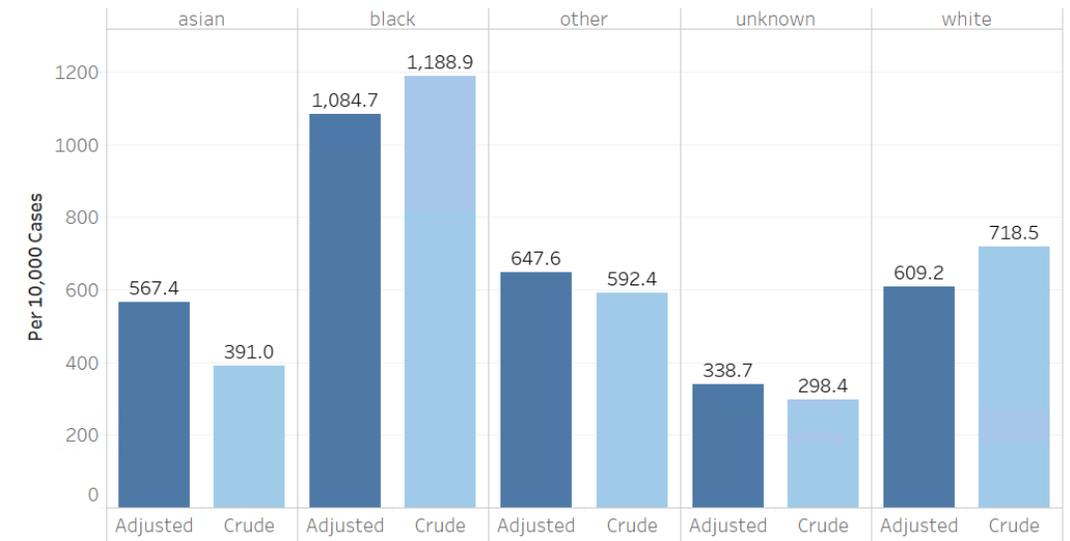
In Marion County, when Black Hoosiers did get COVID-19, they faced mortality rates higher than any other race.

Black Hoosiers in Marion County have a higher hospitalization rate than any other race, 1.7x higher than the next highest race.

### Mortality



### Hospitalization



# Now What?

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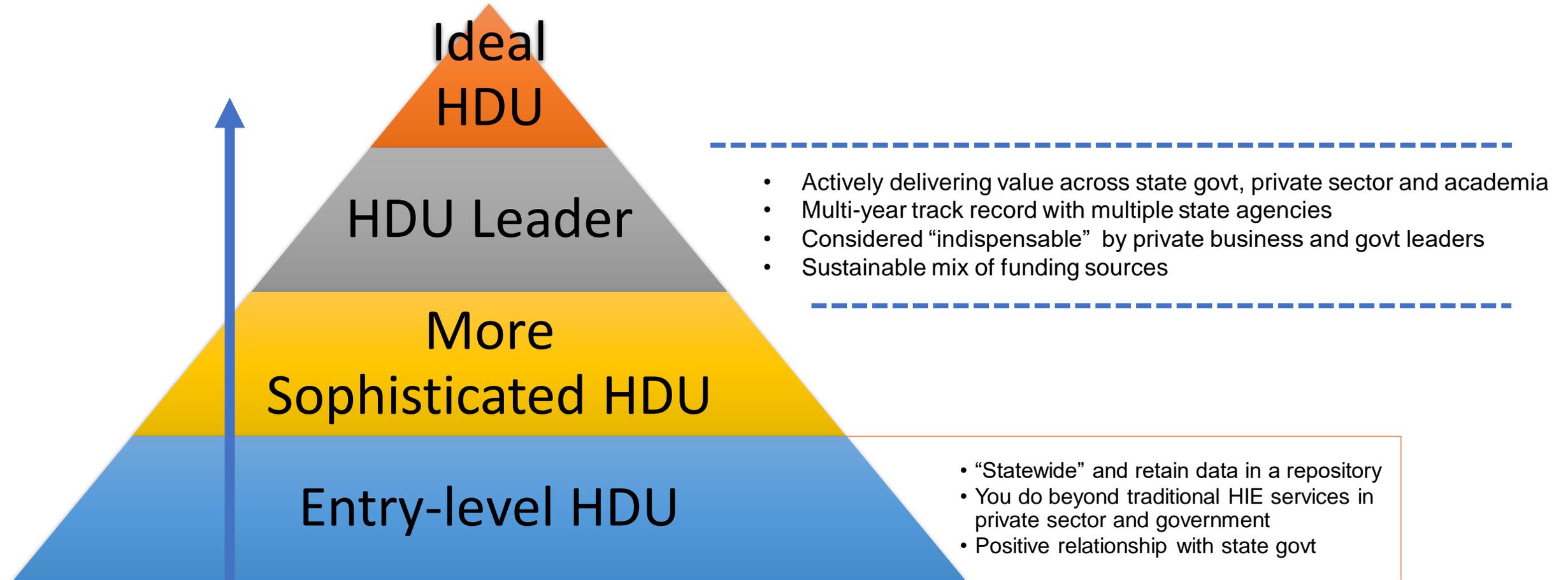
# Applying the HDU model to Your Organization's Strategy

- An HDU definition should not constitute a binary litmus test for whether an organization is or is not an HDU
- BUT...
  - Every state should have an HDU
  - Every state has a different set of circumstances

## **Recommendation:**

*A maturity model should be developed to help the industry better understand HDU and consistently apply the concept*

# Maturity Model as a Way of Defining HDU



# Illustrating an HDU Maturity Grid (example only)

## Private Sector

## State Government

## Academia

	PROVIDERS	PAYERS	Employers	DEPT OF HEALTH	MEDICAID	PDMP	APCD	Universities
ADVANCED	<ul style="list-style-type: none"> <li>EHR Integration</li> <li>Automated PH reporting</li> <li>Things that reduce burden</li> </ul>	<ul style="list-style-type: none"> <li>Sophisticated stuff</li> <li>You are part of their overall clinical data strategy</li> </ul>	<ul style="list-style-type: none"> <li>Sophisticated stuff</li> </ul>	<ul style="list-style-type: none"> <li>Automated PH reporting</li> <li>Analytics – ad hoc or ongoing</li> <li>Services supporting LHDs</li> </ul>	<ul style="list-style-type: none"> <li>Sophisticated stuff</li> <li>Supplement the program... with analytics or... other</li> <li>Medicaid (multi-agency) identity mgmt</li> </ul>	<ul style="list-style-type: none"> <li>You run it</li> </ul>	<ul style="list-style-type: none"> <li>You run it</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing support and enablement of research</li> </ul>
MEDIUM	<ul style="list-style-type: none"> <li>Repository (statewide)</li> </ul>	<ul style="list-style-type: none"> <li>Medium stuff</li> </ul>	<ul style="list-style-type: none"> <li>Medium stuff</li> </ul>	<ul style="list-style-type: none"> <li>Medium stuff</li> </ul>	<ul style="list-style-type: none"> <li>Medium stuff</li> <li>History of a financial relationship</li> </ul>	<ul style="list-style-type: none"> <li>You sync data with it</li> </ul>	<ul style="list-style-type: none"> <li>You exchange data with it or enhance data</li> </ul>	<ul style="list-style-type: none"> <li>Some one-off support and enablement of research</li> </ul>
BASIC	<ul style="list-style-type: none"> <li>Clinical Messaging</li> </ul>	<ul style="list-style-type: none"> <li>Simple stuff</li> </ul>	<ul style="list-style-type: none"> <li>Simple stuff</li> </ul>	<ul style="list-style-type: none"> <li>open communication / person-to-person relationships</li> </ul>	<ul style="list-style-type: none"> <li>open communication / person-to-person relationships</li> </ul>	<ul style="list-style-type: none"> <li>open communication / person-to-person relationships</li> </ul>	<ul style="list-style-type: none"> <li>open communication / person-to-person relationships</li> </ul>	<ul style="list-style-type: none"> <li>No evidence of supporting research</li> </ul>

# Thank you!

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**BETTER TOGETHER**  
HEALTH DATA  
COLLABORATIVES  
& INFORMATION  
EXCHANGE  
**2022**  
**TO ADVANCE  
HEALTH EQUITY**