

# *HIEs As Essential Public Health Infrastructure for COVID-19*

Session 38, August 10, 1:15-2:15PM

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**HIMSS** **21**

DISCLAIMER: The views and opinions expressed in this presentation are solely those of the author/presenter and do not necessarily represent any policy or position of HIMSS.

*Welcome*



Shaun Grannis MD, MS, FAAFP, FACMI,  
FAMIA  
Vice President for Data and Analytics,  
Regenstrief Institute



Harm Scherpbier MD, MS, FAMIA, FHIMSS  
Chief Medical Information Officer,  
HealthShare Exchange



# *Conflict of Interest*

Harm Scherpbier MD MS

Consulting Fees (e.g., advisory boards): HealthShare Exchange

Shaun Grannis MD MS

Serves as CMIO for Indiana Health Information Exchange

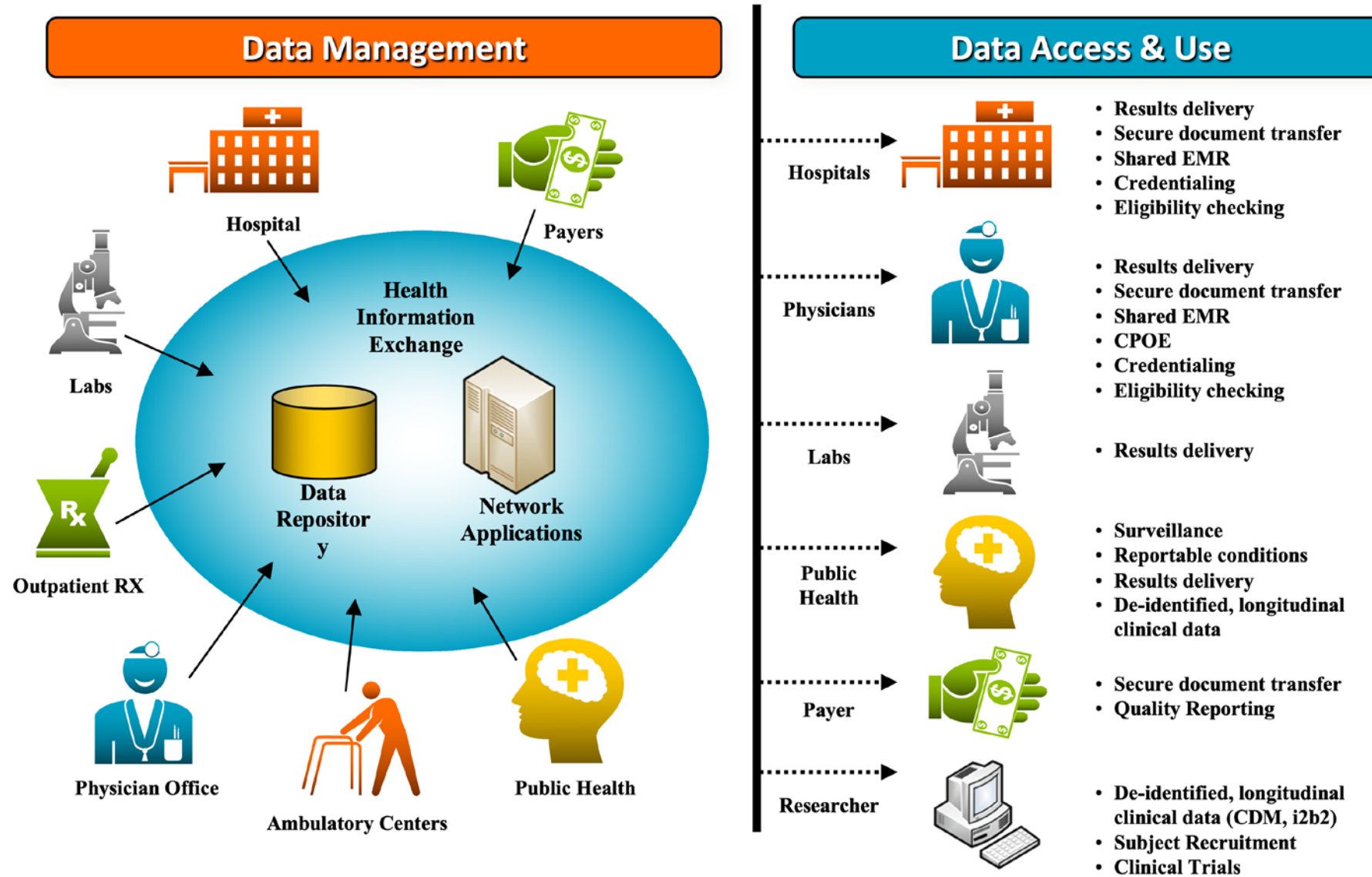
# *Agenda*

- Shaun Grannis: How HIE Can Support COVID-19 Response
- Harm Scherpbier: HIE as Essential Public Health Infrastructure
- Group discussion

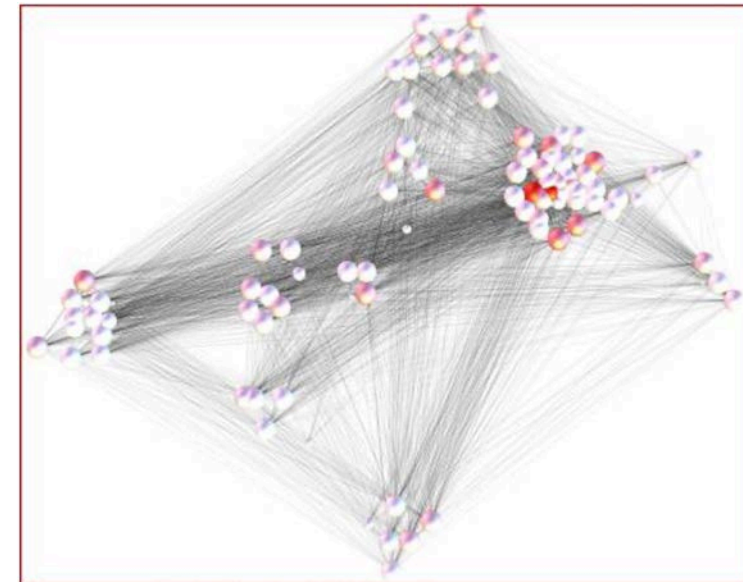
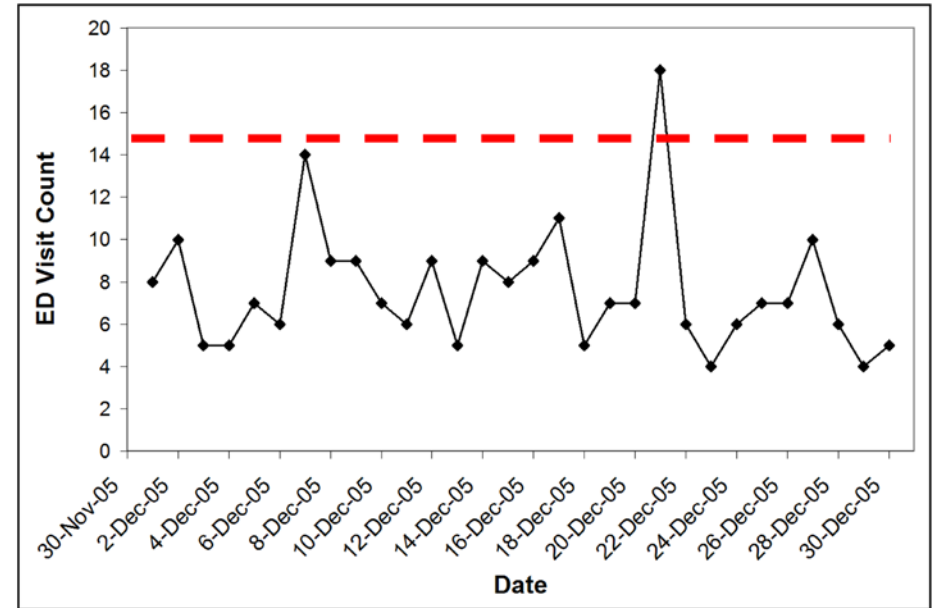
# *Learning Objectives*

- Assess the benefits of interoperability in COVID-19 tracking and other public health disease management initiatives
- Recognize data challenges in interoperability for pandemic management and public health data sharing
- Evaluate interoperability standards for public health data aggregation
- Summarize the role of HIEs in pandemic management

# EHR Integration: The Indiana Network for Patient Care (INPC)



# Surveillance → Predictive Modeling

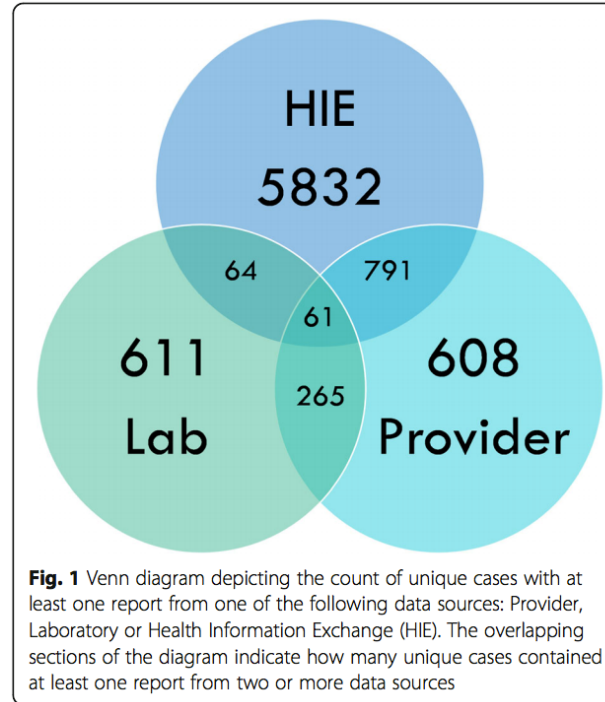


*Notifiable Condition Detector*





# Completeness



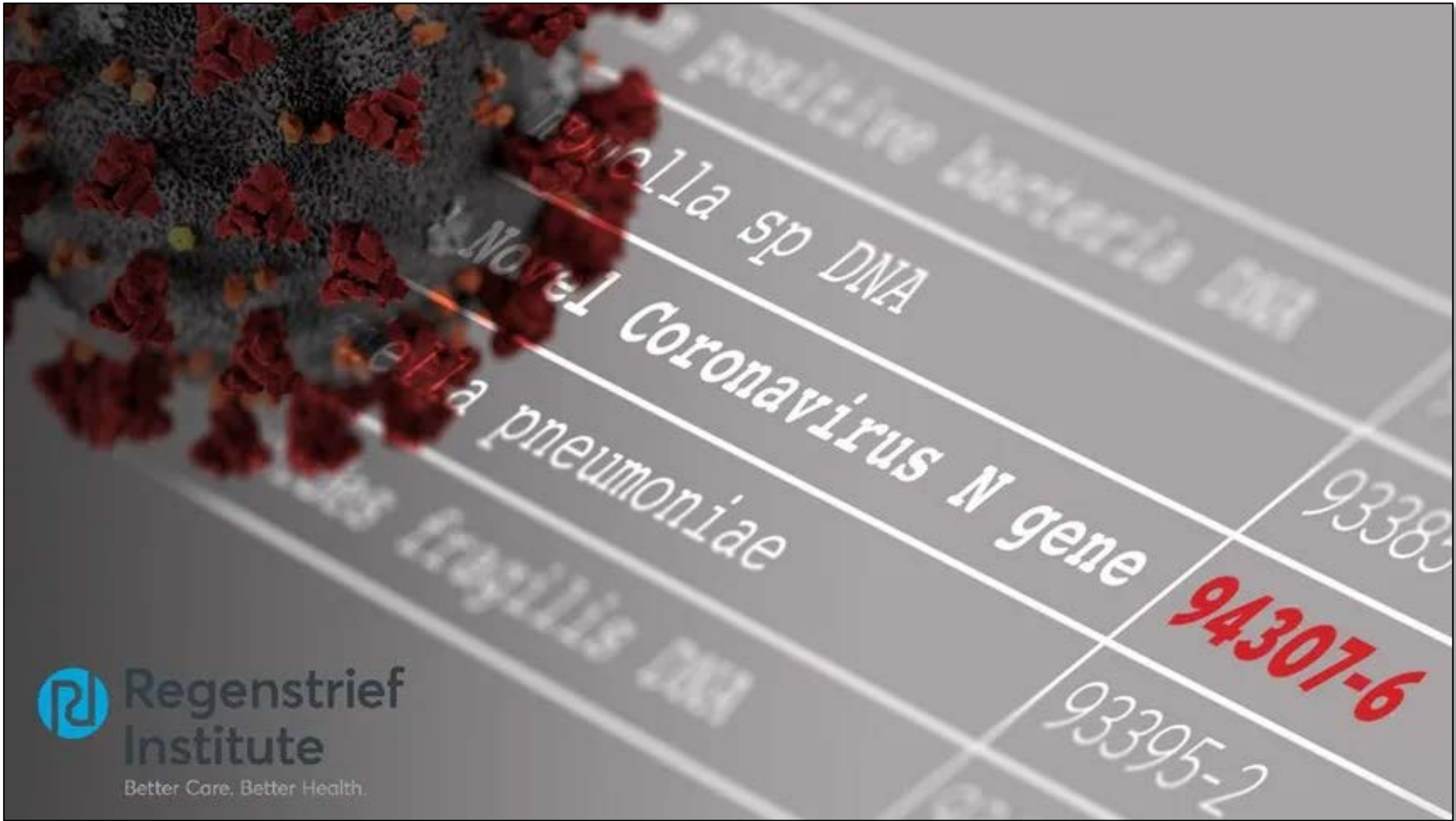
# Timeliness

**Table 3** Timeliness by data source

Data Source	Total N	Mean # days	Median # days	Max # days	P-value for $\chi^2$
Provider	1878	10.5	5	375	Reference
Faxed-LR	1142	3.6	2	367	<0.0001
HIE-ELR	7393	2.0	1	320	<0.0001
Any Laboratory <sup>a</sup>	8535	2.2	1	367	<0.0001

*HIE* Health information exchange, *ELR* Electronic laboratory report, *LR* Laboratory report  
<sup>a</sup>Source here could be either HIE-ELR or Faxed-LR







# COVID-19 Hospitalizations for 03/01/2020 - 08/09/2021

INPC Data last refreshed at: 8/9/2021 5:00:08 PM

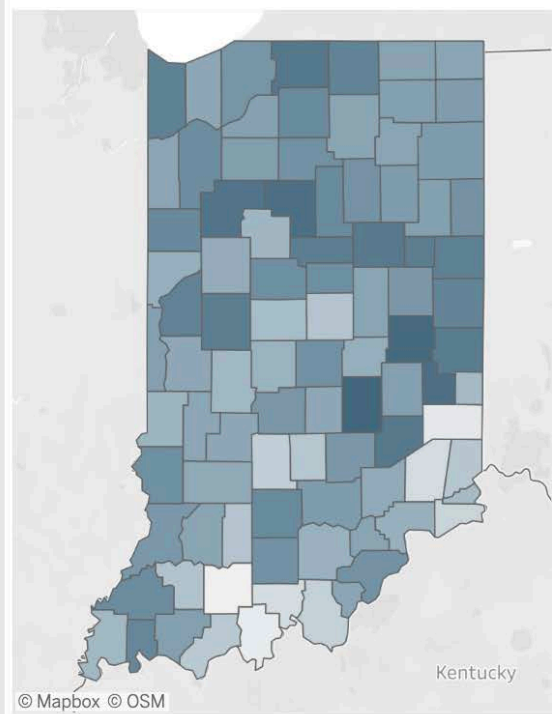
Most recent INPC lab result: 8/9/2021 12:00:00 AM

Start Date: 03/01/2020  
End Date: 08/09/2021

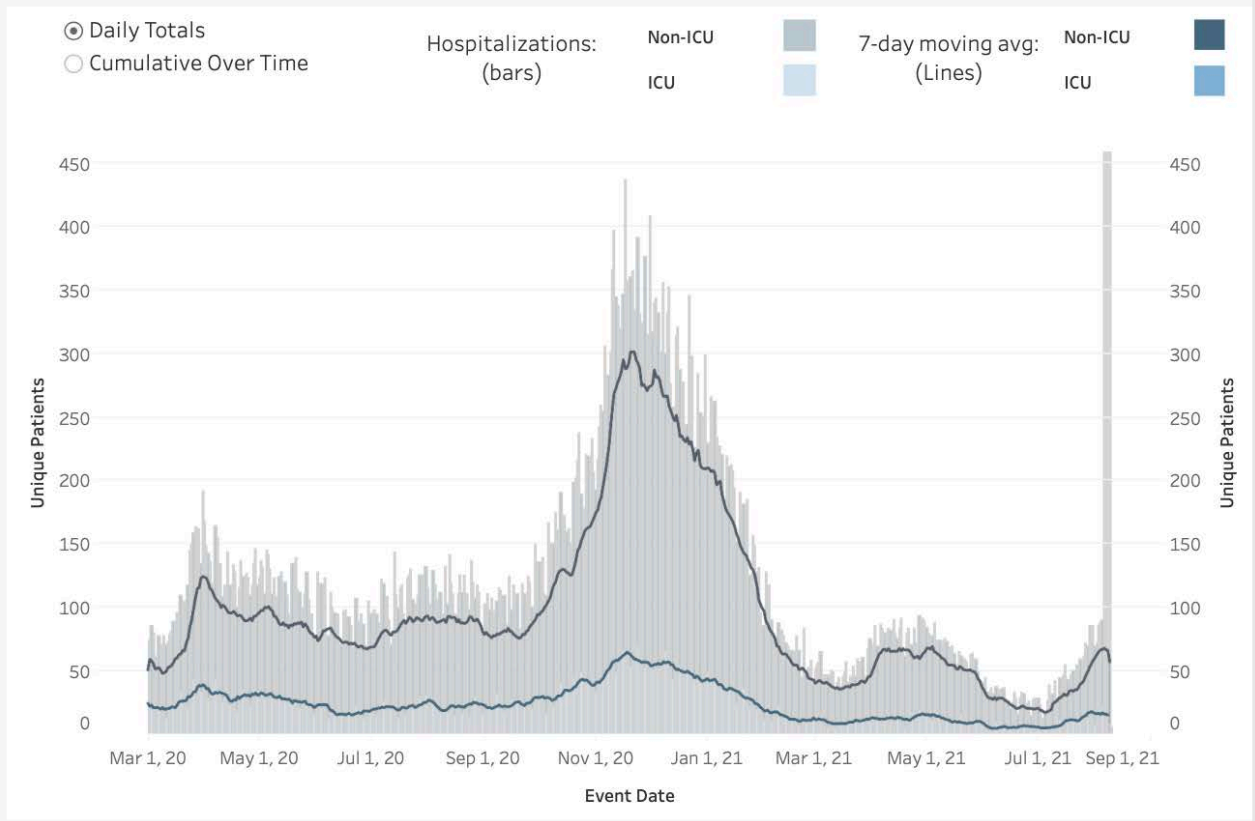
Hospitalizations		Emergency Visits		ICU Admits		Recovery*		Hospital Mortality	
Unique Patients	63,265	Unique Patients	135,929	Unique Patients	12,302	Unique Patients	740,972	Deaths	11,323
% of COVID+	8.1%	% of COVID+	17.4%	% of COVID+	1.6%	% of COVID+	94.6%	% of Hosp.	17.9%

Hospitalizations by County, 03/01/2020 - 08/09/2021

County  
 ISDH Region  
 Colors indicate relative hospitalizations based on population by County



Individuals hospitalized: Daily Totals, 03/01/2020 - 08/09/2021



This dashboard provides a simple way to see whether areas are experiencing changes in key metrics. Using a series of 7-day moving averages, green (decreasing), yellow (inconclusive), and red (increasing) colors identify trends. Bar charts to the right show daily counts for each metric. Trend indicators are not intended to predict future trends.





Select Geographic Area

- County
- ISDH District

Trend Indicators

- Decreasing  0-25%
- Inconclusive  25-50%
- Increasing  50-75%
- Early Warning  75-100%

Per Capita Quartiles

-  0-25%
-  25-50%
-  50-75%
-  75-100%

Hover over legends for definitions

### Statewide Trends

Positive Tests



Emergency Visits



Hospital Admits



ICU Admits



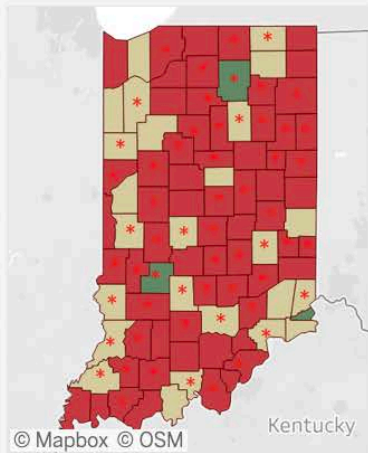
Deaths



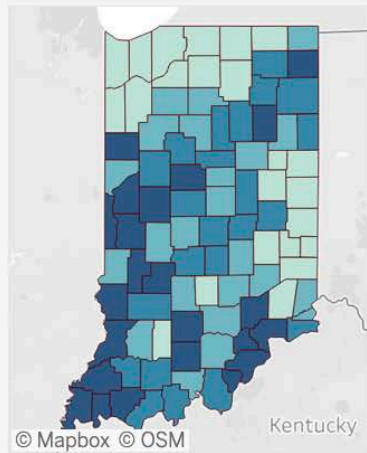
### INPC Total Positive Tests

Click on districts or counties to filter the charts on the right; tooltips provide additional information

Trends Since Nov-03

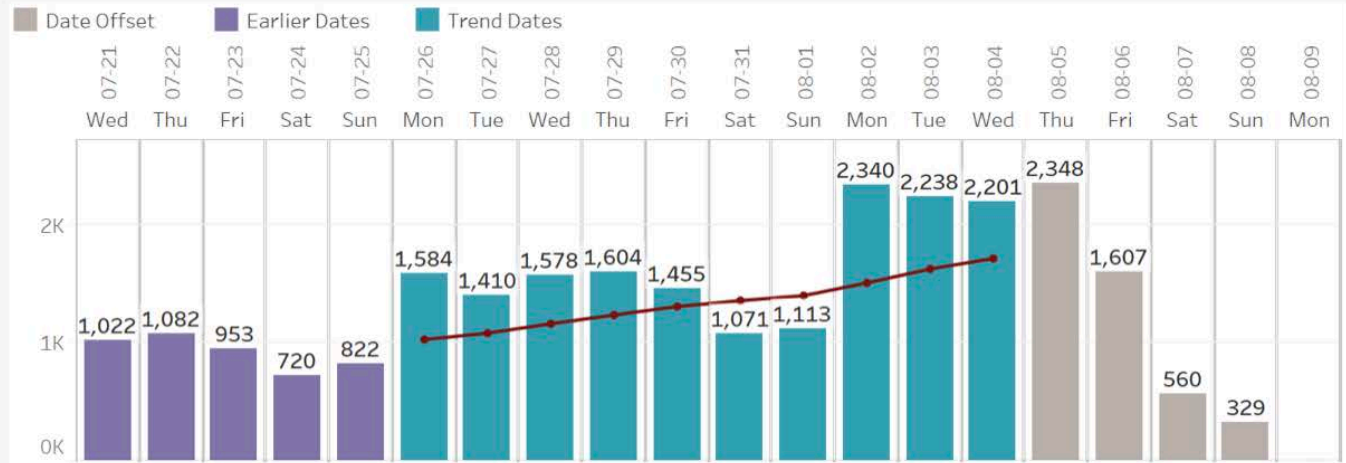


Per Capita Rates Since Nov-03



Positive Tests Daily Counts

All Counties, All Districts





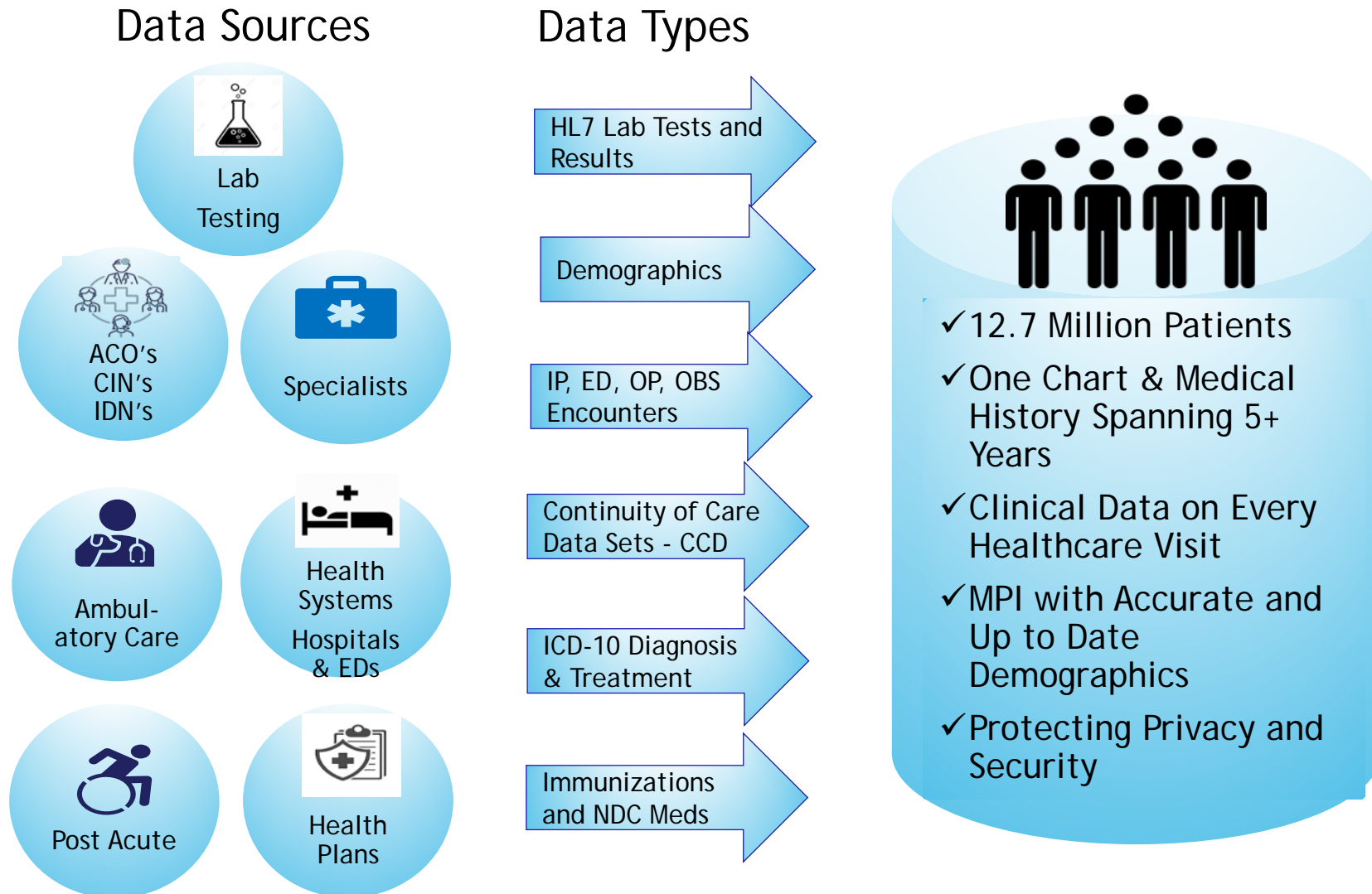
# HealthShare Exchange

# HealthShare Exchange HSX

- Non-Profit, Since 2012
- Diverse, Broad, Unique
- Community Asset
  
- 10 Health Plans
- 60 Hospitals
- 120 Post-Acute Facilities
- Ambulatory practices
- Community and Social Service organizations
  
- Enable Coordinated Care
- Improve Quality and Outcomes
- Lower Costs



# HealthShare Exchange HSX Data Flow



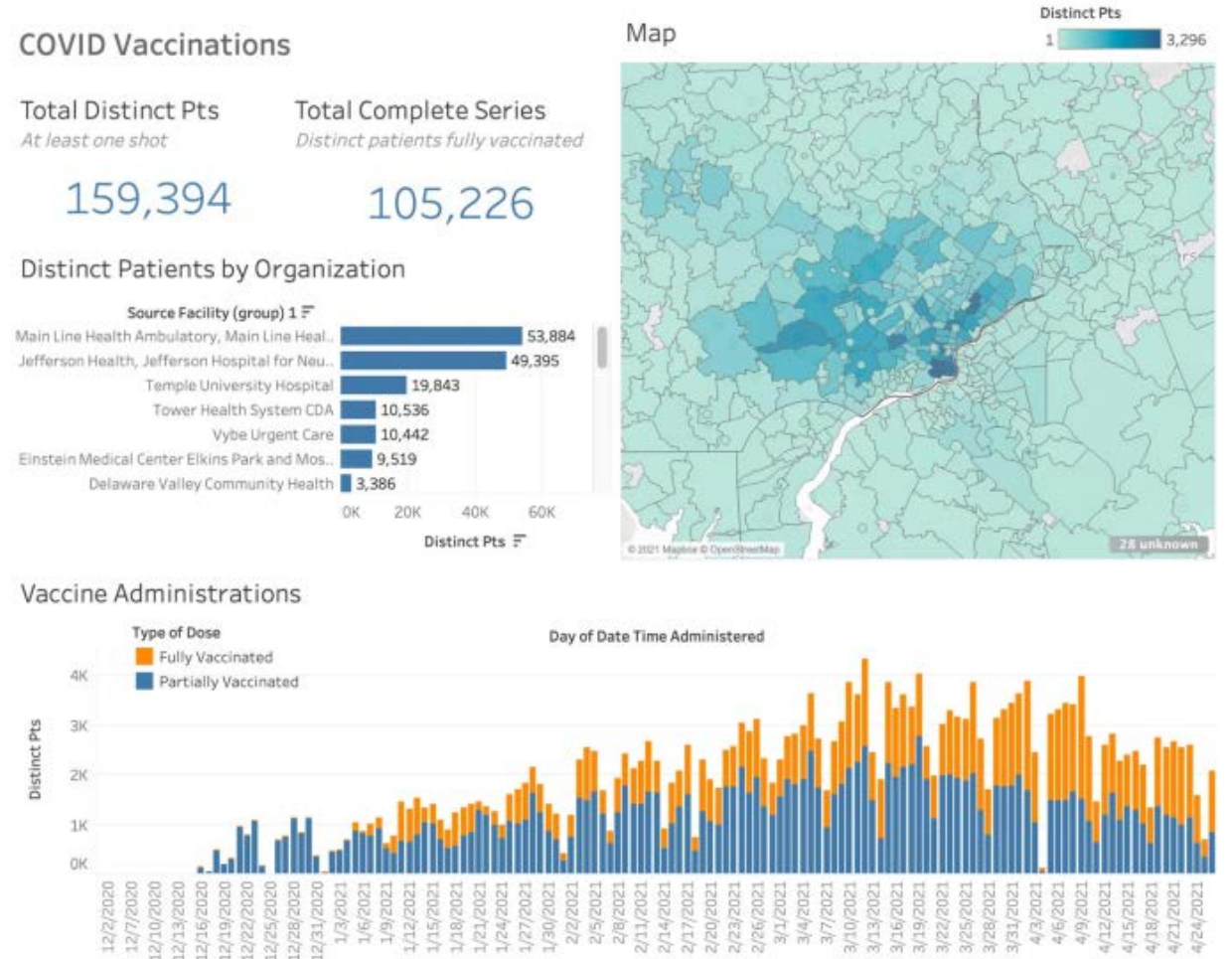


# *HSX Partnerships in Population and Public Health*

- Public Health Partnerships, Data Sharing and Pandemic Response
  - City of Philadelphia
  - Commonwealth of PA
  - Surrounding Counties Public Health Departments
  - One of five ONC STAR HIE Program Participants
- Population Health and Disease Management Partnerships
  - American Diabetes Association
  - Robert Wood Johnson Foundation
  - Pennsylvania Department of Aging

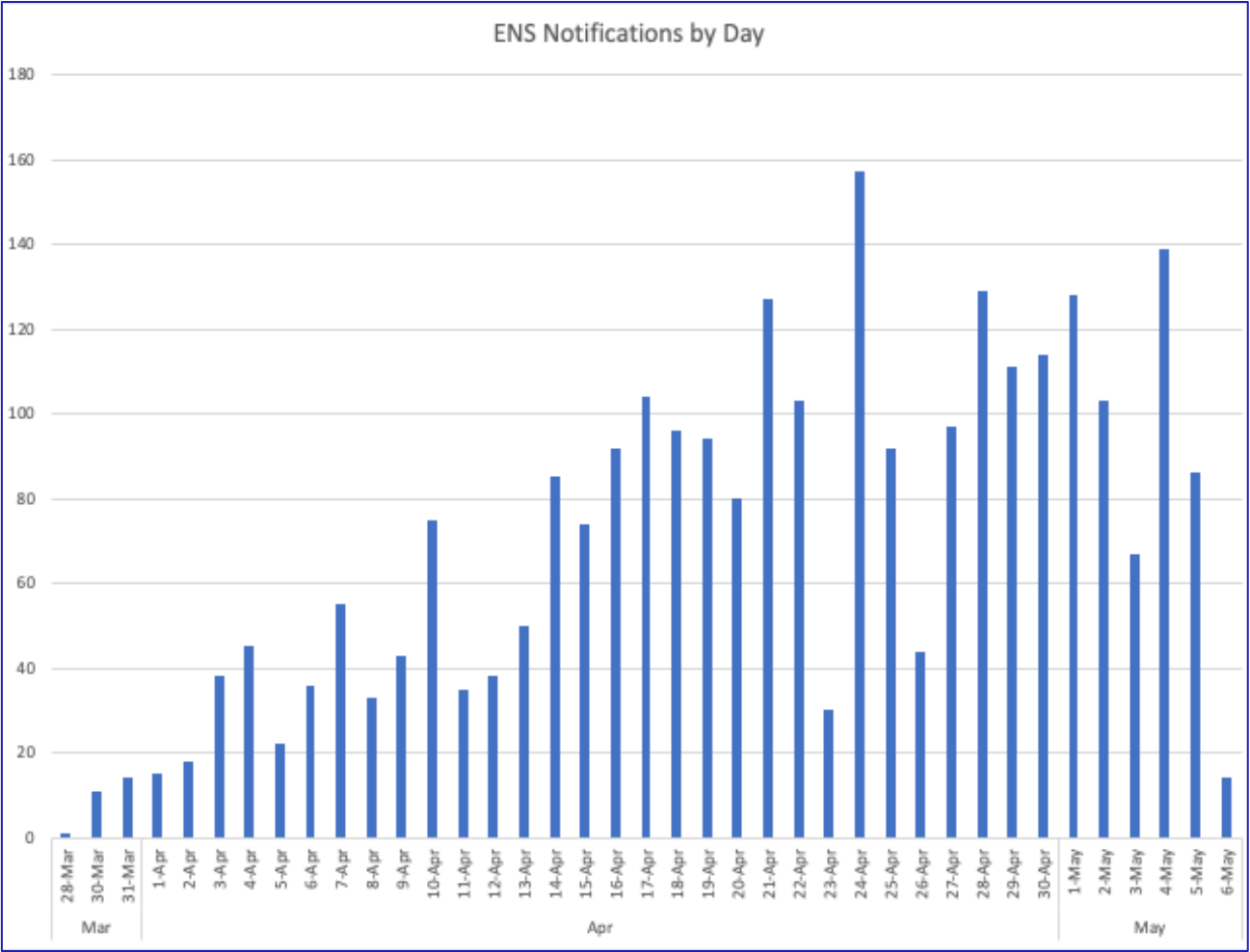
# Pandemic Tracking

- Tracking Covid-19 cases and hospitalizations
- Tracking vaccinations
- Data sharing with Public Health departments for contact tracing and pandemic tracking



Source: Healthshare Exchange

# COVID Encounter Notifications to PCP and Care Team



# *Pandemic Tracking Challenges*

- Inconsistent coding – ICD10, LOINC
- Challenging LOINC codes
- Inconsistent use of HL7 transactions and C-CDA documents

## Use HL7 and LOINC properly

(removed the patient ID and order date/time fields above)

```
OBX|1|ST|COVSO^COVID Source^L^31208-1||Nasopharyngeal Swab|||||F
```

```
OBX|2|ST|COV19^COVID-19 (SARS CoV-2) Virus^L^94309-2||Positive||Negative|A|||F
```

(removed the patient ID segments above)

```
OBX|1|NM|J101A^SARS COV-2 (COVID-
```

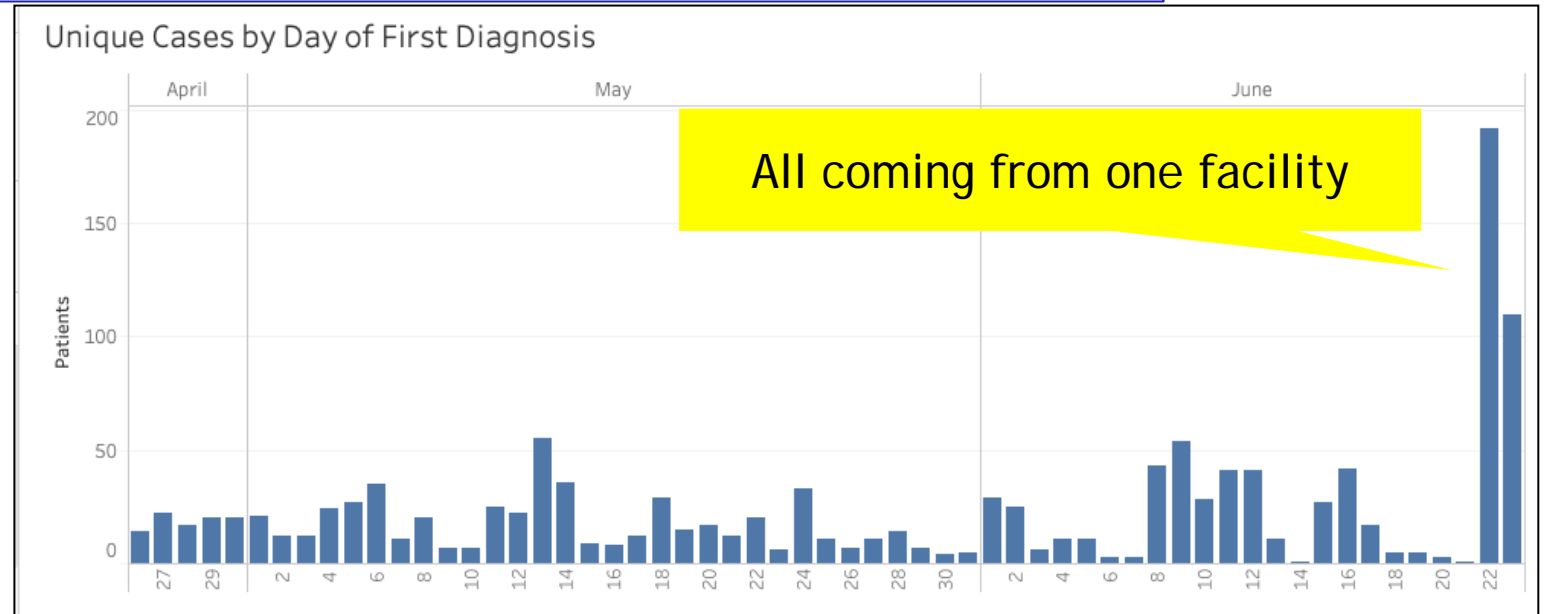
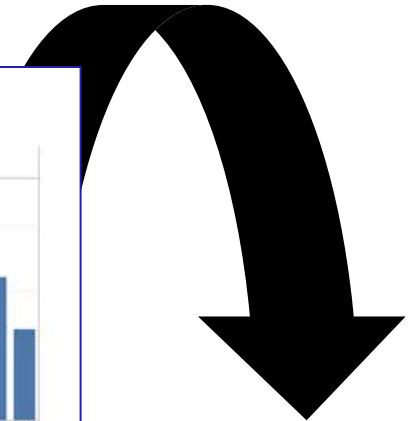
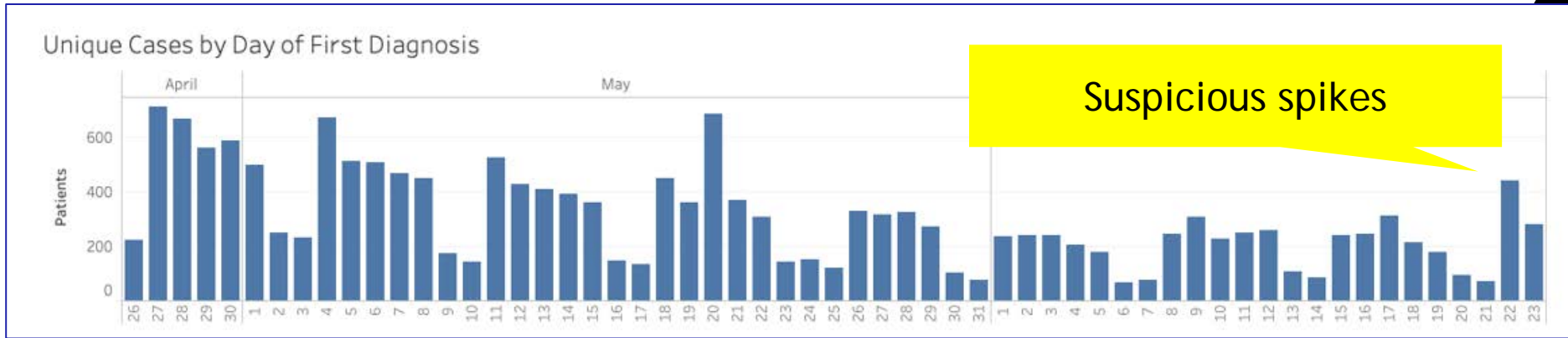
```
19)^J101A^L^J101A^^LN^LAB|||||A|||F|||202004010101|T^||||
```

```
NTE|1||Reference range: Negative\\.br\\(NOTE)\\.br\\.br\\Methodology:\\.br\\.br\\Roche cobas  
SARS-CoV-2 cleared for Emergency Use Only under FDA. FDA\\.br\\approved specimen types  
include nasopharyngeal swab or oropharyngeal\\.br\\swab collected using Copan UTM-RT  
system or BD Universal Viral\\.br\\Transport System (UVT)\\.br\\.br\\The cobas SARS-CoV-2 is a  
real-time qualitative PCR assay. This\\.br\\assay utilizes two targets - one is the ORF1/a, a  
non structural\\.br\\region unique to SARS-CoV-2.
```

( many lines with text describing methodology etc. removed here - hjs)

```
NTE|2||Positive||
```

# *Inconsistent ICD-10 coding*



## *HIEs are Data Aggregators*

- Data Quality is a challenge – within healthcare organizations, and even more in Health Information Exchanges
- HIEs are like recycling facilities – so: please put it in the right bin!
- Data Quality needs to be a primary concern for all healthcare data teams

# Questions

- What do you see as major obstacles for US Public Health Data Infrastructure?
- How do you think Health Information Exchanges can help overcome those obstacles?
- How will national exchanges such as CareEquality, Commonwell Health Alliance, or eHealth Exchange, impact the role of Health Information Exchange?
- What Public Health IT Infrastructure elements should be prioritized?



# *Interoperability Tour for Clinicians*

- Today Tuesday 8/10, 2:45 PM – at the Interoperability Showcase
- From Sands Expo center via Skybridge to Ceasars Forum – Academy Ballroom  
(keep going straight)

# *Thank you!*

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