NCSD and CDC STI Informatics Webinar

Today's Topic

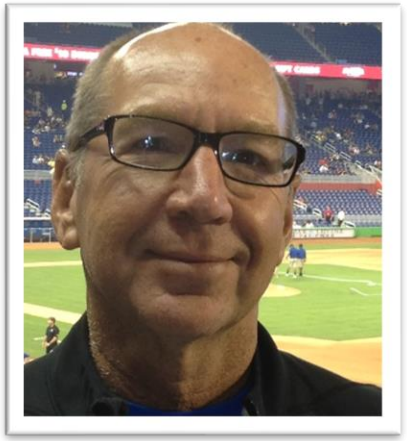
Bringing STI Epidemiology to Life!
Visualizing Data Trends using Data Dashboards

August 17, 2023 3:00 – 4:00 PM ET

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

NCSD
National Coalition of STD Directors

Informatics Webinar Facilitators



Charlie Rabins, MPH
Capacity Building Consultant
National Coalition of STD Directors (NCSD)

Robin Hennessy, MPH
Public Health Advisor
CDC Division of STD Prevention
Surveillance and Data Science Branch

A Few Housekeeping Items

- Use the chat function to talk with or ask for help from facilitators and ask questions for the presenters
- If the facilitators loses web or voice connection during the presentation, please keep your video and audio connections until the facilitator reconnects
- Download today's webinar slides from the chat function
- An audio/video recording and slides of this webinar will be posted on the My NCSD Surveillance Community site in the next week

John Snow and the Broad Street Pump Dashboard

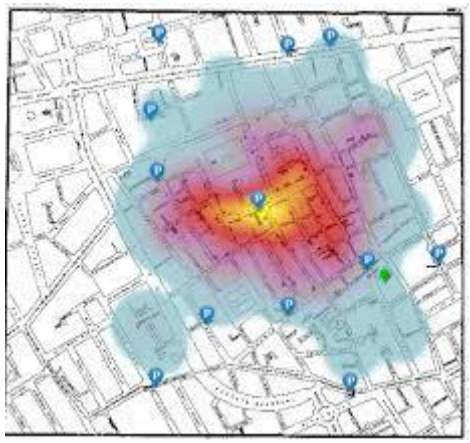
Table 5.1

Deaths From Cholera Epidemic in Districts of London Supplied by Two Water Companies Over 7 Weeks, 1854

Water Supply Company	Number of Houses	Deaths From Cholera	Cholera Deaths per 10,000 Houses
Southwark and Vauxhall	40,046	1,263	315
Lambeth	26,107	98	37
Rest of London	256,423	1,422	59

Source: Snow J. On the mode of transmission of cholera. London: John Churchill, 1855, pp. 55–98. Part 3, Table IX, Reprinted by UCLA Fielding School of Public Health 2001. Available at: http://www.ph.ucla.edu/epi/snow/snowbook3.html (accessed 26 June 2016).

Open in a separate window



Webinar Agenda

- NCSD Update – Charlie Rabins
- DSTDP SDSB Update - Robin Hennessy & Melissa Pagaoa
- Using Dashboards to Prepare for and Respond to Syphilis Outbreaks in Indiana – Jamie Black
- Arizona Data Dashboards – Becca Scranton
- Webinar Evaluation - Charlie Rabins

NCSD Information Sharing and TA/CB Tools

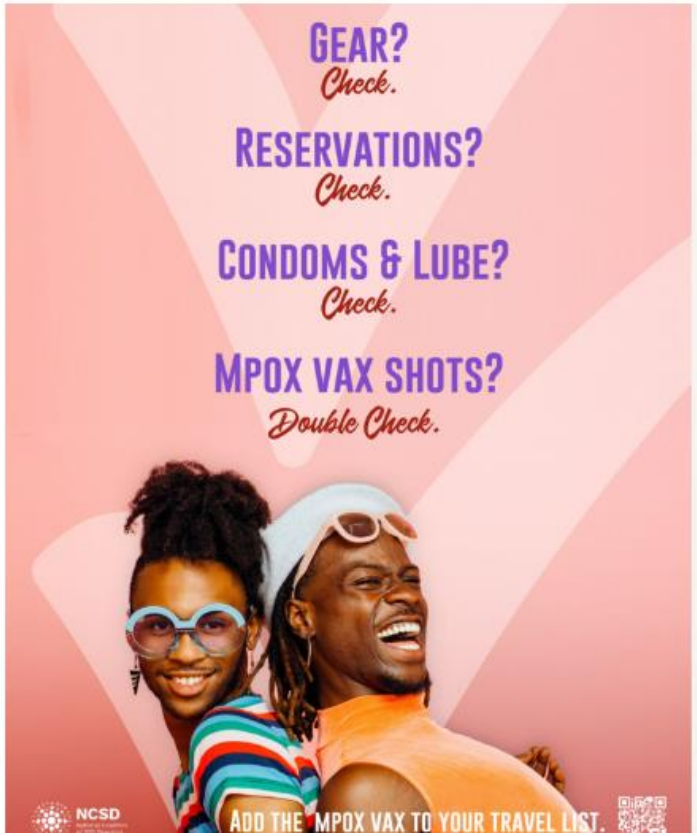
- NCSD Website New Highlights
- NCSD Weekly Email Update
- NCSD TA/CB Support
  - NCSD Learning Center
  - MY NCSD: Peer Driven Communications and Resource Sharing Site
    - STI Surveillance and Informatics Community
    - DIS Community
    - Clinic Plus

DOXY As STI PEP Command Center

[Doxy as STI PEP Command Center | NCSD (ncsddc.org)]

Mpox Communications Toolkit

[Mpox Communications Toolkit and Creative Assets | NCSD (ncsddc.org)]



STD RESOURCE JULY 7, 2023

Mpox Communications Toolkit and Creative Assets

Use the Mpox Communications Toolkit and Creative Assets to share important information about the mpox vaccine with your community. Use the Communications Toolkit to work with local media to raise awareness about mpox or respond to outbreaks. Use the Creative Assets to remind people that mpox is still around and about the benefits of completing the two-dose mpox vaccine series.

READ MORE >

NCSD Learning Center

[Learning Center | NCSD (ncsddc.org)]

NCSD Learning Center - 2

- The NCSD Learning Center is our new learning management system. We have a variety of self-paced e-Learning courses, blended courses, and live instructor-led trainings on topics ranging from diversity, equity, and inclusion, to leadership skills, to STI/HIV program policy and motivational interviewing available for free. We also offer the opportunity to connect with colleagues through discussion boards, messaging, and profiles or to join fellowships and academies.
- Past informatics, NIPS, and other TA webinars and workshops can also be found on the NCSD Learning Center.
- You can learn more about the NCSD Learning Center and how to register here: https://www.ncsddc.org/learning-center/
- Direct Link to Account Sign-Up Page: https://ncsdlearningcenter.myabsorb.com/#/login

NCSD Learning Center - 3

- **Number of current courses:** Over 800 courses, including the National Network of Disease Intervention Training Centers (NNDITC) courses.
- **Number of participants:** Over 3,300 participants.
- **Example surveillance related course titles -** ***learners must join and log in to the Learning Center to directly access these courses using the following links*****:**
  - Infection Surveillance
  - Laboratory Information Systems (LIS): Data Management
  - Manually Entered Results (Labs without LIS)
  - HIPAA: The HITECH Act
  - Quality Assessment Basics and Performance Improvement in the Lab
  - Leading Digital Transformation
  - Agile Project Management Series and Scrum Series
  - Introduction to Lean and Six Sigma

NCSD Weekly Email Update

National Coalition of STD Directors

STD Weekly

December 2, 2022

NCSD Featured Information

NCSD Featured Information

NCSD Statement: Honoring World AIDS Day

Monkeypox and rising sexually transmitted infection rates illuminate unmet needs in the work to end HIV. Read the Statement

NCSD Co-Authors National PrEP Program Letter

More than 6,000 people signed on to a letter this week asking Congress and the Administration to fund a national PrEP program. Read the Letter

Upcoming Events

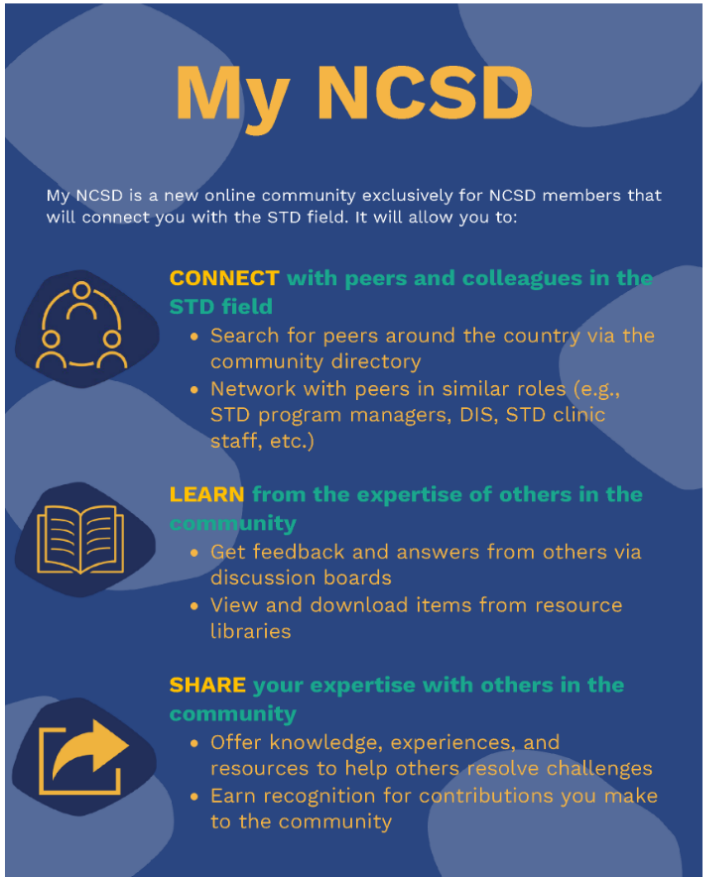
DEC 7

How CDC's ELC CoAg Supports State and Local STD and Informatics Projects

Everything you wanted to know about the CDC's Epidemiology and Laboratory Capacity Cooperative Agreement (ELC CoAg) - but were afraid to ask!

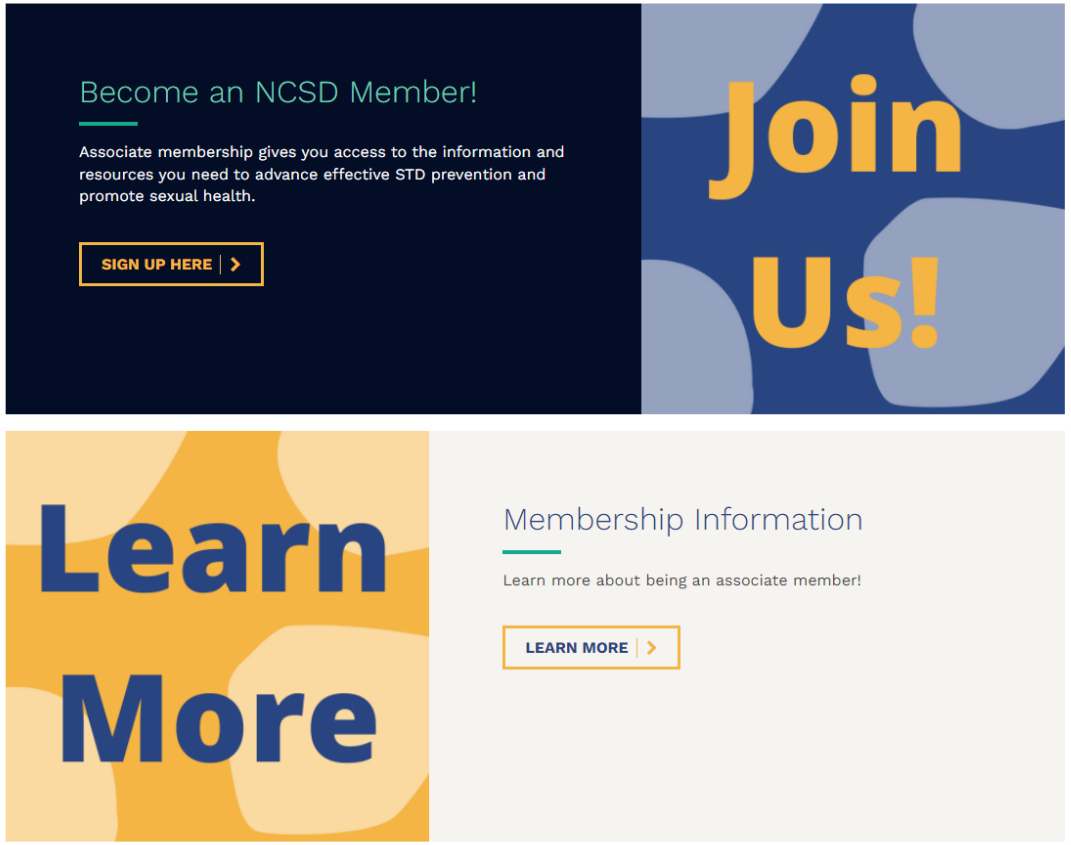
NCSD New Communication and Resource Sharing Tool for STI Surveillance and Informatics Practioners

What is My NCSD?

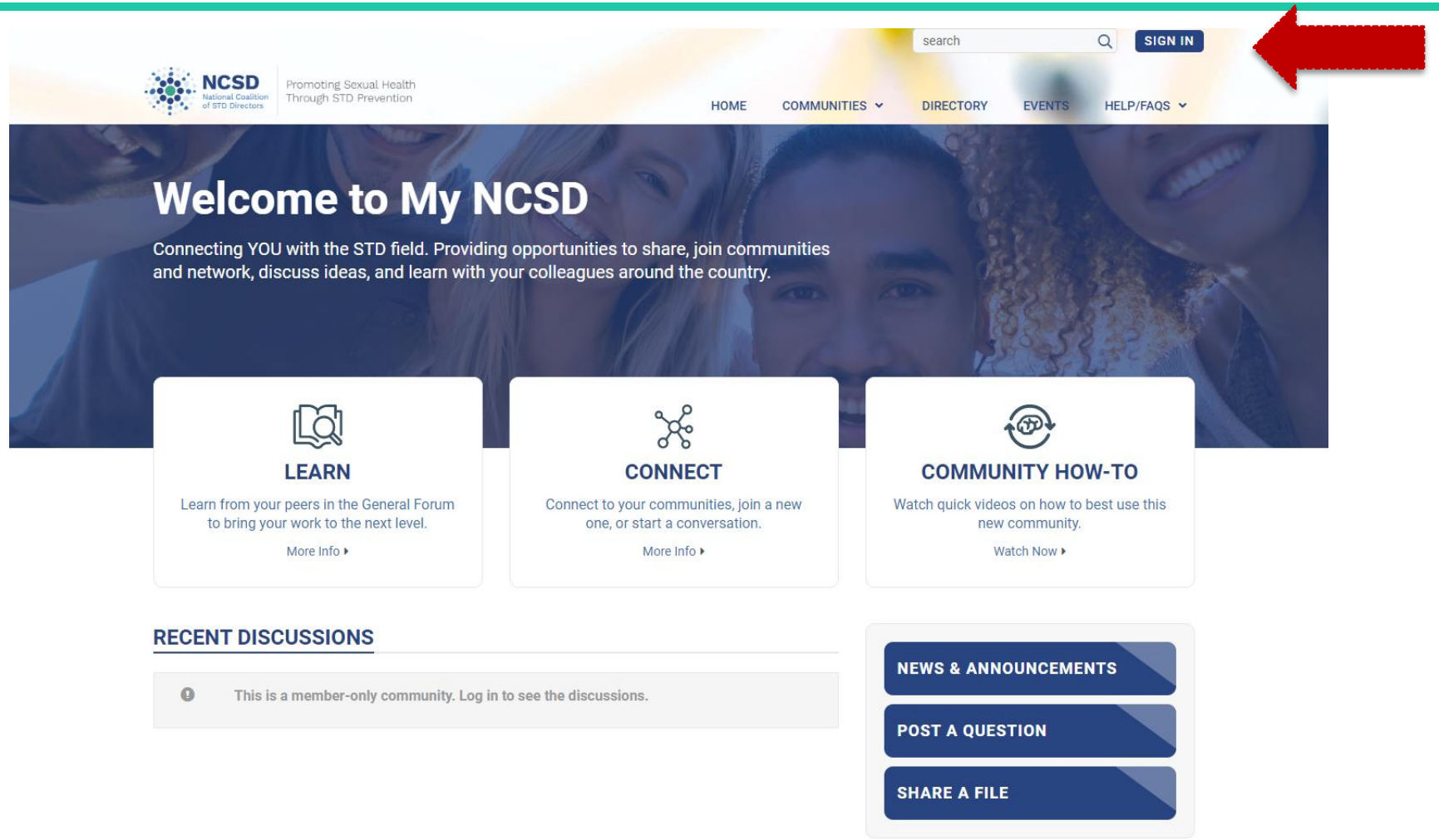


How to Access the My NCSD Surveillance Community

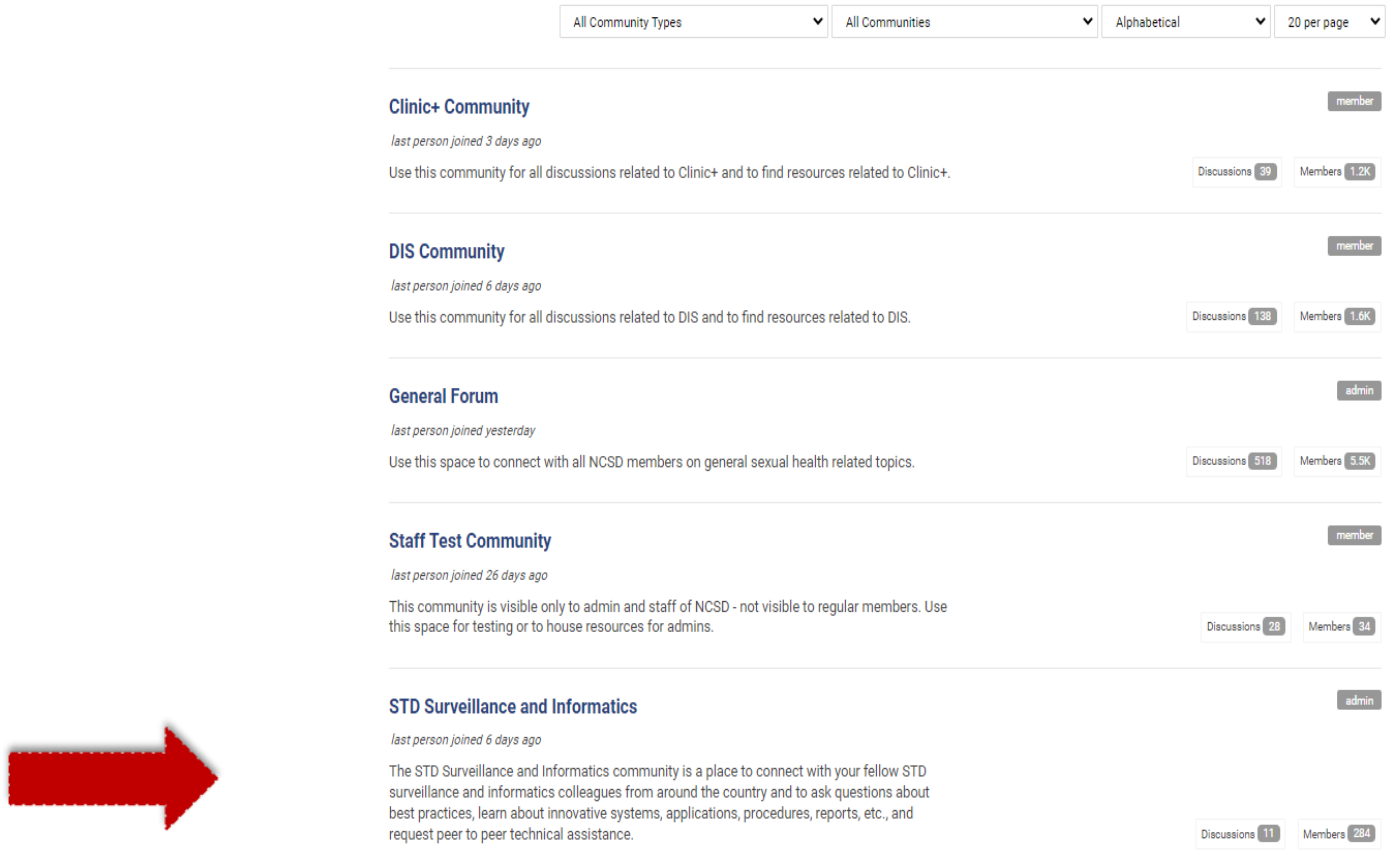
https://www.ncsddc.org/get-involved/ncsd-membership/



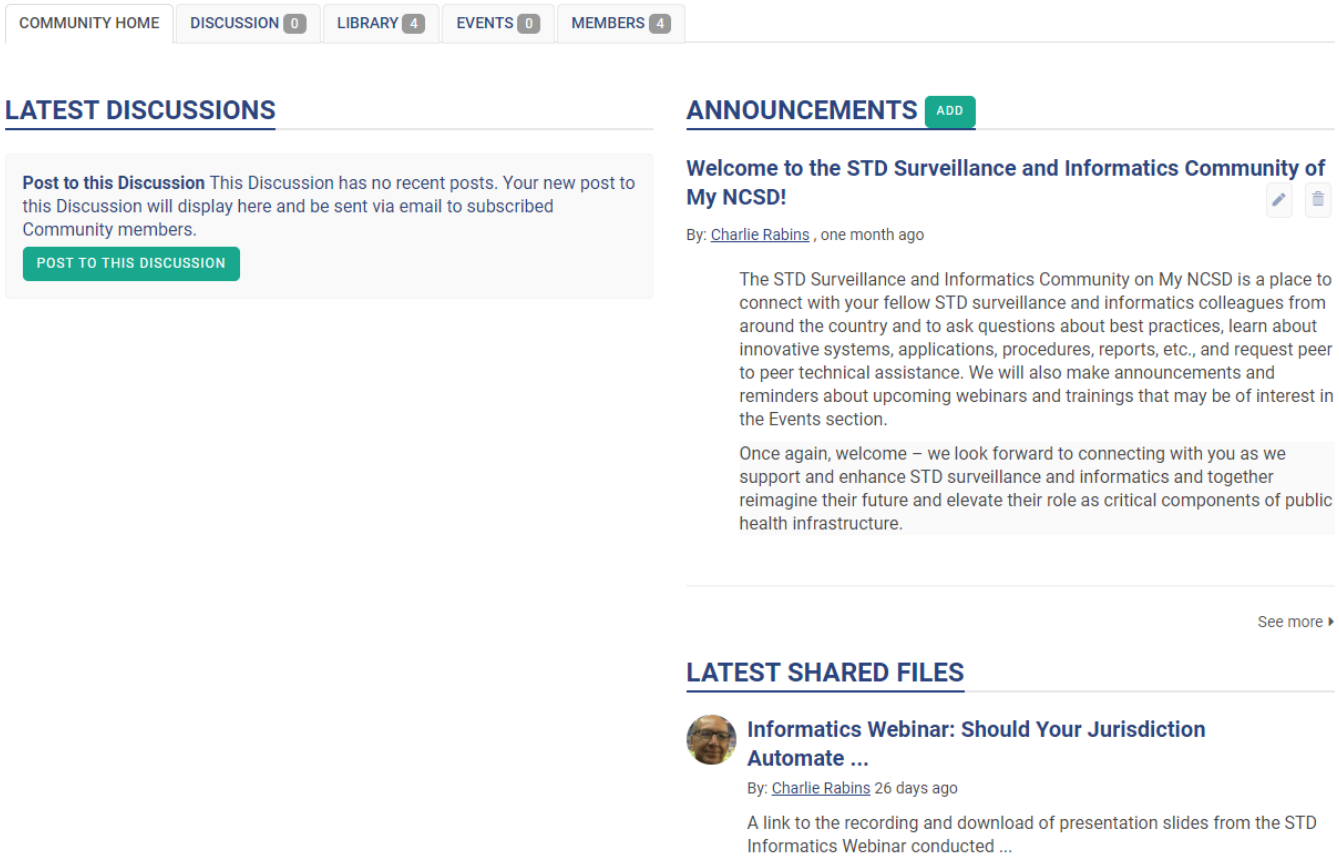
My NCSD Landing Page



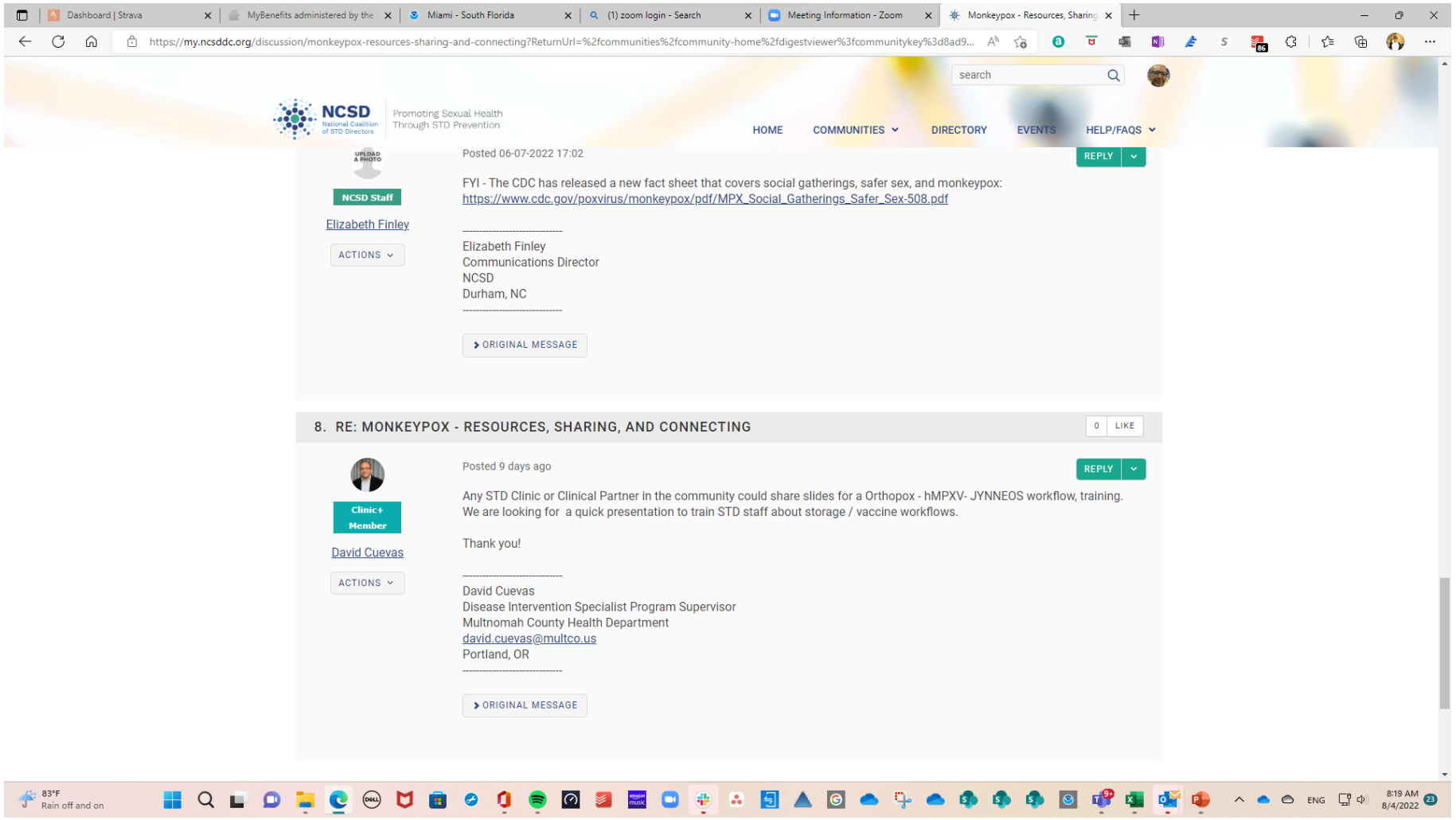
My NCSD Communities



My NCSD Surveillance Community Landing Page



My NCSD Example Resource and Question Post



CDC DSTDP
Surveillance and Data Science Branch Update

Robin Hennessy and Melissa Pagaoa

2022 NNDSS Reconciliation Timeline

- **August 18, 2023:**
  - Jurisdictions' STD Managers (as listed in the MVPS Portal) to verify and tentatively approve final STD case data within the MVPS Portal
  - DSTDP to e-mail sign-off letters with final CS case data to all jurisdictions (i.e., outside of the MVPS Portal)
- **August 25, 2023: State/Territorial Epidemiologists complete sign-off to officially approve final 2022 STD and CS case counts**
  - Sign-off for final STD case data will be completed within the MVPS Portal
  - Sign-off for final CS case data will be completed via letter, e-mailed from DSTDP on August 18

Retirement of Original "Congenital Syphilis Data Collection" Form on December 31, 2023

- Original "Congenital Syphilis Data Collection" form should only be used to **update previously entered CS cases**
- Currently, the "Congenital Syphilis Data Collection - MMG Version" form only accepts CS cases with a birth year of 2023
  - On August 26, 2023, the birth year restriction will be removed, and jurisdictions should enter all new CS cases regardless of birth year in the "Congenital Syphilis Data Collection - MMG Version" form
- If a jurisdiction discovers a new CS case with a birth year of 2022 or earlier between today and August 25, 2023, wait until August 26, 2023 to enter the new CS case in the "Congenital Syphilis Data Collection - MMG Version" form
- Starting on January 1, 2024, jurisdictions will be able to enter and update CS cases in the "Congenital Syphilis Data Collection - MMG Version" form only

Retirement of Original "Congenital Syphilis Data Collection" Form on December 31, 2023

<table>
<tr><th rowspan="2">Timeline</th><th colspan="2">REDCap Form</th></tr>
<tr><th>Congenital Syphilis Data Collection ("Original")</th><th>Congenital Syphilis Data Collection - MMG Version</th></tr>
<tr><td>Today – August 25, 2023</td><td rowspan="3">Update CS cases
with birth year ≤ 2022</td><td>Enter & update CS cases with birth year = 2023</td></tr>
<tr><td>August 26, 2023</td><td rowspan="3">Enter & update CS cases,
regardless of birth year</td></tr>
<tr><td>December 31, 2023</td></tr>
<tr><td>January 1, 2024 – Future</td><td>Form retired</td></tr>
</table>

CSTE Data Standardization Workgroup (DSWG)

- DSWG is part of the CSTE Surveillance Practice and Implementation Subcommittee
  - Activities include identifying core data elements for surveillance for transmission to CDC

- Upcoming topics that may be of particular interest to STD surveillance colleagues
  - Pregnancy status: will be discussed on August 25, 2023 meeting, from 1-2pm Eastern Time
  - Sexual orientation and gender identity: October 2023, date TBD

- Visit the CSTE Surveillance Practice and Implementation Subcommittee webpage to learn more about their workgroups and how CSTE members can get involved

Responses to Today's Data Dashboards Informatics Webinar Registration Questions

- Does your STI Program or agency have a web-based dashboard for displaying STI surveillance data and trends? N=252
  - Yes: 53%
  - No: 47%
- Who is the intended audience for your data dashboard? N=260
  - Both Agency Staff and the Public: 62%
  - Program Staff and Agency Leadership: 20%
  - The General Public: 18%
- What type of dashboard software does your STD Program use? N=174
  - Tableau: 66%
  - Microsoft Power BI: 18%
  - Other: 16%

Indiana Department of Health

Bringing STI Epidemiology to Life! Visualizing Data Trends using Data Dashboards:

Using Dashboard to Prepare for and Respond to Syphilis Outbreaks in Indiana

Jamie Black, MPH
Division of HIV/STD/Viral Hepatitis
Indiana Department of Health

August 17, 2023

Topics to Cover

Before You Begin...

Outbreak Preparedness & Monitoring

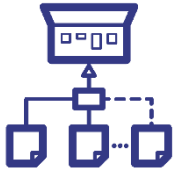
Data-Driven Outbreak Responses

Sharing & Maintaining Dashboards

Getting Ready to Create!

Indiana Department of Health

Best Practices in Creating Dashboards



Understand your surveillance system and its data

Know your stakeholders and their wants/needs

Research limitations of your website/servers

Look into visualization best practices, especially for accessibility

Resources: Includes a great textbook, and a webinar with good examples

Book

Webinar

Indiana Department of Health

Tableau Learning

https://elearning.tableau.com/

Courses grouped by learning tracks now! Ranging from easy to more complex.

Sometimes agencies can acquire group learning codes at discounted rates.

Self-paced learning and searching questions in the community forum is how I trained myself.

Indiana Department of Health

Dashboard development time

Set aside 1- to 2-hour blocks of time to brainstorm with your team and stakeholders.

Once you know what the finished product needs to achieve, dive into the data. Consider frequency of data updates.

Provide drafts and plan on enough time for review and suggestions.

Indiana Department of Health

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Using Syphilis Data to Monitor for Outbreaks

Indiana Department of Health | Division of HIV/STD & Viral Hepatitis

STD Data Dashboard: Syphilis

Alt+Click Download PDF | Data are updated as of: 4/25/2023

This dashboard is built to assist local STD staff in monitoring the amount of syphilis cases for notable increases that warrant further investigation, based on location and patient characteristics (including demographics, risk factors, and pregnancy status) over time. These views should be used in conjunction with the Prevention program's **Syphilis Increase Monitoring Policy** to conduct more in-depth reviews of case-related information obtained by DIS during interviews with infected patients and their partners in determining the likelihood of an actual syphilis outbreak. Information contained within the different dashboard tabs is updated on a weekly basis. Please note that data for the current year are considered **preliminary** until closeout is completed in the year that follows. Filters apply to individual tabs. *This dashboard may be shared with external partners.*

Overall Case Counts | Cases By Time | Cases By Person | Cases By Place | Key Populations

--Filters for View--

Select **STD District**: (All)

Select **Patient County**: (All)

Select **Year**: 2022

	Primary & Secondary Cases	Early Latent Cases	Late or Unknown Duration Cases	Total Syphilis Cases
Total Adult Syphilis Cases YTD	670	534	740	1,944

Percent Change (Last 2 Months)	Nov 2022	Dec 2022	Nov 2022	Dec 2022	Nov 2022	Dec 2022	Nov 2022	Dec 2022
	-20.7%	-67.4%	-39.6%	-53.1%	5.0%	-66.7%	-17.5%	-63.8%

Notes

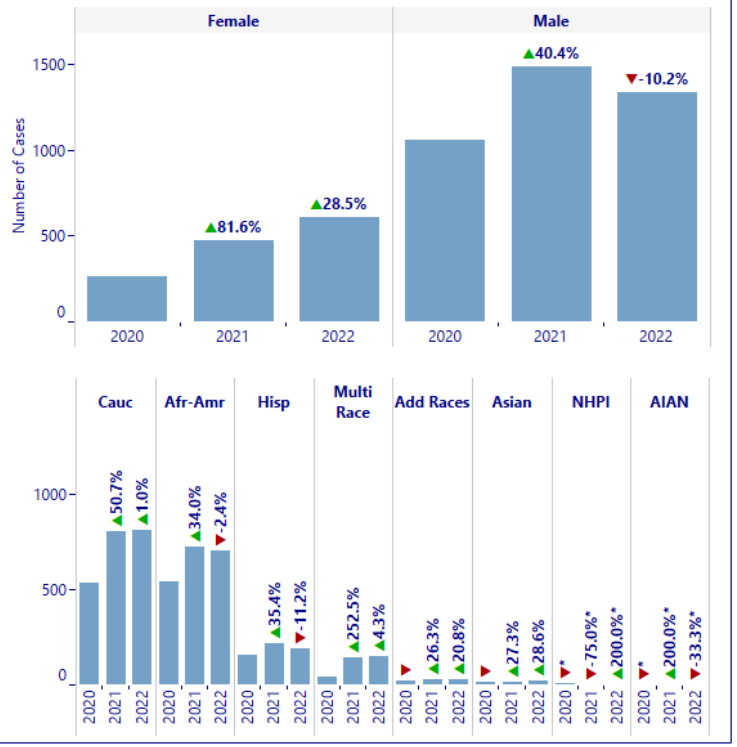
Total cases YTD: If no cases meet the filter and data element criteria, the area will remain blank. Counts less than five will show as *. If a percent change involves going from zero cases to more than zero, the percent change will be missing (Tableau cannot force calculate dividing by zero).

Percent Change: Increases for percent change are shown in green text. Decreases in percent change are shown in red.

Total Cases Over Time: Percent change shown above bar is from previous year (2020 not shown since 2019 data not included). ▲= Percent increase, and ▼= Percent decrease. All races should be considered non-Hispanic or Latino, ex. non-Hispanic Caucasian, except for "Hispanic" race. * next to a percent indicates the percent change is based on a count less than five and should be intepreted with caution. Case counts less than five in the hover option on the bar graphs are suppressed and show a * character.

Race abbreviations: Cauc=Caucasian, Afr-Amr=African-American, Hisp=Hispanic, NHPI=Native Hawaiian-Pacific Islander, and AIAN=American Indian-Alaskan Native. Unknown and NULL races have been excluded from the bar graph on the bottom right.

Total Cases Over Time **by Sex** (*Top*) and **Race** (*Bottom*)



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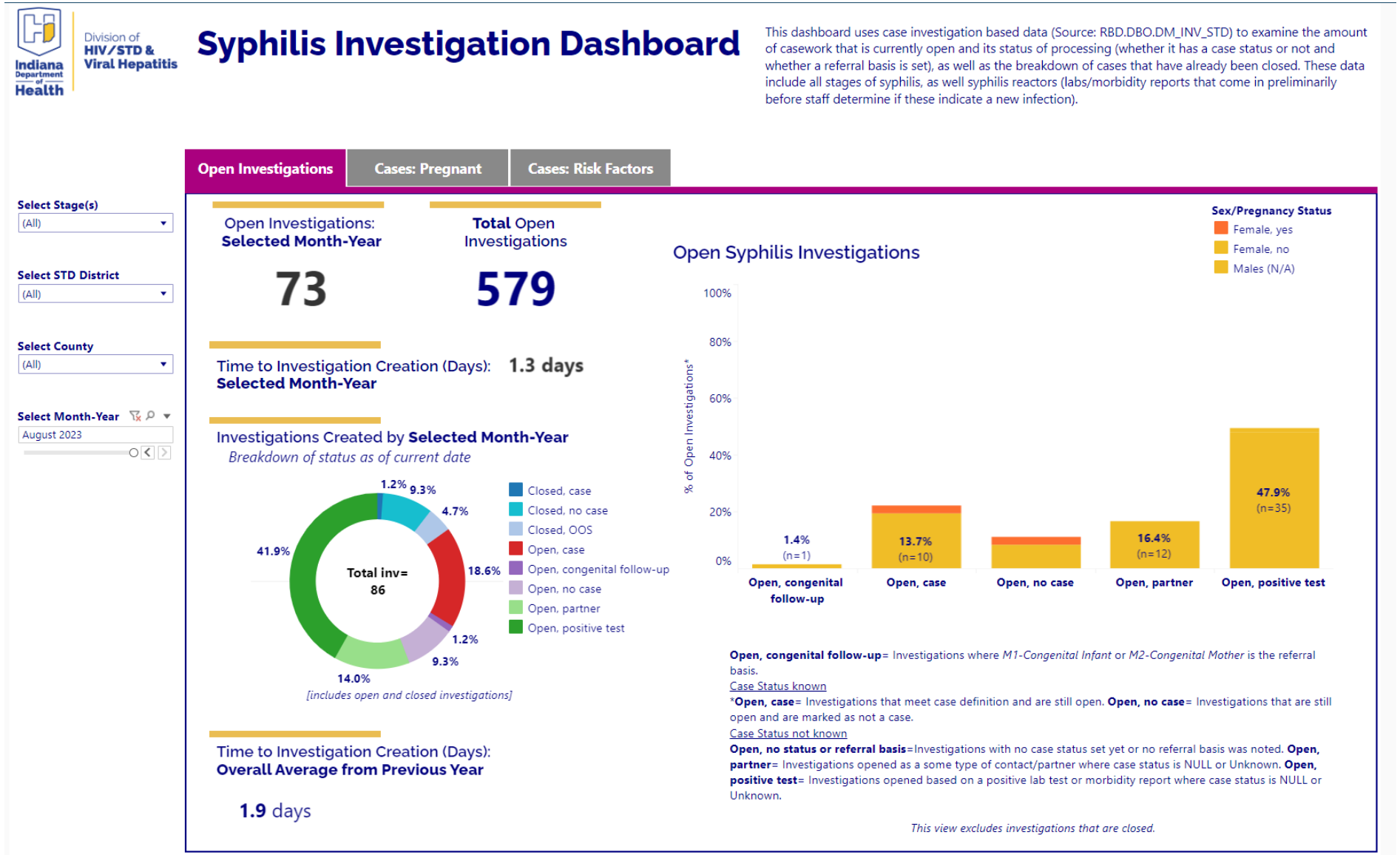
Dive even further into casework…



Indiana Department of Health

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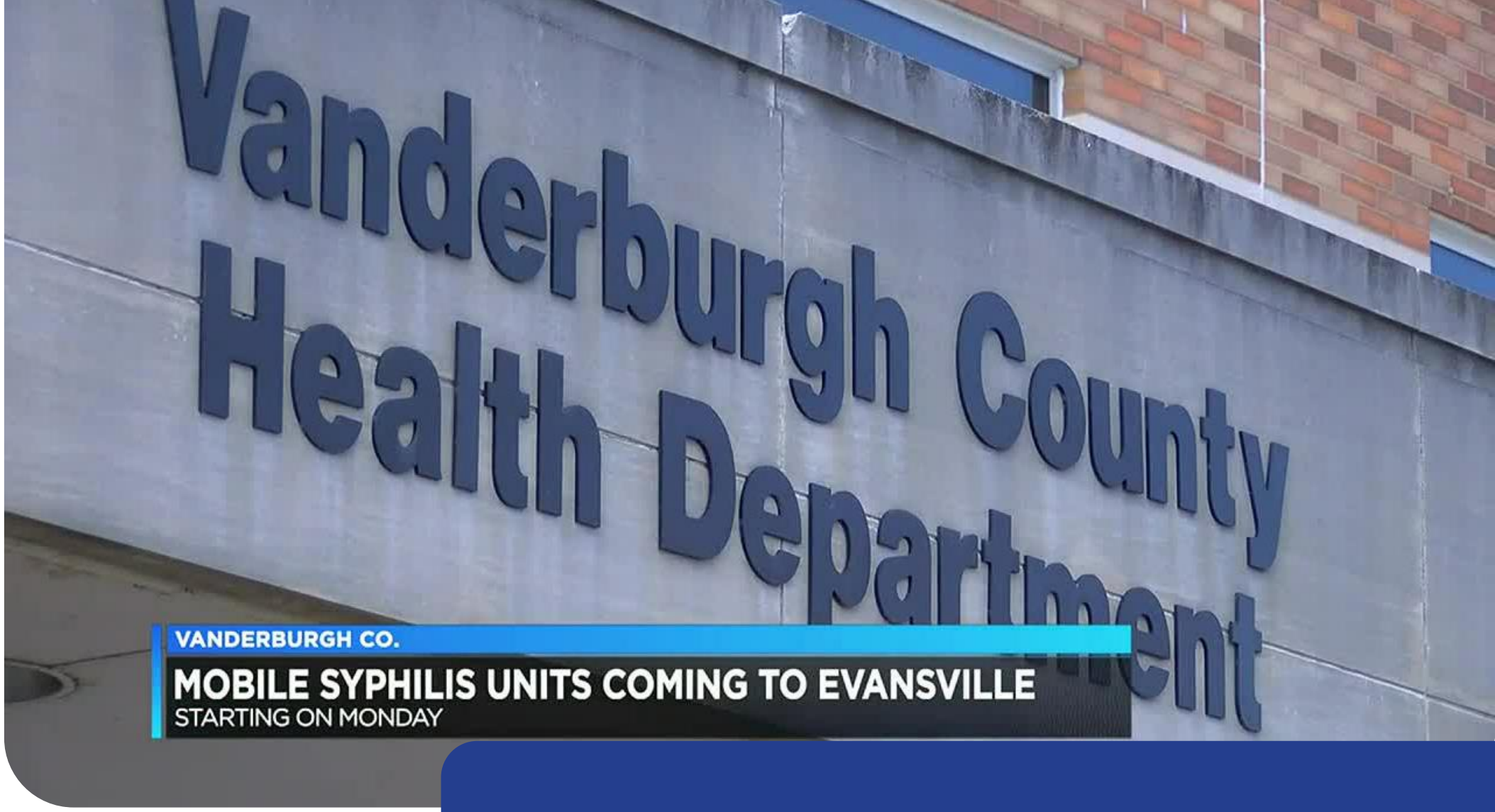
Indiana Department of Health



Syphilis Outbreak in Indiana

Indiana Department of Health

Bringing data to life!

Patient-specific Data

- Diagnosis, staging → **Outbreak case definition: Confirmed or Probable**
- County of residence, address w/zip → **Filled "heat" maps + pin-point outreach maps**
- Testing and treatment dates → **Flag number of patients needing treatment**
- Symptoms
- Patient demographics → **Monitor proportional changes in outbreak case epi profile**
- Risk factors → **Monitor proportional changes across all risk factors**
- Pregnancy and HIV status
- HIV viral suppression
- Hepatitis co-infection (ABC)

→ **Monitor number of co-occurrences with syphilis**

Daily ICS Dashboard For Leaders

STD District 8 Syphilis Outbreak Tracker

Number of Total Outbreak Cases

122

Confirmed Outbreak Case	Probable Outbreak Case
105	17

Open Cases

14

Closed Cases

108

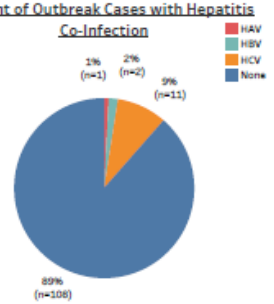
Cases Treated	Partners Prev. Treated
78	47

Number of Partners Being Pursued

1

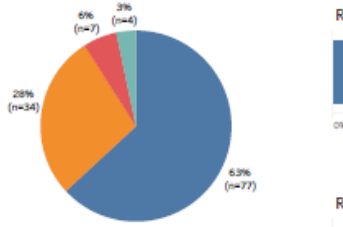
COVID Vaccines	Hep A Vaccines
3	1

Percent of Outbreak Cases with Hepatitis Co-Infection

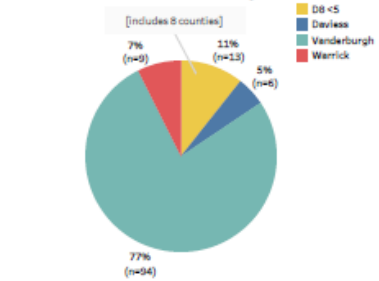


Percent of Outbreak Cases with HIV Co-Infection (not virally suppressed)

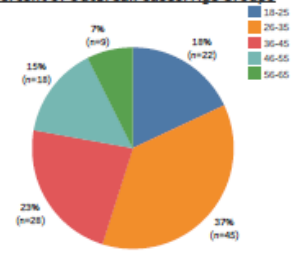
Percent of Outbreak Cases: Sex and Pregnancy Status



Percent of Outbreak Cases: County of Residence

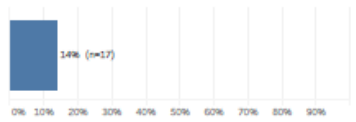


Percent of Outbreak Cases: Age Groups



Risk Factors: Percent of Outbreak Cases

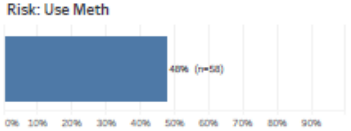
Risk: Homelessness



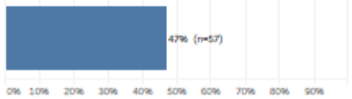
Risk: MSM (not sexual orientation)

Risk: IDU

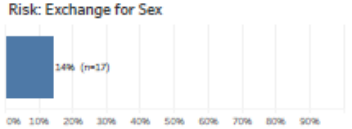
Risk: Use Meth



Risk: Recent Incarceration



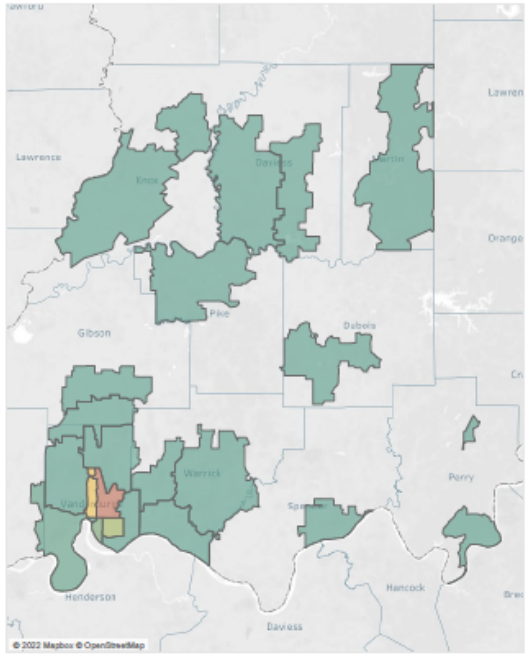
Risk: Exchange for Sex



Risk: Use Dating Apps

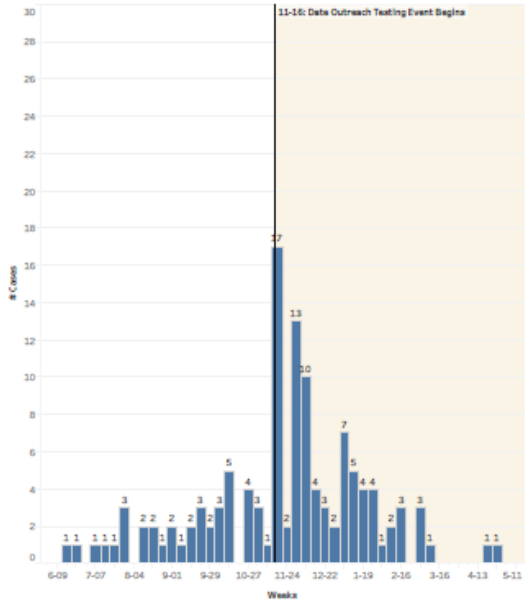
For both internal and external use. Share accordingly.

Map of Outbreak Cases



Number of Outbreak Cases Over Time

Index case tested positive 6/14/21



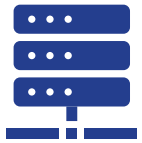
Report as of June 7, 2022.

Outbreak response takeaways

Visualizing disease burden and monitoring increases can help identify outbreaks sooner.

Tracking proportional changes in risk factors will help your understanding of outbreak shifts.

Simple, eye-catching visualizations help communicate data to broad audiences.



Centrally-located data trackers with locked fields can streamline data collection across staff skill ranges.

(Near) Real-time data reports can help inform programmatic decisions about response efforts during an outbreak.

Topics to Cover

Before You Begin...

Outbreak Preparedness & Monitoring

Data-Driven Outbreak Responses

Sharing & Maintaining Dashboards

Indiana Department of Health

Dashboard maintenance

- Agree upon data pulling standards
- Tap into analysts' skills for complex joins
- Rely on SMEs for "larger picture" signoff

Dashboard sharing

Creation of content, dashboard is ready by stakeholders' standards

Dashboard sent to Office of Public Affairs for branding approval

Dashboard sent to Office of Data Analytics for data standards check and publishing

Questions?

CONTACT:

Jamie Black, MPH
STD Epidemiology
Projects Supervisor

SURRG & SSuN Grant
Principal Investigator

jamblack@isdh.in.gov

Work: 317-234-8981

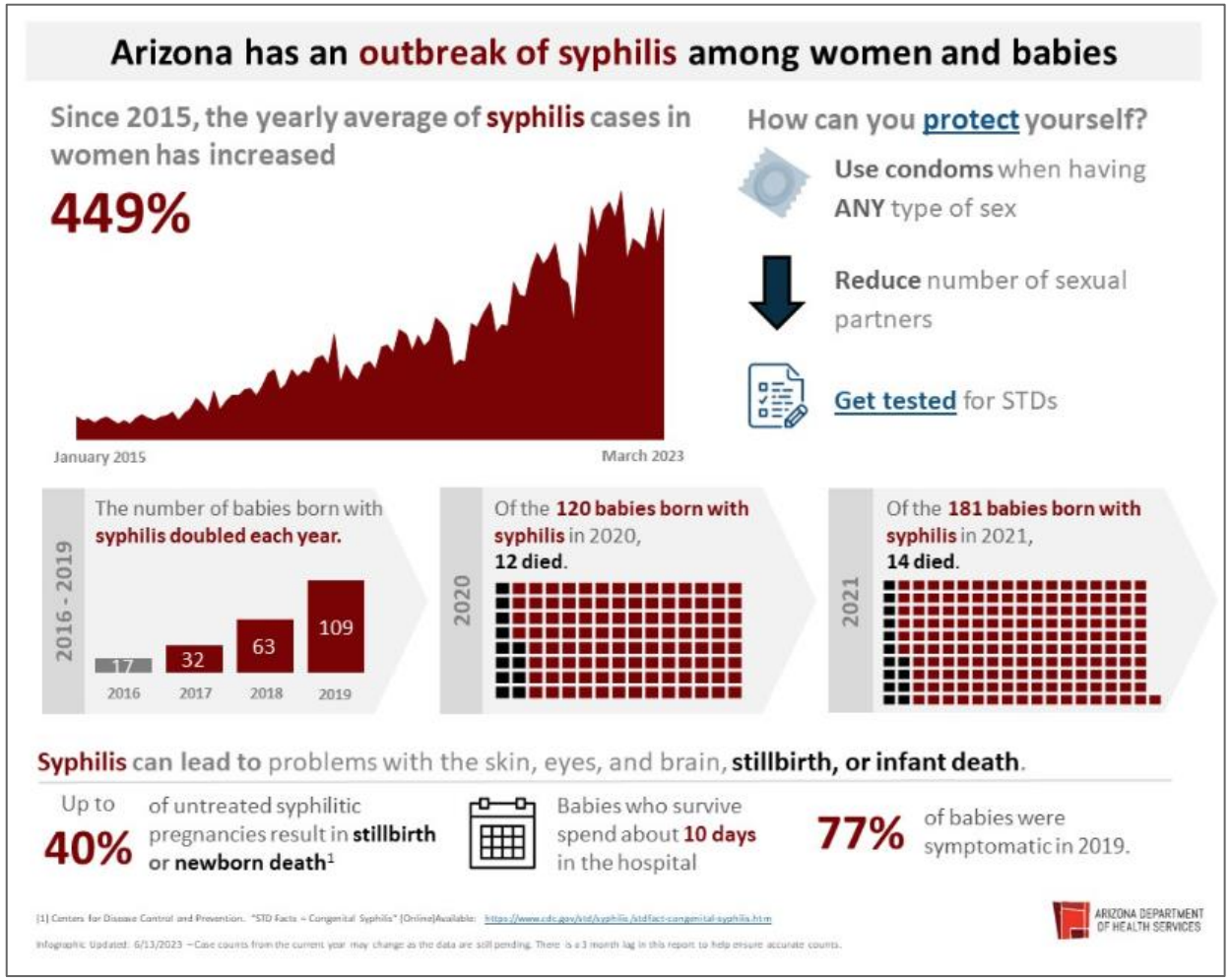
Center of Gonorrhea Excellence Website

Arizona STI Data Dashboards

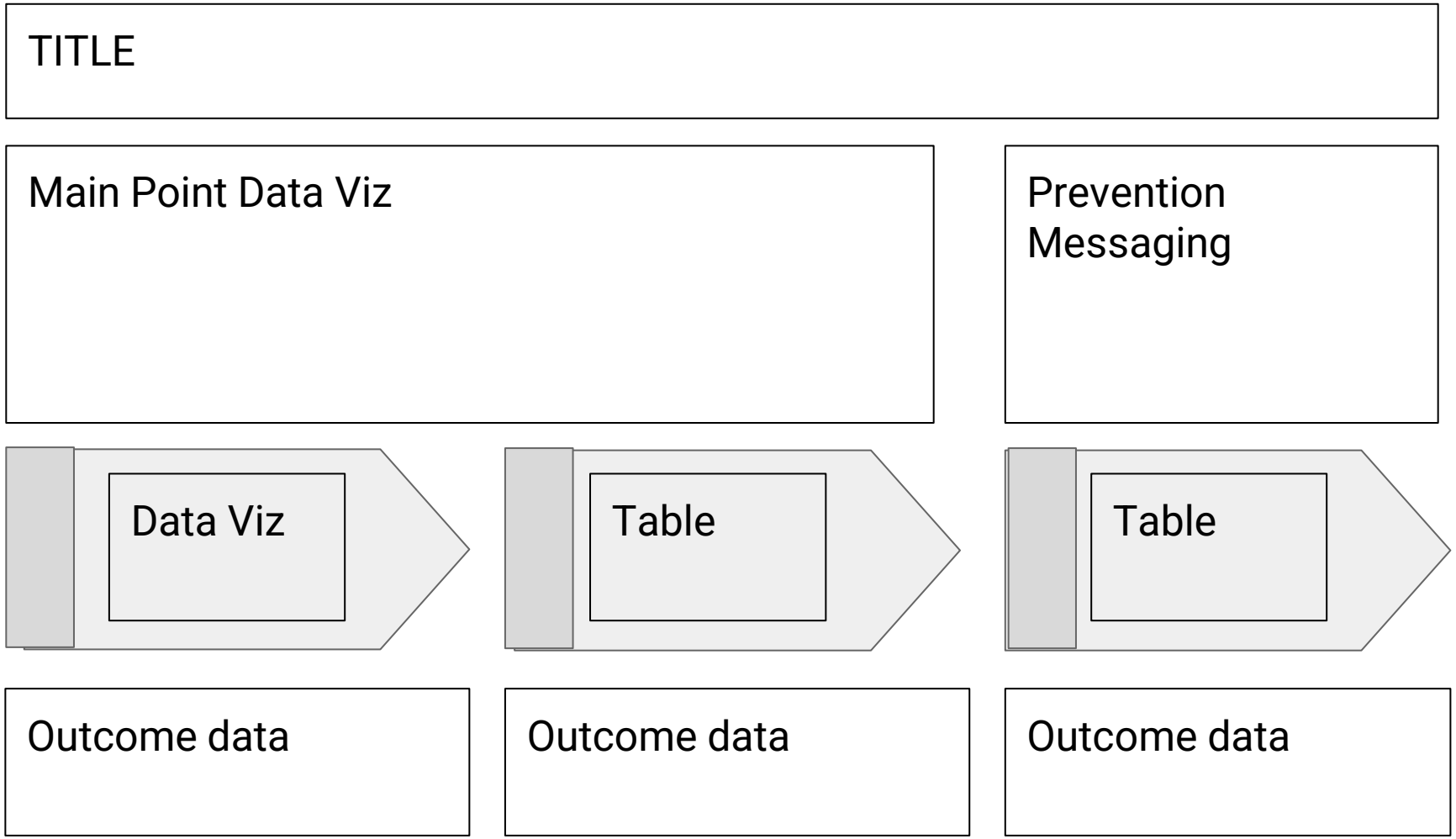
Becca Scranton

ARIZONA DEPARTMENT OF HEALTH SERVICES

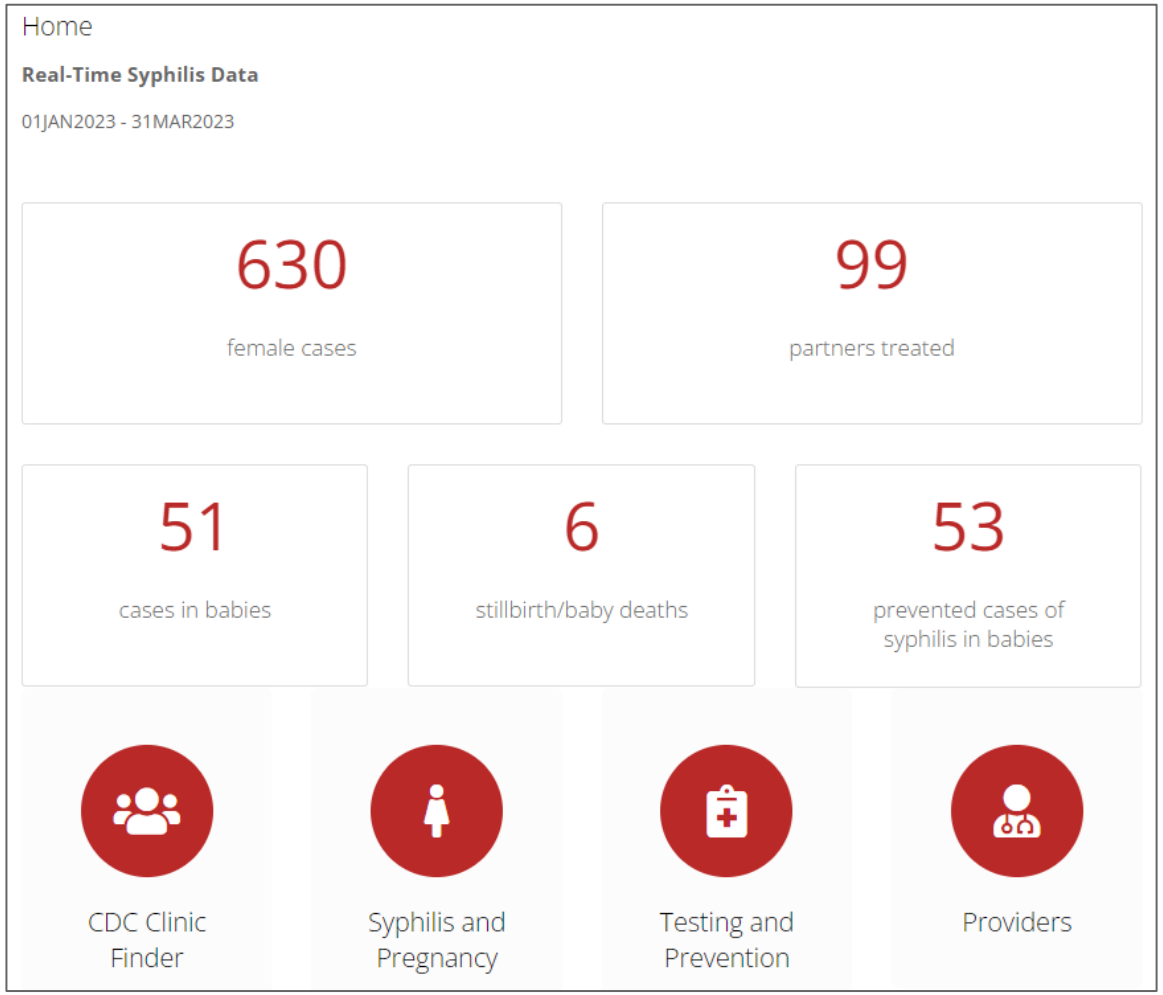
Static Dashboards

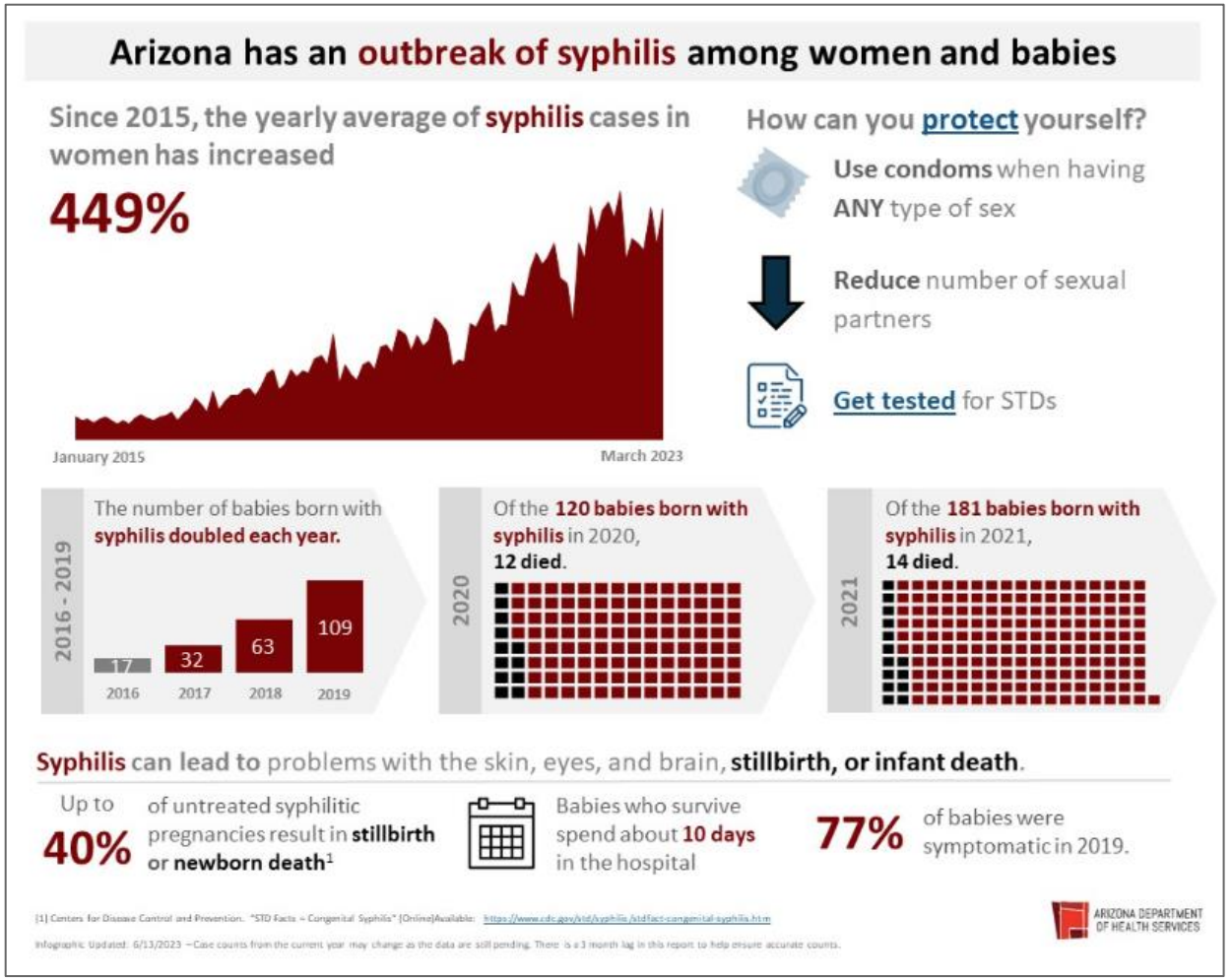


Behind the Scenes



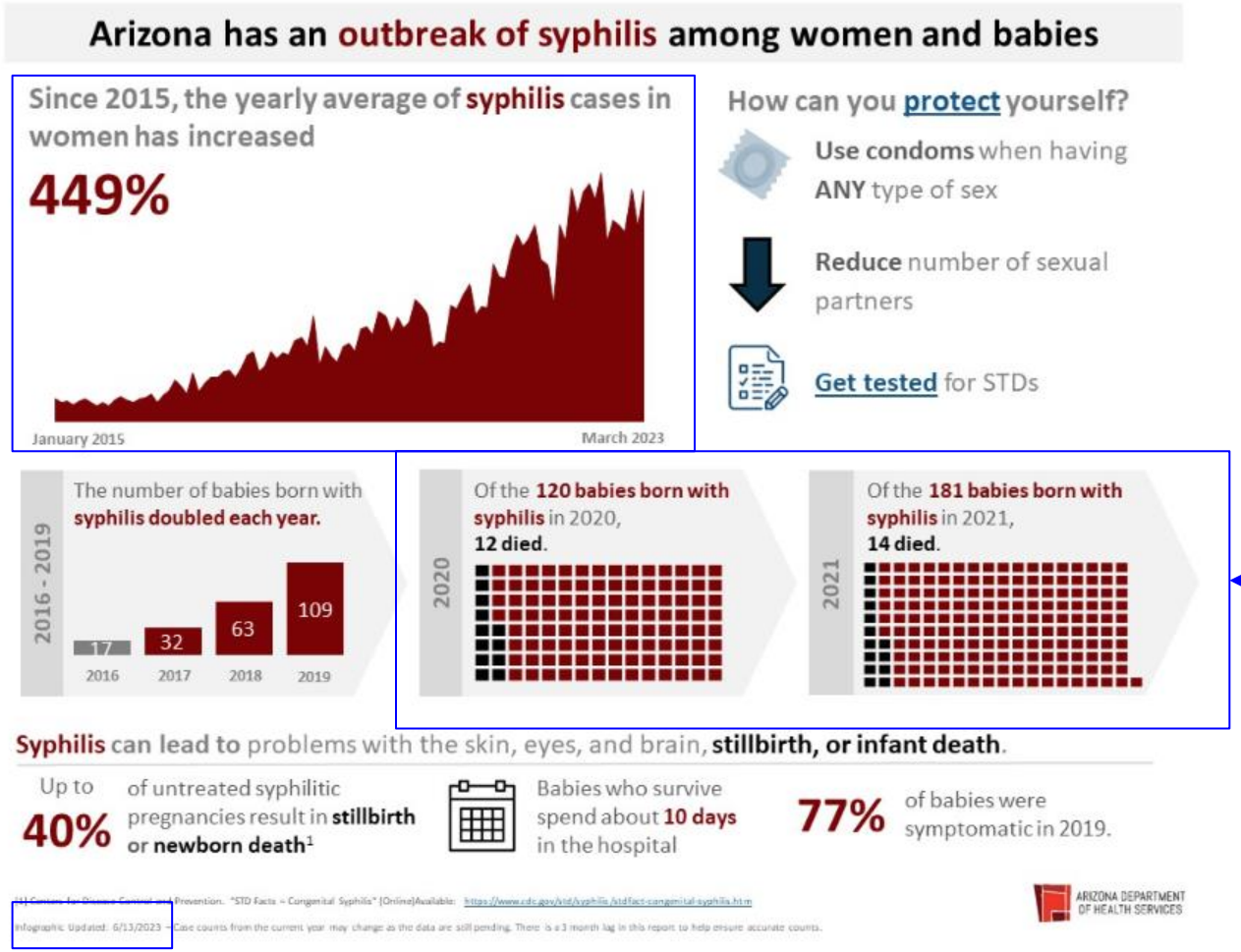
Static Dashboards – Maintenance





Static Dashboards

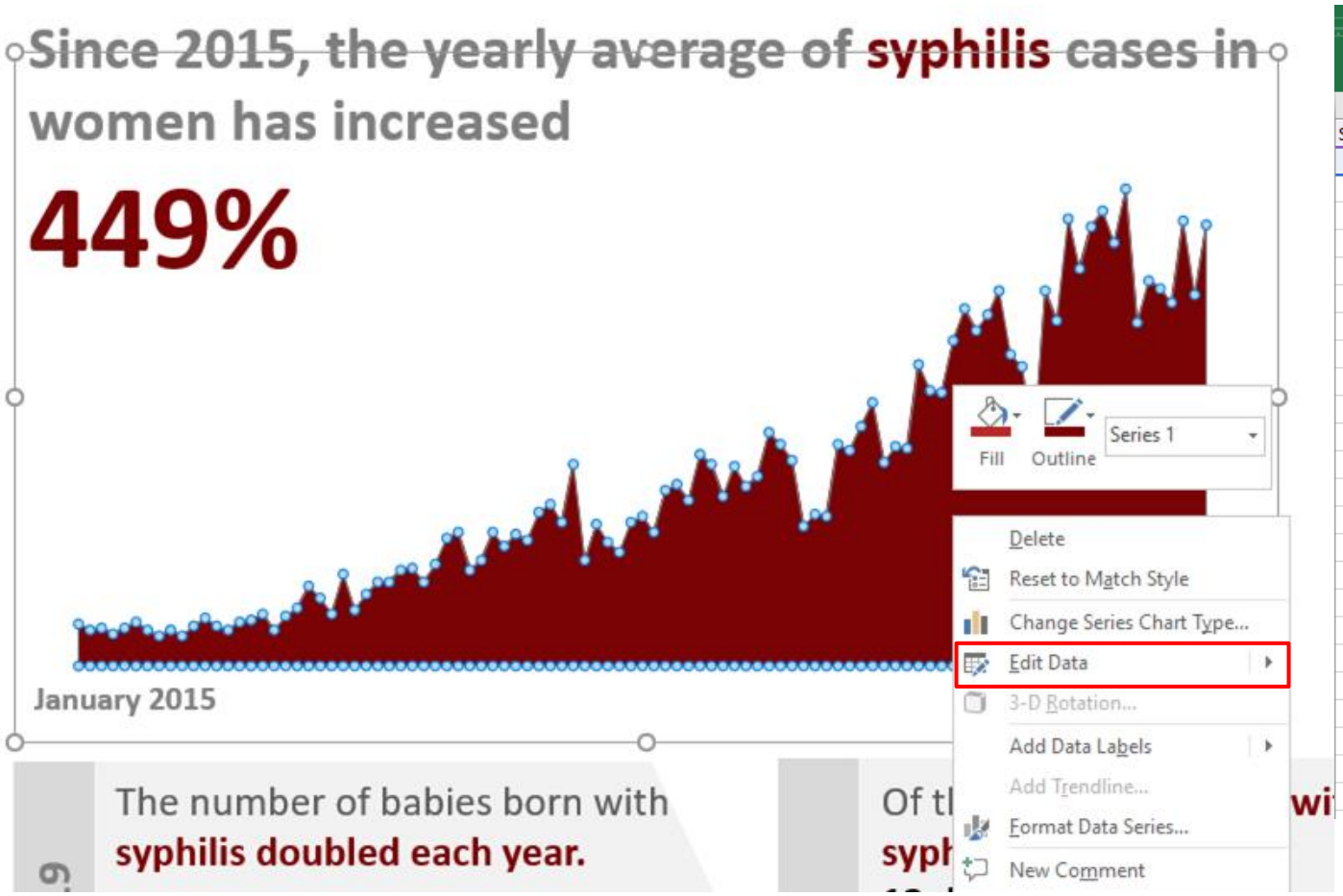
Update monthly →

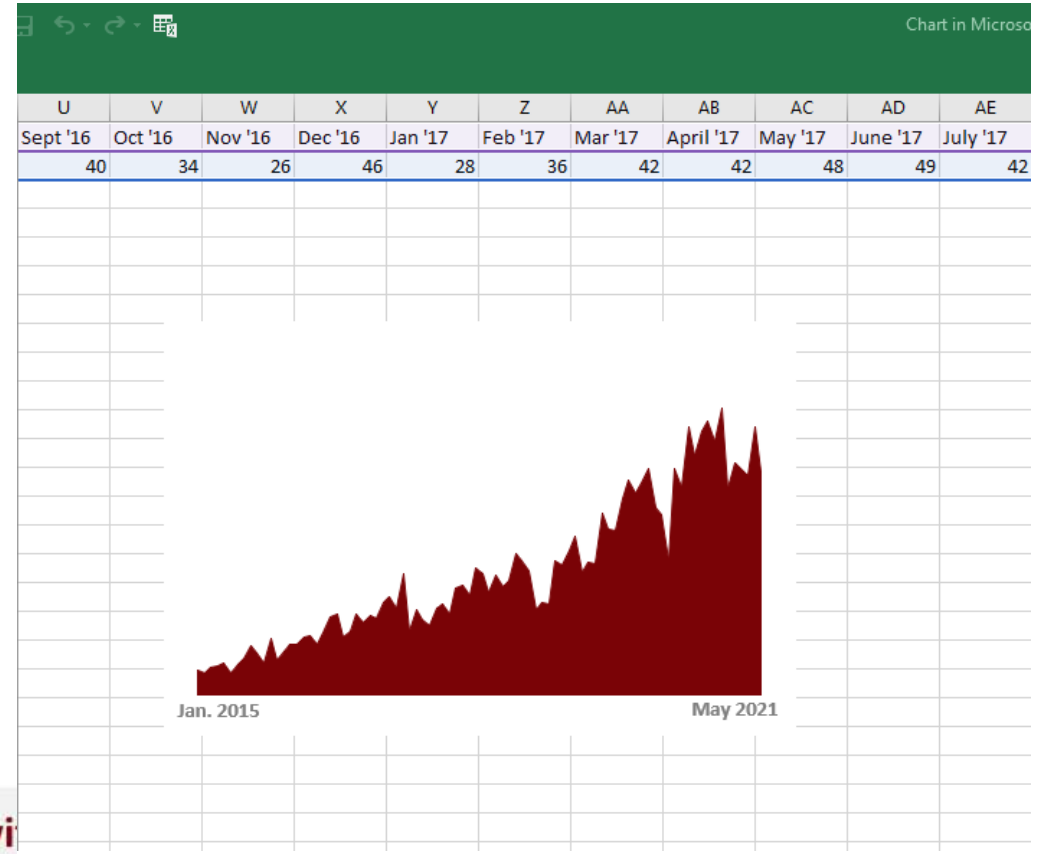


← Update monthly(ish)

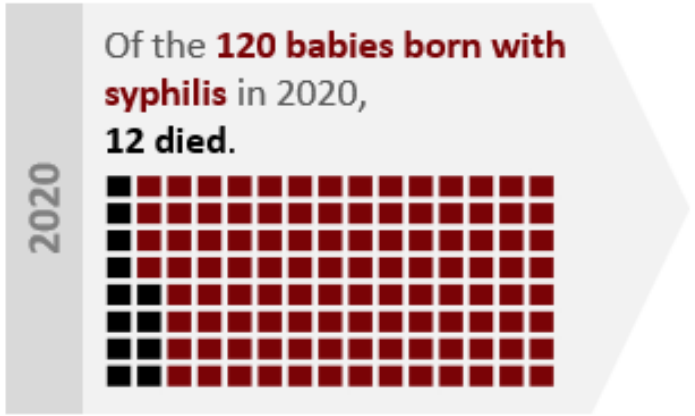
Update monthly →

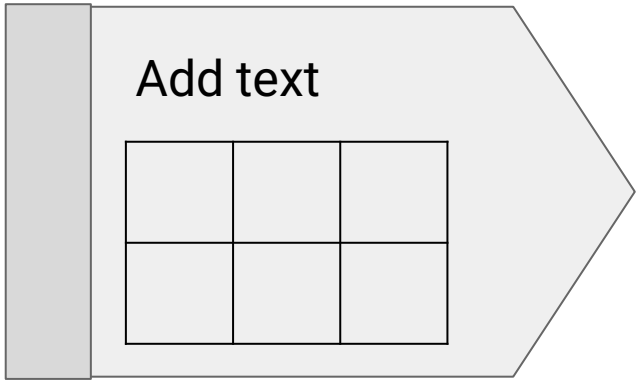
Updating the data

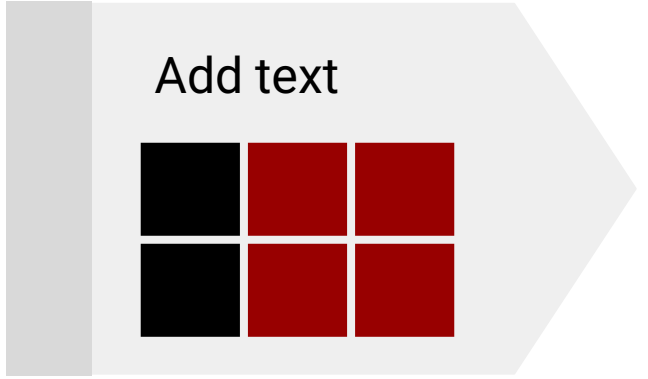




How to build the icon array graphic

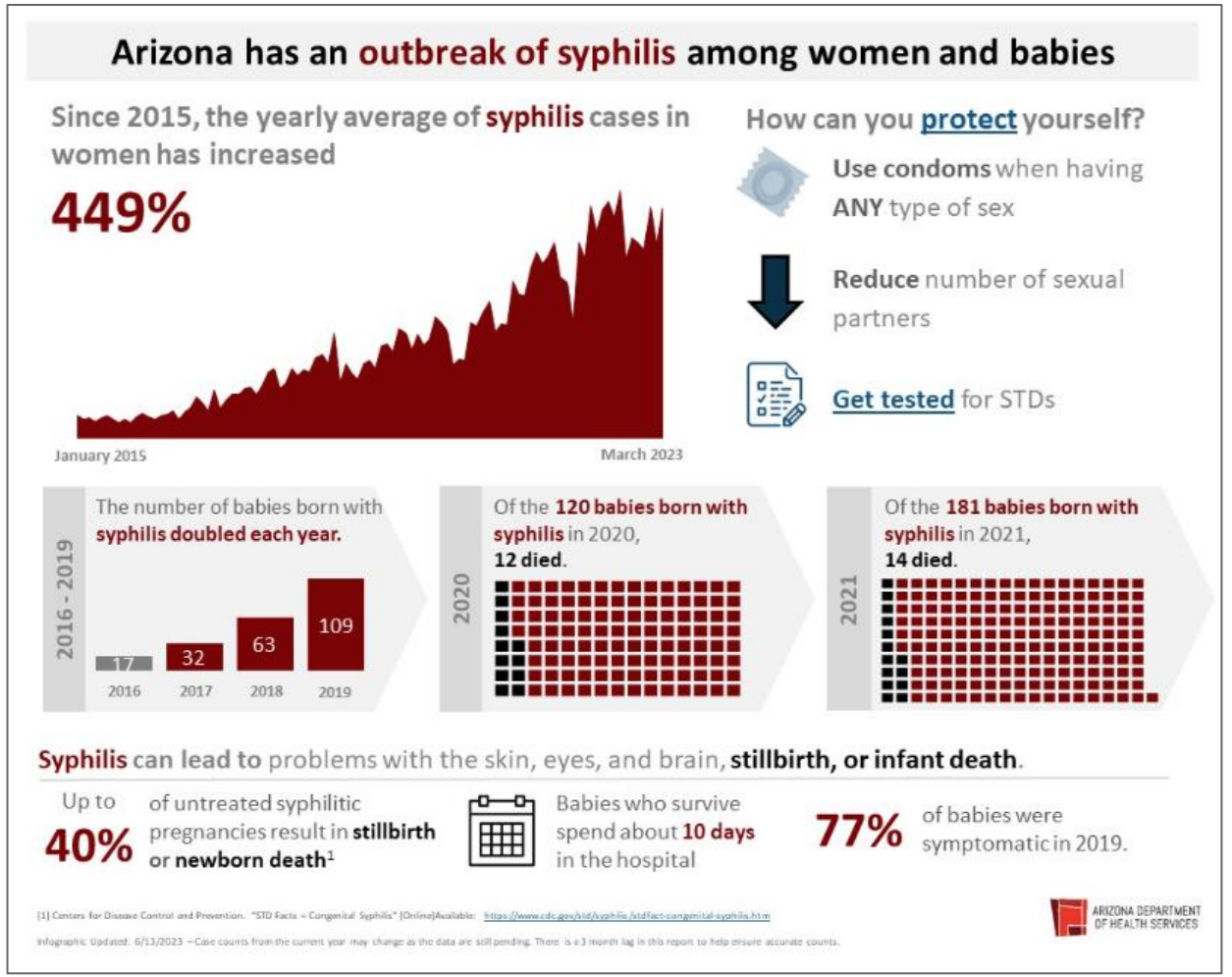




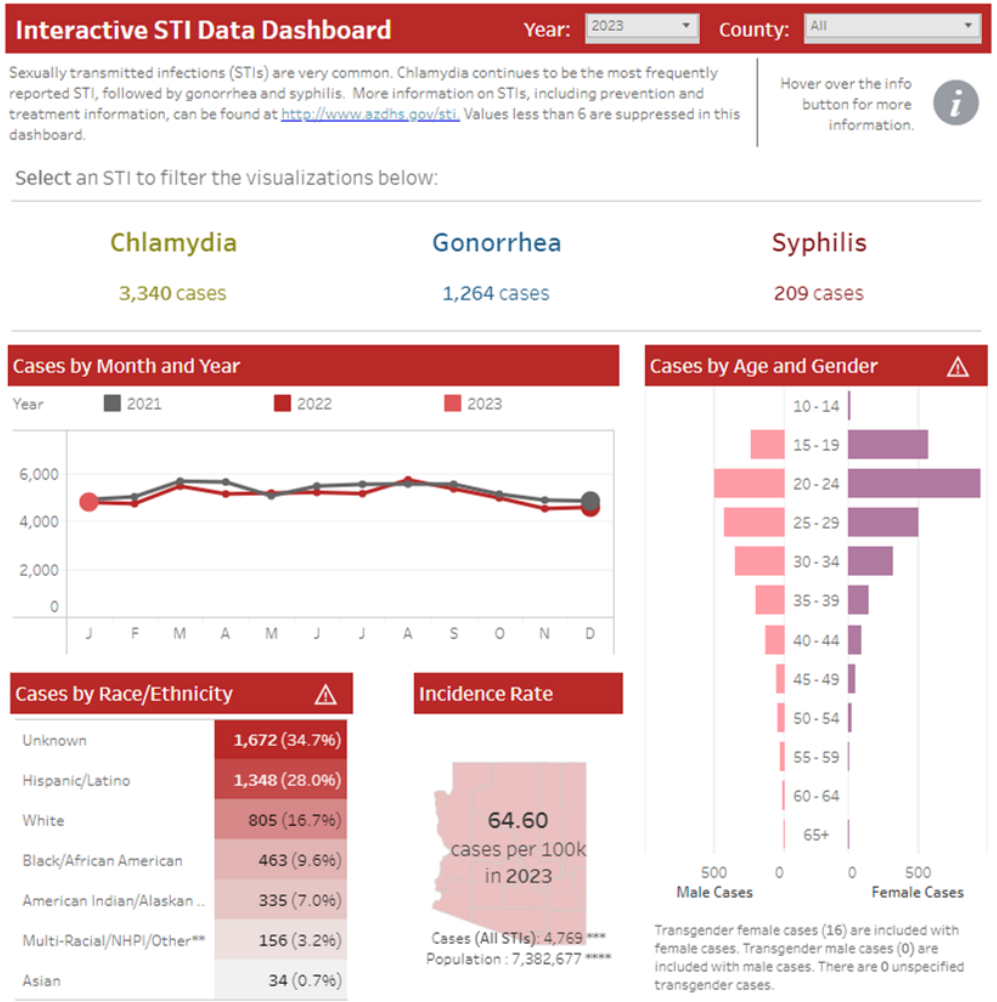


Static Dashboards Resource Needs

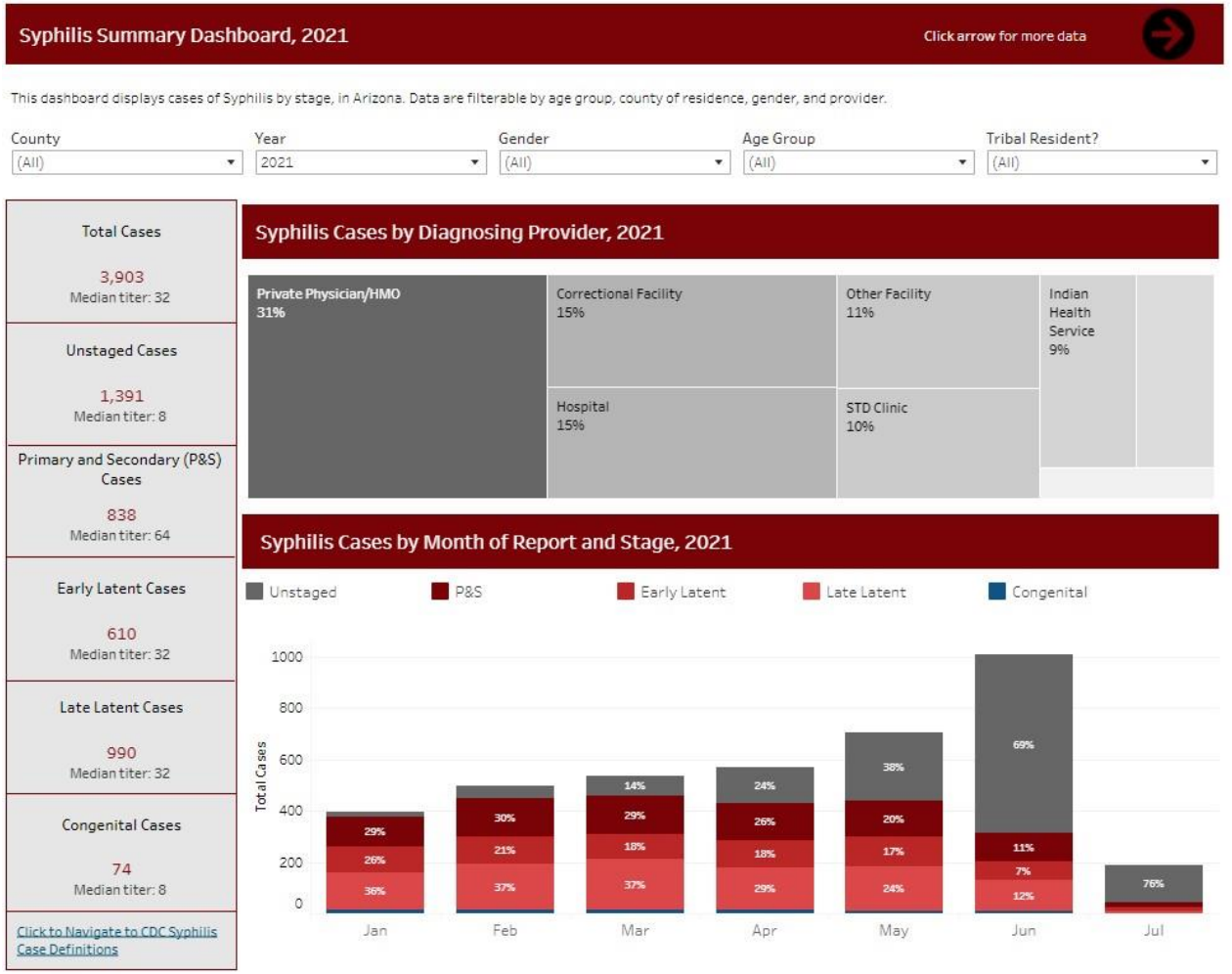
- **Staff: 1 epi (build/maintain)**
- **Dev time: 2-4 weeks**
- **Maintenance: 30 min/month**
- **Annual Cost: Varies, usually minimal**



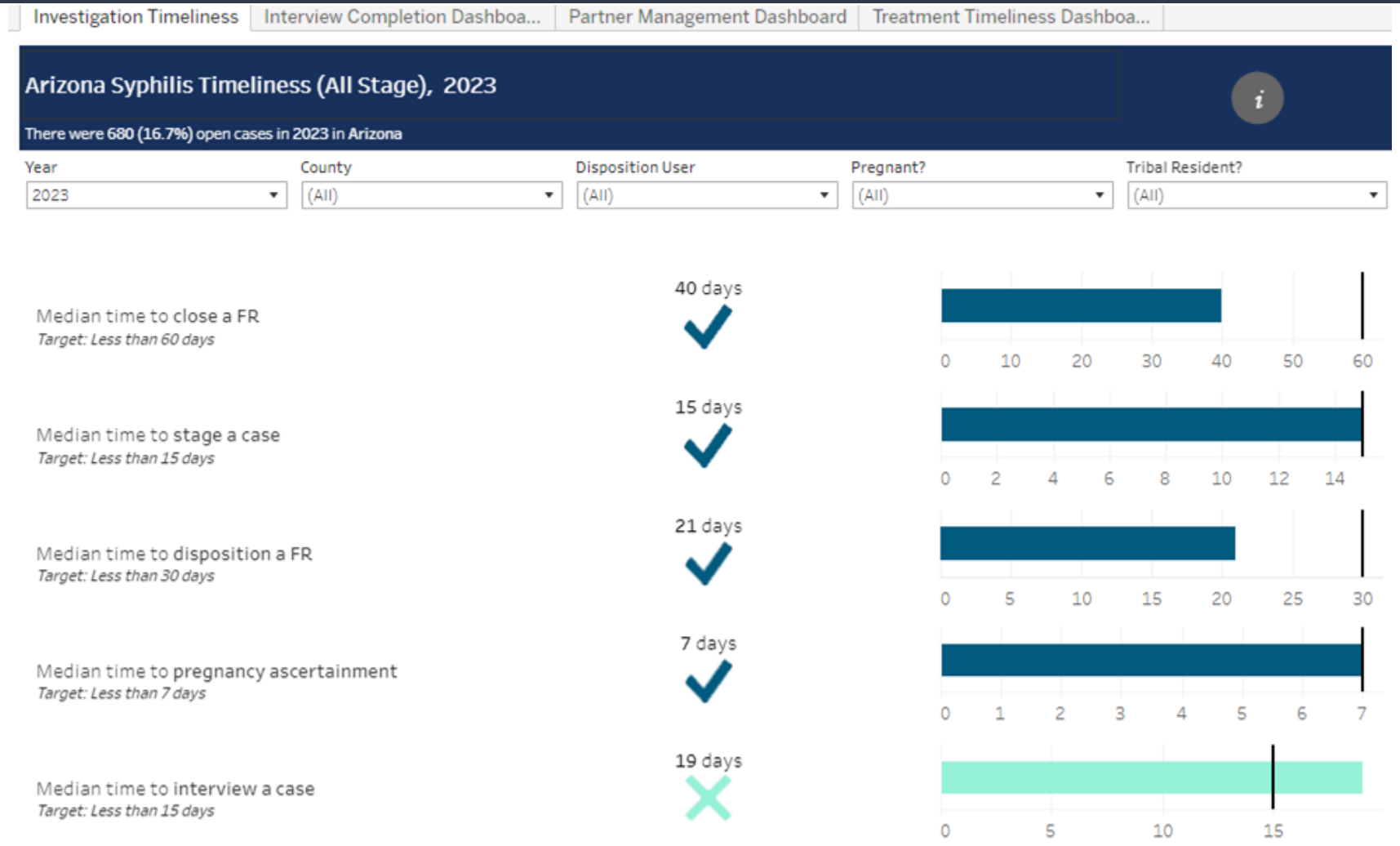
Interactive Dashboards



Internal Dashboards



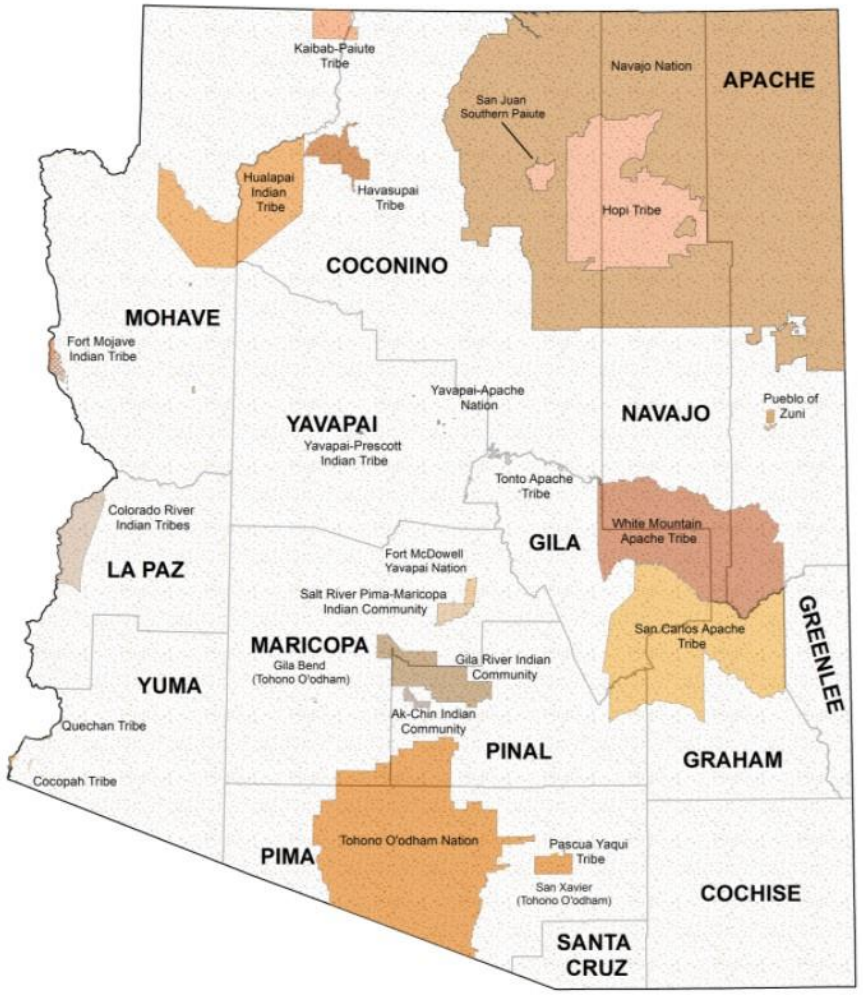
Internal Dashboards



Row Level Security

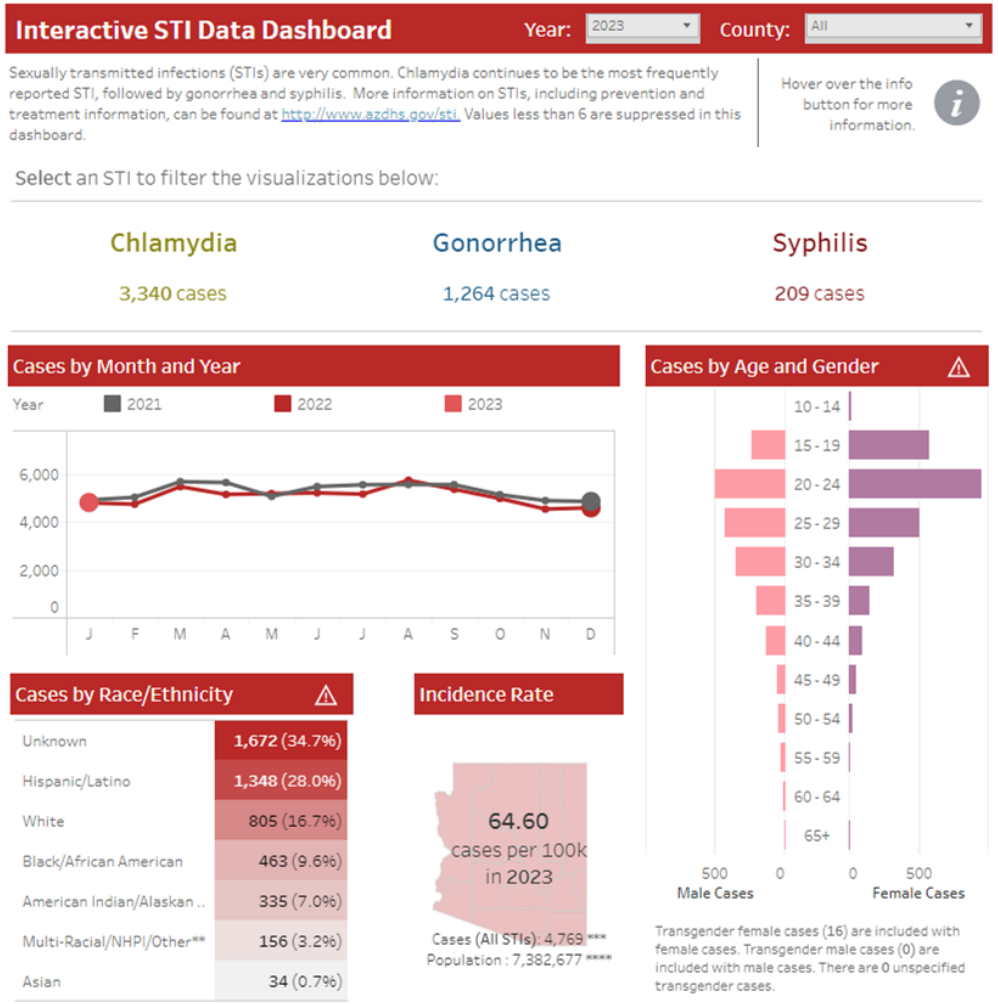
Counties see everything in their county, including tribal cases.

Tribes see everything in their jurisdiction, even across counties



Interactive Dashboard Resource Needs

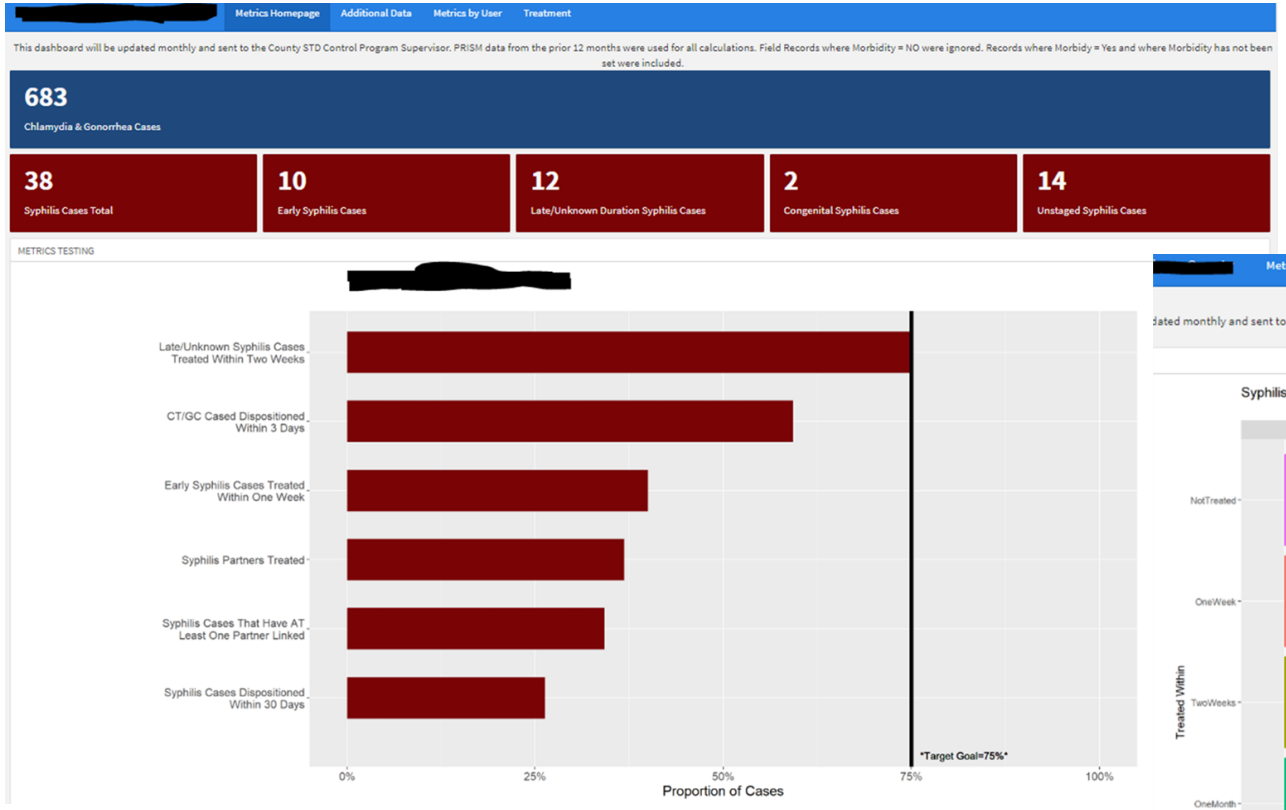
- **Staff: 2 epi, build 1 epi maintain**
- **Dev time: ~6 months**
- **Maintenance: minimal, recommend annual review**
- **Annual Cost: $840 minimum**

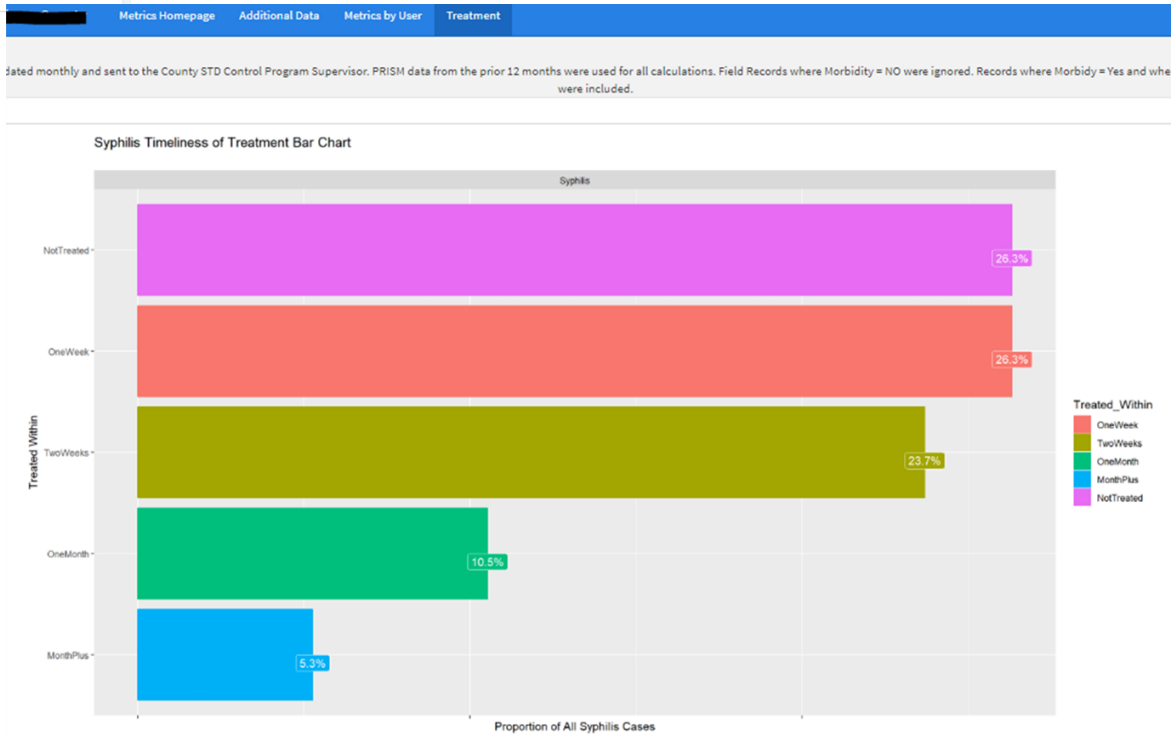


Annual Tableau Cost ($840+)

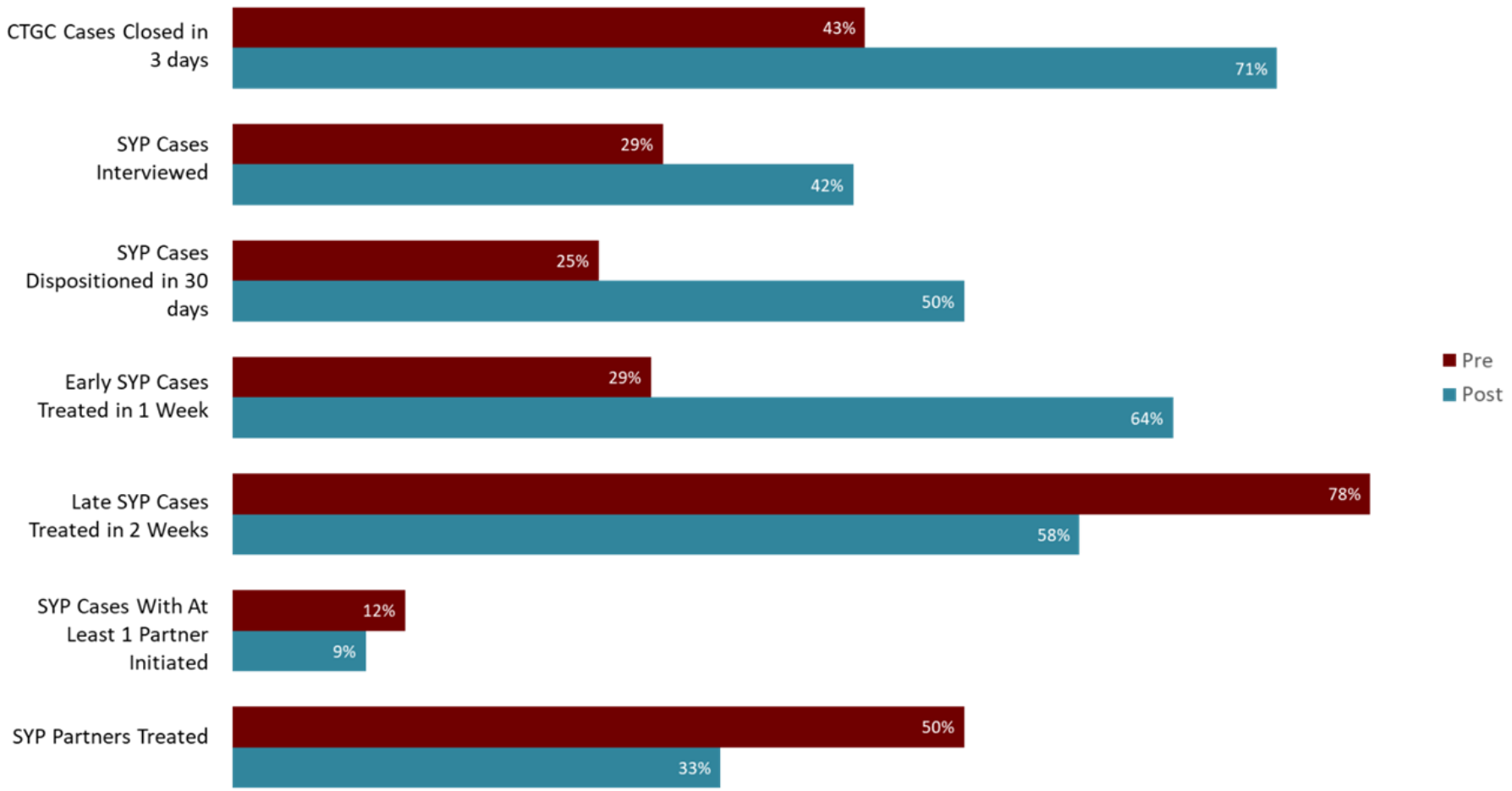
- **Public Facing Dashboard**
  - **$840 per Creator license (need at least 1-2 to build/maintain)**
- **Additional cost for Internal Dashboards**
  - **$180/user/year**
    - **Example: $6,660 for 37 viewers (1 account per jurisdiction, 15 Counties, 22 tribes)**

Try R dashboards for a lower cost option!



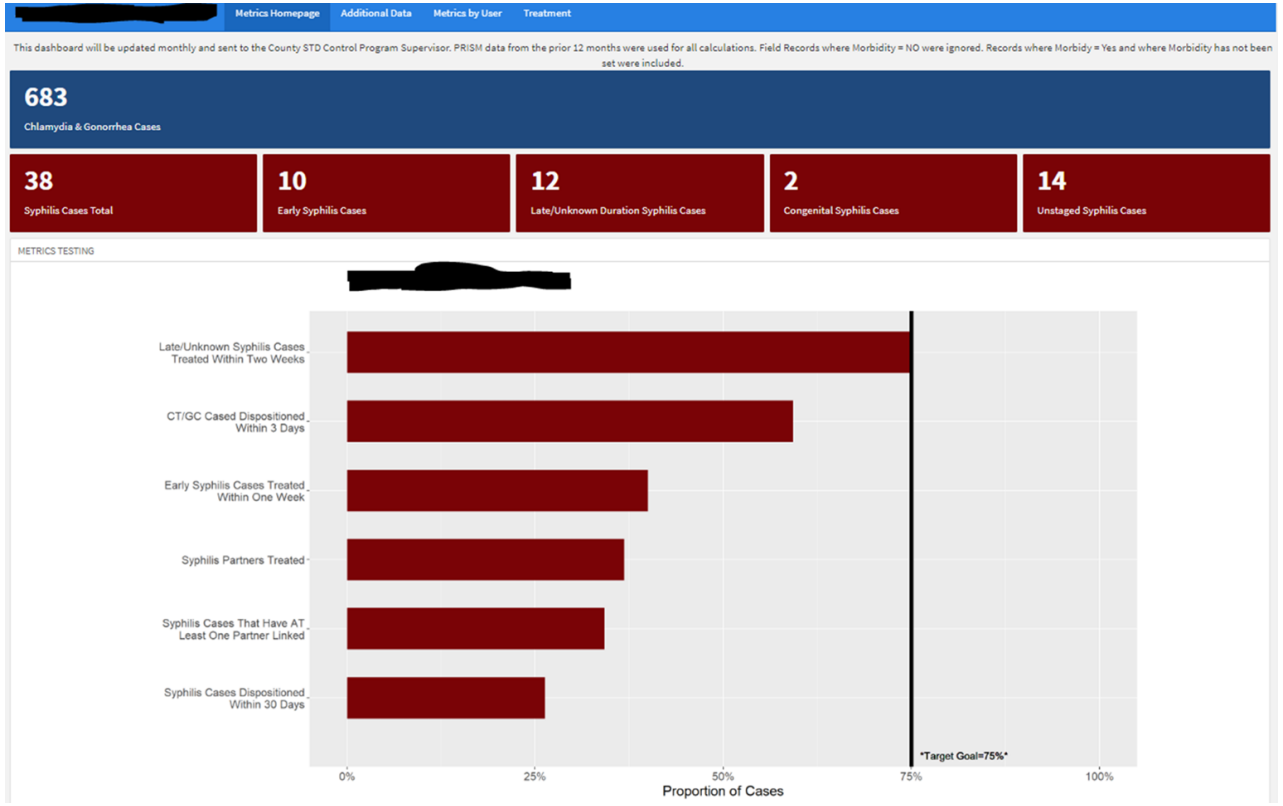


Outcome data from dashboard project



R Dashboard Resource Needs

- Staff: 1 epi (build/maintain)
- Dev time: 2-4 weeks
- Maintenance: minimal
- Annual Cost: minimal



Dashboard Options

- Static Dashboards
- Interactive Dashboards
- Internal Dashboards
- R Dashboards

Additional Resources

NY Dashboard Article

Evergreen Data Viz

ASTHO AZ STI Dashboard Tool

AZ STI Data: azdhs.gov/sti

AZ Syphilis Data: azdhs.gov/syphilis

Want to keep chatting about dashboards?

Rebecca.Scranton@azdhs.gov

sti@azdhs.gov

Thank you to Keivon Hobeheidar for helping to develop these slides and our Tableau dashboards!

Webinar Evaluation Poll Question

Q1:Webinar Usefulness

Webinar Evaluation Poll Question

Q2: Program Improvement

Thanks for Participating

- We hope you found this webinar worthwhile and informative.

- If you have topic suggestions for future Informatics Webinars, please email us:

  - Charlie Rabins crabins@ncsddc.org

  - Robin Hennessy btj2@cdc.gov