

Data Integration to Monitor COVID Vaccine Rollout

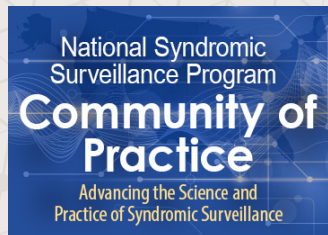
2:45PM EST | November 19th, 2020 | 2020 SyS Symposium

Moderated by Jim Nowicki, MBA – GDIT

Invited Panelists:

Lakshmi Radhakrishnan, MPH – CDC/NSSP

Zach Stein, MPH – ICF Consultant, CDC/NSSP



Council of State and Territorial Epidemiologists

Session Objectives



By the end of the session, participants will be able to...

1. Identify and discuss additional data sources for monitoring and understanding possible negative reactions to COVID-19 vaccines.
2. Identify potential collaborative initiatives to incorporate roundtable discussion into action.
3. Be able to apply session learnings to their state and local jurisdictions to more effectively prepare for and conduct the rollout of vaccines.



NSSP

National Syndromic
Surveillance Program

BioSense Platform



NOVEL USE OF SYNDROMIC SURVEILLANCE TO IDENTIFY VACCINE-ASSOCIATED ADVERSE EVENTS

Zach Stein and Lakshmi Radhakrishnan

Centers for Disease Control and Prevention

Division of Health Informatics and Surveillance (DHIS)

Vaccine-Associated Adverse Events Syndrome

Definition

- **Goal:** To assist public health partners in capturing vaccine adverse events through syndromic surveillance data by developing a sensitive query in anticipation of a mass-vaccination event

Discharge Diagnosis Query

Hierarchy of Inclusion Factors

1. Discharge diagnosis codes



2. Highly-relevant terms (vaccine reaction, vaccine side effect)



3. Time + Vaccine + Effect



3a. Time + Vaccine (regardless of effect)

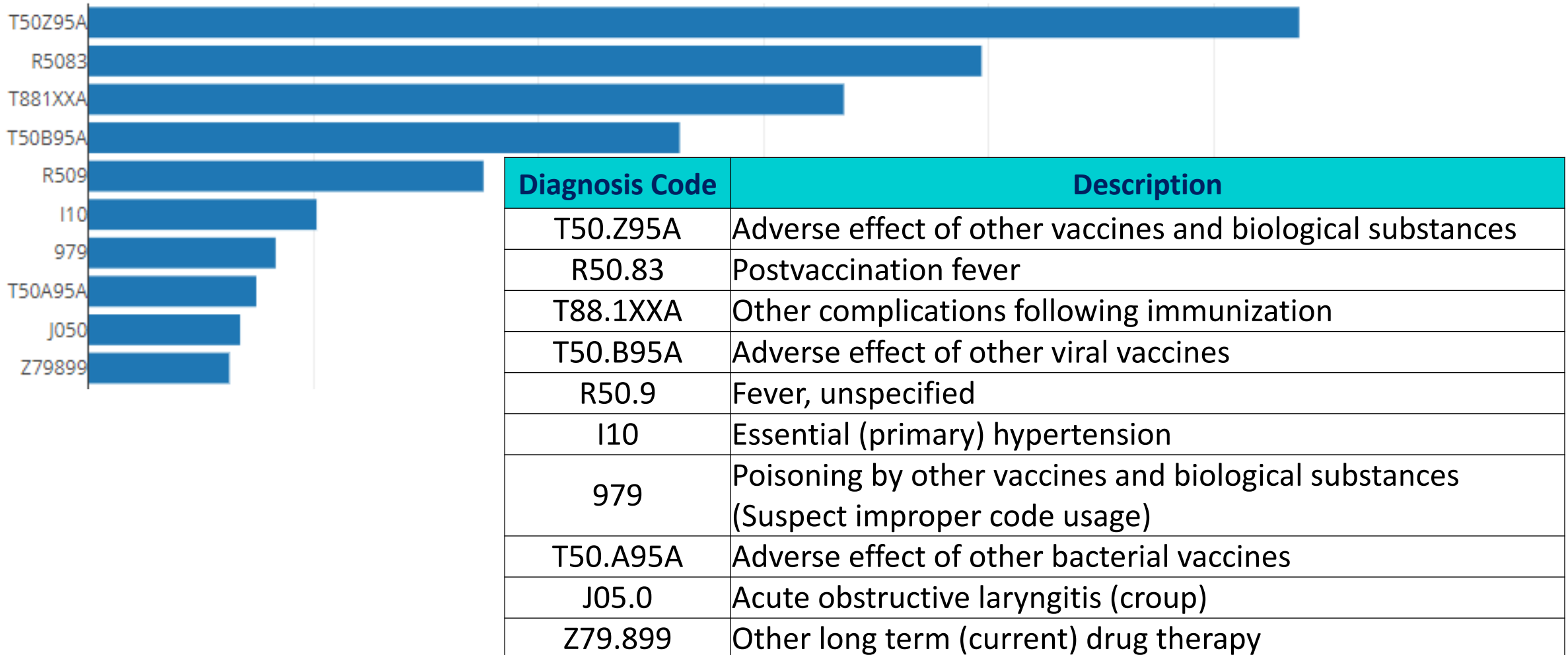
3b. Vaccine + Effect

Notes on Discharge Diagnosis Data

Notes	ICD-10	ICD-9	SNOMED
Adverse effect of, poisoning by, and underdosing of bacterial, viral and other vaccines, and biological substances	T50.A, T50.B, T50.Z	978, 979, 964.6	420113004, 408672009, 293125008, 293120003, 293118001, 293109003, 293116002, 293117006, 219075006, 219084006, 219088009, 293104008
Anaphylactic reaction and other serum reaction due to vaccination.	T80.52, T80.62	999.42, 999.52	15920121000119103
Infection and other complications (not elsewhere classified), following immunization	T88.0, T88.1	999.0, 999.39	47988006, 31935007
Postvaccination fever	R50.83	780.63	123471000119103
Postimmunization acute encephalopathy, encephalitis, myelitis, and encephalomyelitis	G04.32, G04.02	323.5	

Top 10 Discharge Diagnosis Frequencies, Sep 1-Dec 29, 2019

Top 10 Single Term Frequencies of Discharge Diagnosis

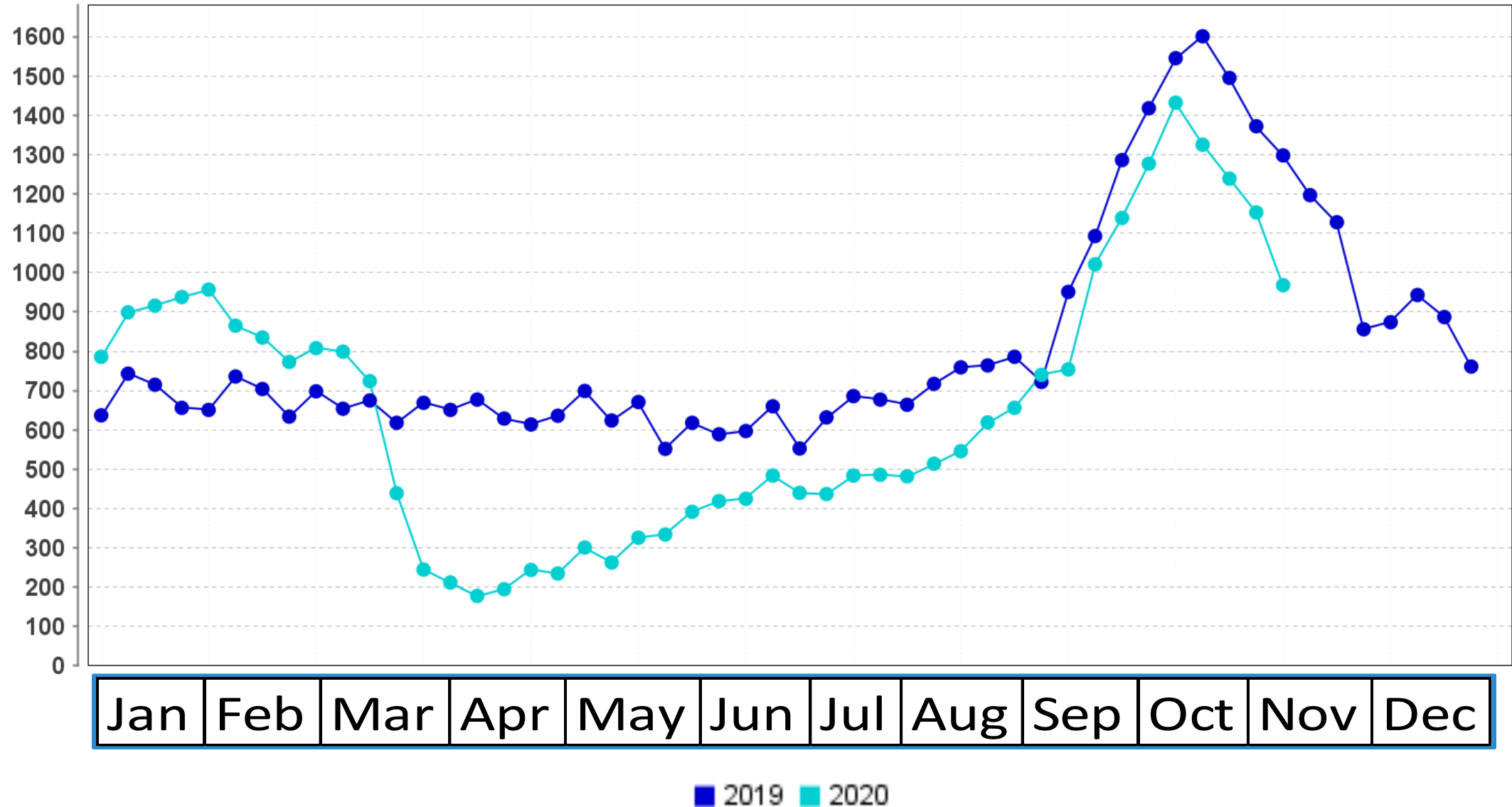


Chief Complaint Query

Chief Complaint Terms

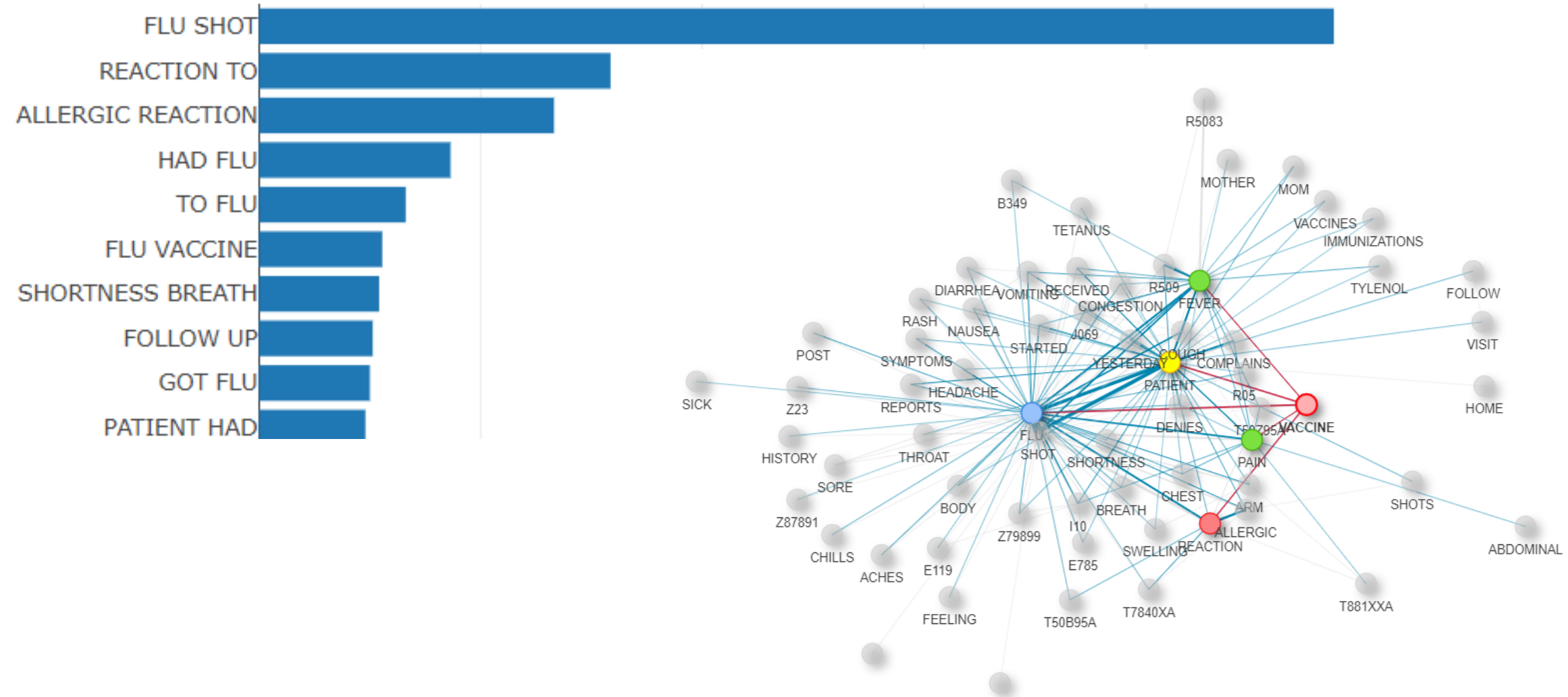
(, (^vaccin^,or,^immuniz^,or, (^shot^,and, (^flu^,or,Flu^,or,^influenza^,or,^shingles^,or,^pne^,or,^pna^,or,^tetn^,or,^tetanu^,or,^tdap^,or,^booster^,or,^td^,or,^hpv^,or,^mmr^,or,^covid^,or,^corona^,)),),and, (^reaction^,or,^allerg^,or,^adverse^,or,^side effect^,or,^had^,or,^received^,or,^got^,or,^was given^,or,^after^,or,^post^,or,^last time^,or,^recent^,or,^since getting^,or,^since receiving^,or,^since yesterday^,),or,^shot^,AND, (^Reaction^,or,^Allergic^,or,^Adverse^,)),),andnot, (^no vaccine^,or,^no immuniz^,or,^immunization not carried^,or,^[;/]Z28.21^,or,^[;/]Z2821^,or,^[;/]P55.1^,or,^[;/]P551^,or,^has received first dose^,or,^has received second dose^,or,^has received third dose^,or,^dog^,or,^cat^,or,^wound^,or,^up to date^,or,^ABO isoimmunization of newborn^,or,^well child^,or,^well visit^,or,^encounter for immunization^,or,^loss of consciousness^,or,^aftercare^,or,^UTD^,or,^up to date^,or,^wound^,or,^bite^,or,^air vac^,or,^Denies any previous adverse reaction^,or,^did not receive^,)

Vaccine Associated Adverse Events Syndrome Definition, 2019-2020



Top 10 Bi-gram Frequencies and Word Association Cloud, Sep 1-Dec 29, 2019

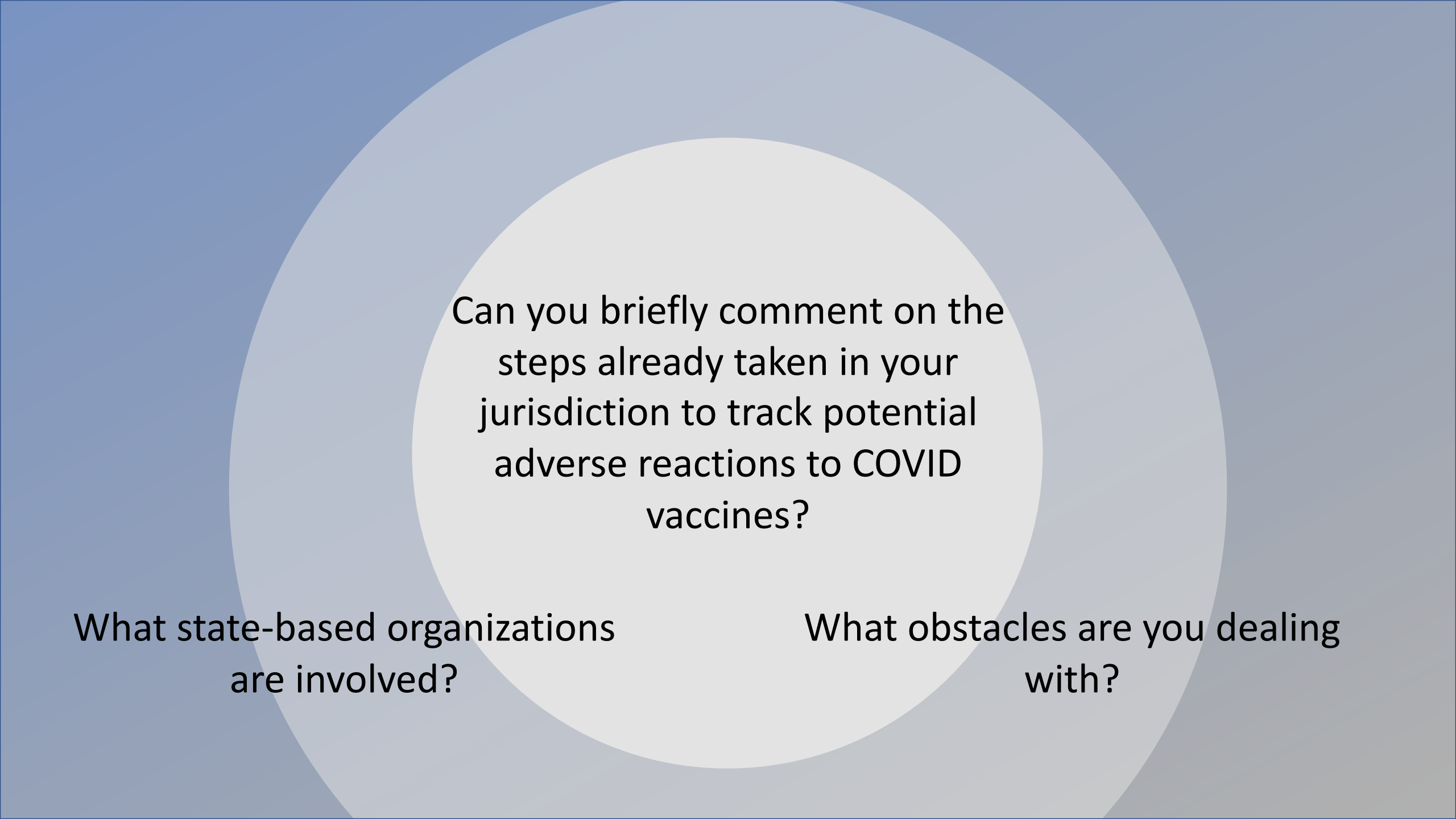
Top 10 Bigram Frequencies of Chief Complaint Parsed



Acknowledgements

Centers for Disease Control and Prevention

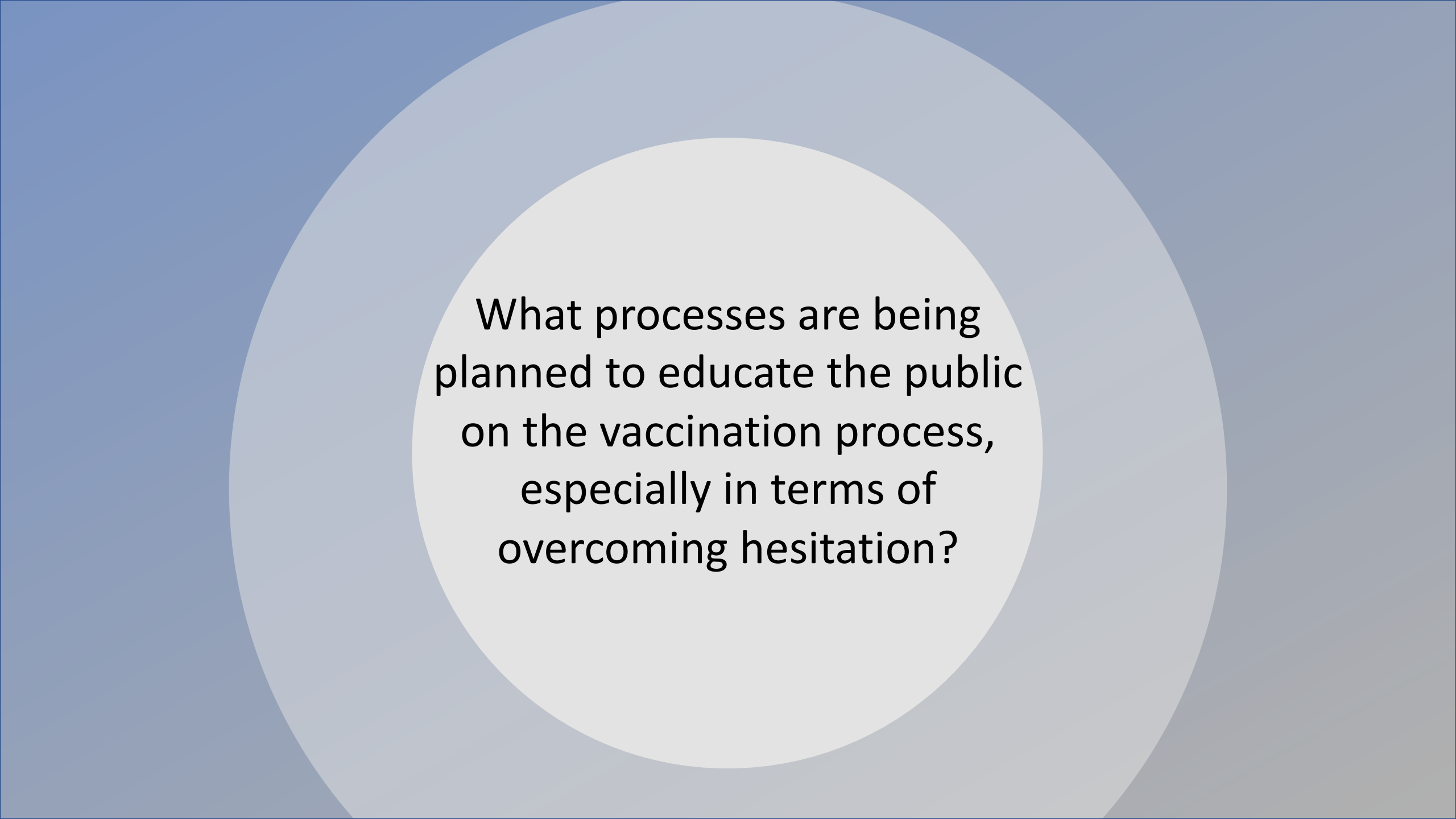
- ❖ Loren Rodgers
- ❖ Kathleen Hartnett
- ❖ Amanda Smith
- ❖ Jourdan DeVies



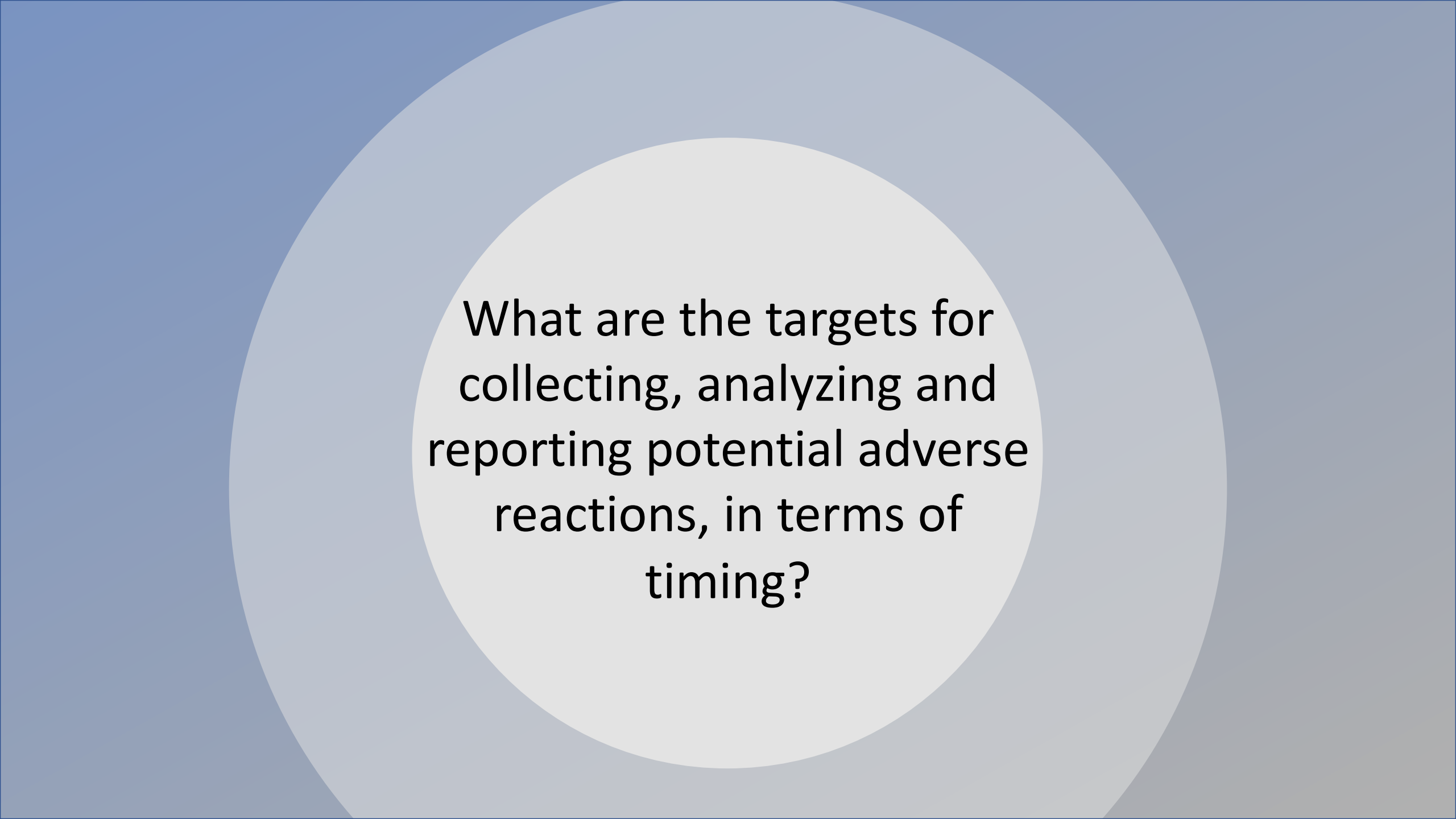
Can you briefly comment on the steps already taken in your jurisdiction to track potential adverse reactions to COVID vaccines?

What state-based organizations are involved?

What obstacles are you dealing with?



What processes are being
planned to educate the public
on the vaccination process,
especially in terms of
overcoming hesitation?



What are the targets for
collecting, analyzing and
reporting potential adverse
reactions, in terms of
timing?

National Syndromic Surveillance Program

Community of Practice

Advancing the Science and Practice of Syndromic Surveillance



Block Schedule

1-1:15PM EST	Daily Opening, Logistics, Overview			
1:15-1:45PM EST	Plenary: NSSP and the Federal COVID Response			
1:45-2:30PM EST	Plenary Panel: Syndromic Surveillance during a National Emergency - the State and Local Experience			
	...BREAK...			
2:45-3:30PM EST	Breakout: COVID Syndrome Definition Update	Roundtable: Data Integration to Monitor COVID Vaccine Rollout	Roundtable: Data Quality and COVID	Demo/Technical Walkthrough: Analytic Innovations for the COVID Response - RShiny Dashboard
	...BREAK...			
3:45-4:15PM EST	Who We Are and Where We're Going - NSSP Community of Practice Participation and Strategic Framework			
4:15-4:45PM EST	Ongoing Activities - NSSP Community of Practice Subcommittee, Workgroup, and User Group Updates			
4:45-5:00PM EST	Looking Ahead - Engaging in the NSSP Community of Practice Moving Forward			
5PM EST	Symposium Closing Session			