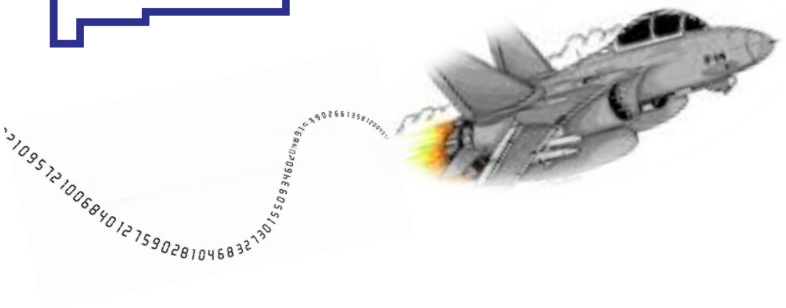
NMDOH

NEW MEXICO DEPARTMENT OF HEALTH

Investing for tomorrow, delivering today.



NM: Welcome to the Data-Zone

Kathryn (Katie) Cruz, NMSIIS Manager

April 26, 2022

Accredited Health Department • PHAB Advancing public health performance • Public Health Accreditation Board

Need for Data Visualization

- Provide needed data to the Governor's office, unified command, planning section, operations section, logistics section, NMDOH's Office of Health Equity, and other stakeholders
- Internal and external dashboards
- Guide vaccine allocation and administration of vaccines
- Capture and compile vaccination and demographic data from multiple sources:
  - New Mexico Statewide Immunization Information System (NMSIIS)
  - New Mexico Electronic Disease Surveillance System (NM-EDSS)
  - Real Time Solutions (RTS)
  - U.S. Census Bureau
  - Tiberius

Need for Data Visualization

- Monitor and report epidemiological and vaccination trends, in the context of demographics and social determinants of health, for example, measuring:
  - vaccination progress for those with access or functional needs
  - vaccination progress among demographic categories
  - community health worker training and efficacy
  - vaccine uptake barriers due to hesitancy and/or health literacy
  - geographic patterns of vaccinations
  - social vulnerability index (SVI) rankings
  - COVID epidemiology
  - vaccine confidence

Challenges for Data Visualization

- Limited staff and resources available for development
- Divided resources within the Department of Health

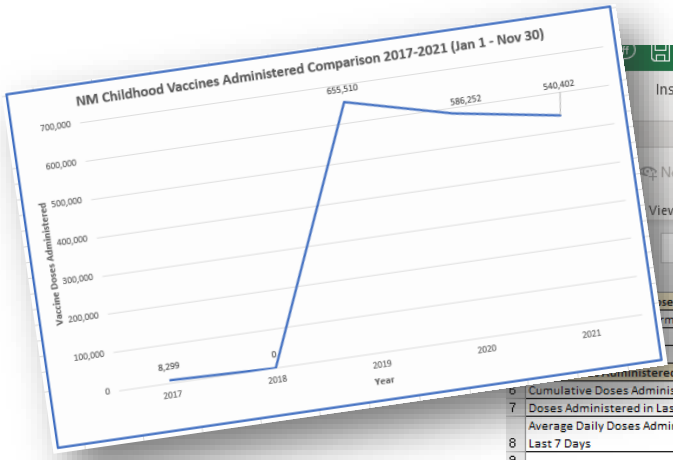
(Public Health Division, IT Department, and Epidemiology & Response Division)

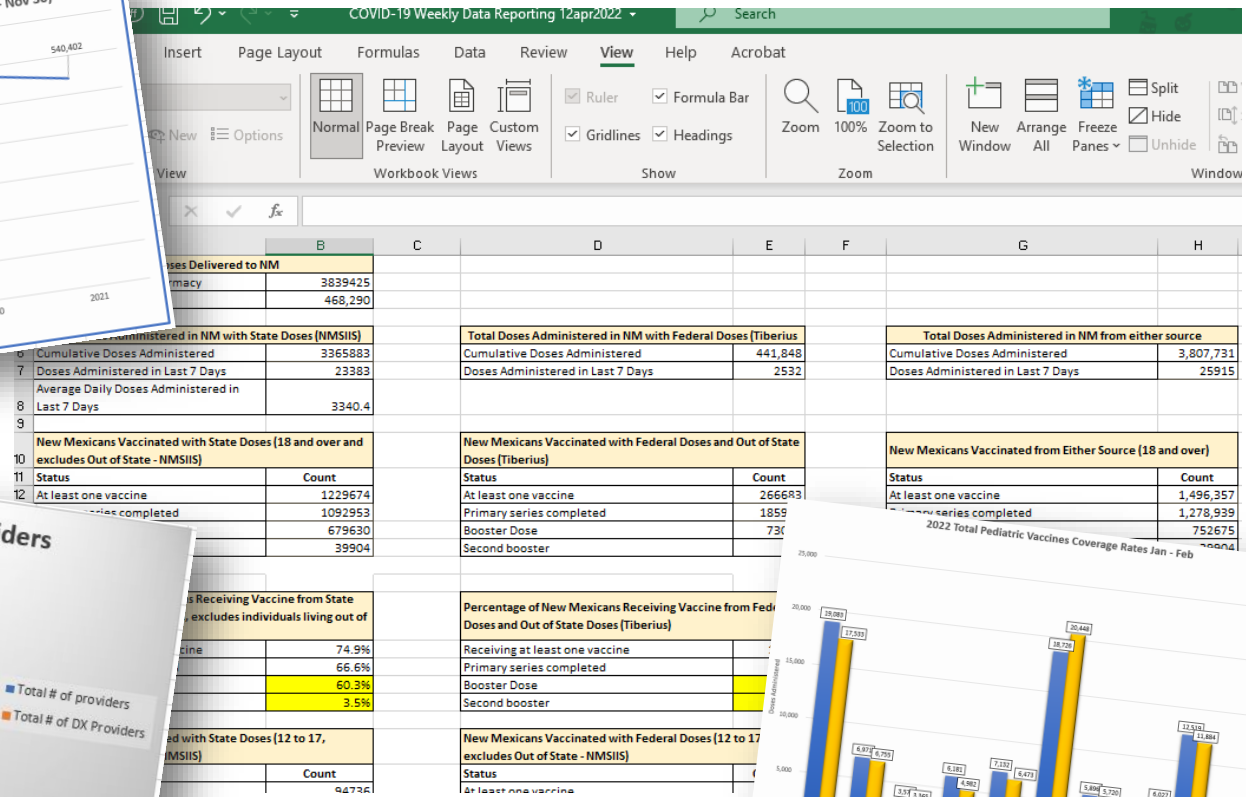
- No existing infrastructure in place
- Demand for it to be created immediately
- Evolving priorities

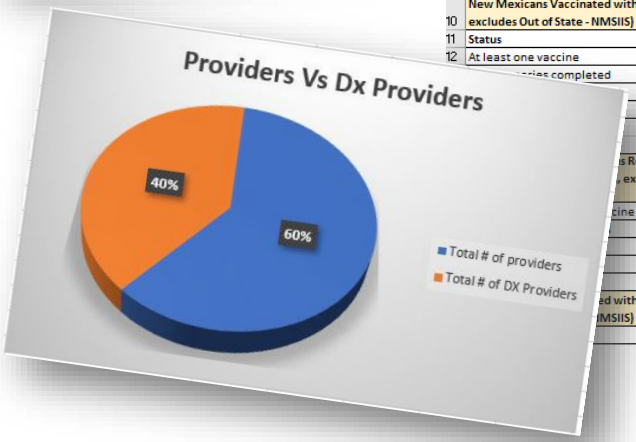
Initial Data Visualization Attempt: Excel

- Flat file imports from state and federal data
- High opportunity for errors
- Limited data capacity
- Limited visualizations: charts, graphs, or tables
- Not interactive
- Inability to analyze or update real-time data
- Lacks comprehensive collaboration, such as cloud-based integration

Excel Visualization







Next Data Visualization Attempt: Public Dashboard

- 3rd party vendor
- Limited control over the data presented
- Dependent on vendor to understand goal
- High opportunity for error
- Not interactive
- Inability for real-time updates

Public Dashboard Visualization

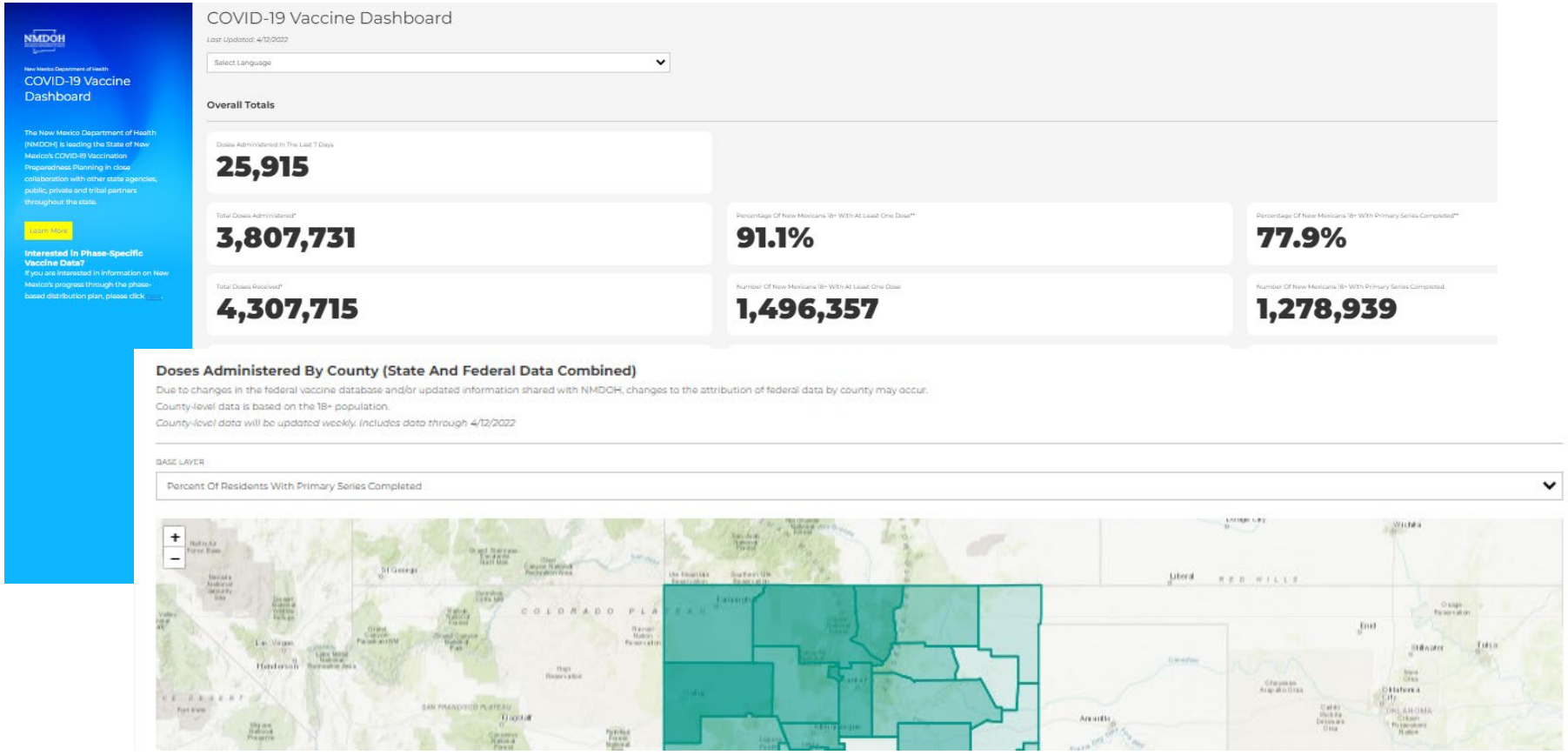
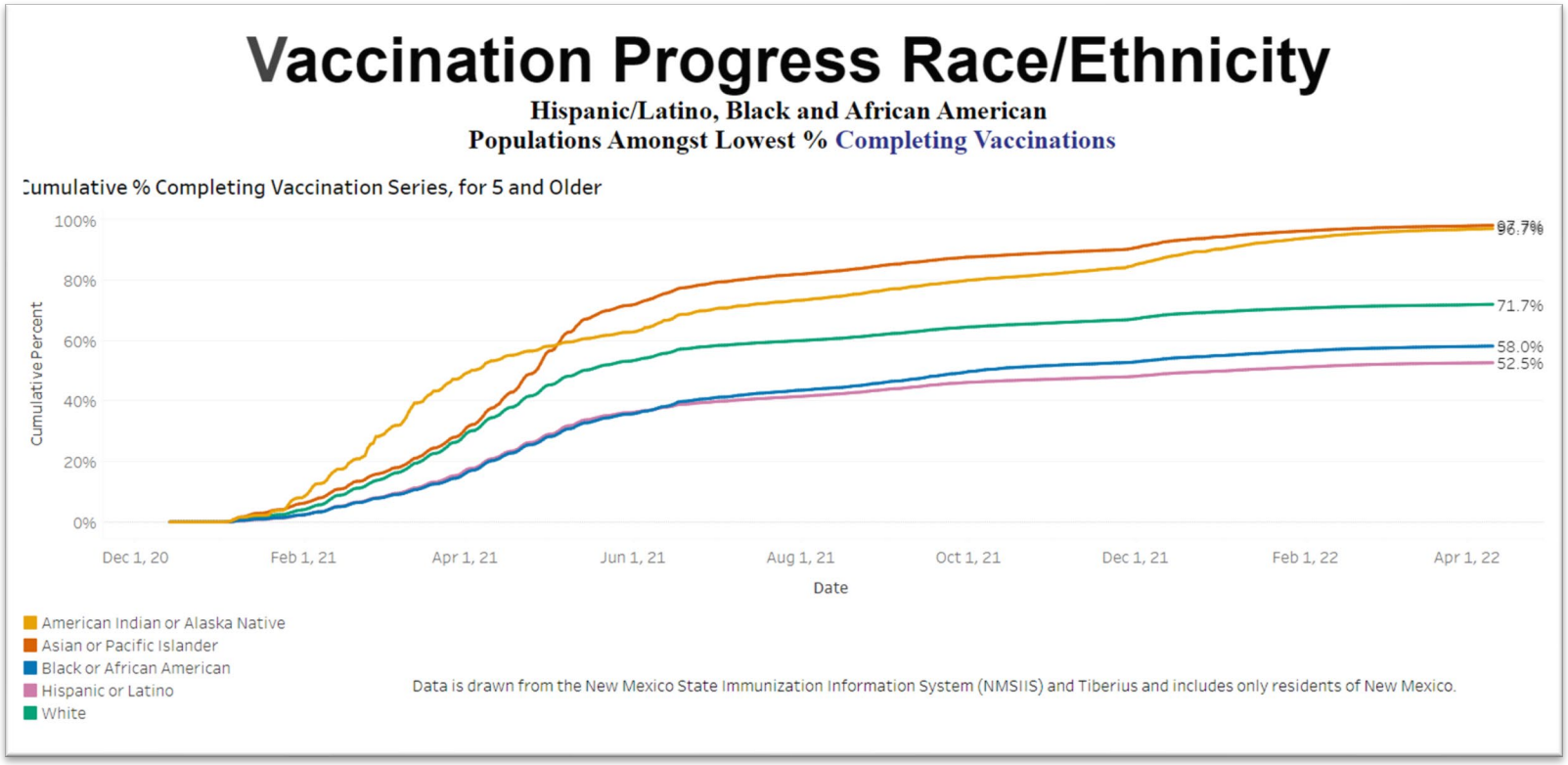


Tableau to the Rescue!

BENEFITS:
Interactive
Ability for quick changes
Reduces work time
Large amounts of data
Extensive customer resources
Multiples data sources
Flexible with data requests
Visually appealing

CHALLENGES:
Licensing
Server downloads and access
Tiberius data limitations
Data should be pre-cleaned
Must be manually refreshed
Requires IT assistance

Tableau Visualization



- https://dashboards.nmhealth.org/#/views/WeeklyVaccineDataReport/1

Tableau Visualization

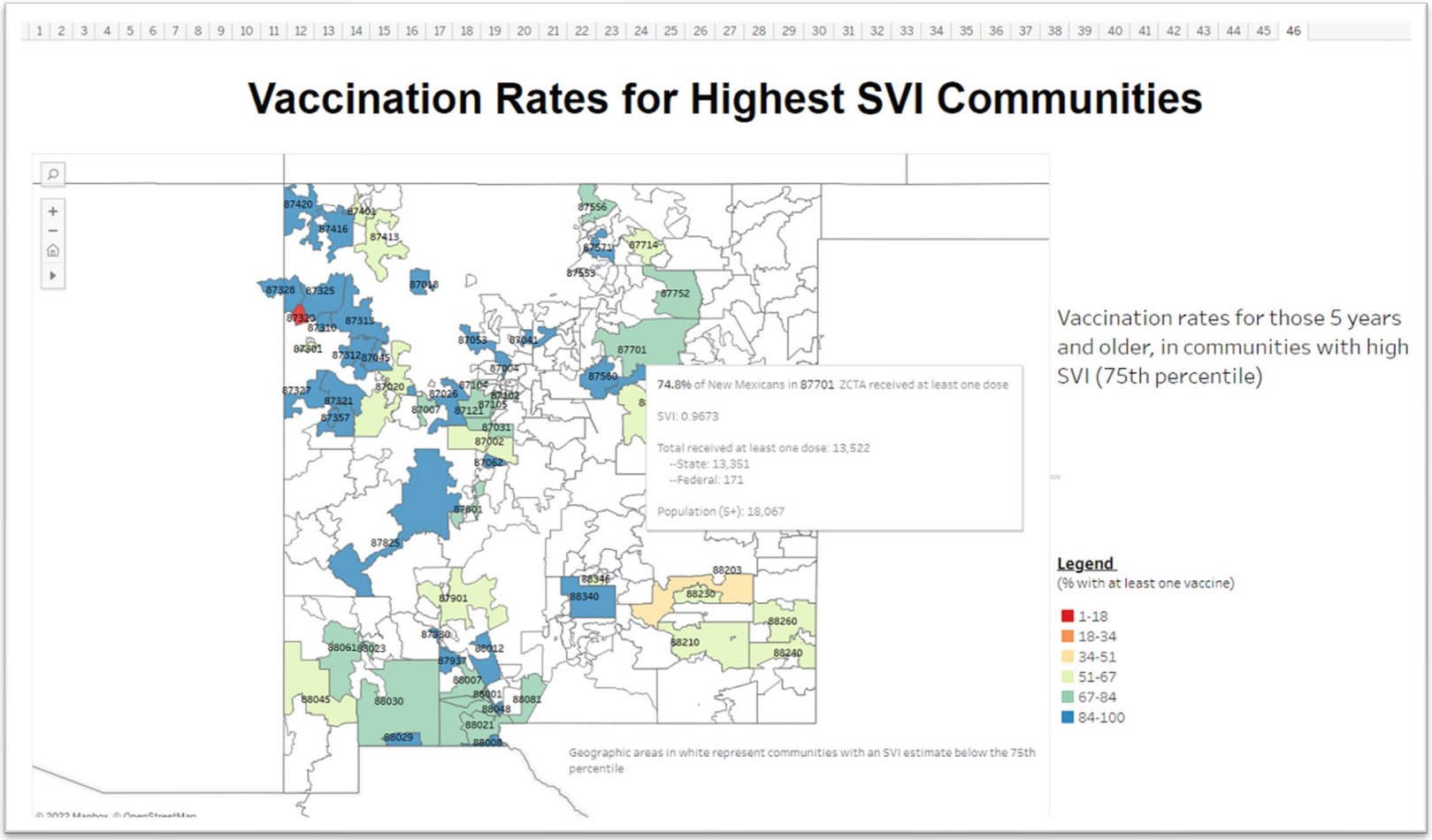
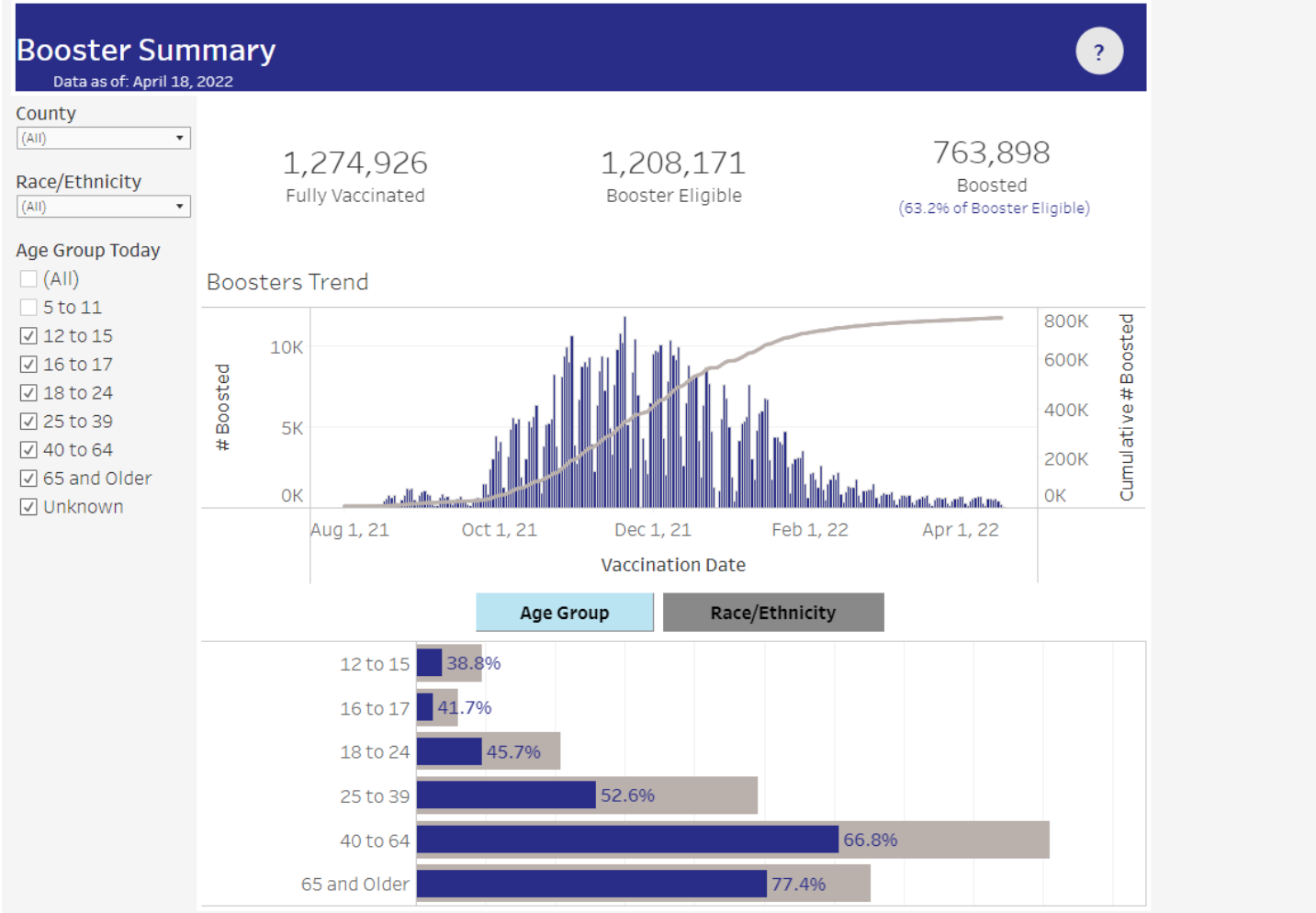
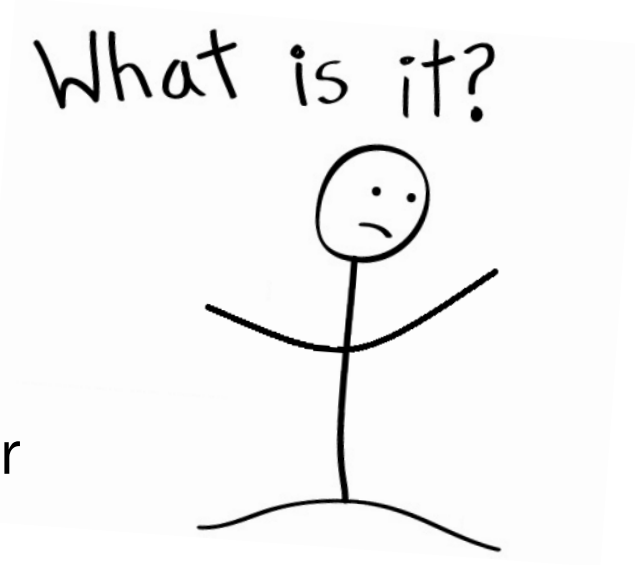


Tableau Visualization



Wait… Here comes Microsoft PowerBI



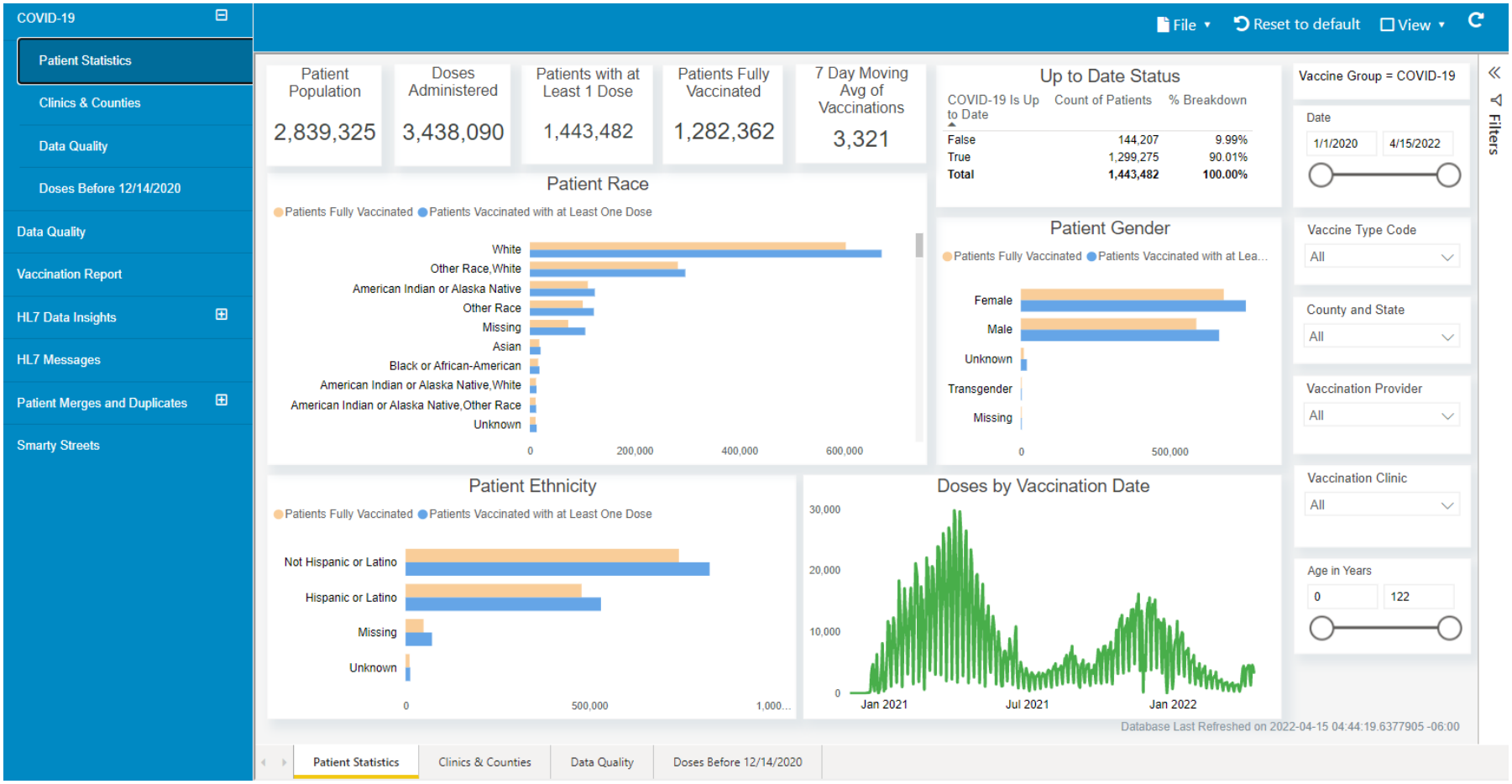
- Best used as an analytics endpoint to create ad-hoc data requests or visualizations
- Can be accessed via Embed feature or XMLA connection
- Allows for centralized reporting and analytics

Microsoft PowerBi

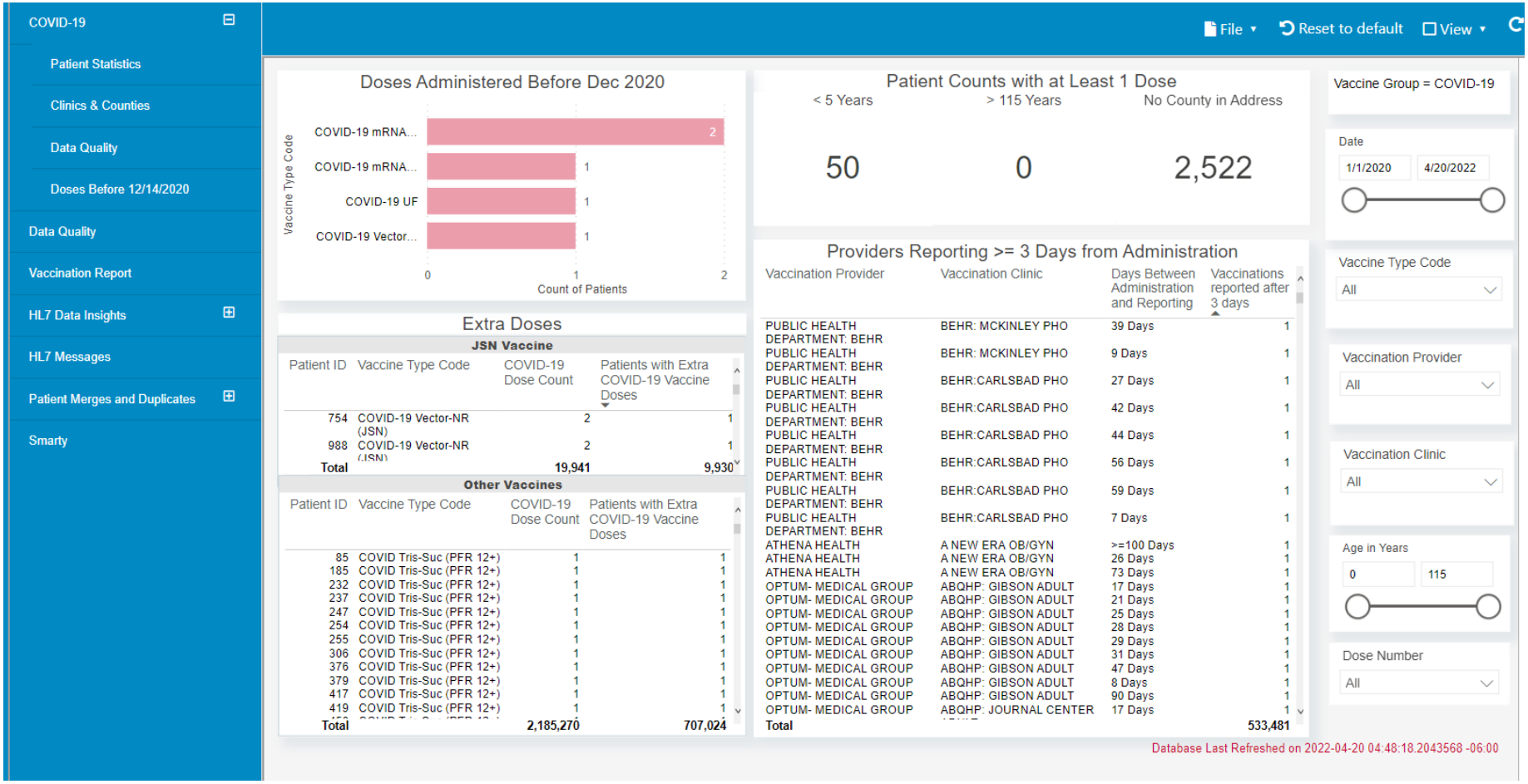
BENEFITS:
Superior data integration
Connects to multiple data sources
Multi-user collaboration
Customizable dashboards
Extremely interactive
Variety of options for visualization
Publish reports securely
Similar use to all Microsoft Products
Accommodates large data sets

CHALLENGES:
Doesn't allow bulk extracts
Data should be pre-cleaned
Can feel overwhelming

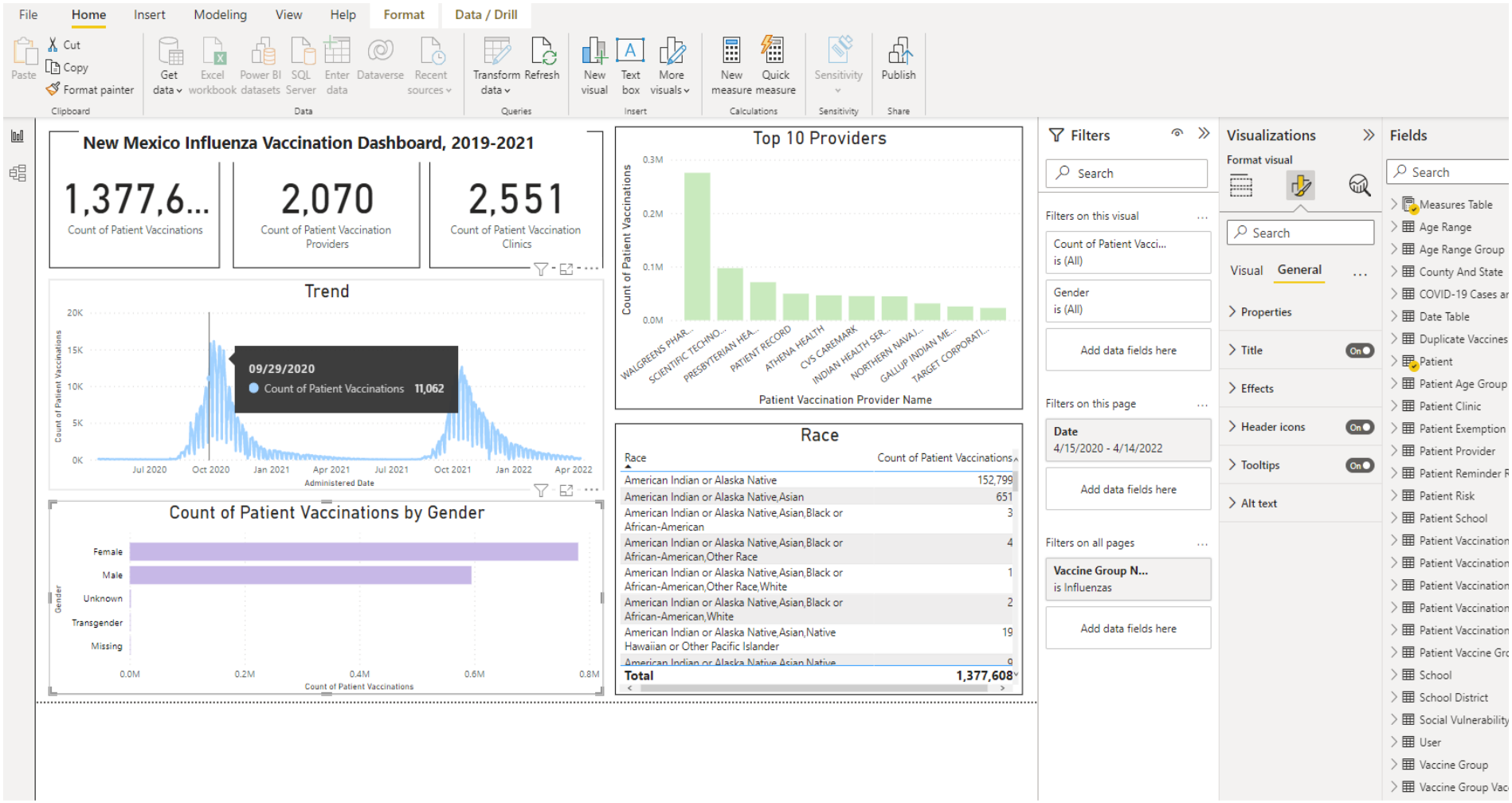
Embedded PowerBI Visualization



Embedded PowerBI Visualization

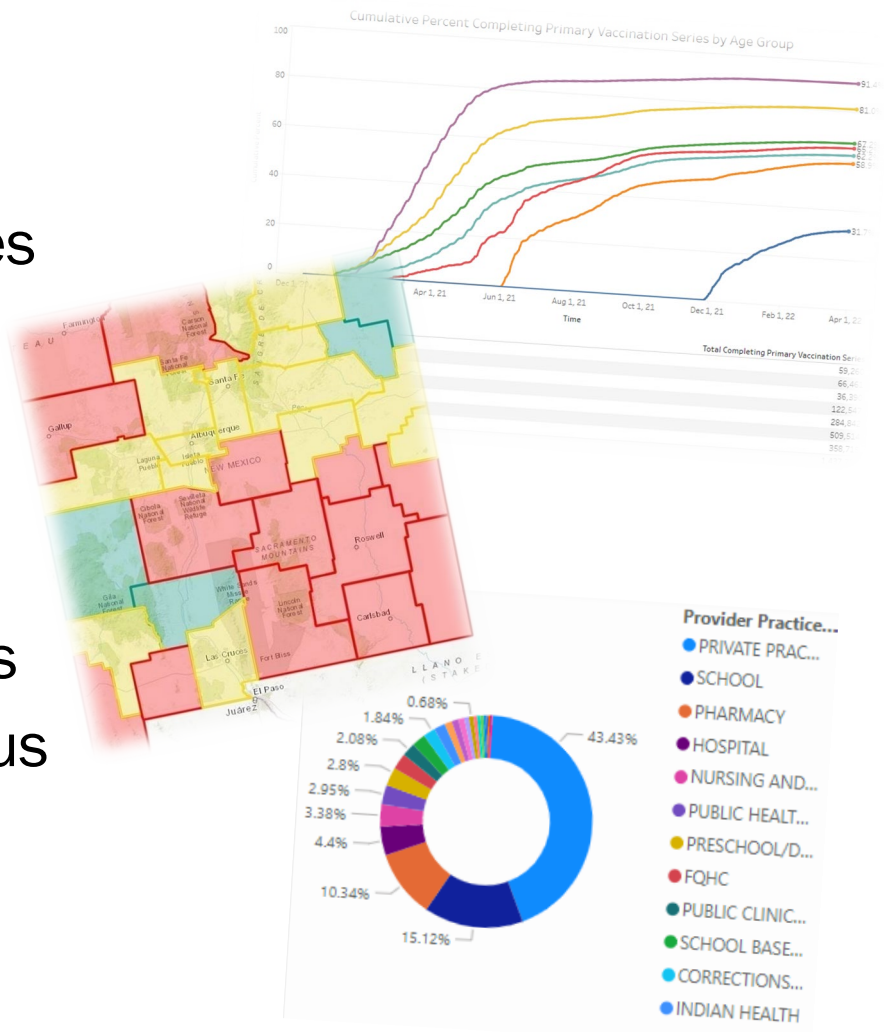


Microsoft PowerBI XMLA Visualization



PowerBI XMLA Visualization Goals

- Include case, testing and vaccine data
- Integrate data from all sources into NM DOH Data Lake
- Heat mapping
- Trend tracking
- Vaccine equity data
- Enroll provider sites and types
- Doses administered for various population demographics
- Clear benchmarks and resources



Next Steps for Vaccine Data Visualization in NM

- Continue to expand use of Tableau and Microsoft PowerBI
- Implement a Tableau program in place to include licensing (100 plus), training, and support for additional DOH divisions
- Expand staffing to include data developers and engineers across agency, including FTE Epidemiologist for NMSIIS/IZ Program
- Implement a data factory models and support documentation
- Combine other data sources to strengthen data (Data Lake)
- Utilize newly acquired data visualization abilities for routine vaccine data and exemption data
- Utilize as standard for data request, IPRAs, media inquiries, dashboards, etc.

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