



WELCOME

Thank you for joining:

Modernization in Action: Turning Strategy into Public Health Impact



Today's Presenters

- **Gary Wheeler**, Executive Vice President and General Manager, Envision Technology Partners
- **Sanju Pratap**, Chief Product Officer, InductiveHealth
- **Jim Holsinger**, Vice President of Product, Envision Technology Partners
- **Kevin Snow**, Chief Technology Officer, Envision Technology Partners
- **Megan Drysdale**, Product Manager, Envision Technology Partners



Modernization in Action: Turning Strategy into Public Health Impact





MODERNIZATION IN ACTION: TURNING STRATEGY INTO PUBLIC HEALTH IMPACT

AGENDA

- **Welcome**
- **InductiveHealth & Team Overview**
- **How Modernization Drives Our Product Strategy**
- **Today's Discussion Focused on:**
 - **Self Service Analytics**
 - **HL7 Log Search as an Efficient Platform Service**
 - **Self Service Configuration Tools**
 - **Integrated HL7 Onboarding Validation**
 - **Q & A**



SSDI

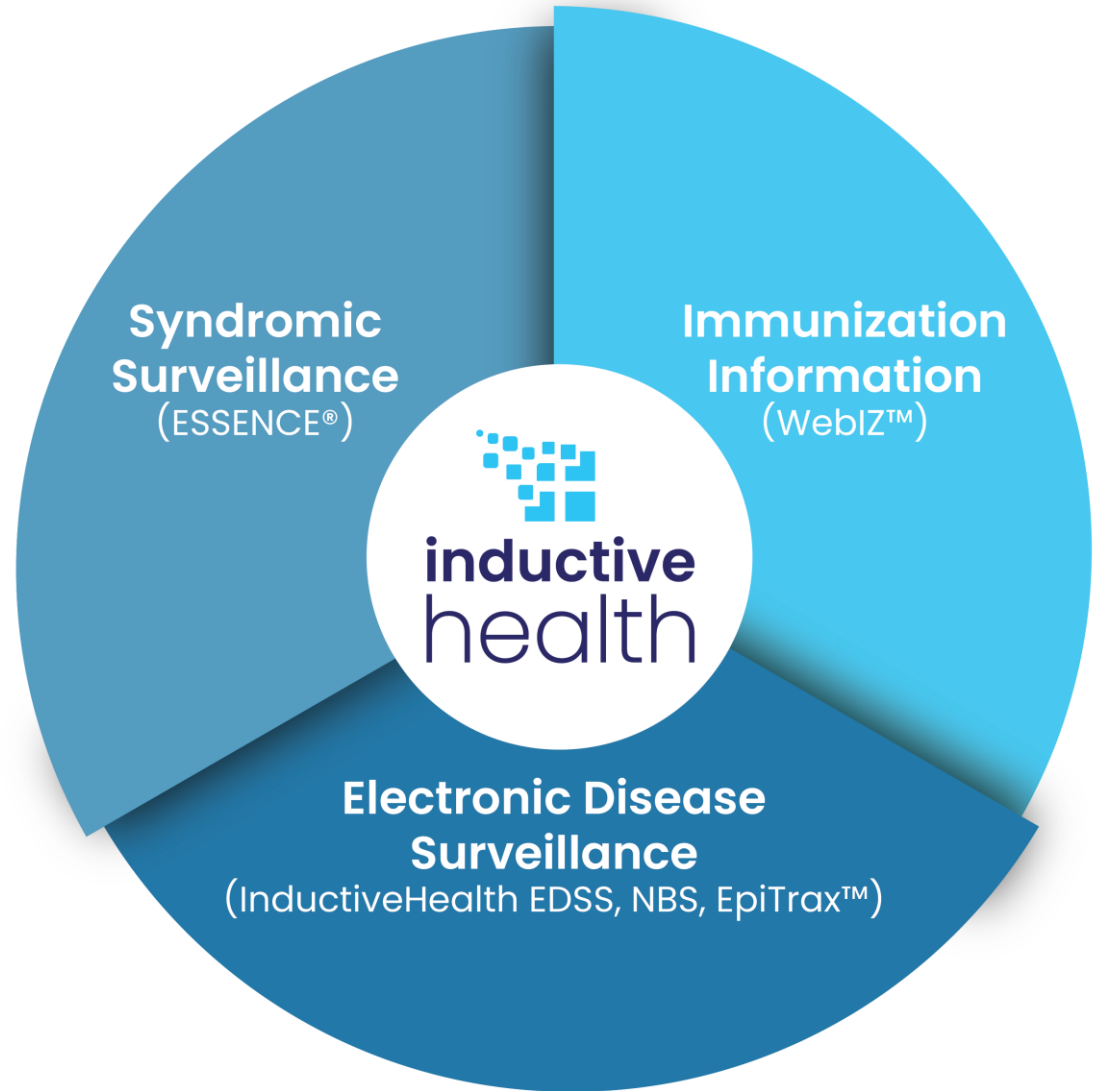
**Stop
Disease
Through
Technology**

**Over 40 Federal,
State, Local, and
Territorial Public
Health Agencies**

**~160 Colleagues in 30
States**

**Interoperability
HL7 | FHIR | Rhapsody
Mirth | APIs**

**Advanced Public
Health Expertise**



MEET THE TEAM



Sanju Pratap
CPO



Jim Holsinger
VP of Product



Kevin Snow
Chief Architect



Gary Wheeler
EVP & General Manager



Megan Drysdale
Product Manager

MODERNIZATION FOCUS DRIVING PRODUCT STRATEGY

Modernization Tenets

- Frictionless Interoperability & Integrations to/ from multiple data sources and program groups using modern standards
- Simplify the User Experience via modern applications & automation
- Transparent & Timely Data Quality, Reporting and Insights
- Responsible AI and Intelligent Automation in user workflows, integrations & data insights



Translates to Direct Client Value

Program Empowerment	Platform Productivity Efficiencies	Sustainable Funding
<ul style="list-style-type: none"> • Self Configurable Jurisdiction tools • Timely Data Availability in Jurisdiction preferred access modes – E.g. Dashboards, Reports, SQL, API* • Chat based Power BI Dashboard Insights • Cross program data interoperability & access management • AI curated data pipelines for improved data quality 	<ul style="list-style-type: none"> • Faster & Efficient HL7 Log Searches • Provider Self Service Onboarding Tool* • End to End Jurisdiction Provider HL7 Onboarding Tool* • Increasingly frictionless workflows (e.g. patient deduplication) 	<ul style="list-style-type: none"> • Platform Services driving economies of scale • Continued technology and AI modernization initiatives aligned to funding opportunities • Partner on alternate funding sources

*included in today's demo

MODERNIZATION: EMPOWERING IIS PROGRAMS THROUGH SELF-SERVICE

Deeper Dive

Self-service analytics

Efficient HL7 log searches

Self-configuration tool

Integrated HL7 Onboarding

DEMAND IS GROWING FASTER THAN CAPACITY

Every IIS program is feeling this. The question is what to do about it.

CAPACITY

Demand keeps rising

Ad hoc requests, recurring reports, validation work

Staff capacity is flat

Or shrinking — everyone is doing more with less

Same people answer everything

Every new question lands on the same desk

Canned reports never quite fit

One more filter — and it's back to manual

TOOLS

Different roles, different tools

Epidemiologists want R, analysts want Power BI or SAS

Inconsistent access

VPN, credentials, utility server - differ per tool

No single source of truth

Everyone pulling slightly different numbers

Breaking changes break workflows

Downstream dependencies silently break

PROCESS

Too many manual tasks

Reports that should run themselves, don't

Extracts and copies everywhere

Each one a fragile dependency

90% of time wrangling

Cleaning, joining, rebuilding logic before any query runs

No path to automation

Can't schedule, alert, or trigger anything

The answer isn't more staff. It's smarter access to data.

PLATFORM SERVICES: EMPOWERING IIS PROGRAMS THROUGH SELF-SERVICE

RACHEL ODOM, RN, IIS MANAGER · ARKANSAS

"Self-service really is for everyone"

YOUR APPROACH

The tool you adopted

- SQL / SSMS

Why this tool?

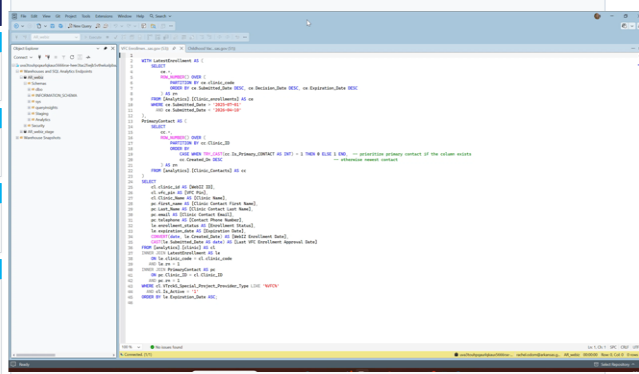
- Speed and strong performance
— learn once, use forever

The question you answered

- Childhood vaccination rates
- Expired VFC enrollments

Your aha moment

- Fulfill nearly all data requests without waiting on anyone else
- Create automated reports for non-technical colleagues.



PROPRIETARY AND CONFIDENTIAL



"Self-Service really is for everyone" - AR

NATHAN PADGETT, DATA ANALYST · KENTUCKY

"It's quick and simple"

YOUR APPROACH

The tool you adopted

- Power BI

Why this tool?

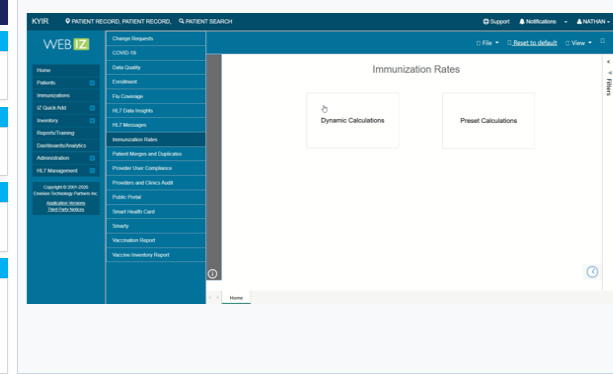
- Performance, accessibility, intuitive

The question you answered

- What are the immunization rates for each county in our jurisdiction?

Your aha moment

- Published on KDPH website – "it's already available?"



PROPRIETARY AND CONFIDENTIAL



"It's quick and simple" - KY

JULIE MIEDLAR, MS, STATISTICIAN · PENNSYLVANIA

"Bring Your Own Tool – No question unanswered"

YOUR APPROACH

The tool you adopted

- SAS

Why this tool?

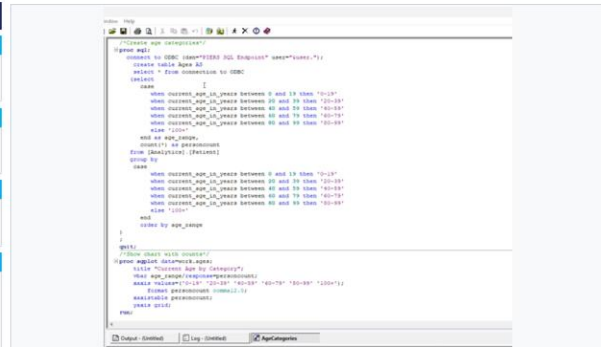
- Uses SAS to access IIS data in past
- Build on existing skill and logic

The question you answered

- Can connect to SAS through ODBC
- Can use cloud resources

Your aha moment

- Connection gives us the capability to answer any question



PROPRIETARY AND CONFIDENTIAL



"Bring Your Own Tool – No question unanswered" - PA

SARAH FINLEY, RESEARCH/DATA ANALYSIS MANAGER · MISSOURI

"Automation as a pressure release valve"

YOUR APPROACH

- Python and Tableau

Why this tool?

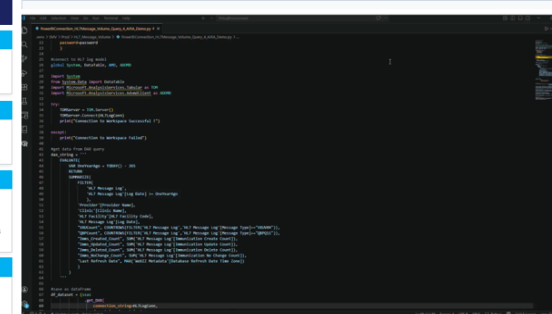
- Python for automation extraction, Tableau preferred visualization tool by the team

The question you answered

- What days had more queries or vaccine updates than usual? Who are the top 10 providers sending queries or vaccine updates on a certain day?

Your aha moment

- Putting the automated visualization together with automated email alerts = actionable insight



PROPRIETARY AND CONFIDENTIAL



"Automation as a pressure release valve" - MO

WHEN YOU DESIGN FOR SELF-SERVICE, THIS IS WHAT CHANGES

BEFORE		AFTER — Designed for Self-Service
<p>Hours (or days) to run expensive queries Statewide reports timed out or took all day</p>	Performance	<p>30 seconds or less, no pre-aggregation Slice and dice freely — AR: coverage rates cut to 5 sec; PA: SQL in 9 sec</p>
<p>Months of staff time on manual reporting KY: 3 analysts, 1–2 months per cycle across 120 counties</p>	Capacity	<p>1 person, 1 week — time freed for higher-value work Ad hoc requests answered same-day; ORR responses in hours, not days</p>
<p>Manual, reactive monitoring — days of investigation MO: reactive HL7 analysis with manual review of canned reports</p>	Automation	<p>Automated alerts + reports — seconds per facility Daily HL7 volume alerts; automated dashboard via XMLA</p>
<p>Long onboarding; complex internal rules Thousands of tables, undocumented business logic; had to ask vendors</p>	Onboarding	<p>New staff hit the ground running Analytics schema as first dataset — faster to learn, less wrangling on day one</p>
<p>Locked into a static, fragile schema Breaking changes, copies everywhere, no path to AI or modern tooling</p>	Future-Proof	<p>Modern platform — AI-ready, versioned, shareable Run data agents, share query templates, evolve without rebuilding from scratch</p>

This is not a copy of the database. It's a SaaS-like product built around how your team works.

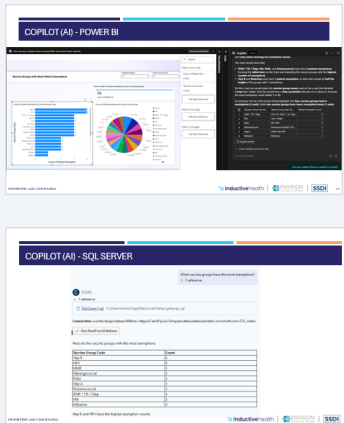
WHERE SELF-SERVICE GOES NEXT

The platform is already ready. Your team will be too.

AI-GENERATED REPORTS

Available with Copilot

“Show me the vaccine groups with the most exemptions.”



CONVERSATIONAL DATA AGENT



AI Policy Pending

You: “Are there any data quality issues that you detect?”

Agent: “Yes, there are several data quality issues detected in the registry:
Patient Table:...”



No SQL. No joins. No wrangling.

PHIG announcement

AI data policy may be closer than you think.

BRING YOUR OWN TOOL



Available now

Connect Directly via Your Tool

Execute directly in the Cloud for Fast Performance

Power BI

Excel

SSMS

Tableau

Python

Jupyter Notebook

SAS

R Studio

SSAS

Snowflake

Databricks

Lakehouse



One endpoint · SSO + MFA

Future-proof

Your investment today works with tomorrow's tools

AI-ready

The platform is already set up for AI — waiting on policy

Empowerment

Any role. Any tool.
Not just technical or data scientists.

Scale

One platform. Every tool.
Every question you can ask.

MODERNIZATION

- Test in Production like environment
- Designed to address real-world scenarios
- Numerous search parameters
- Search-optimized database

HL7 Log Search Demo

WebIZ HL7 UNIT TEST PROVIDER, HL7 ... PATIENT SEARCH Support Notifications KEVIN

Execute HL7 Message

Enter a HL7 message click "Submit to HL7 Engine Web Service" to test the message.

HL7 Message

Submit To HL7 Engine Web Service

2.5.1 Messages

```
1) Search for Bart Simpson, DOB: 01/01/1999 (QBP)
MSH|^~\&|TestApplication|FL999999|WebIZ|FLDOH|20260622230553.130-0600||QBP^Q11^QBP_Q11|FL9999993885400000232|T|2.5.1|||ER|AL|||234^CDCPHINVS
QPD|234^Request Immunisation History^CDCPHINVS|querytag||SIMPSON^BART^M^L||19990101||
RCP|I|5^RD&records&HL70126|B^real-time^HL70394

2) Update Bart Simpson, DOB: 01/01/1999 (VXU)
MSH|^~\&|TestApplication|FL999999|WebIZ|FLDOH|20260622230553.130-0600||VXU^V04^VXU_V04|FL9999993885400000232|T|2.5.1|||ER|AL|||222^CDCPHINVS
PID|I|00000002^^^FL999999^MR||SIMPSON^BART^M^L||19990101|M||2106-3^White^CDCREC-2054-5^Black or African American^CDCREC|1011 Winward^Manhattan^K3^66502^M|^P
ORC|RE||9999^FLDOH
RXA|O|I|19990101||45^hep B, unspc^CVX|999||01^historical^HIP001|^FL999999|^^^^|^CP|A

3) Update [Bart Simpson, DOB: 01/01/1999 w/ Single Historical Vaccination (VXU)
MSH|^~\&|TestApplication|FL999999|WebIZ|FLDOH|20260622230553.130-0600||VXU^V04^VXU_V04|FL9999993885400000232|T|2.5.1|||ER|AL|||222^CDCPHINVS
PID|I|00000002^^^FL999999^MR||SIMPSON^BART^M^L||19990101|M||1011 Winward^Manhattan^K3^66502^M|^P^B^664^1309701|
ORC|RE||9999^FLDOH
RXA|O|I|19990101||45^hep B, unspc^CVX|999||01^historical^HIP001|^FL999999|^^^^|^CP|A

4) Update Bart Simpson, DOB: 01/01/1999 w/ Single Administered Vaccination (VXU)
MSH|^~\&|TestApplication|FL999999|WebIZ|FLDOH|20260622230553.130-0600||VXU^V04^VXU_V04|FL9999993885400000232|T|2.5.1|||ER|AL|||222^CDCPHINVS
PID|I|00000002^^^FL999999^MR||SIMPSON^BART^M^L||19990101|M||
ORC|RE||9999^FLDOH
```

MODERNIZATION

- Pick the right tool for the job
- **How** we build becomes just as important as **What** we build
- Allow for economies of scale

Platform Service Example: HL7 Log Search

Shift HL7 Logs out of the database to a Central Platform Service

- Performance
 - A search engine provides faster searches
 - Allows for searching wider date ranges
 - Reduce load on the transaction database
- Costs
 - Able to use more affordable disk space in the search engine as opposed to the transaction database
 - Centralize services to allow economies of scale
 - Distribute costs
 - Easier deployments

SELF SERVICE CONFIGURATION & ADMIN TOOL

Current State:

- Email or ticket sent for file runs, configuration changes, etc.
- Jurisdictions wait for developers to make requested changes

Solution:

- Jurisdiction Self-Service Portal minimizing release dependencies
- Role based access to Self Configuration & Admin tools
- Audit Tracking of access and changes
- Provider Self-Service Portal
- Comprehensive Dashboard
- Automation & AI Assistance where applicable

First Use Case: STLT Self Management & Tracking CDC File Delivery

File Configurations - ND DOH Webiz
Monthly and quarterly schedules are shown for reference only and cannot be changed here.

SCHEDULE INFORMATION
Reflects your chosen schedule and the system's execution timing.

STATUS LEGEND ● Active ● Scheduled ● Paused

Configuration Name	Spec	Last sent file	Status	Requested by	Changed on
CDC ADS Generate Covid All File	v3.2.1	Jun 2, 2026 at 3:00 AM CT (success)	Active	Cara Murray	Apr 21, 2026
CDC ADS Generate Influenza Files	v2.4.0	Feb 1, 2026 at 3:00 AM CT (success)	Paused	Cara Murray	Feb 2, 2026 CT
CDC ADS Generate Routine Vax Files (Enhanced)	v4.0.2	Jan 20, 2026 at 3:00 AM CT (failed)	Active	Cara Murray	Apr 18, 2026
CDC ADS Generate RSV Files	v1.8.3	Jan 1, 2026 at 4:00 AM CT (success)	Scheduled	Cara Murray	Apr 24, 2026

Eliminates ticket request & tracking for CDC file delivery

Audit Log
Time-stamped record of delivery results, configuration changes, and generated files that are paused.

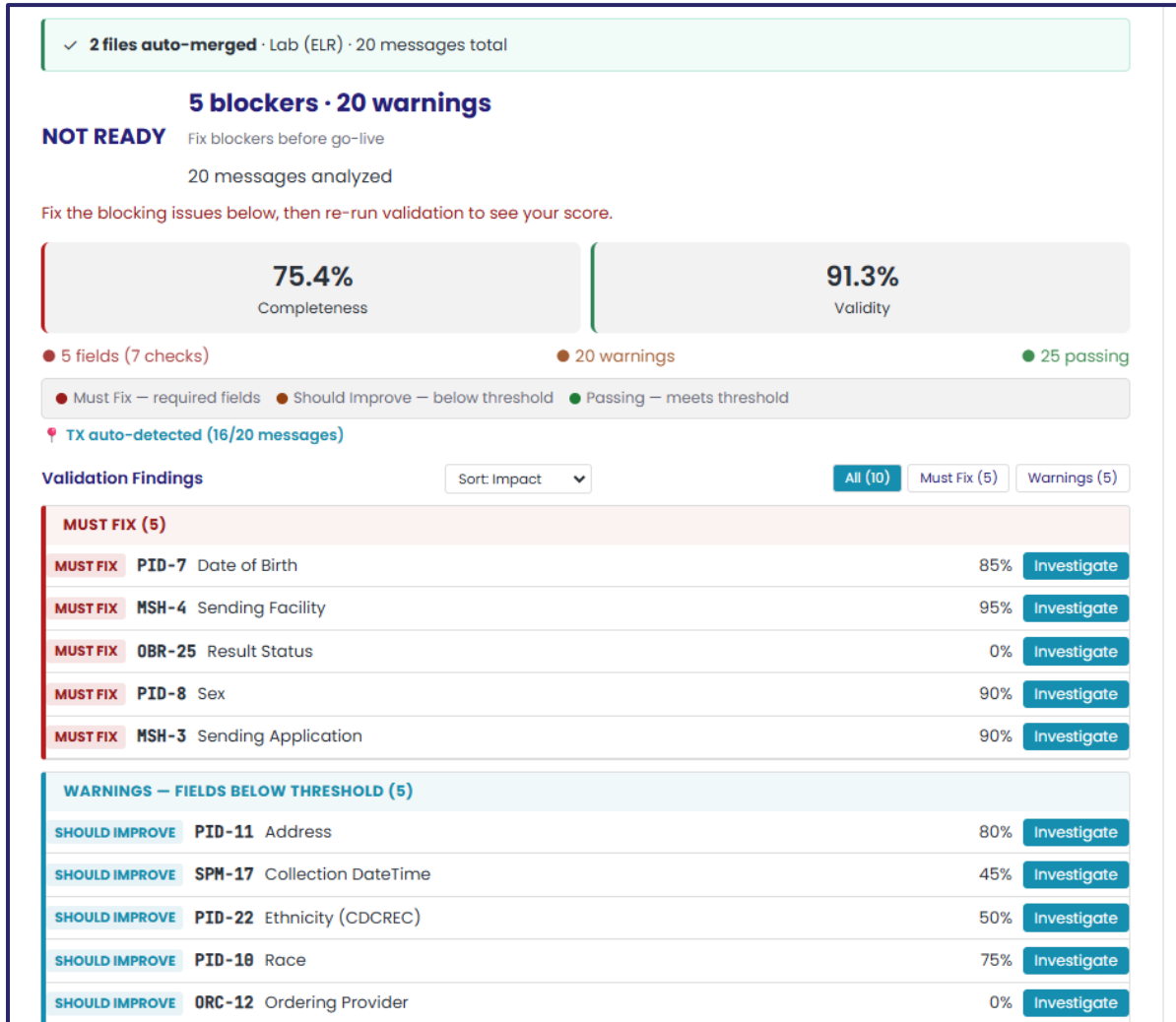
Delivery Changes | Configuration Changes | File Generation

FILTER BY FILE: All files | Covid All | Influenza | Routine Vax (Enhanced) | RSV

TIMESTAMP	REQUESTED BY	ROLE	FILE	ACTION	OUTCOME	DELIVERY STATUS	LINKED RUN	REASON
Apr 24, 2026, 7:40 AM CT	Cara Murray system@nh.com	Admin	RSV Files North Dakota DOH	Resend succeeded	Resend delivered	Sent	rsv-2026-04-01	Automatic retry completed after endpoint recovery
Mar 31, 2026, 11:03 PM CT	system@nh.com system@nh.com	Admin	RSV Files North Dakota DOH	Delivery failed	Failed	Failed delivery	rsv-2026-04-01	Endpoint timeout from downstream CDC receiver.
Mar 31, 2026, 10:05 PM CT	system@nh.com system@nh.com	Admin	Influenza Files North Dakota DOH	Delivery succeeded	Delivered	Sent	Influenza-2026-04-01	---

Role based access and audit trail of related activities

HL7 ONBOARDING VALIDATION – WHY WE BUILT IT



InductiveHealth Team's Provider and Facility Onboarding – Current Process

- Identifying errors in fields or structure is easily missed.
- Communication loops are slow, convoluted, & messy
- Qualitative assessment for the onboarding process
- Loss of legacy tools (NIST & PHIN-VADS)
- DQ variability between STLTs/Facilities clients.

So, We built an internal tool for InductiveHealth SMEs to address these problems across multiple HL7 formats.

We focused on finding a better path for direct provider and facility access and engagement.

END TO END ONBOARDING AND VALIDATION TOOL

Core Features:

- Automated HL7 validation and quality scoring
- Configurable jurisdiction-specific validation rule profiles
- Deterministic or AI-generated guidance & client communications
- Historic view of data quality
- Facility-level drilldowns and report generation

Current State:

Internal Team Use (ELR/eCR)

- ~ 60% reduction in time for investigation & external communication.
- Non-SME usability proven
- < 10% Out-of-Tool Review
- Supports multiple formats (IIS, SyS, ELR, eCR, FHIR)

Phase 2:

- STLT Self-service portal
- Live feed integrations
- Schema Drift/Facility Drop

Phase 3:

- Automated Self-service Onboarding Platform for Providers & STLTs

The screenshot displays a 'Partner Email' preview window. The main content is an 'ELR Data Quality Report' for 'Pinnacle Reference Labs'. The report shows an overall 'Action Required' status with a 78% DQ Score (Not Ready). Below this, three key metrics are shown: 25 Messages, 74% Completeness, and 82% Validity. A 'Processing Notes' section contains a bullet point: 'Filename 'LowDQ-STL.hl7' was uploaded 1 time(s) in the last 30 days by this account — confirm this is not an accidental re-submission.' At the bottom, there are buttons for 'Copy Text' and 'Download HTML'.

[Onboarding Validation | InductiveHealth Demo](#)

HL7 ONBOARDING VALIDATION DEMO

CLIENT ADMIN VIEW

Provider Onboarding Hub Admin Portal

Dashboard

Work Queue

Inbox

Monitoring

Admin

QA Bypass

Jurisdiction

Dashboard

OVERVIEW

OPEN ACTIONS **42**
across 13 providers - 15 in pipeline

Refresh

PIPELINE

INTAKE	5	SETUP	3	TESTING	4	LIVE	2	MONITOR	1
Midwest Pediatric ...	Sandhills Family ...	Metro Pediatrics ...	Regional Health S...	Coastal Pharmac...					
CoxHealth System	Truman Medical C...	Lakeside Pediatr...	Heartland Urgent ...						
Cascade Regional ...	Boothel Rural He...	Pacific Island Imm...							
Capitol City Pediatr...		Narragansett Bay ...							

12 other providers need attention [Work Queue >](#)

Upcoming check-ins
1 scheduled - monitoring follow-ups

SEP 15 Community Health Centers Network
9/15/2026

[View full monitoring schedule >](#)

PROVIDER ADMIN VIEW

Welcome back, Dr. Rebecca
Heartland Urgent Care — Intake & Verification

How to use this page

Onboarding Progress **Step 1 of 6**
Current stage: Intake & Verification [View all stages -->](#)

STAGE **Intake & Verification** > Onboarding Setup > Onboarding Testing > Production Go-Live > Monitoring > Completed

Actions Required

0 PENDING TASKS

0 UNREAD MESSAGES

1 DOCUMENTS TO REVIEW

My Facilities
1 locations

Activity Log
View timeline

Help & FAQ
How it works

Contact SME
Send message

[Onboarding Validation | InductiveHealth Demo](#)

THANK YOU!
QUESTIONS?



RACHEL ODOM, RN, IIS MANAGER · ARKANSAS

"Self-service really is for everyone"

YOUR APPROACH

The tool you adopted

- SQL / SSMS

Why this tool?

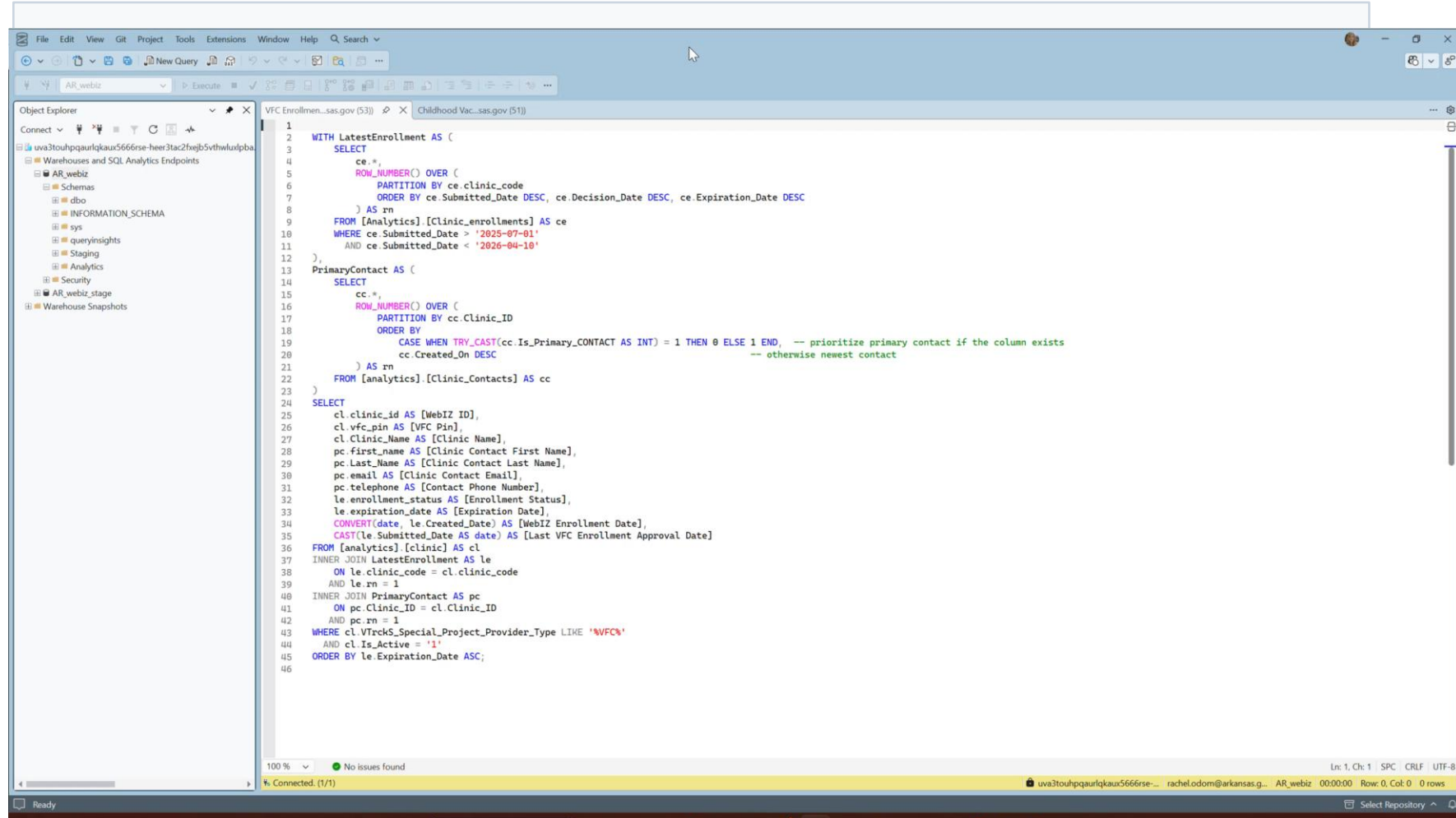
- Speed and strong performance — learn once, use forever

The question you answered

- Childhood vaccination rates
- Expired VFC enrollments

Your aha moment

- Fulfill nearly all data requests without waiting on anyone else
- Create automated reports for non-technical colleagues.



```
1
2 WITH LatestEnrollment AS (
3     SELECT
4         cc.*,
5         ROW_NUMBER() OVER (
6             PARTITION BY ce.clinic_code
7             ORDER BY ce.Submitted_Date DESC, ce.Decision_Date DESC, ce.Expiration_Date DESC
8         ) AS rn
9     FROM [Analytics].[Clinic_enrollments] AS ce
10    WHERE ce.Submitted_Date > '2025-07-01'
11    AND ce.Submitted_Date < '2026-04-10'
12 ),
13 PrimaryContact AS (
14     SELECT
15         cc.*,
16         ROW_NUMBER() OVER (
17             PARTITION BY cc.Clinic_ID
18             ORDER BY
19                 CASE WHEN TRY_CAST(cc.Is_Primary_CONTACT AS INT) = 1 THEN 0 ELSE 1 END, -- prioritize primary contact if the column exists
20                 cc.Created_On DESC
21         ) AS rn
22     FROM [analytics].[Clinic_Contacts] AS cc
23 )
24 SELECT
25     cl.clinic_id AS [WebIZ ID],
26     cl.vfc_pin AS [VFC Pin],
27     cl.clinic_name AS [Clinic Name],
28     pc.first_name AS [Clinic Contact First Name],
29     pc.last_name AS [Clinic Contact Last Name],
30     pc.email AS [Clinic Contact Email],
31     pc.telephone AS [Contact Phone Number],
32     le.enrollment_status AS [Enrollment Status],
33     le.expiration_date AS [Expiration Date],
34     CONVERT(date, le.Created_Date) AS [WebIZ Enrollment Date],
35     CAST(le.Submitted_Date AS date) AS [Last VFC Enrollment Approval Date]
36 FROM [analytics].[clinic] AS cl
37 INNER JOIN LatestEnrollment AS le
38     ON le.clinic_code = cl.clinic_code
39 AND le.rn = 1
40 INNER JOIN PrimaryContact AS pc
41     ON pc.Clinic_ID = cl.Clinic_ID
42 AND pc.rn = 1
43 WHERE cl.VTrackS_Special_Project_Provider_Type LIKE '%VFC%'
44 AND cl.Is_Active = '1'
45 ORDER BY le.Expiration_Date ASC;
46
```

NATHAN PADGETT, DATA ANALYST · KENTUCKY

"It's quick and simple"

YOUR APPROACH

The tool you adopted

Power BI

Why this tool?

Performance, accessibility,
intuitive

The question you answered

What are the immunization rates for
each county in our jurisdiction?

Your aha moment

*Published on KDPH website –
"it's already available?"*

The screenshot displays the WEB IZ (Immunization) system interface. The top navigation bar includes 'KYIR', 'PATIENT RECORD, PATIENT RECORD,', 'PATIENT SEARCH', 'Support', 'Notifications', and 'NATHAN'. The main content area is titled 'Immunization Rates' and features two primary buttons: 'Dynamic Calculations' and 'Preset Calculations'. A left sidebar menu lists various system functions such as 'Home', 'Patients', 'Immunizations', 'IZ Quick Add', 'Inventory', 'Reports/Training', 'Dashboards/Analytics', 'Administration', and 'HL7 Management'. The 'Immunization Rates' menu item is currently selected. The bottom of the interface shows a 'Home' button and a copyright notice for Envision Technology Partners Inc. (© 2001-2026).

SARAH FINLEY, RESEARCH/DATA ANALYSIS MANAGER · MISSOURI

"Automation as a pressure release valve"

YOUR APPROACH

The tool you adopted

- Python and Tableau

Why this tool?

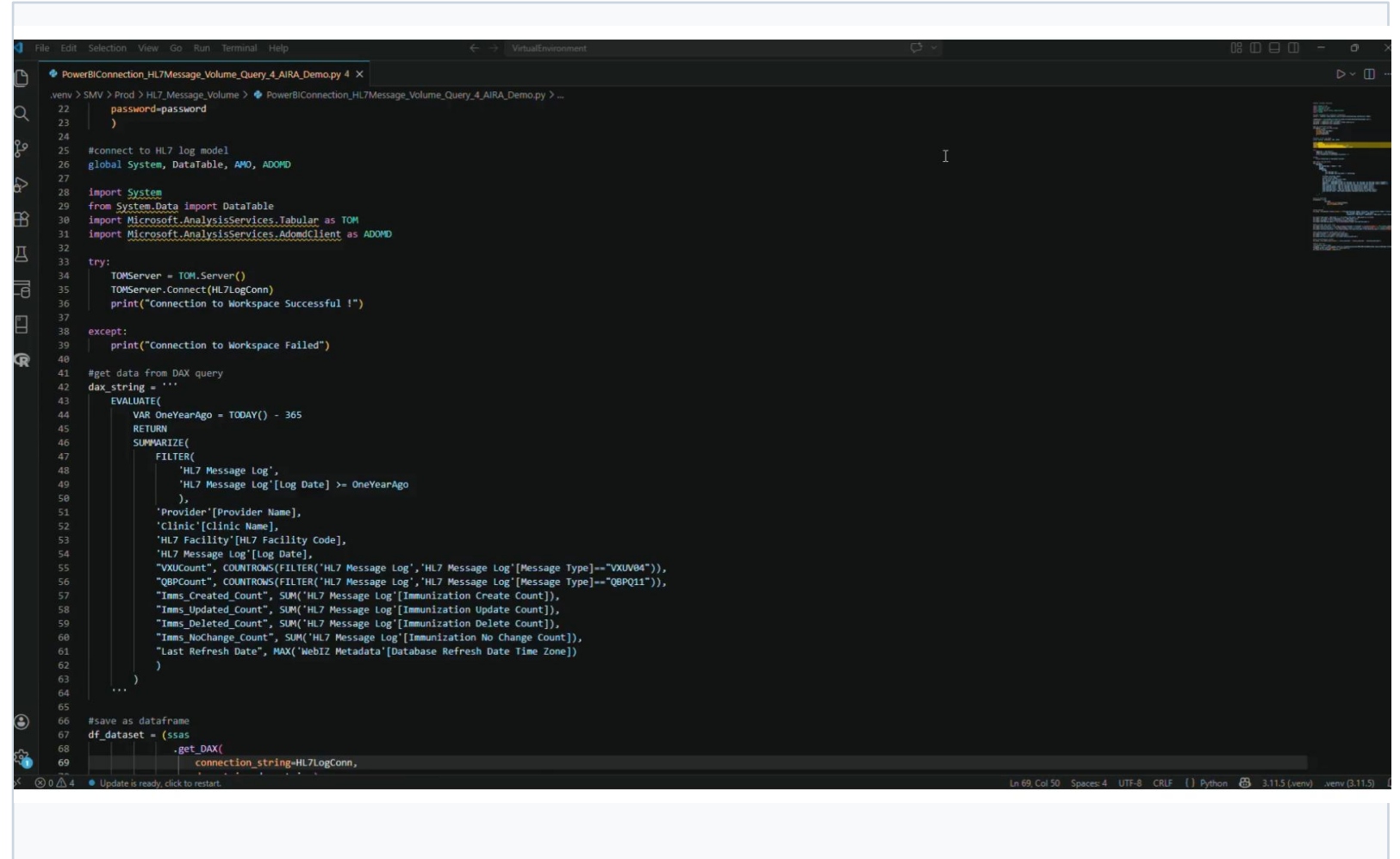
Python for automation extraction, Tableau preferred visualization tool by the team

The question you answered

What days had more queries or vaccine updates than usual? Who are the top 10 providers sending queries or vaccine updates on a certain day?

Your aha moment

Putting the automated visualization together with automated email alerts = actionable insight



```
PowerBIConnection_HL7Message_Volume_Query_4_AIRA_Demo.py 4 X
.venv > SMV > Prod > HL7_Message_Volume > PowerBIConnection_HL7Message_Volume_Query_4_AIRA_Demo.py > ...
22     password=password
23     )
24
25 #connect to HL7 log model
26 global System, DataTable, AMO, ADOMD
27
28 import System
29 from System.Data import DataTable
30 import Microsoft.AnalysisServices.Tabular as TOM
31 import Microsoft.AnalysisServices.AdomdClient as ADOMD
32
33 try:
34     TOMServer = TOM.Server()
35     TOMServer.Connect(HL7LogConn)
36     print("Connection to Workspace Successful !")
37
38 except:
39     print("Connection to Workspace Failed")
40
41 #get data from DAX query
42 dax_string = '''
43     EVALUATE(
44         VAR OneYearAgo = TODAY() - 365
45         RETURN
46         SUMMARIZE(
47             FILTER(
48                 'HL7 Message Log',
49                 'HL7 Message Log'[Log Date] >= OneYearAgo
50             ),
51             'Provider'[Provider Name],
52             'Clinic'[Clinic Name],
53             'HL7 Facility'[HL7 Facility Code],
54             'HL7 Message Log'[Log Date],
55             "VXUCount", COUNTROWS(FILTER('HL7 Message Log', 'HL7 Message Log'[Message Type] == "VXUV04")),
56             "QBPCount", COUNTROWS(FILTER('HL7 Message Log', 'HL7 Message Log'[Message Type] == "QBPO11")),
57             "Imms_Created_Count", SUM('HL7 Message Log'[Immunization Create Count]),
58             "Imms_Updated_Count", SUM('HL7 Message Log'[Immunization Update Count]),
59             "Imms_Deleted_Count", SUM('HL7 Message Log'[Immunization Delete Count]),
60             "Imms_NoChange_Count", SUM('HL7 Message Log'[Immunization No Change Count]),
61             "Last Refresh Date", MAX('WebIZ Metadata'[Database Refresh Date Time Zone])
62         )
63     )
64     ...
65
66 #save as dataframe
67 df_dataset = (ssas
68     .get_DAX(
69         connection_string=HL7LogConn,
```

COPILOT (AI) - POWER BI

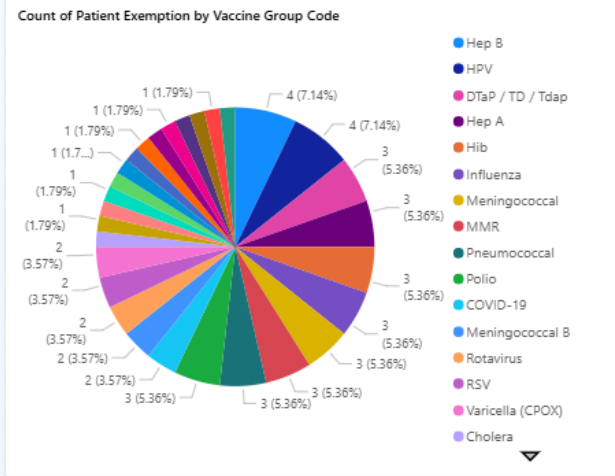
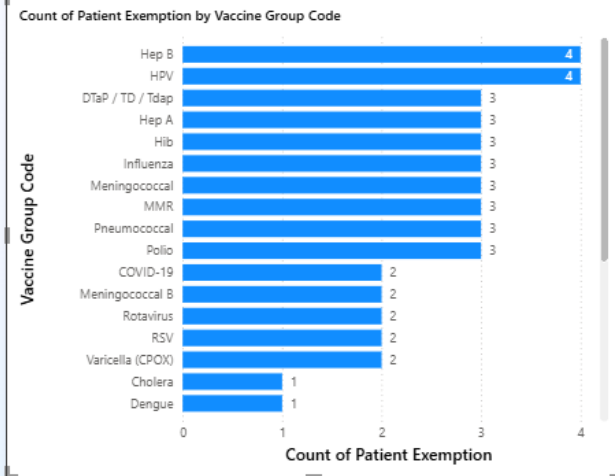
Auto recovery contains some recovered files that haven't been opened.

Vaccine Groups with Most Patient Exemptions

Exemption Reason: All
 Vaccine Group Name: All

Total number of patient exemptions across all vaccine groups

56
 Count of Patient ID



View recovered files

Search

Filters on this visual

Count of Patient Exe... is (All)

Vaccine Group Code is (All)

Add data fields here

Filters on this page

Add data fields here

Filters on all pages

Add data fields here

Visualizations

Data

Copilot Preview

with data labels showing the exemption counts.

The chart would show that:

- **DTaP / TD / Tdap, Hib, Polio, and Pneumococcal** each have **2 patient exemptions**, forming the **tallest bars** on the chart and indicating the vaccine groups with the **highest number of exemptions**.
- **Hep B** and **Rotavirus** each have **1 patient exemption**, so their bars would be **half the height** of the groups with 2 exemptions.

On the x-axis you would place the **vaccine group names**, and on the y-axis the **Patient Exemption Count**. Each bar would have a **data annotation** directly on or above it, showing the exact exemption count (either 1 or 2).

In summary, the bar chart would clearly highlight that **four vaccine groups lead in exemptions (2 each)**, while **two vaccine groups have lower exemption levels (1 each)**.

	Vaccine Group Vaccine ...	Vaccine Group Vaccine ...	Patient Exemption Count
1	DTaP / TD / Tdap	DTP, DT, DTaP, T, Td, Tdap	2
2	Hib	Hib, H-DTaP	2
3	Polio	IPV, OPV	2
4	Pneumococcal	Pneumococcal (PCV, PC...	2
5	Hep B	HEPB, Hib-HEP	1
6	Rotavirus	Rotavirus	1

Expand answer

How Copilot arrived at this

Is this response helpful?

Can you output this as a power bi report?

COPILOT (AI) - SQL SERVER

What vaccine groups have the most exemptions?
> 1 reference



SSMS

✓ 1 reference

[SQLQuery1.sql](#) C:\Users\ksnow\AppData\Local\Temp\garhysej..sql

Connection: uva3touhpqaurlqkaux5666rse-2etpjsiix7ae3h5yx2a7u6npqm.datawarehouse.fabric.microsoft.com.STG_webiz

✓ Ran ReadFromDatabase

Here are the vaccine groups with the most exemptions:

Vaccine Group Code	Count
Hep B	4
HPV	4
MMR	3
Meningococcal	3
Polio	3
Hep A	3
Pneumococcal	3
DTaP / TD / Tdap	3
Hib	3
Influenza	3

Hep B and HPV have the highest exemption counts.

SELF-SERVICE - JUPYTER NOTEBOOKS

File Edit View Run Kernel Tabs Settings Help

Filter files by name

Name	Modified	File Size
Coverage Rates - Florida.ip...	now	41.9 KB
Flu Analysis- Dev.ipynb	4 days ago	170.7 KB
Flu Analysis.ipynb	1 hour ago	215.1 KB
Untitled.ipynb	4 days ago	72 B
Untitled1.ipynb	23 hours ago	184.7 KB
Untitled2.ipynb	22 hours ago	22.1 KB
Untitled3.ipynb	1 minute ago	184.4 KB
AnalyticsSchemalmmunizat...	4 days ago	20.4 KB
Florida_PercentMeetingVali...	20 seconds ago	157 KB
Florida_PercentMeetingVali...	14 seconds ago	326.7 KB
geojson-counties-fips.json	4 days ago	3.1 MB
python code for flu analysi...	23 hours ago	3.6 KB
python code for map creati...	1 hour ago	16.5 KB

Untitled3.ipynb | Flu Analysis.ipynb | Coverage Rates - Florida.ipyr X | Florida_PercentMeetingValid X

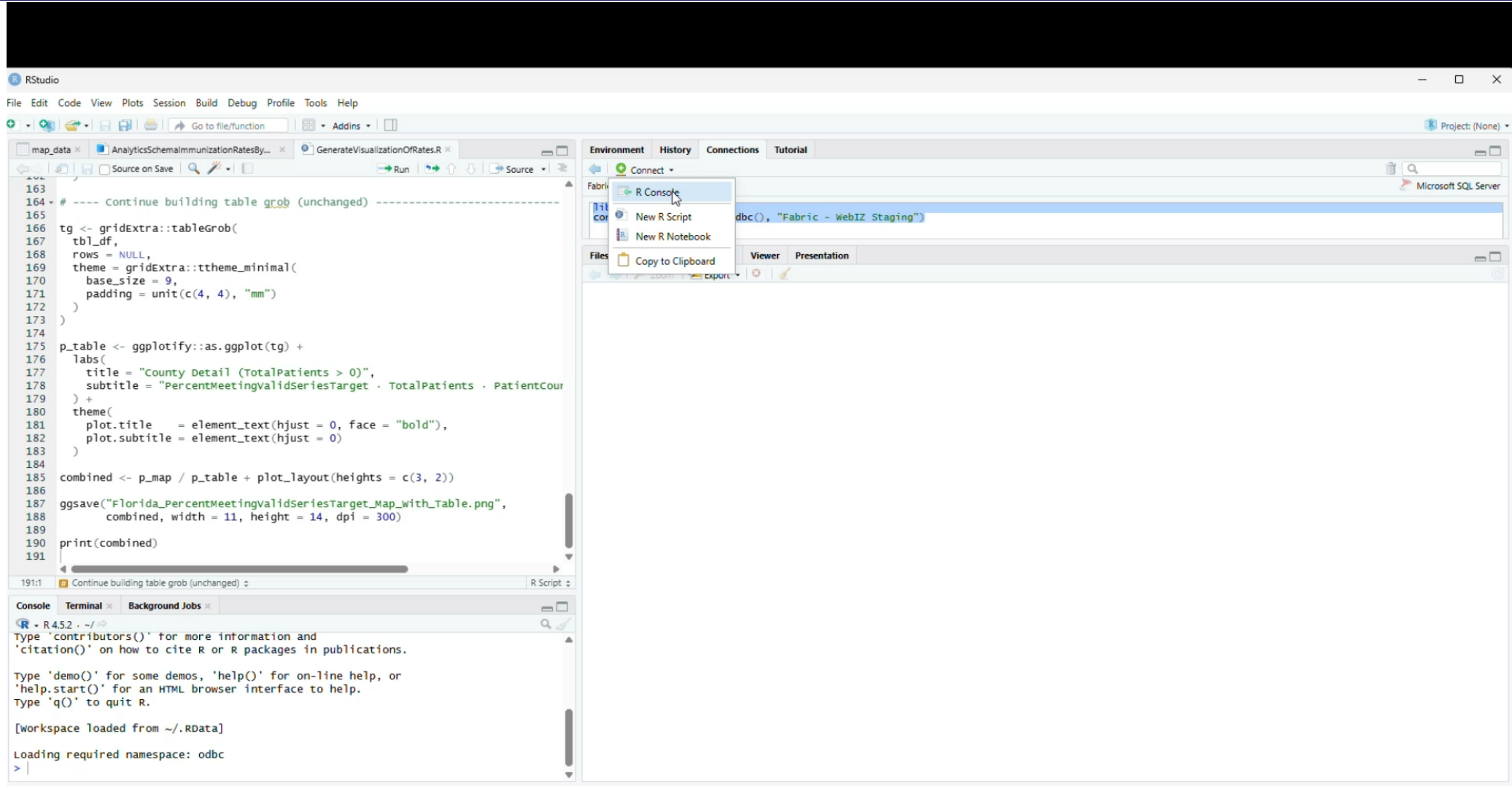
Distrust HTML

Florida Counties — Percent of 19–35mo Meeting Full Series Target 4:3:1:3:3:1:4

Light gray = no data; colored counties show % meeting target · Source: Fabric - WebIZ Staging

County	PercentMeetingValidSeriesTarget	TotalPatients	PatientCountMeetingValidSeriesTarget
Broward	11.5%	3,856,399	441,755
Hillsborough	11.5%	2,898,862	332,268
Miami-Dade	11.4%	3,504,024	400,459
Palm Beach	11.4%	2,952,368	337,097
Pasco	11.4%	1,594,526	181,748
Volusia	11.5%	1,404,116	160,977
TOTAL	11.4%	16,210,295	1,854,304

SELF-SERVICE – R-STUDIO



DEMO: DATA AGENT LLM IN ACTION (PREVIEW 1/2)

What you're seeing:

- A natural language interface to explore registry data
- You can review, edit, and learn from the query

How:

- The system generates a query based on your question and a copy of the schema
- AI does not access your datastore, only submits generated queries.

Why it matters:

- **Transparency:** See the exact data query being run
- **Training:** Great for building query literacy for new or non-technical users

How many patients and immunizations are in the registry? Of those, how many were created in the last week? Of those, how many were created by HL7 in the last week?



Stop

Sample questions

Ask a question to test the data agent's response

Send



DEMO: DATA AGENT LLM IN ACTION (PREVIEW 2/2)

What you're seeing:

AI, on its own, can detect domain-specific data quality issues

Jump-Start Data Quality

Helping users query data without writing SQL, and learn in the process

Teach the AI how to query the models as you would

Stay alert for hallucinations

Are there any data quality issues that you detect?

There are several data quality issues detected in the registry:

Patient Table:

- 34 instances of duplicate SSNs.
- 9 instances of duplicate birth certificate IDs.

Patient Vaccination Table:

- 845 instances where the expiration date is before the administration date.
- 1,161 instances where the vaccination was administered before the birth date.
- 1,910 instances where the administered vaccination has a missing lot number.
- 540,369 instances where the administered vaccination is missing VIS (Vaccine Information Statement).
- 279 instances of administered vaccinations with unspecified formulation.
- 564,749 instances where the modified-on date is greater than the created-on date.

These issues need to be addressed to ensure the integrity and accuracy of the data in the registry.

Sample questions

Analyze recent data for any outliers | I

Thank you to our presenters and attendees for your valuable contributions and participation!

