ENVISION
TECHNOLOGY PARTNERS

IZ Gateway – Preparing for the Future

Presenters:
Kaitlyn Lamb, Sr. Project Manager
Kevin Snow, Chief Architect
Forster McCracken, HL7 SME

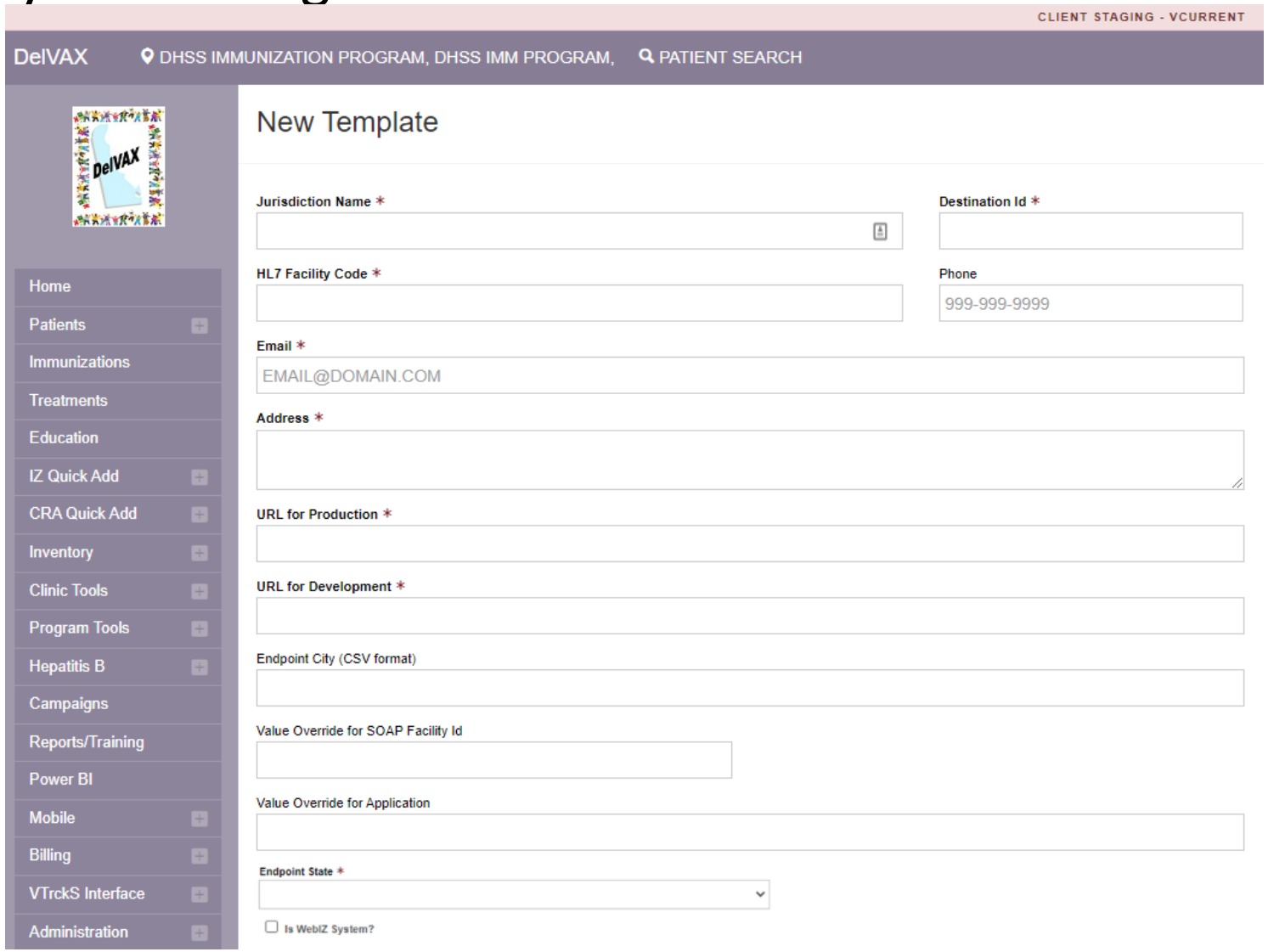
AIRA National Meeting – April 26th, 2022

Topics

1. Strategies to reduce onboarding time
2. Ideas and efforts to save on costs, resources, and development time
3. Testing and reporting via a self-service model
4. Monitor IZ Gateway interfaces and measuring the impact on the IIS

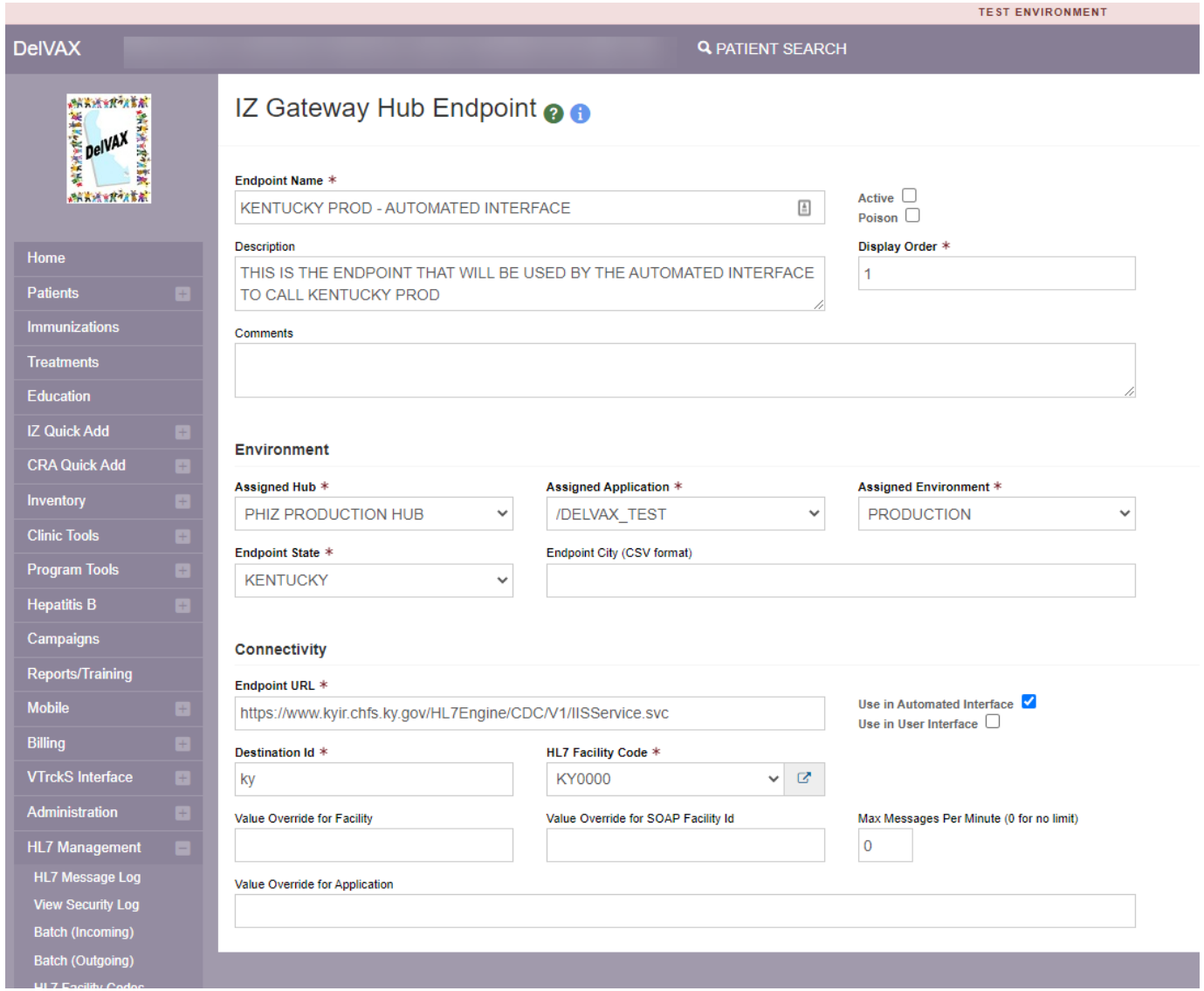
Strategies to Reducing Onboarding Time

- ❑ IZ Gateway hub configuration within the user interface



Strategies to Reducing Onboarding Time

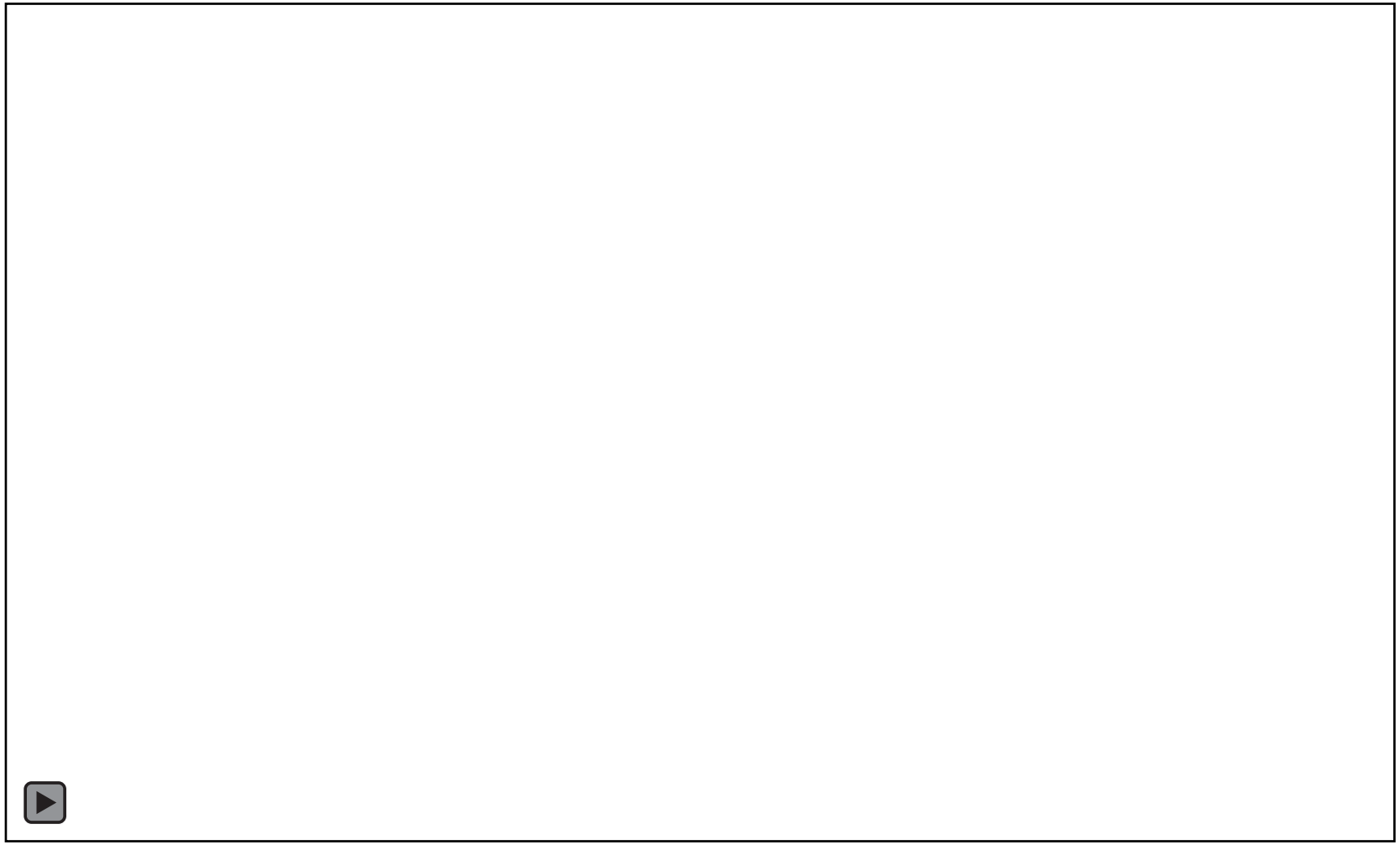
- ❑ Destination hub generated from template in user interface



ENVISION TECHNOLOGY PARTNERS

Self Service Model

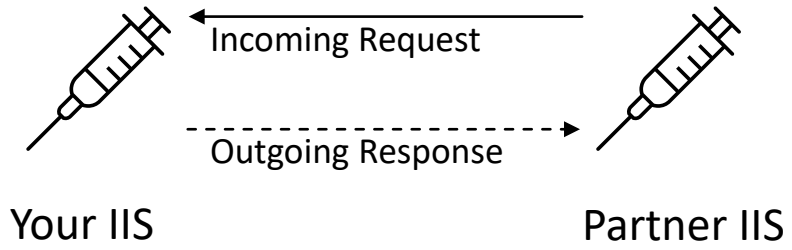
- Manual query – confirm connectivity between Jurisdictions



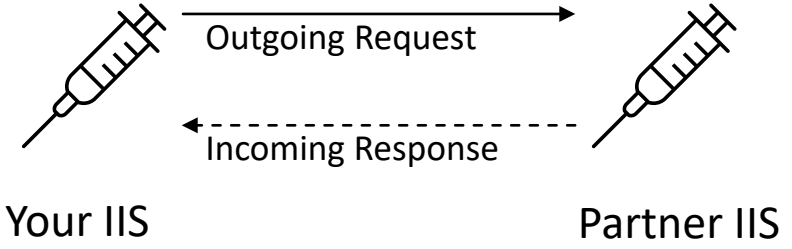
Self Service Model

- ❑ Log Types adjusted to IZ Gateway

Incoming VXU (Updates) or QBP (Queries) **from** Partner IIS

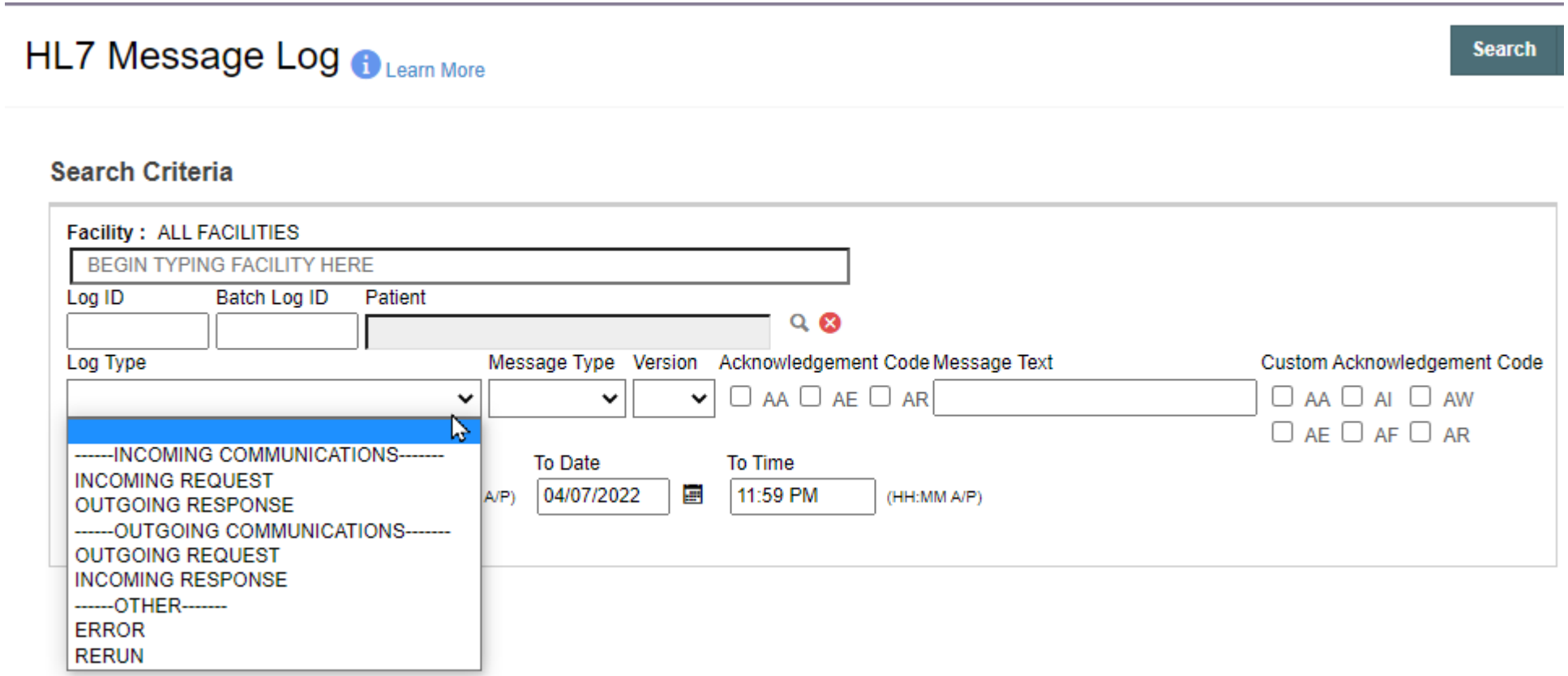


Outgoing VXU (Updates) or QBP (Queries) **to** Partner IIS

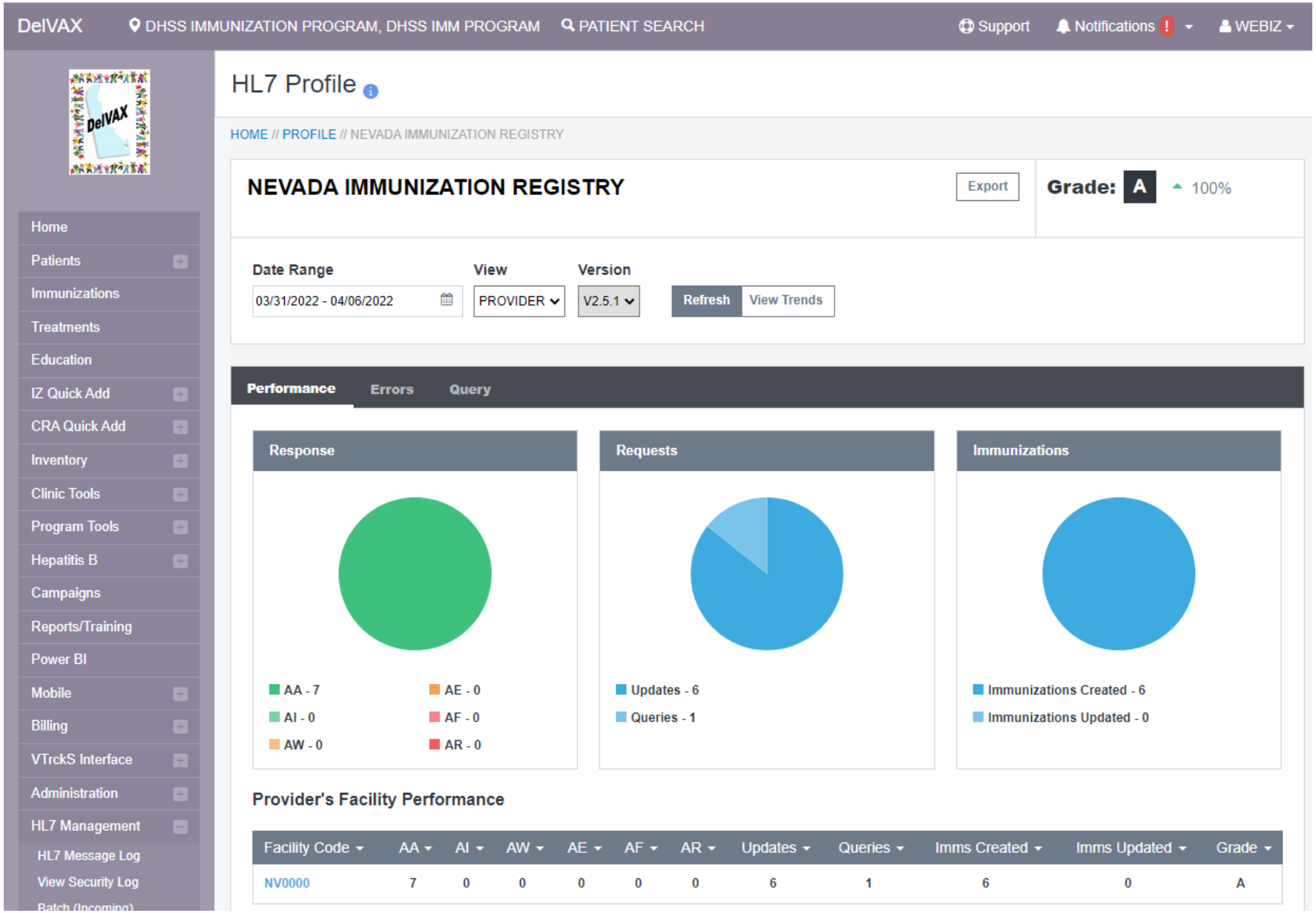


Self Service Model

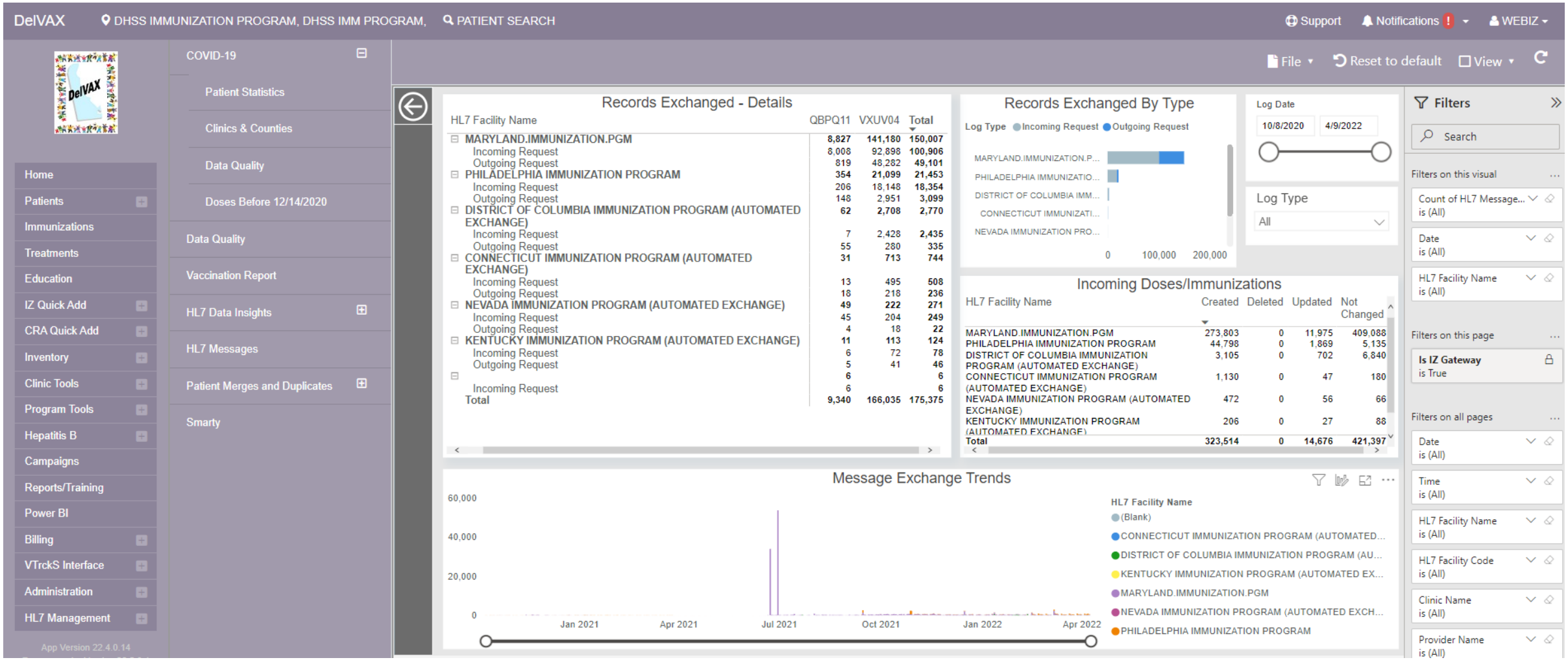
- ❑ Logs Types = First-Class Citizen



Traffic Analysis Module > IZ Gateway Focused



Embedded Analytics > IZ Gateway Reports



Embedded Analytics > IZ Gateway Filters

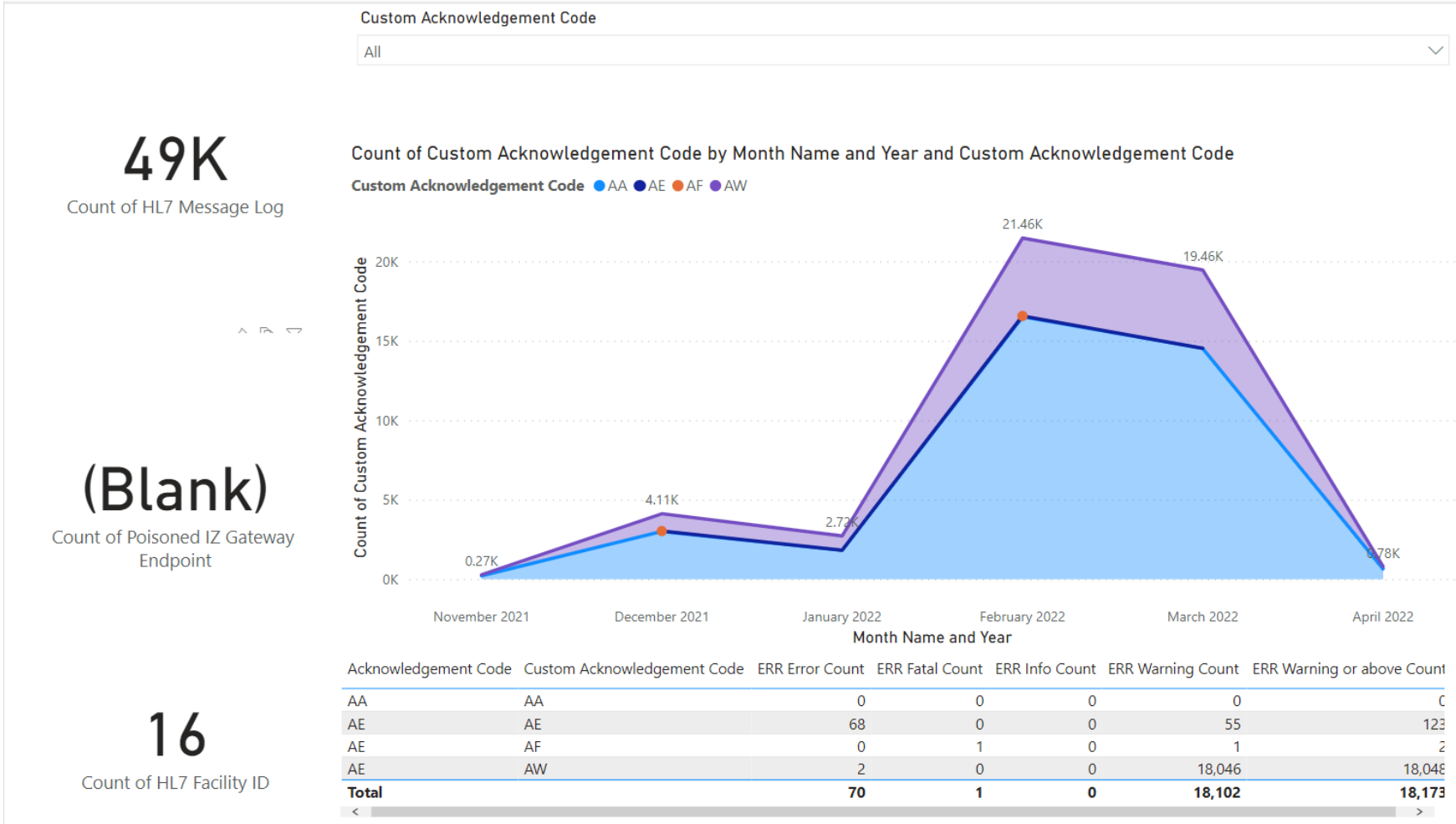
- ❑ Current and Future (video)

Monitoring the IZ Gateway and Impact on the IIS

- ❑ PowerBI Dashboarding
  - — Dashboards can be filtered to display specific IZ Gateway connections, message types, and log types for more granular analysis and monitoring
- ❑ Impact on the IIS
  - — Manual Monitoring vs Automated Monitoring
  - — Reduced downtimes in IZ Gateway Connections
  - — Potential for more robust alerting mechanisms in the future

Monitoring the IZ Gateway and Impact on the IIS

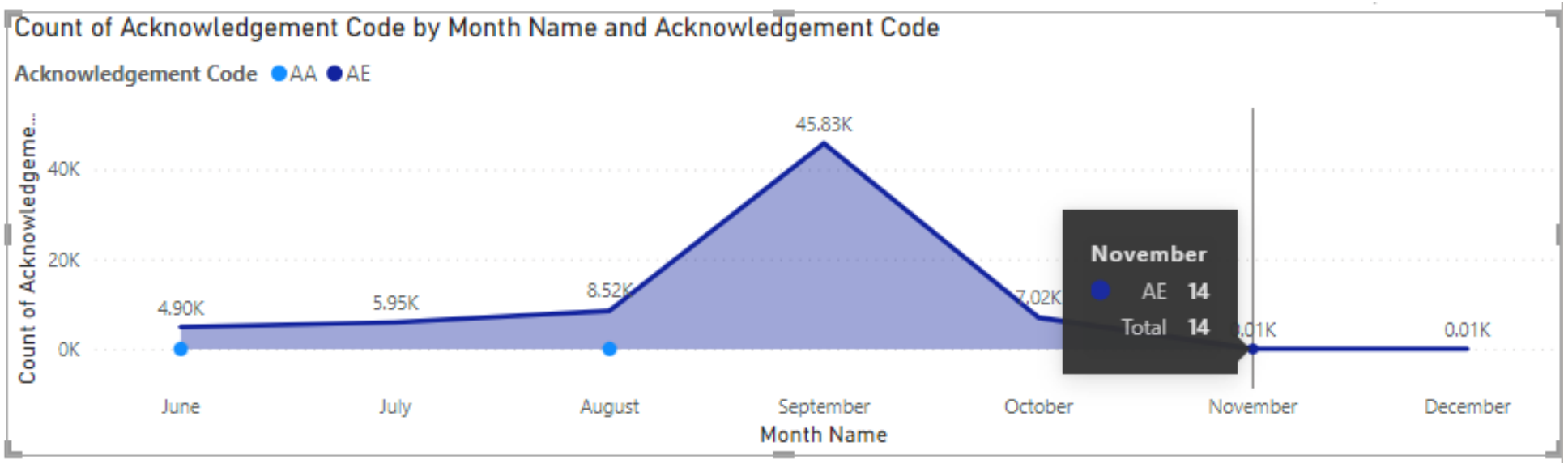
- Oklahoma's Dashboard:



Acknowledgement Code	Custom Acknowledgement Code	ERR Error Count	ERR Fatal Count	ERR Info Count	ERR Warning Count	ERR Warning or above Count
AA	AA	0	0	0	0	0
AE	AE	68	0	0	55	123
AE	AF	0	1	0	1	2
AE	AW	2	0	0	18,046	18,048
Total		**70**	**1**	**0**	**18,102**	**18,173**

Monitoring the IZ Gateway and Impact on the IIS

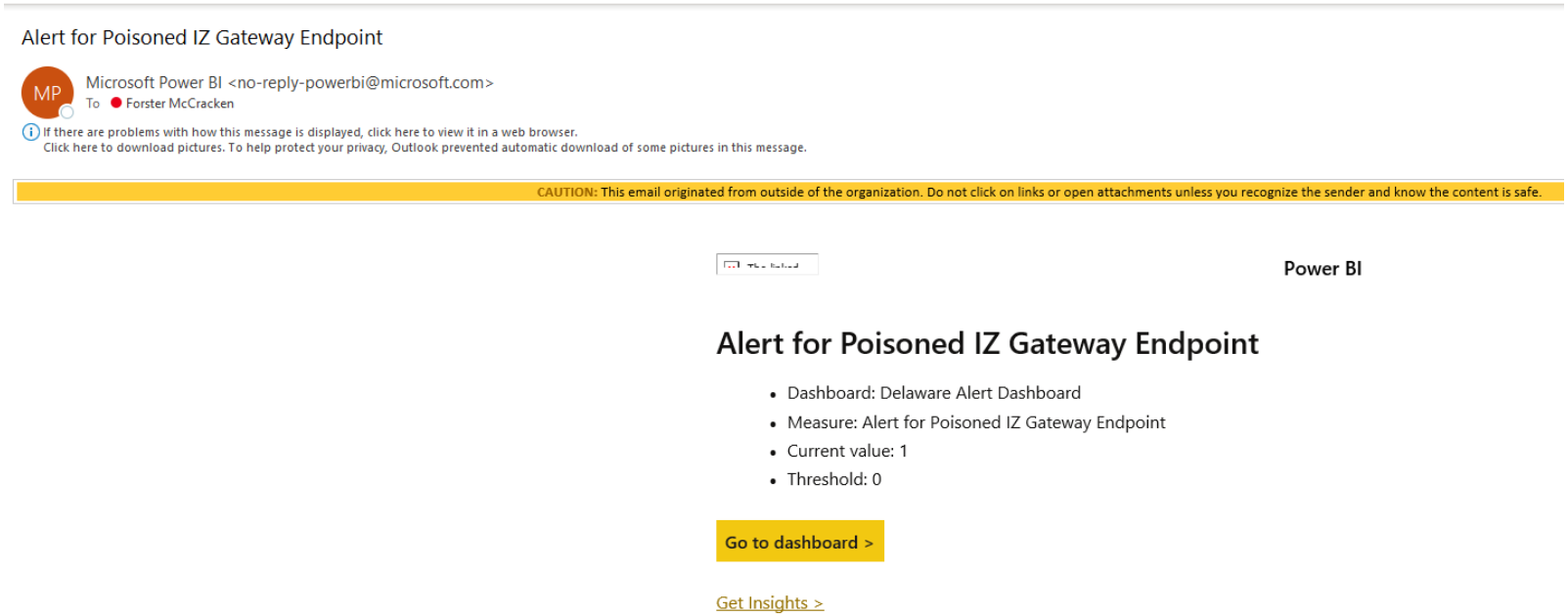
- Example of a volume dip:

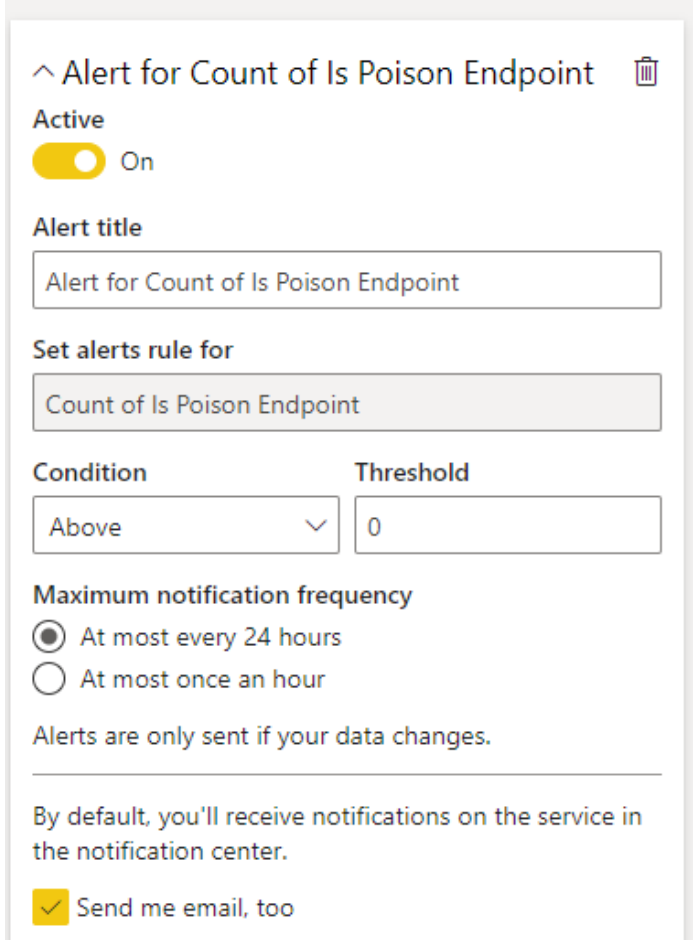


Acknowledgement Code	Custom Acknowledgement Code	ERR Error Count	ERR Info Count	ERR Warning Count	ERR Warning or above Count
		0	1	0	0
AA	AA	0	5,986	0	0
AE	AE	1,356	4,462	12,207	13,563
AE	AW	11,368	799	872,755	884,123
Total		**12,724**	**11,248**	**884,962**	**897,686**

Monitoring the IZ Gateway and Impact on the IIS

- ❑ Alerting for Poisoned (Inactive) Endpoints





Monitoring the IZ Gateway and Impact on the IIS

- ❑ Subscription based weekly Snapshots

Weekly Poisoned Endpoint Snapshot - Oklahoma

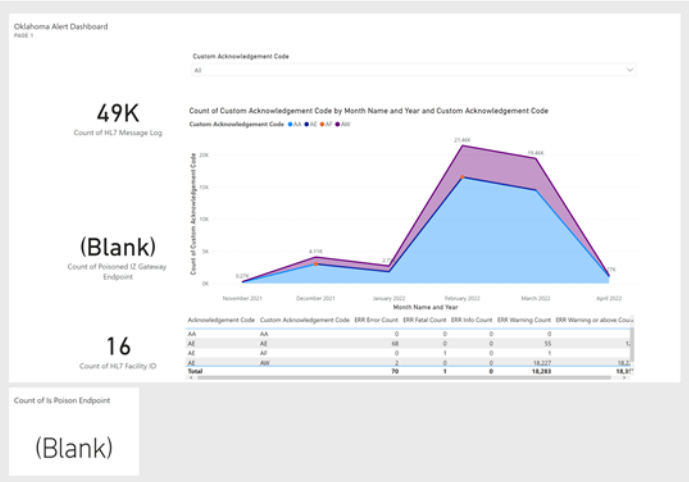
MP Microsoft Power BI <no-reply-powerbi@microsoft.com>
To Forster McCracken

If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

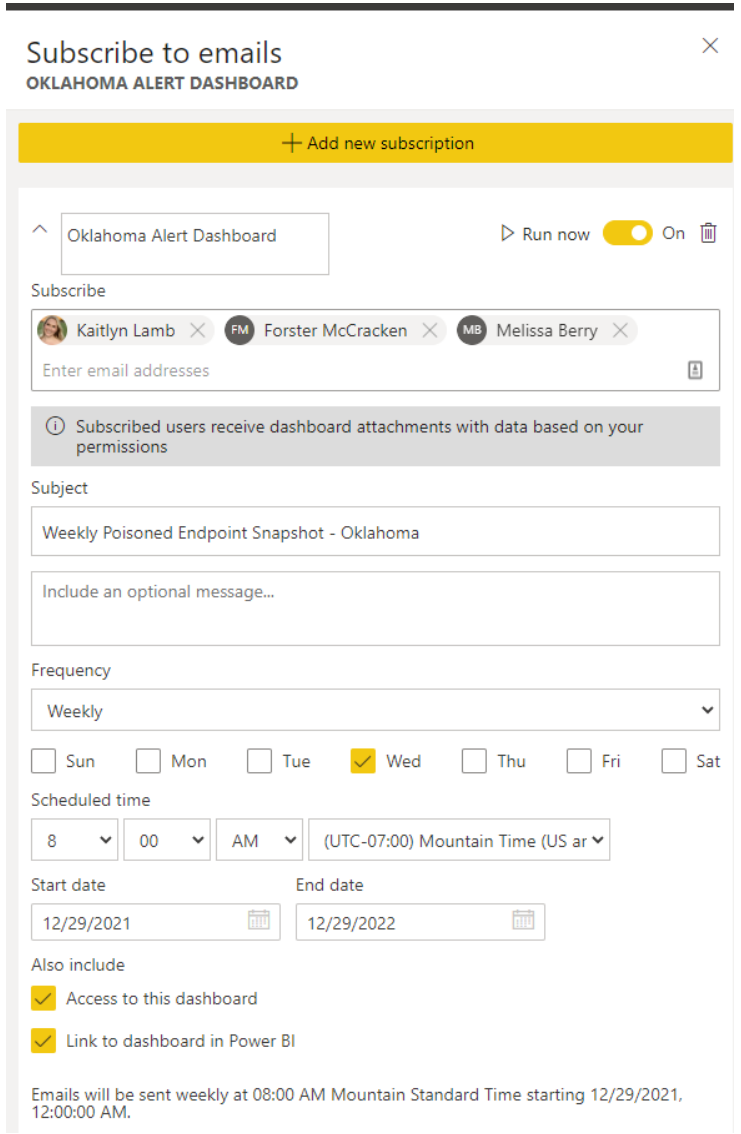
Oklahoma Alert Dashboard.png
228 KB

Oklahoma Alert Dashboard

Go to the dashboard >



You're receiving this email because you subscribed to the 'Oklahoma Alert Dashboard' dashboard. The image above was generated at April 12, 2022 16:14 UTC.



ENVISION TECHNOLOGY PARTNERS

Monitoring the IZ Gateway and Impact on the IIS

- Oklahoma Dashboard with AA and AW Custom ACKS:

Custom Acknowledgement Code

Multiple selections

49K

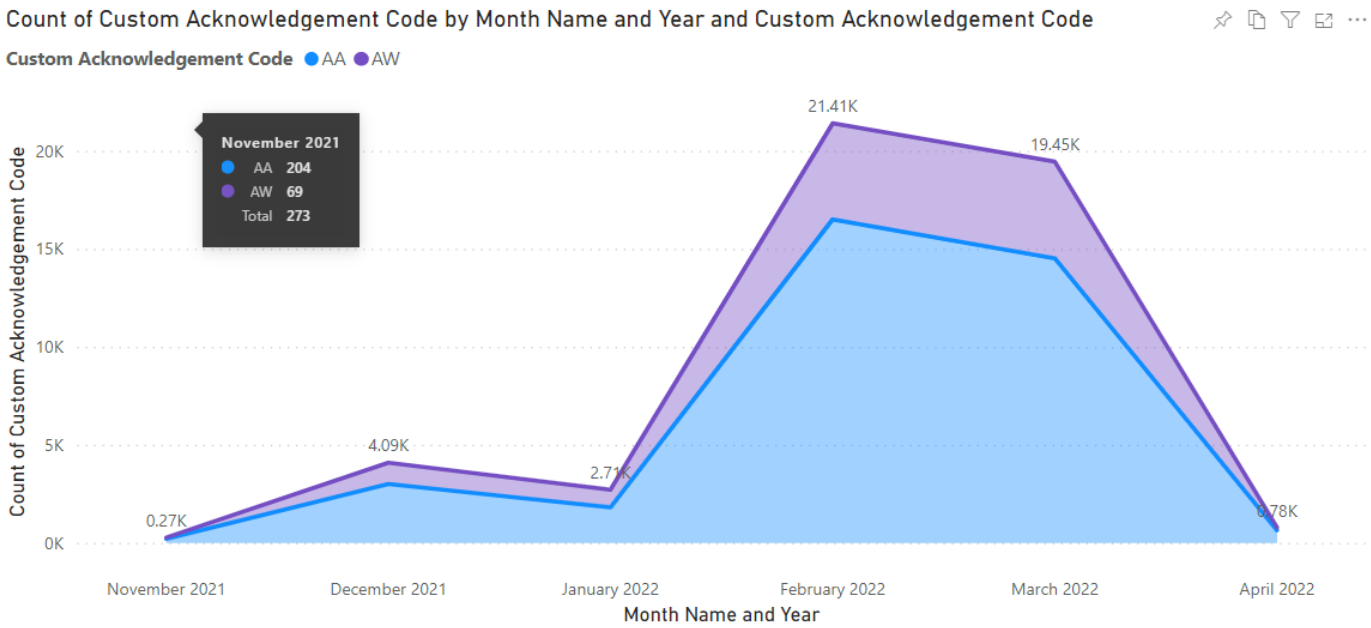
Count of HL7 Message Log

(Blank)

Count of Poisoned IZ Gateway Endpoint

16

Count of HL7 Facility ID

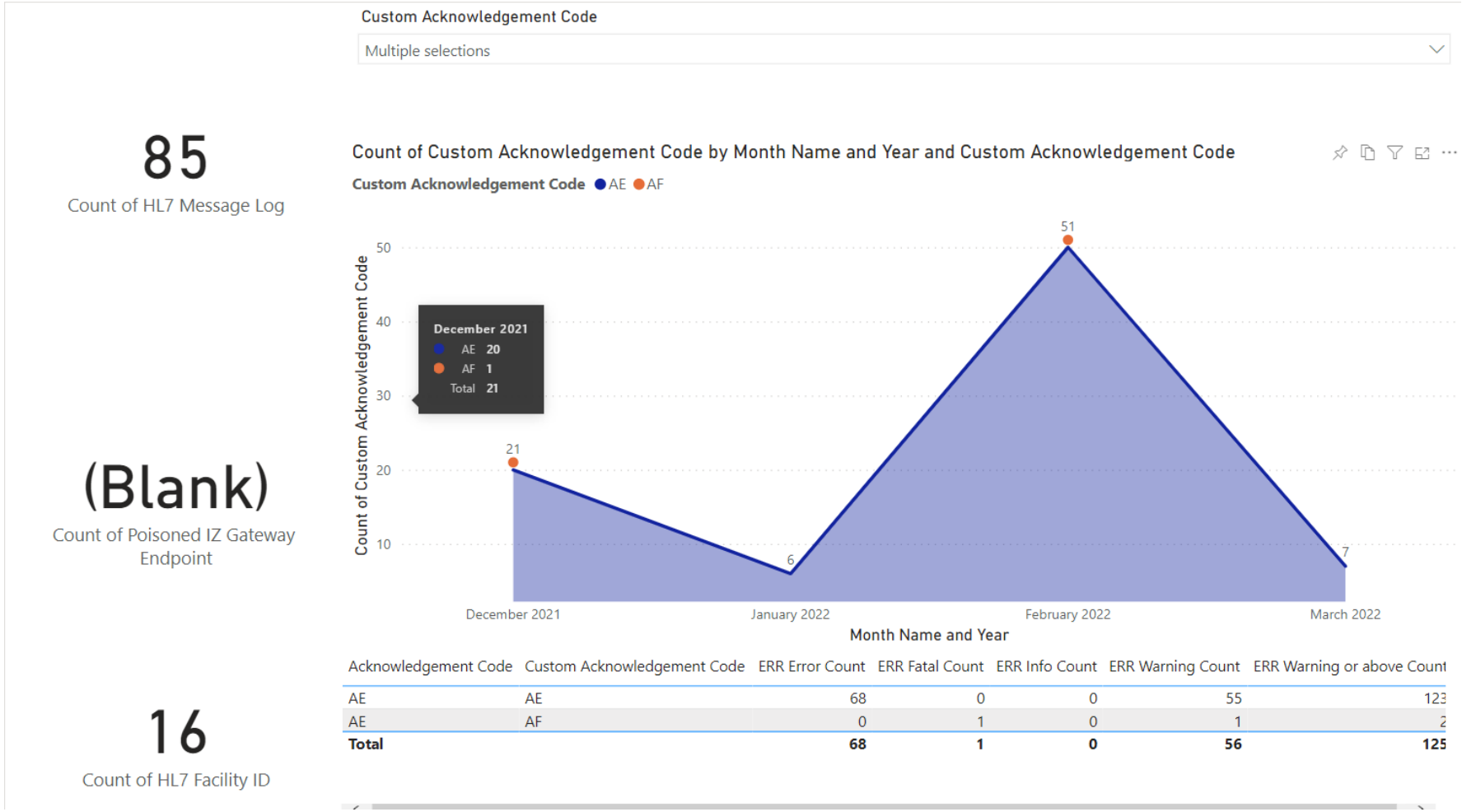


Acknowledgement Code	Custom Acknowledgement Code	ERR Error Count	ERR Fatal Count	ERR Info Count	ERR Warning Count	ERR Warning or above Count
AA	AA	0	0	0	0	0
AE	AW	2	0	0	18,046	18,048
Total		**2**	**0**	**0**	**18,046**	**18,048**

ENVISION TECHNOLOGY PARTNERS

Monitoring the IZ Gateway and Impact on the IIS

❑ Oklahoma Dashboard with AE and AF Custom ACKS



Conclusion and Benefits

- ❑ Make IZ Gateway interactions for testing, reporting, monitoring self-service
- ❑ Reduce development time and costs
- ❑ Decrease time to go-live
- ❑ Increase Jurisdiction access to data trends, alerts
- ❑ Quick identification of issues/errors both for Envision and Jurisdiction staff
- ❑ End goal: faster project timelines, more connections and data exchanged via the IZ Gateway

ENVISION
TECHNOLOGY PARTNERS

Thank you!

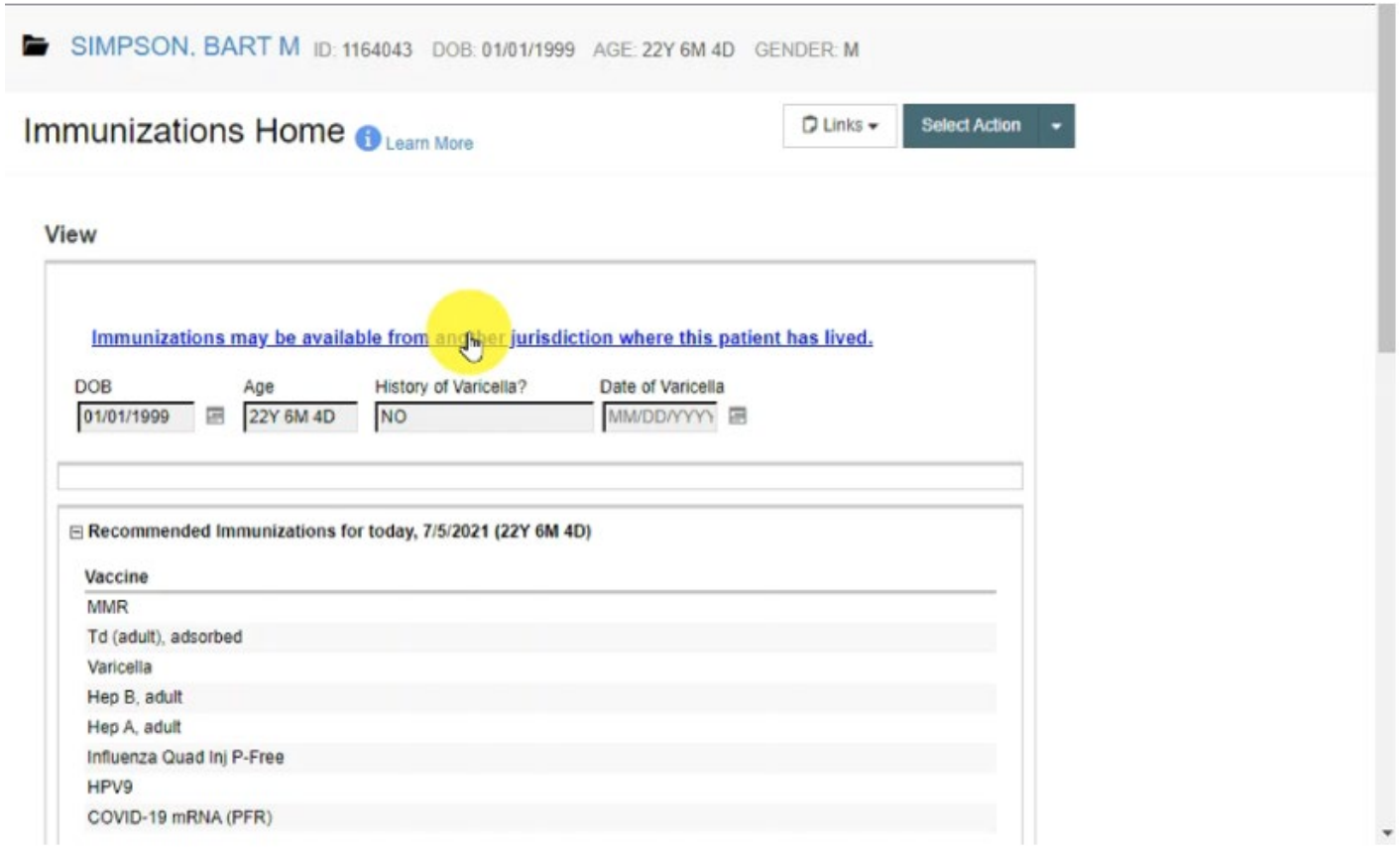
The following appendix slides include notes and talking points for the detailed slides to provide additional context to presentation content

Appendix – Supporting notes and documentation

- Slide number 3:
  - Strategy in Action: Envision created the ability to generate an IZ Gateway destination hub via configuration template
  - Utilizing code tables, created the ability for a user to build a jurisdiction destination endpoint using available connectivity information like the MSH: 5 and MSH:6
  - Template is built once, then deployed to all jurisdiction's environments
  - Development time is no longer needed to configure an IZ gateway connection as this is now done by the IZ gateway team, eliminating the need for development resources
  - We've reduced our project timelines by about a month with the use of this configuration template
- Slide number 4:
  - These jurisdiction hub templates are then added with a click of a button and activated with in the Jurisdictions Environment by simply checking the "active" box
  - Once an endpoint is added, our team can immediately start testing since all the connectivity information has already been included in the endpoint
  - Overall, the time savings of implementing the connectivity template functionality has been significant

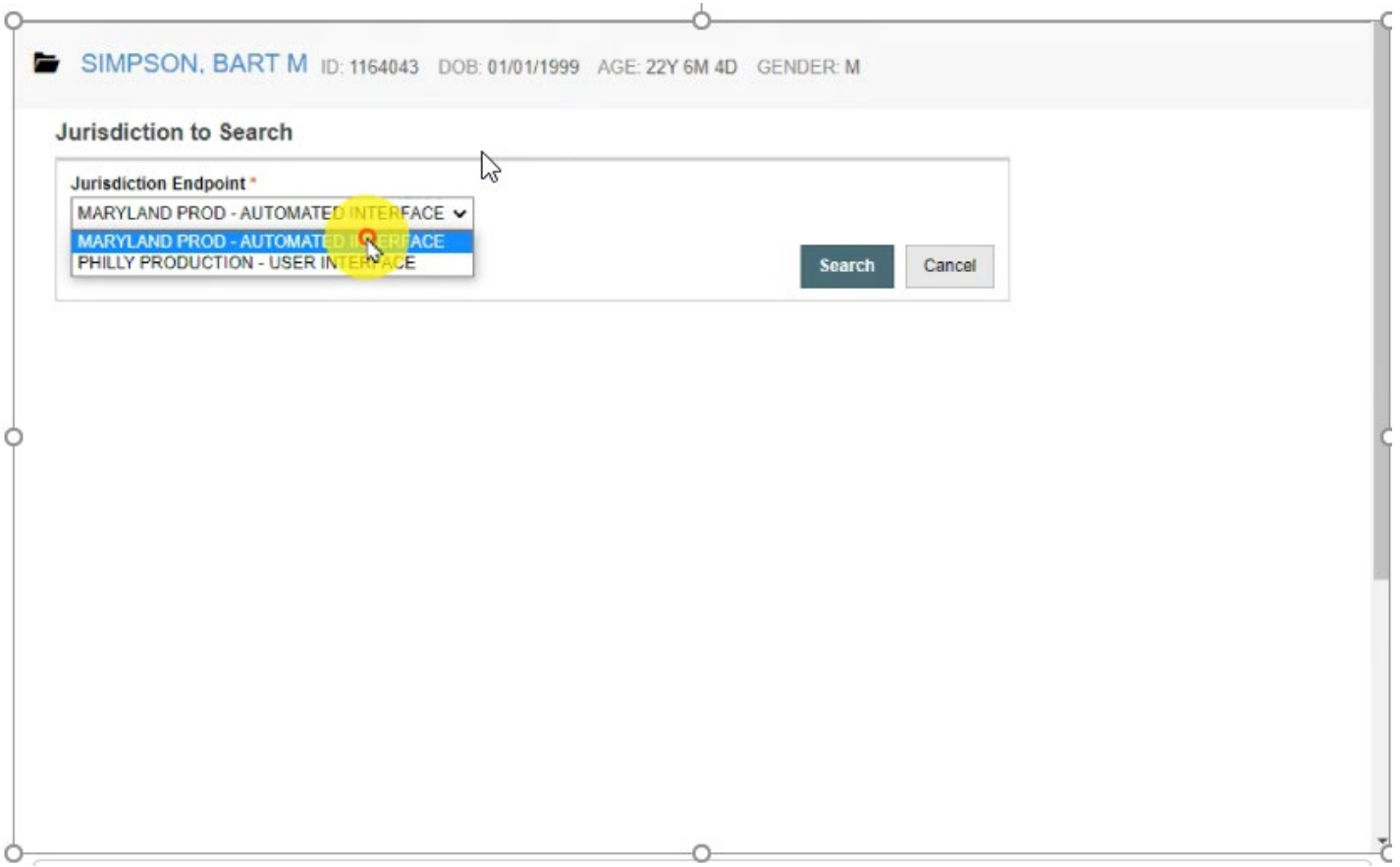
Appendix – Supporting notes and documentation

- ❑ Slide number 5: Manual Query video (supporting screenshots included)
  - Allows user to confirm connectivity via the user interface
  - Connectivity is tested through the User Interface – we see an indication of shared data via the blue link in the patient's immunization record



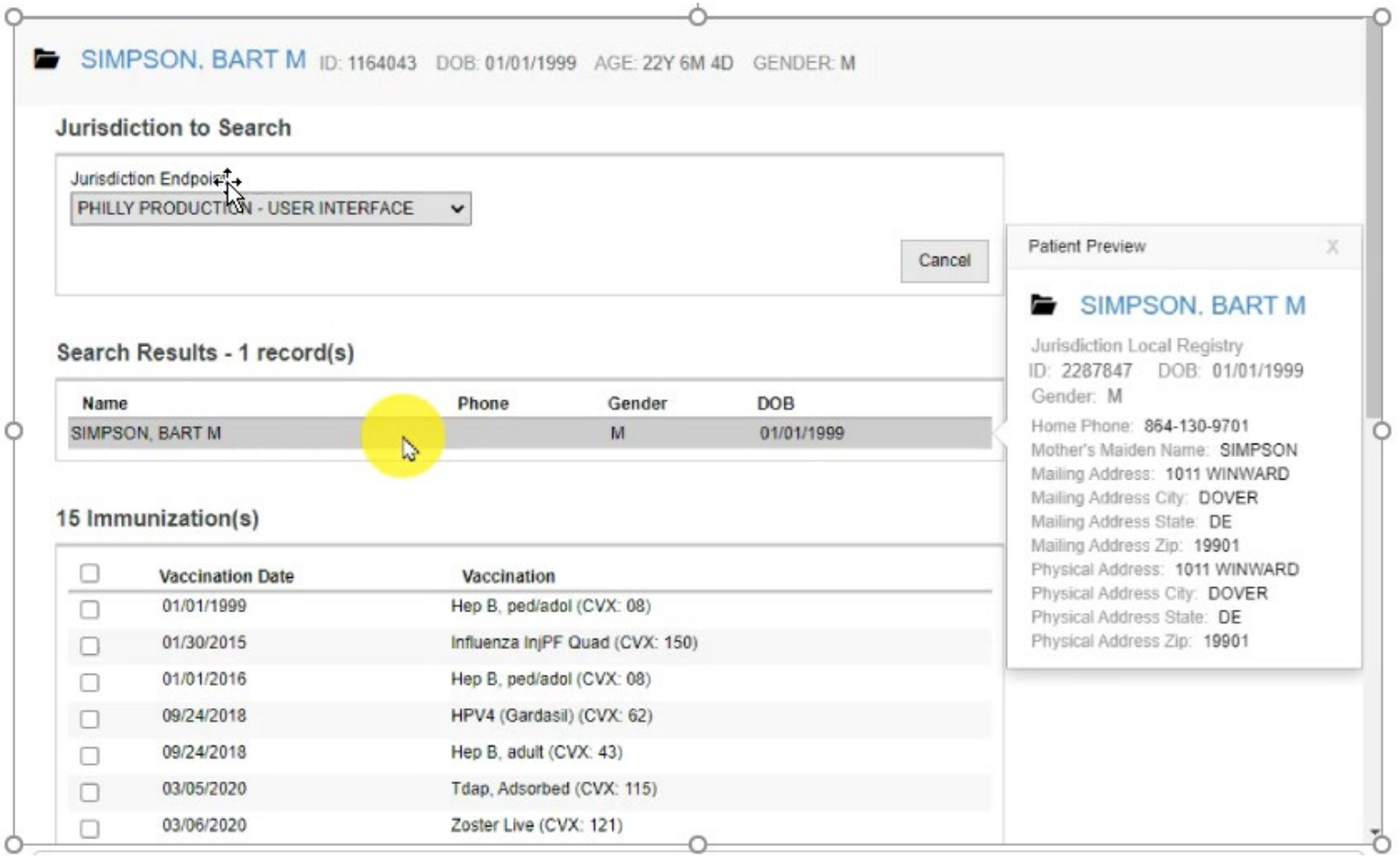
Appendix – Supporting notes and documentation

- ❑ Slide number 5: Manual Query video (supporting screenshots included)
  - Currently, we're able to select the jurisdiction that the patient has address history in, but we have new functionality that will be available in our May 2022 release that will allow a user to search any connected jurisdiction, regardless of the patient's address history.



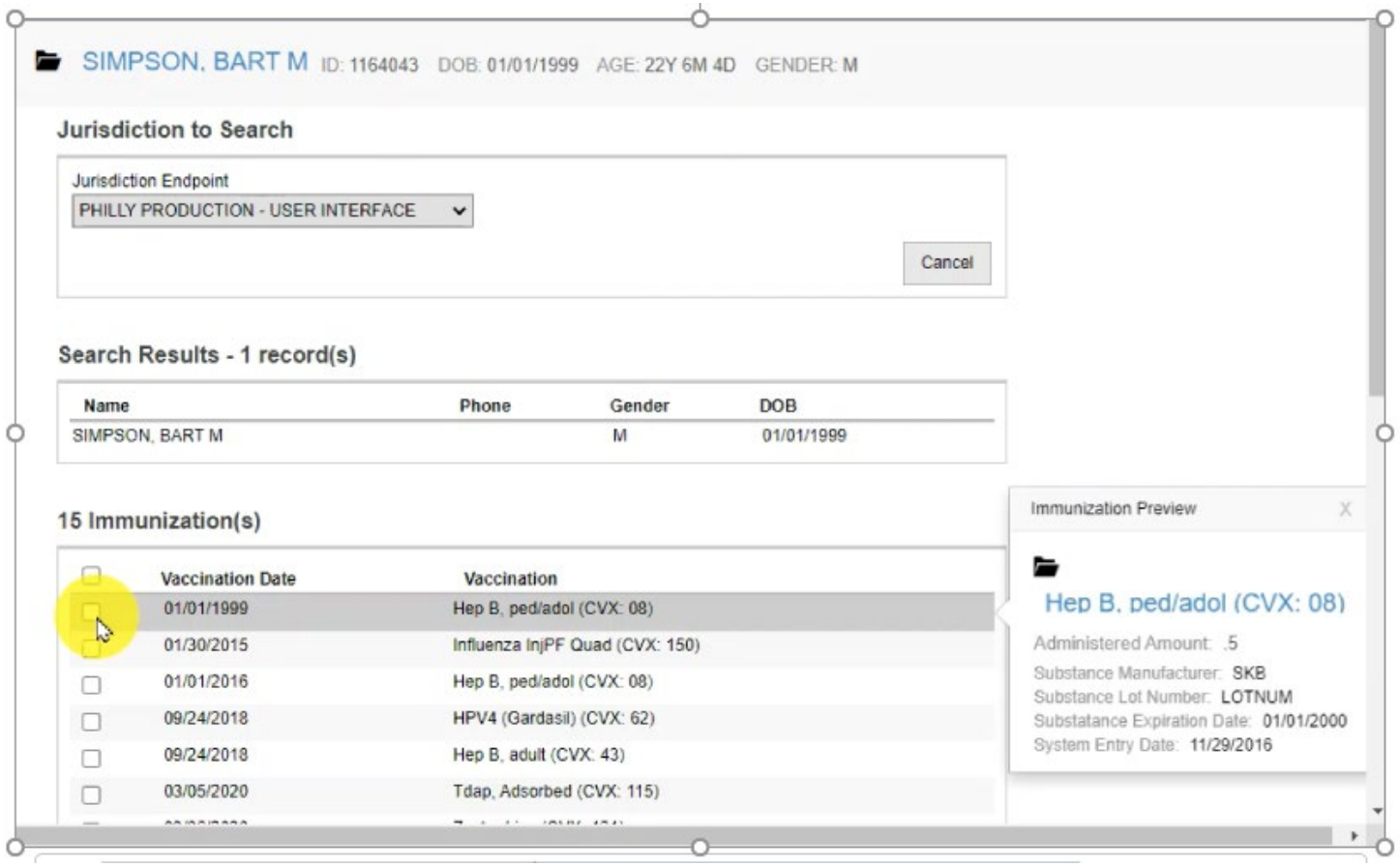
Appendix – Supporting notes and documentation

- ❑ Slide number 5: Manual Query video (supporting screenshots included)
  - The user can confirm the shared patient on this screen by hovering over the patient demographic information



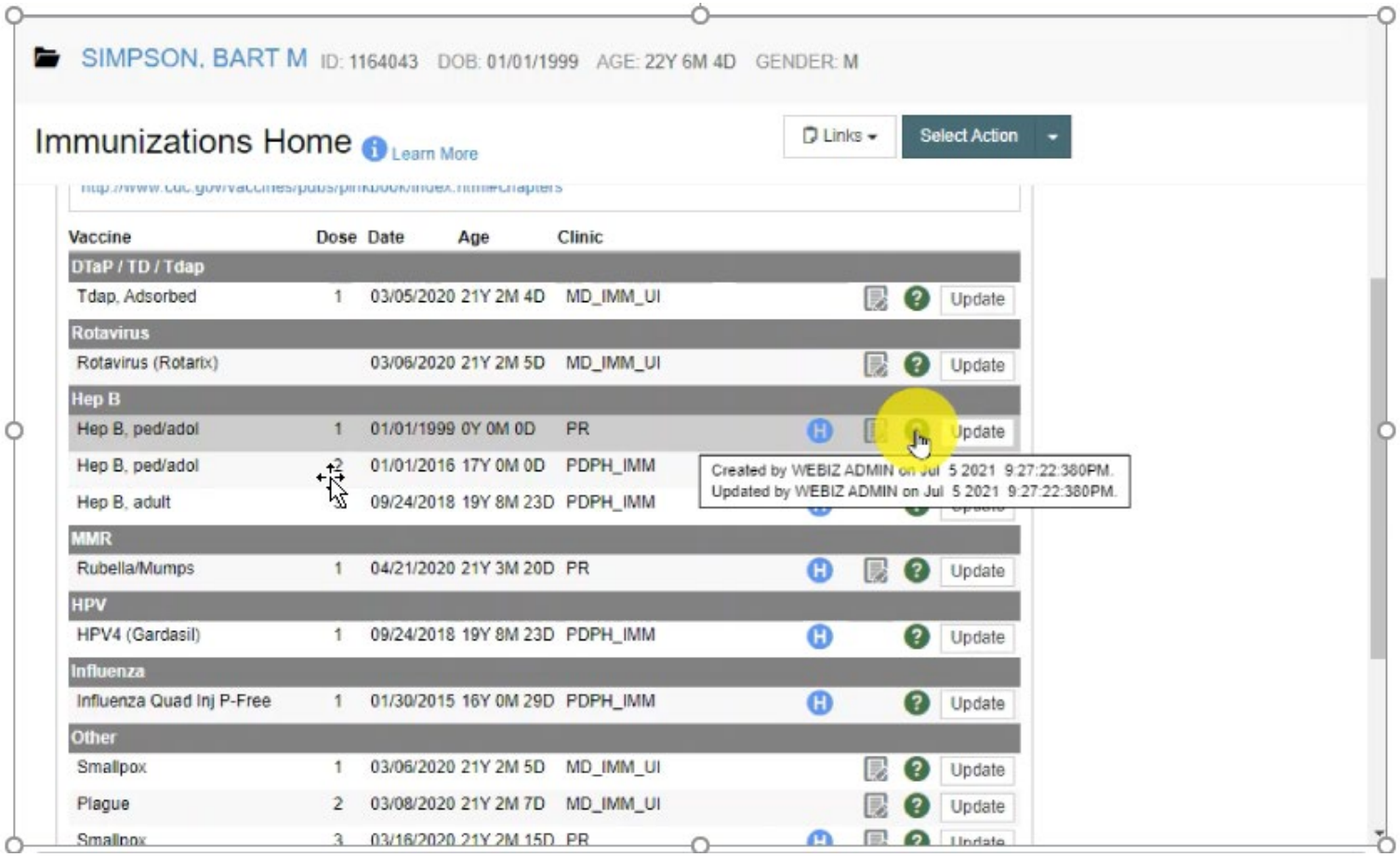
Appendix – Supporting notes and documentation

- Slide number 5: Manual Query video (supporting screenshots included)
  - The user can then select the immunizations that they'd like to import from the partner jurisdiction and can see the immunizations that are already in the patient record at the bottom of the screen, so they don't import duplicates.



Appendix – Supporting notes and documentation

- ❑ Slide number 5: Manual Query video (supporting screenshots included)
  - The user can then view the imported immunization within the patient's immunization record.



Appendix – Supporting notes and documentation

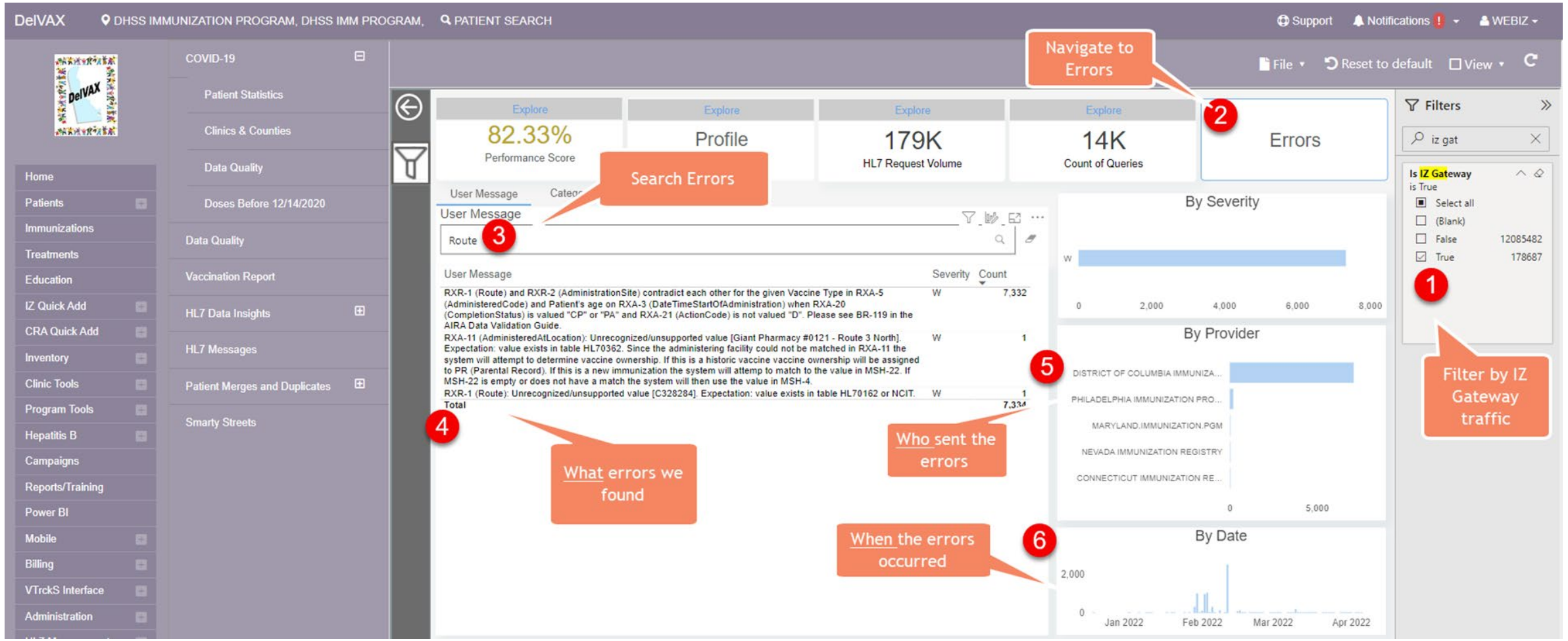
- ❑ Slide number 6:
  - This is designed for us to be able to work with two different communication flows
  - Query other IIS when historical physical patient address exists in partner jurisdictions' demographic
  - VXU when new patient, immunization, or updated immunization of patient current physical address in partner jurisdiction
- ❑ Slide number 7:
  - Log Types are worked into all logs, reports, analytics, etc.
  - This concept is treated as first-class citizen as we know we need to be able to report on communications from both directions
- ❑ Slide number 8:
  - All existing reports and the Traffic Analytics Module can be filtered down to IZ Gateway Senders

Appendix – Supporting notes and documentation

- ❑ Slide number 9:
  - Break-down by IIS Partner **and Log Type**
  - Can view:
    - Message Counts
    - Operation Counts
    - Who sent what when
- Ensures Queries and Updates are flowing in both directions and each IIS has a copy of the complete consolidated immunization record from across multiple-IIS
- **If you query the same patient that exists in multiple-IIS, each one should have the same complete record**
- The tool includes cross-highlighting and a large collections of filters are at your disposal for any additional analysis you wish to perform

Appendix – Supporting notes and documentation

- ❑ Slide number 10: Below visual indicates all topics discussed via red number



Appendix – Supporting notes and documentation

- Slide number 10: numbers correlate with red numbers on slide 28

1. We can apply IZ Gateway filters to existing HL7 Analytics
2. Walk-through the example:
   - What problems
   - Who the party involved was – can drill down to clinic
   - When the problem occurred
3. Select specific problem - Can search problems

Again, many more filters available to you on the side

For example, you can filter down to only Outgoing Communications or Incoming Communications

4. See What the problems are
5. See Who the problems are with

Appendix – Supporting notes and documentation

- Slide number 10: numbers correlate with red numbers on slide 28

6. See when the problems occurred
   - You can also cross-filter by Who or When, not just What

Future improvements:

- We have plans to allow category level, meaning you could filter down to all IZ Gateway traffic from Federal Partners
- We also have plans to go down one more level, so all IZ Gateway traffic from Federal Partners of type VHA
- Finally, the same analytics endpoint we use to build Power BI reports is available to jurisdictions to build ad-hoc queries and reports in tools like Power BI, Excel, Tableau
- This means this new fields will be available for filtering and reporting by all program staff

Appendix – Supporting notes and documentation

- Slide number 13:
  - This is the example that led to the creation of these dashboards. One of our jurisdictions reached out to use to inquire about a significant dip in volume of the data they were exchanging with another jurisdiction.
  - The volume dropped from 7000 messages in October to 14 for the month of November. Once we discovered the root cause of the issue, which was an inactivated endpoint, we began developing these dashboards to alert us when an endpoint becomes inactive.
  - From there, the dashboards grew to include visualizations for the data exchanged.

- Slide number 14:
  - This is the Alert we initially created for endpoints that become inactive, we receive this email telling us which environment the poisoned endpoint is in. This should alert us within 24 hours at most, instead of waiting to hear from a jurisdiction that there is an issue.

Appendix – Supporting notes and documentation

- Slide number 15:
  - These snapshots are how we monitor the dashboards, they are sent to send out to the IZ Gateway team once a week at 8AM on Wednesday mornings and contain a screenshot of the dashboard in its current state.
  - This will show us any dips in volume or rises in errors in the exchange.
- Slide number 16:
  - Here we can see one of our dashboards that has been filtered to show more granular acknowledgement codes in which the message data was successfully added to the registry.
- Slide number 17:
  - This is a view of all messages with that returned more granular acknowledgement codes that indicate Error or Fatal Error severity level in the response.
  - We can also see breakdown of ERR segments in the messages indicating how many ERR segments were present in each message type.