Using Data at Rest (DAR) to Assess Data Quality by EHR Vendor

Takeaways from the IIS Data Analyst Collaborative (IDAC)

May 2026

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Using Data at Rest (DAR) to Assess Data Quality by EHR Vendor—Meeting Summary

May 21, 2026

The IIS Data Analyst Collaborative (IDAC)

The IIS Data Analyst Collaborative (IDAC) is a discussion-based collaborative for people who work with immunization data to connect on important and timely topics. IDAC happens quarterly on the third Thursday at 1 p.m. ET. There are different discussion topics in every meeting. The goals for these collaboratives are to offer an opportunity to share and develop skills and insights, to help people who work with immunization data to connect and spark collaborations, and to create a supportive, engaged community of IIS data analysts.

The May IIS Data Analyst Collaborative (IDAC) meeting discussion focused on using Data at Rest (DAR) to assess data quality by EHR vendor.

Questions Discussed During This IDAC Session Included the Following:

- How helpful do you find the EHR level for assessing quality?
- Do you find inequalities across providers with the same EHR vendors?
- Do data quality issues for other IIS usually happen at the EHR level or provider level?
- How frequently are data quality issues caused by an issue with the EHR rather than human error at the provider level?
- How can we make it easier on EHR vendors to be compliant with our IIS?
- How can we best relay feedback to vendors?

Project Background and Purpose

The project described is part of a Cooperative Agreement between AIRA and the CDC, designed to provide technical assistance to jurisdictions through a collaborative, data-driven initiative. The focus is on leveraging the existing Data at Rest (DAR) framework, which includes approximately 45 measures related to data completeness, timeliness, and validity, to generate deeper insights—particularly by analyzing data at the EHR (electronic health record) vendor level.

Six jurisdictions are participating in a multi-jurisdiction learning collaborative, with the goal of conducting hands-on working sessions that emphasize shared learning, cross-jurisdiction insights, and practical application. The collaborative is structured as eight sessions, with a flexible, “rolling wave” planning approach that adapts based on emerging data findings rather than a fixed analytical path.

The ultimate objective is to produce user guides, templates, and tools that can be shared broadly across jurisdictions to support similar analyses and improvements. The effort is exploratory in nature, as analyzing IIS data by EHR vendor is relatively uncharted territory, requiring iterative learning and group problem-solving.

Key Findings

Throughout the first five sessions, several consistent themes have emerged:

1. EHR mapping and data management challenges
    - EHR mapping processes are largely manual and reactive, often relying on informal communication (e.g., “word of mouth”) to identify changes.
    - Maintaining accurate provider and EHR contact lists is difficult, leading to outdated or incomplete information.
    - Provider onboarding was identified as the most critical point for capturing accurate EHR data, but ongoing maintenance is weak.
2. Data quality monitoring practices
    - Jurisdictions have strong access to data dashboards and error reports, which effectively support monitoring.
    - However, provider engagement is inconsistent, often due to uncertainty about:
        - Whom to contact
        - How to initiate improvements
        - Where responsibility lies (provider vs. EHR vendor)
3. Dataset scope and limitations
    - The project includes data from five jurisdictions, covering:
        - 116 EHRs total
        - 84 EHRs unique to one jurisdiction
        - 31 EHRs shared across jurisdictions (used for pattern analysis)
    - While the sample size limits generalizations, it provides a useful foundation for identifying trends and testing approaches.

Development of the EHR analysis tool

To support this work, the team developed an Excel-based reporting tool that builds on DAR outputs while minimizing additional burden on jurisdictions.

Data inputs and processing

- Jurisdictions provide a crosswalk linking provider IDs to EHR vendors.
- DAR data are exported and combined with this crosswalk.
- Data are aggregated using pivot tables and lookup functions to generate EHR-level summaries.

Tool Features

- Produces “report cards” for each EHR vendor
- Evaluates performance across ~48 measures
- Compares:
    - Performance against DAR thresholds
    - Performance relative to other EHRs (min, max, mean, and median)
    - Performance against overall IIS averages

- Assigns weighted scores based on importance of data elements (e.g., higher weight for name, DOB)
- Generates rankings to motivate improvement and identify high performers

Design considerations

- Tools are customizable (e.g., weighting measures).
- Compatibility issues (e.g., Excel versions) required redesign for broader accessibility.
- EHR name normalization across jurisdictions is challenging due to inconsistent naming conventions.

Insights from data analysis and discussion

1. EHR vs. provider-level issues

A major takeaway is that data quality issues are often driven more by provider behavior than by EHR systems.

- Most EHRs are capable of collecting required data (e.g., phone, email).
- Variation occurs because:
    - Providers might not configure systems properly
    - Data fields might not be required or enforced
    - Workflow or training gaps exist

This is supported by:

- Wide variation in data quality among providers using the same EHR
- Evidence that many errors originate during registration or clinical encounters

2. Root causes of data quality issues

Common contributing factors include:

- Lack of required fields (e.g., lot number, race/ethnicity)
- Optional data entry leading to incomplete records
- Limited provider awareness of downstream data use
- System configuration differences across provider sites

Prior research cited in the discussion suggests:

- Up to two-thirds of errors could be prevented before reaching IIS if addressed at the point of data entry.

3. Importance of provider engagement

Jurisdictions emphasized:

- Targeting high-impact providers or EHRs (e.g., those with large patient volumes)
- Prioritizing programs like VFC (Vaccines for Children) where compliance incentives exist
- Conducting provider-level analysis alongside EHR-level analysis for root cause identification

Strategies for improvement and engagement

Several strategies emerged for improving data quality and collaboration.

1. Use of report cards

- Report cards are highly effective in motivating improvement.

- Ranking systems encourage competition and accountability.
- EHR vendors may be incentivized by reputational or market advantages.

2. Strengthening relationships
   - Direct communication with EHR vendors and provider organizations is critical.
   - Maintaining points of contact (POCs) improves responsiveness.
   - Leveraging relationships with major customers of EHR vendors can drive change.

3. Targeted outreach
   - Focus on:
     - High-volume EHR vendors (e.g., Epic, which represented ~50% of data in this project)
     - Providers with the greatest impact on data quality
   - Avoid spreading efforts too thin across low-impact entities.

4. System and workflow improvements
   - Encourage EHR-level enhancements such as:
     - Required fields or validation prompts
     - Warning messages for missing data
   - Promote provider education on:
     - Importance of data completeness
     - Public health implications (e.g., recalls, equity analysis)

Challenges and lessons learned

- Building and maintaining the EHR crosswalk is labor-intensive and often requires significant cleanup and outreach.
- Data standardization across jurisdictions is difficult but necessary for aggregation.
- Analytical tools must balance functionality and accessibility.
- The distinction between EHR-level and provider-level responsibility is complex and requires layered analysis.

Conclusion and Next Steps

This project demonstrates the value of analyzing IIS data through an EHR-focused lens but also highlights that provider behavior is often the primary driver of data quality issues. The collaborative approach has enabled jurisdictions to share insights, test methodologies, and begin identifying actionable strategies.

Next steps include:

- Completing root cause analyses
- Refining the EHR report card tool
- Developing and disseminating guidance and templates
- Continuing to explore targeted interventions at both the provider and EHR levels

Overall, the initiative represents an important step toward more data-driven, collaborative, and scalable approaches to improving IIS data quality.