# Impact of HL7 Web Service Between NYC CIR and Managed Care Organizations

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# Outline

- Citywide Immunization Registry(CIR) and Managed Care Organizations
- MCOs Query Methods to the CIR
- Impact of Transitioning MCOs to HL7 Web Service
- Summary of Results
- Conclusions & Future Work

# Citywide Immunization Registry and Managed Care Organizations

# Citywide Immunization Registry (CIR)

- CIR is NYC's Immunization Information System (IIS)
- A population-based registry that began citywide in 1997
- Contains over 15 million patient records and more than 180 million immunization events
- Reporting requirements:
  - Mandatory for children 0 through 18 years of age
  - Verbal or written consent needed for adults 19 years of age or older
- Reporting methods:
  - (1) HL7 Web Service
  - (2) Online Registry (user interface)

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# Brief History of HL7 Web Services

- **2009 -** The CIR started HL7 web service development.

- **2011 -** First healthcare facility connected to report to the CIR HL7 Web Service

- **2021 -** First MCO connected to query the CIR via HL7 Web Service

- CIR HL7 Web Service processes over **>600,000 HL7 reporting messages per month**

- Currently, over **>90% of the CIR immunization events** are reported via HL7 Web Service.

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# Managed Care Organizations (MCOs)

- MCOs are healthcare delivery systems that coordinate and manage healthcare services for their enrollees

- The primary goal of an MCO is to control cost, while maintaining or improving the quality of care for its' enrollees

- MCOs contract with hospitals, physicians, and specialists to offer a comprehensive range of medical services to their members at negotiated prices

- MCOs include private and public health insurance plans

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# MCOs' Report Cards for Quality of Care

- Report cards help maintain accountability for legal compliance of quality healthcare

- Quality of Care is evaluated by two annual public reports primarily

  1. NY State Report - Electronic Quality Assurance Reporting Requirements **(eQARR)**

  2. National Report - Healthcare Effectiveness Data and Information Set **(HEDIS Score)**

# eQARR Prevention and Equity Measures

**Year:** 2023 ⌄   **Payer:** Medicaid Managed Care ⌄   **Domain:** Child and Adolescent Health ⌄   **Sub Domain:** Child Preventive Care

## Child Preventive Care - Statewide - Medicaid Managed Care

| Plan Names ⇩ | Adolescent Immunization (Combo 2) ⇅ | Adolescent Immunization ⇅ | Childhood Immunization Status - Combo 3 ⇅ |
|---|---|---|---|
| MCO 1 | 44 | 93▲ | 75▲ |
| MCO 2 | 28▼ | 81▼ | 53▼ |
| **Statewide Average** | **42** | **87** | **65** |
| **National Average** | **36** | **78** | **64** |

**Key**

▲ Significantly better than the regional average for measures in the Perinatal Health subdomain or significantly better than the state average for all other measures

▼ Significantly worse than the regional average for measures in the Perinatal Health subdomain or significantly worse than the state average for all other measures

-- Sample size too small to report.

† A lower rate is desirable. For more information about the risk-adjustment methodologies, see the Technical Notes section.

Source: eQARR - An Online Report on Quality Performance Results for Health Plans in New York State

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# National HEDIS Score – Childhood Immunizations

| | |
|---|---|
| **− Prevention and equity** | ★★★⯪★ |
| **Children and adolescent well-care** | ★★★⯪★ |
| **Childhood immunizations**<br>Did children receive all recommended immunizations by age 2? | ★★★★☆ |
| **Adolescent immunizations**<br>Did children receive all 3 recommended immunizations by age 13? | ★★★☆☆ |

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# National HEDIS Score – Adult Immunizations

| Other preventive services | |
|---|---|
| **Influenza immunizations for adults** <br> Did members ages 19 and older receive recommended influenza immunizations? | ★★★★☆ |
| **Td/Tdap immunizations for adults** <br> Did members ages 19 and older receive recommended Td/Tdap immunizations? | ★★★★☆ |
| **Zoster immunizations for adults** <br> Did members ages 50 and older receive recommended zoster immunizations? | ★★★☆☆ |
| **Pneumococcal immunizations for adults** <br> Did members 66 and older receive recommended pneumococcal immunizations? | ★★★☆☆ |

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# MCOs' Enrollees Immunization Data Gap

- MCOs are limited to only the immunization events that are billed to their plan.

- To form a complete picture of their enrollee's immunization coverage they work with immunization registries to fill in the data gap.

- MCOs are interested to include the full immunization history for all their enrollees to score high coverage measures in their NY State and Federal Report Cards.

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# MCOs Query Methods to the CIR

# Old Data Exchange Interface (DEI)

- Process developed at CIR since 1999 to exchange patient immunization data with MCOs
  - In 1999, there were only 4 MCOs using the data exchange interface
- Currently there are 13 MCOs connected to the CIR
- The DEI was a manual query process that required a full-time data specialist
- It was resource-intensive, labor-intensive, and time-consuming

# CIR Data Exchange Interface (DEI) Workflow
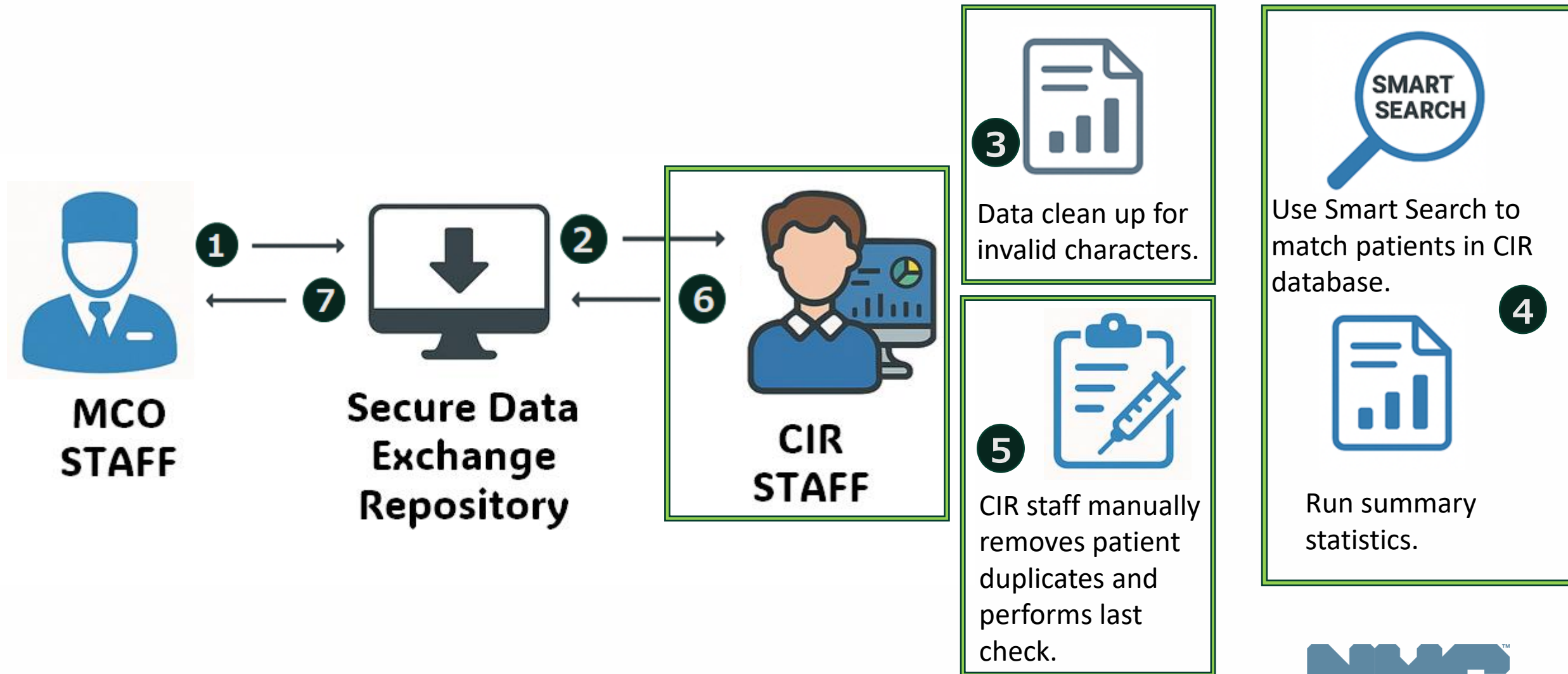
# Transitioning MCOs to HL7 Web Service

**Winter 2021**

Opened HL7 Web Service onboarding to MCOs.

**April 30th 2022**

MCOs that connected to HL7 Web Service, CIR had their DEI process sunset April 2022.

**June 30th 2022**

DEI is sunset for all users by CIR in June 2022.
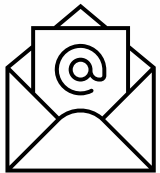
All MCOs received email notice on March 31st , 2022 that the final sunset date would be June 2022 for all DEI services.

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# New MCO querying method: HL7 Web Service

- A real-time, bi-directional health data exchange system.

- It supports CDC-endorsed SOAP Standard Interface Web Service Definition Language (WSDL)

- Within the first year of offering MCOs the HL7 Web Service, 4 MCOs were connected similar to beginning of DEI process in 1999.

- Majority of NYC MCOs were connected by 2023

# New HL7 data workflow for MCOs



QUERY

HL7 WEB SERVICE

RESPONSE

MCO STAFF

CITYWIDE IMMUNIZATION REGISTRY
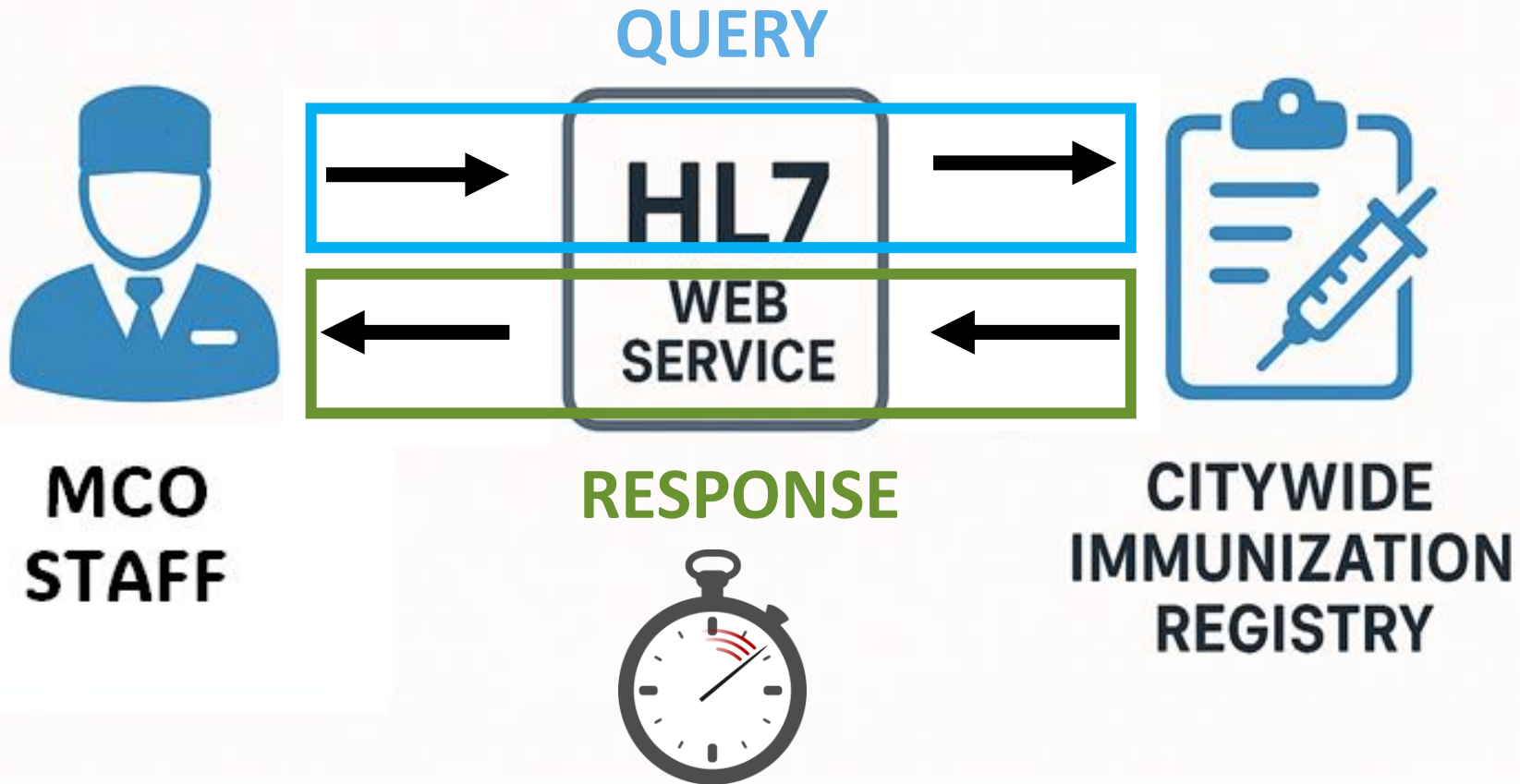
**REAL-TIME and FAST!**

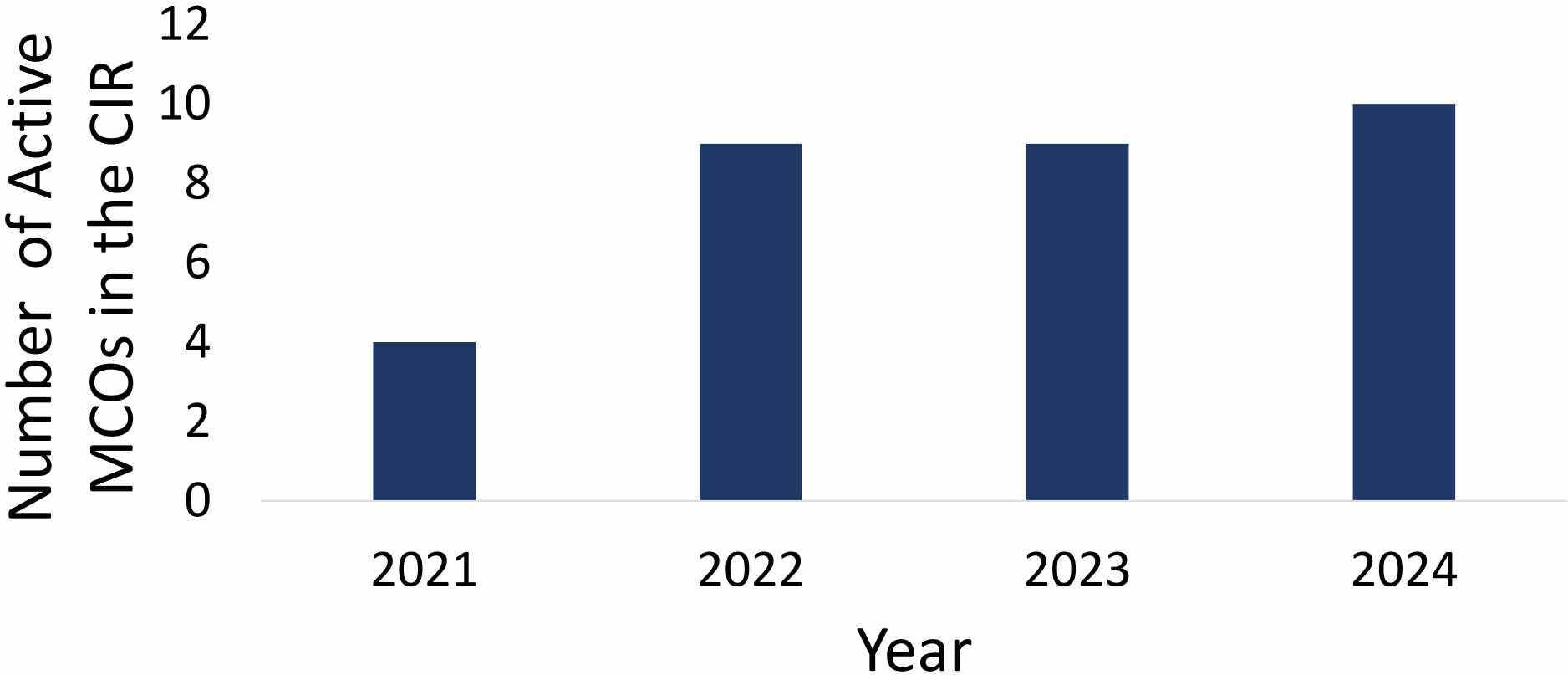# Impact of Transitioning MCOs to HL7 Web Service

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# Objective

- Examine the impact of the HL7 Web Service for MCOs and the CIR

# Evaluation Methods

- We conducted a retrospective comparison of MCO query patterns in 2021 and in 2023

- We included only MCOs that actively queried the CIR in both 2021 and 2023 (N=8)

- We did not include MCOs who were active in year 2022 because many MCOs were still in the process of migrating to the HL7 web service that year

- We looked at total annual HL7 queries and MCO's monthly HL7 query activity patterns.
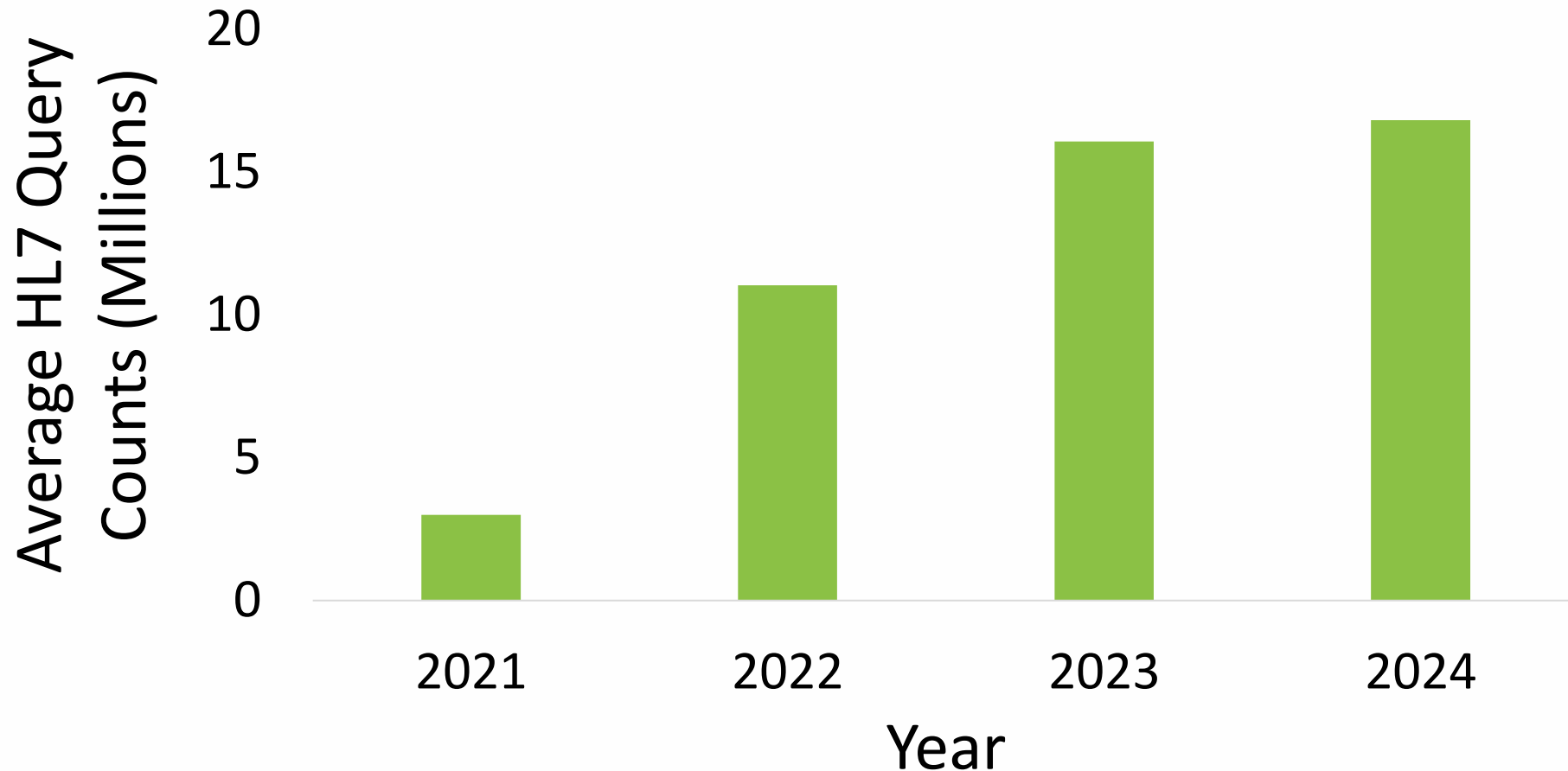
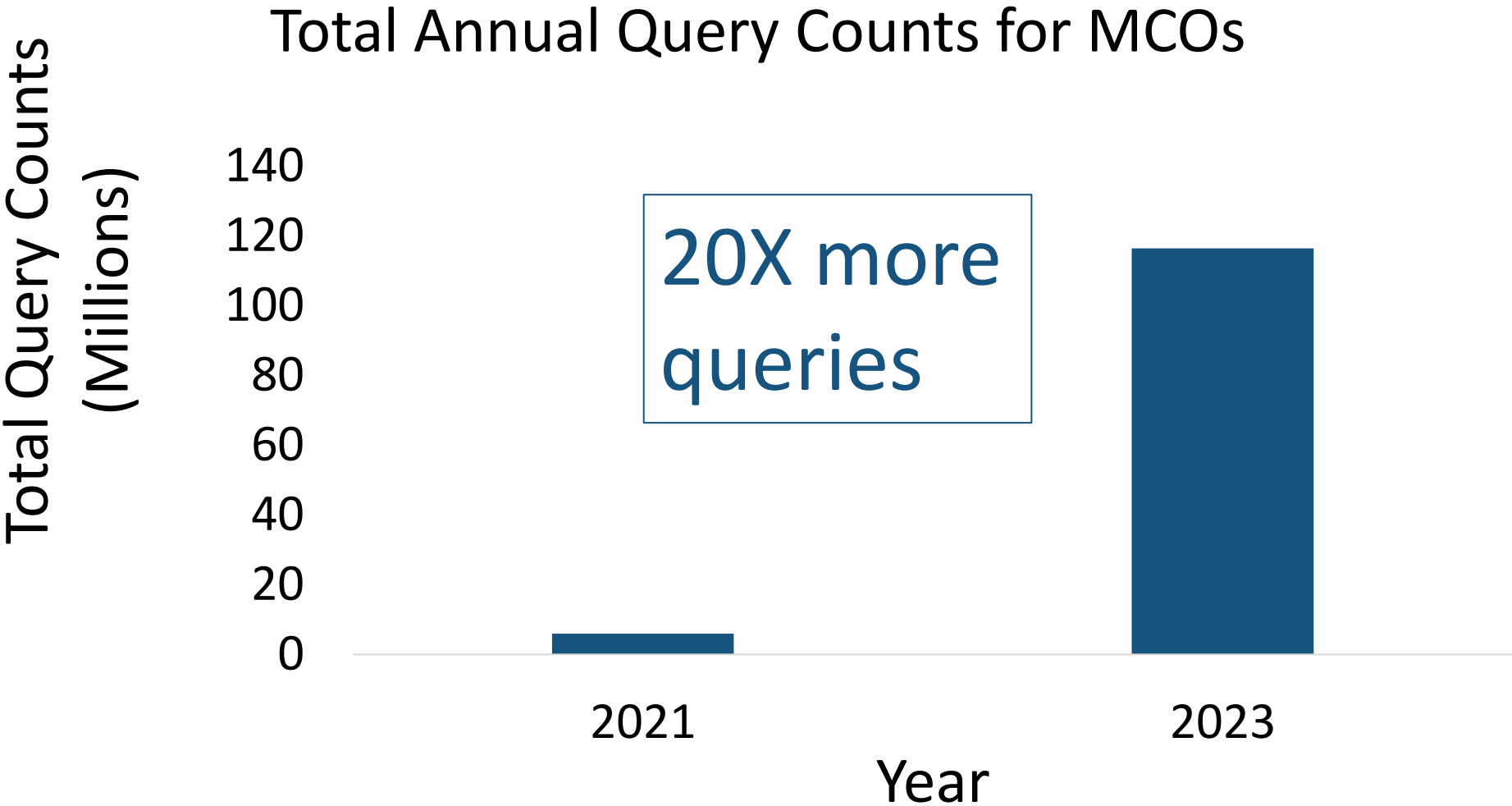# Transition of MCOs to HL7 Web Service
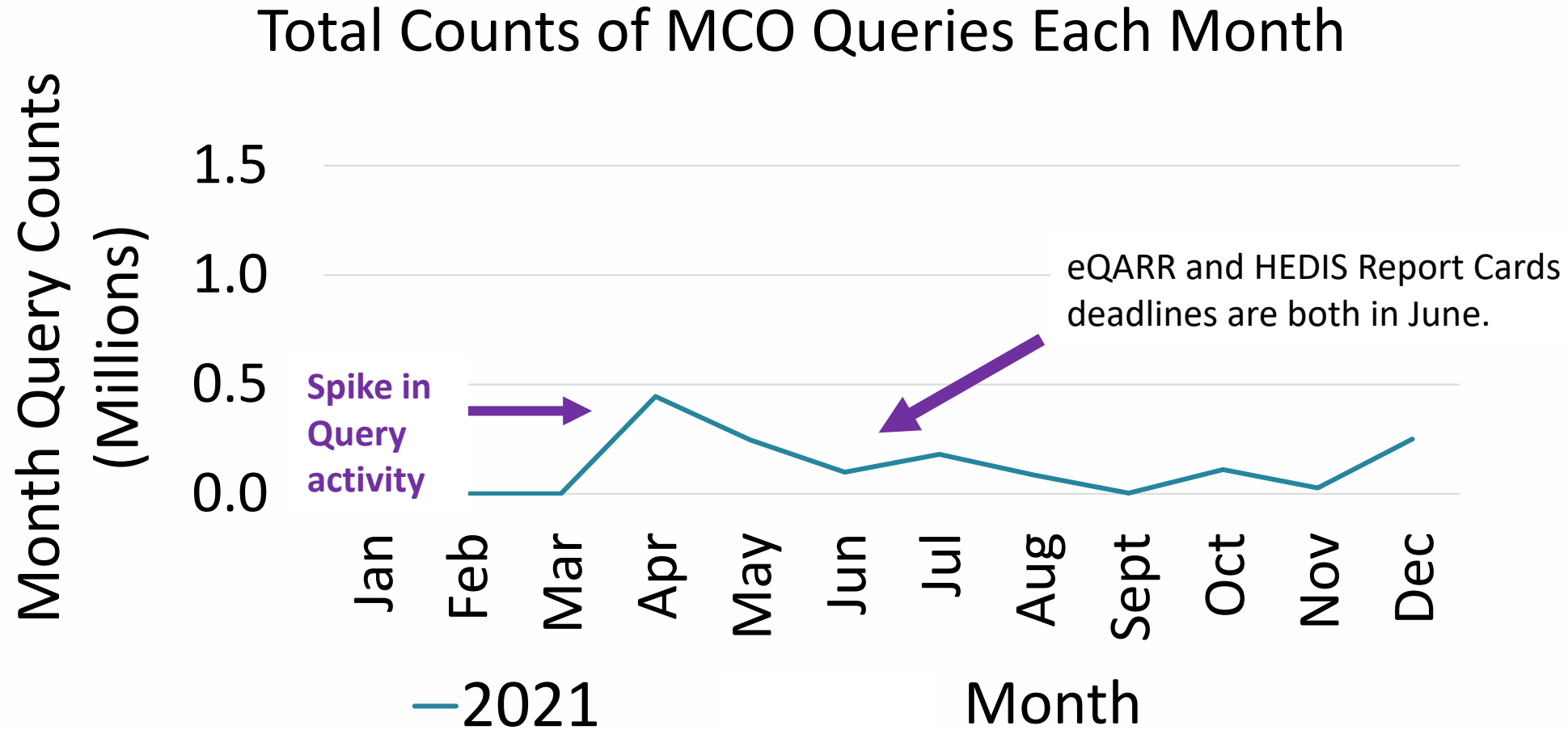


HL7 Active MCOs

# MCO Query Activity Increased 2021 vs. 2023 (n=8)

Total Annual Query Counts for MCOs



Total Query Counts (Millions)

20X more queries

140
120
100
80
60
40
20
0

2021          2023

Year

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Monthly Query Patterns 2021 vs 2023 (n=8)
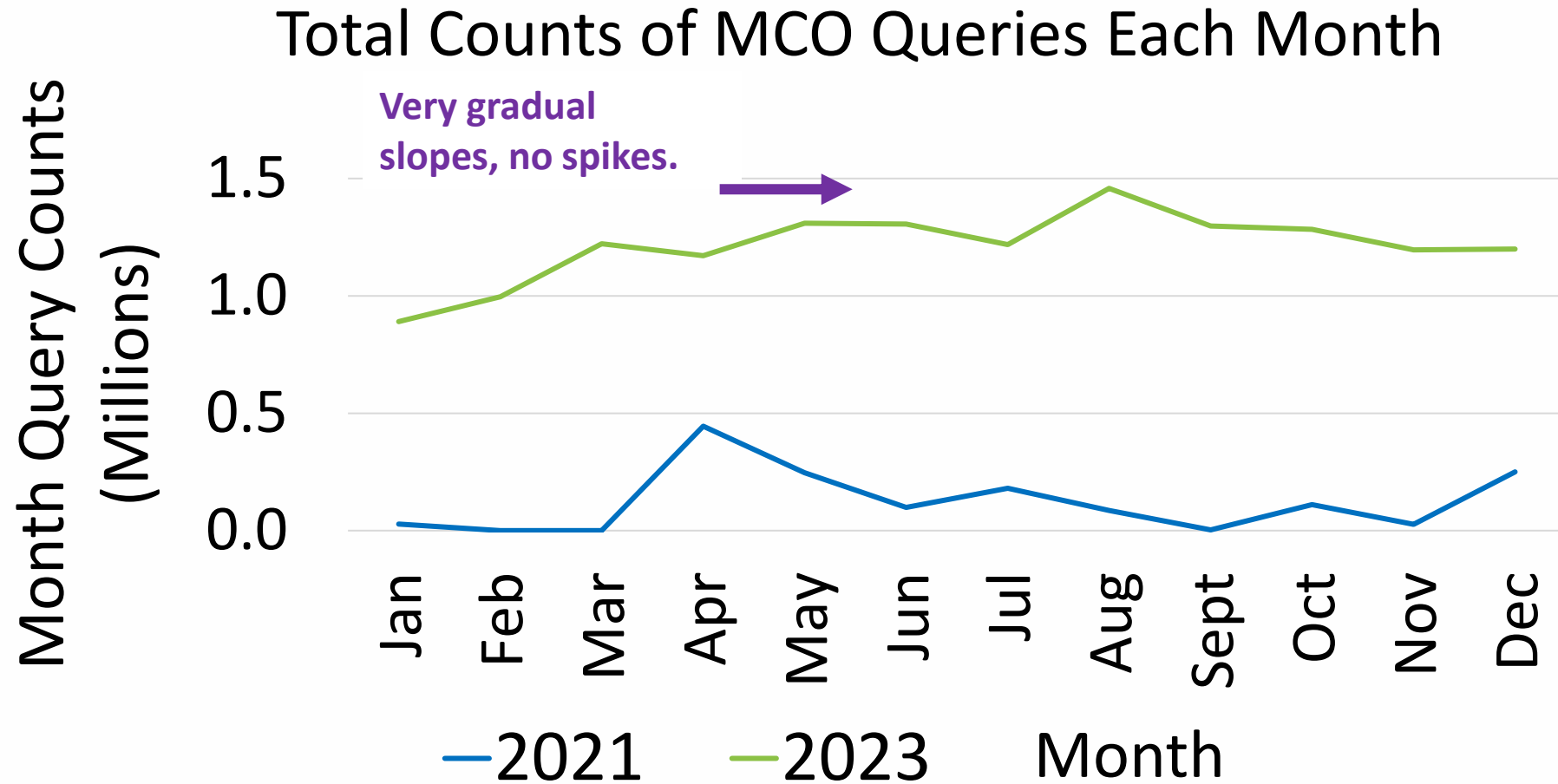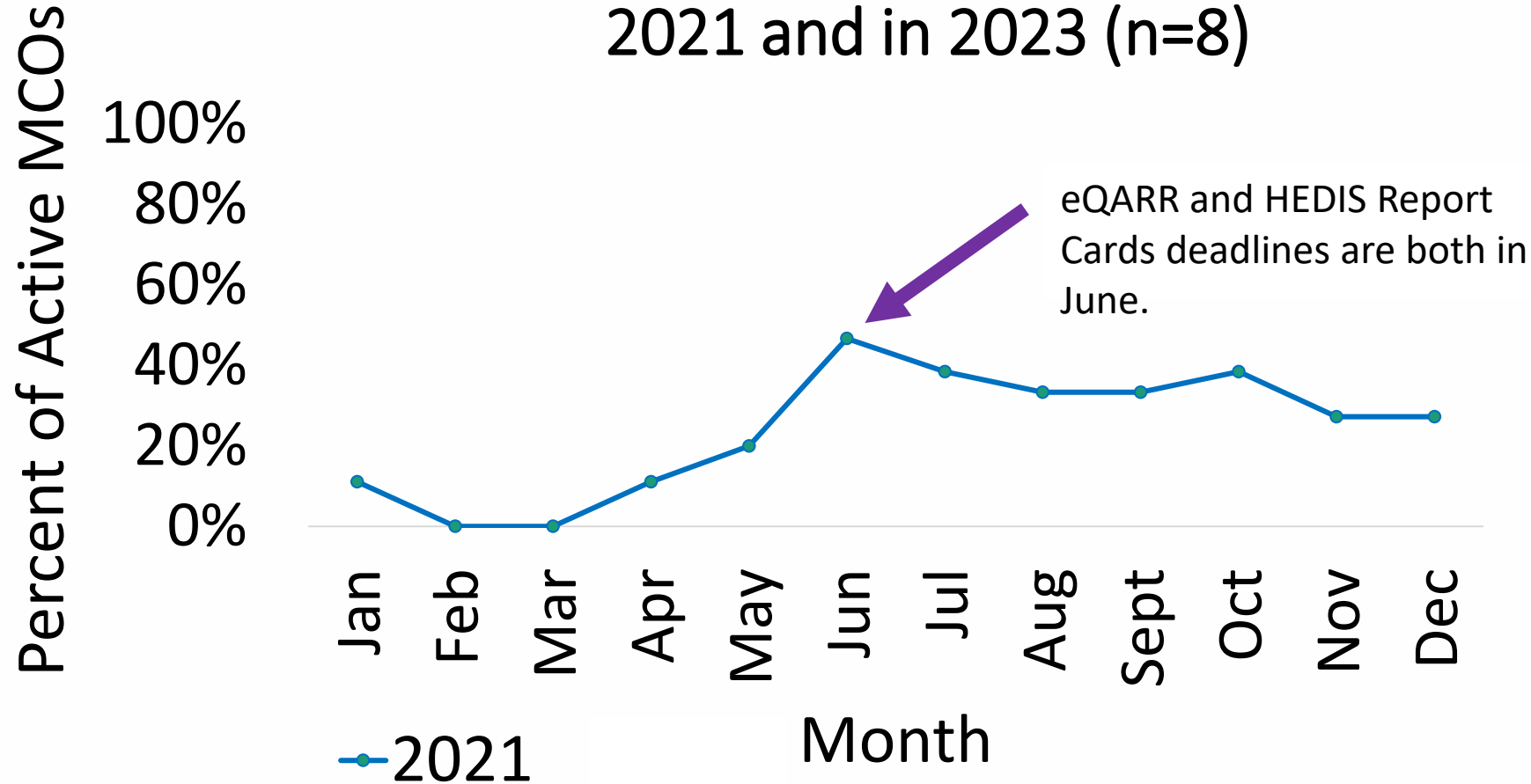
# Old DEI Methods limit the way MCOs query (n=8)

## Percent of Actively Querying MCOs Every Month in 2021 and in 2023 (n=8)



eQARR and HEDIS Report Cards deadlines are both in June.

Y-axis: Percent of Active MCOs (0%, 20%, 40%, 60%, 80%, 100%)

X-axis (Month): Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec

Legend: 2021

# New HL7 Web Service Method Expands MCO Queries (n=8)



Percent of Actively Querying MCOs Every Month in 2021 and in 2023 (n=8)
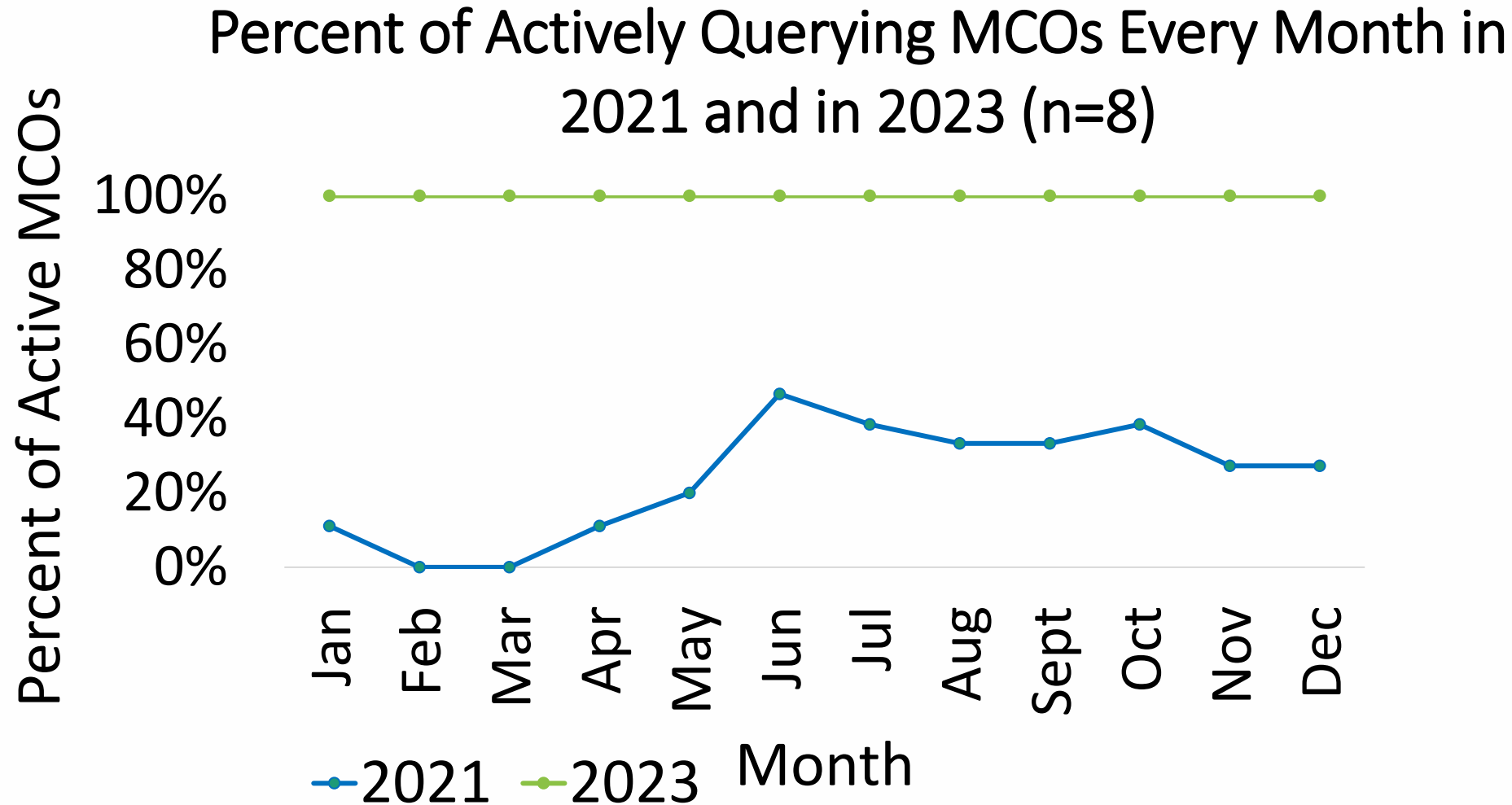
# Summary of Results

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- Average MCO query requests have been increasing since 2021
- MCOs (n=8) queried 20 times more using the HL7 Web Service method
- MCOs total and monthly querying volumes changed when they were able to query in real-time
- Using DEI method, MCO queries spiked during months leading up to and during MCO report cards deadlines
- Using the new HL7 method, MCOs were able to query more consistently leading to less spikes in query activity

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# Conclusions & Future Work

# Conclusions

- CIR fills in the immunization data gap for MCOs' immunization coverage information.
- CIR provides immunization data that improves MCOs' overall public report card scores.
- HL7 web service streamlined query processes for MCOs and automated the CIR workflow by removing the manual labor steps in DEI.
- Using HL7 Web Service, MCOs were able to query the CIR more efficiently, frequently, and at higher volumes.

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# Future Work

- **Upcoming Challenges**
  - Data storage capacities
  - Cloud storage solutions
  - Cyber data security measures
  - Ethical AI integration

# Future Work

- **Developing New tools at CIR for better HL7 Web Service**
    - CIR HL7 Activity Dashboard
    - CIR HL7 Onboarding Dashboard
    - CIR HL7 Interop Dashboard

# Acknowledgements & Questions

- Acknowledgements to entire CIR team
  - And special thanks to Alexandra Ternier, Bancroft Richards, and Youseline Cherfilus.
- Thank you to the AIRA National 2025 Conference Staff!

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# Supplementary Slides

# MCO Reports Transparency

- The New York State eQARR report is available for free to the public with reports dating back to 2008.

- Only current annual HEDIS score report is available for free, but past reports can cost as much as $3000.

# MCO Reporting Deadlines for 2025 eQARR Report

## What to Send for QARR Submission

| QARR Submission Required File | Files must be submitted electronically by 9:00 p.m. ET *on the date indicated* |
|---|---|
| | MY2025 Data Due Date |
| IDSS file for all payers – IDSS files must be locked by auditor | June 12, 2026 |
| CAHPS de-identified member-specific file for CPPO, CEPO, CHMO, EP | June 12, 2026 |
| Enrollee Survey de-identified member-specific file for QEPO, QPPO, QHMO, QPOS | June 12, 2026 |
| Patient-Level-Detail file for all products (includes NYS-specific measures) | June 12, 2026 |
| Optional enhancement files for MA, HIVSNP, and HARP | June 12, 2026 |
| Live Birth files for all payers | August 3, 2026 |

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# MCO Reporting 2024 Deadlines for HEDIS Scores

- June
- Commercial and Medicaid CAHPS survey results are available for download in IDSS.
- IDSS Plan-lock must be applied for all commercial, Exchange, Medicaid, and Medicare audited submissions on Friday, May 30 by 9:00 pm ET to ensure auditors have enough time to validate health plan results.
- Health Plans submit Finalized commercial, Exchange, Medicaid, and Medicare HEDIS (non-survey data) results and signed Attestation via the IDSS on Friday, June 13 by 9:00 pm ET.
- CMS requires a Patient-Level-Detail (PLD) file validation for Medicare submissions. Organizations must submit the patientlevel-detail file to CMS' vendor by Friday, June 13 by 9:00 pm ET.
- Last day for IDSS Resubmission requests for data and Attestation is Friday, June 27.

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