

PRELIMINARY FINDINGS FROM THE DMI ASSESSMENT

State, local, and territorial public health capabilities
and needs assessment

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Daniel Weber
DMI Implementation Unit
Center for Surveillance, Epidemiology, and Laboratory Services



Co-authors: James Kucik, Rachel Kossover-Smith, Michele Hoover, Teresa Jue, Megan Light

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***Disclaimer:** The findings and conclusions in this presentation are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry.*



DMI Priorities



Build the right foundation

Decreased burden on reporters

Free up staff time to focus on prevention and control

Faster data for detecting emerging threats at all levels of public health

Accelerate data into action

Better data integration, visualization

Robust forecasting / modeling

Response-ready platform

Develop a state-of-the-art workforce

Identify, recruit, and retain experts to generate meaningful public health insights

Support + extend partnerships

Better / more timely access to data within and across ecosystem

Common tools to support STLT partners

Manage change + governance

Adaptive, agile approaches

Collaboration

Improved acquisition



How is CDC supporting jurisdictions' data modernization efforts?



Providing direct funding to build foundational DMI capacity and implement core data and surveillance modernization activities.



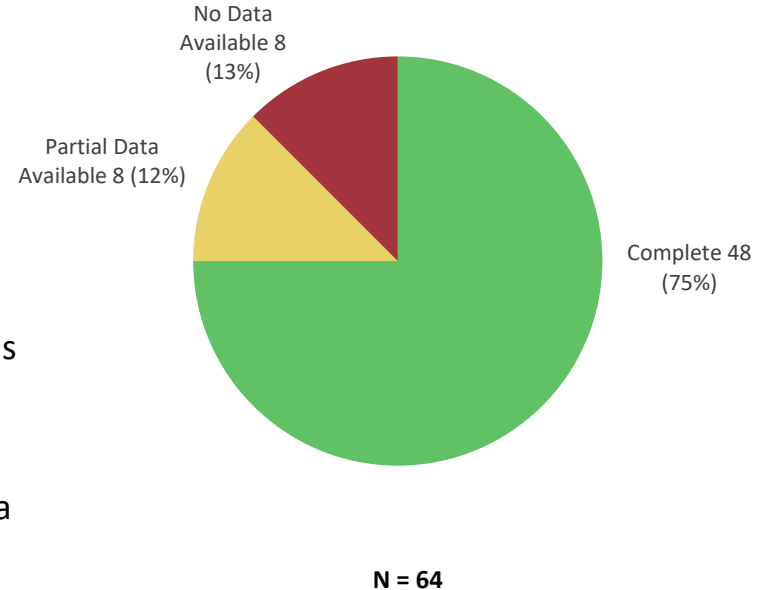
Offering technical assistance that provides experts and resources to support STLT data modernization activities.



Collaborating with national partners to facilitate learning networks and opportunities for knowledge and skill development.

Overview

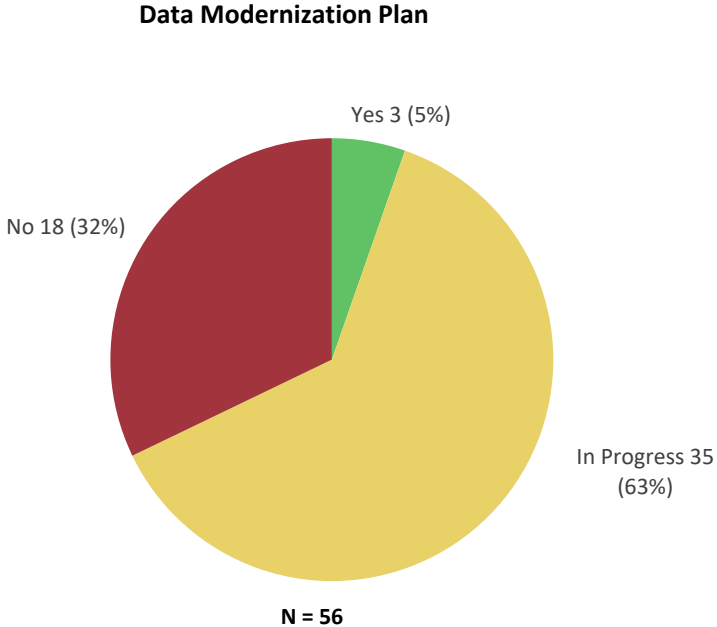
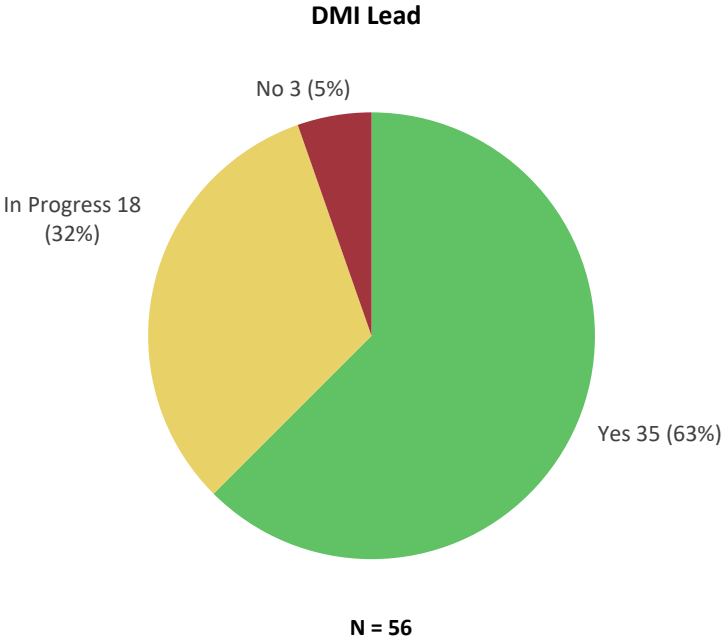
- Represents the status of 64 funded recipients as of **May 2, 2022**.
- Assessments were completed on a rolling basis between November 2021 and May 2022.
- Three categories summarizing the quantitative responses:
 - **General Current State:** current state of activities and systems related to data modernization efforts (including data exchange processes and systems)
 - **Workforce:** workforce capacity and capability related to data modernization efforts
 - **Challenges & Opportunities:** qualitative data that highlights key challenges and opportunities identified throughout jurisdictional Assessment responses



SECTION 1: OVERVIEW OF DMI EFFORTS

Identified DMI Leads & Developed DMI Plans

The majority of public health respondents have identified a DMI lead though few had completed a DM plan.

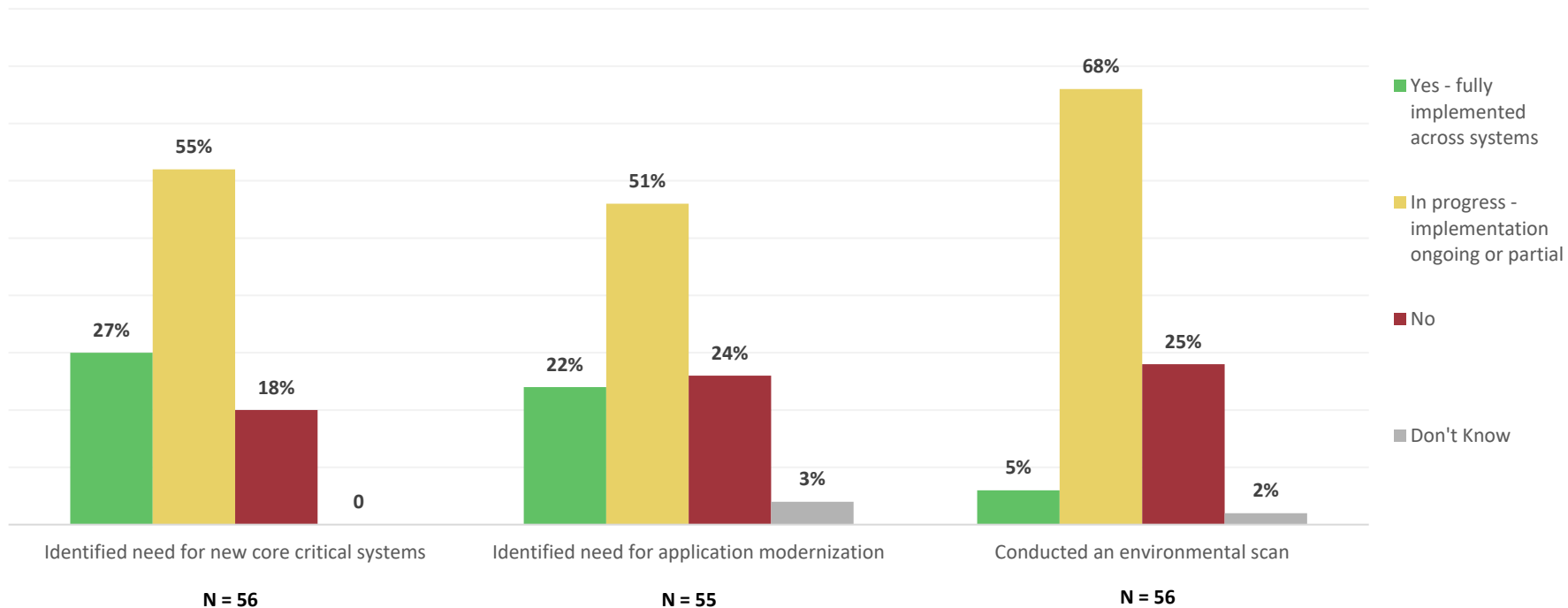


Visual excludes 8 "No Response" responses

SECTION 2: ASSESSMENT OF HEALTH INFORMATION SYSTEMS

Current State: Assessment of Health Information Systems

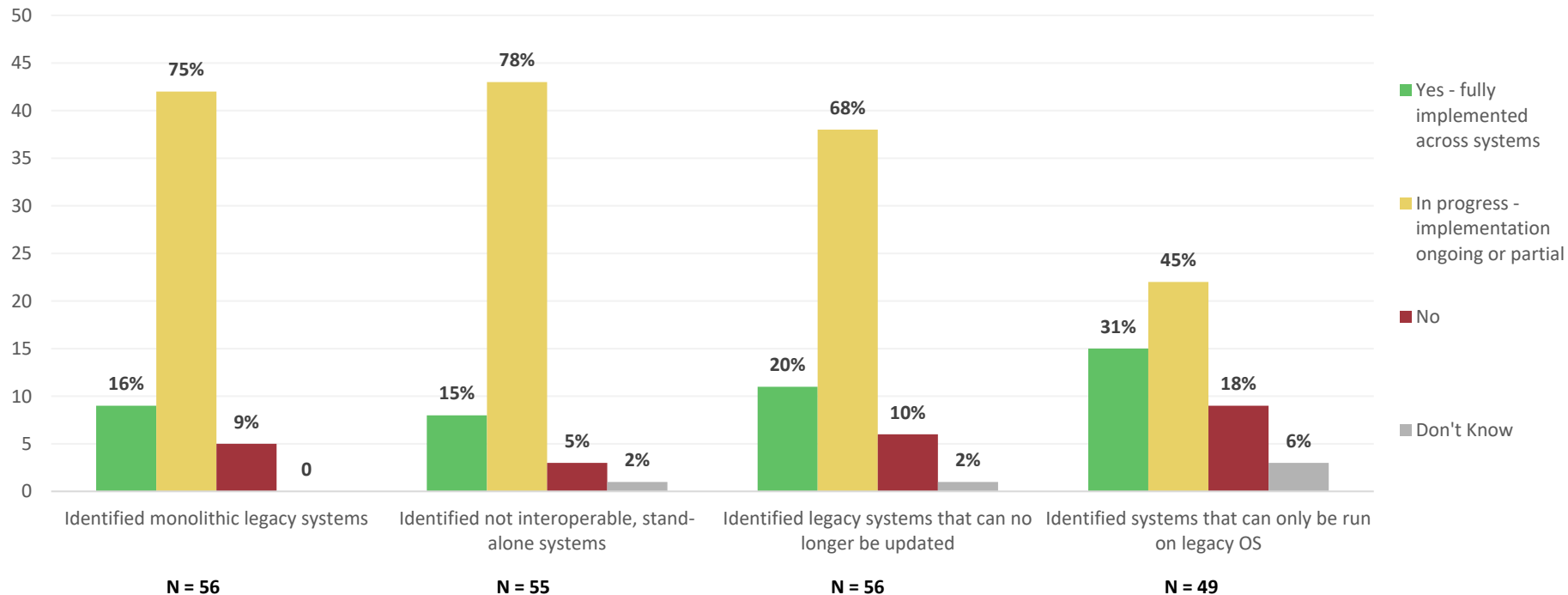
Over half of all respondents are in the process of **identifying systems or applications for modernization**.



Visual illustrates multiple Assessment questions and excludes varying "N/A" and "No Response" responses ¹⁰

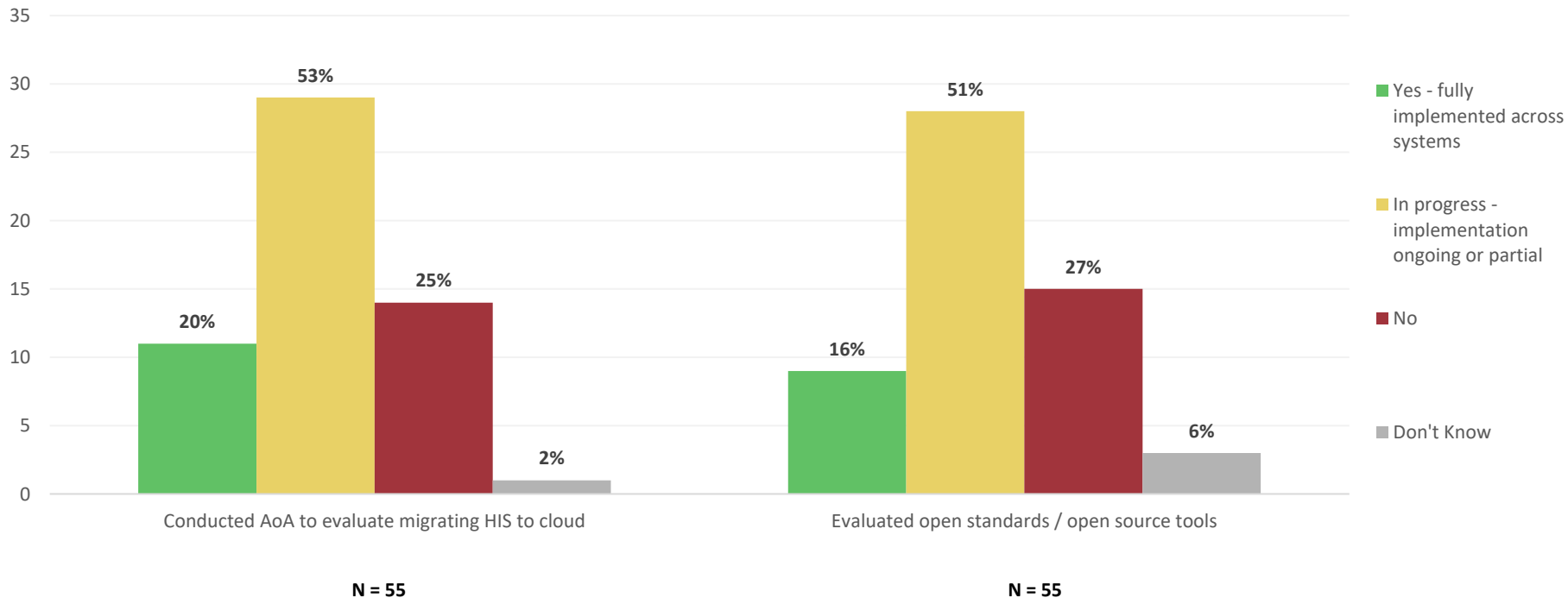
Current State: Assessment of Health Information Systems

A majority of respondents are in the process of identifying **legacy and siloed systems**.



Current State: Assessment of Health Information Systems

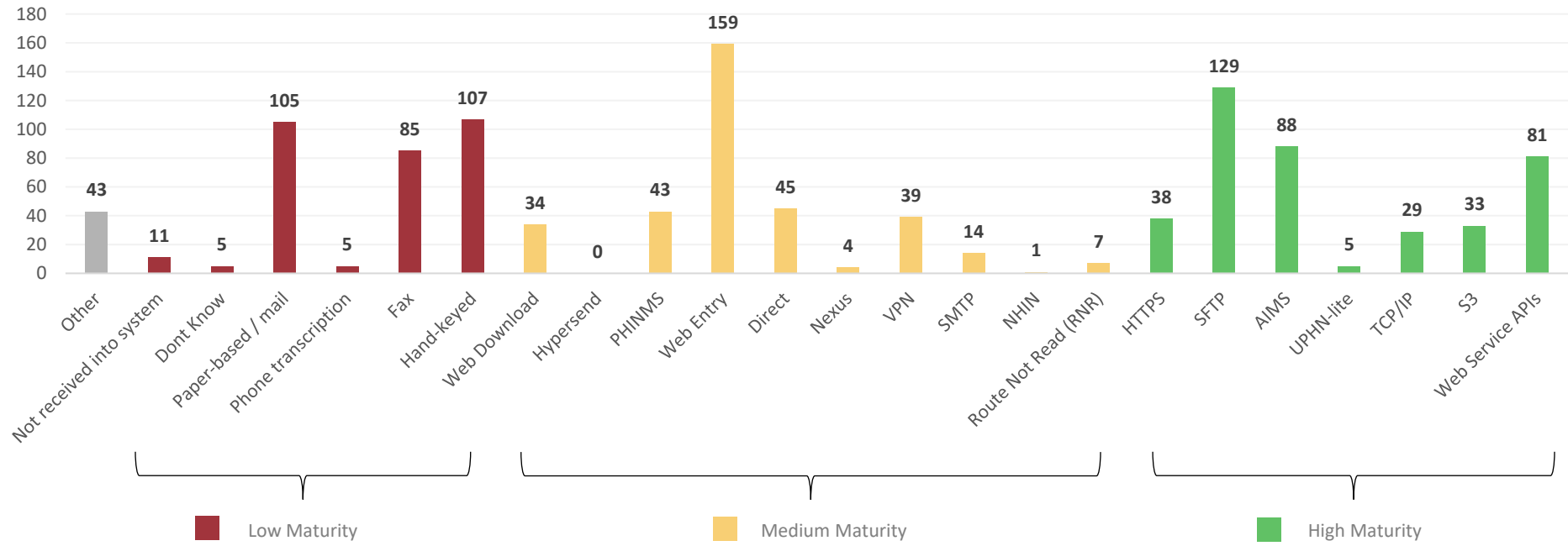
A quarter of respondents have not yet evaluated the use case for **cloud** or **open-source applications**.



SECTION 3: DATA EXCHANGE & SYSTEMS INTEROPERABILITY

Leading Data Exchange Mechanisms

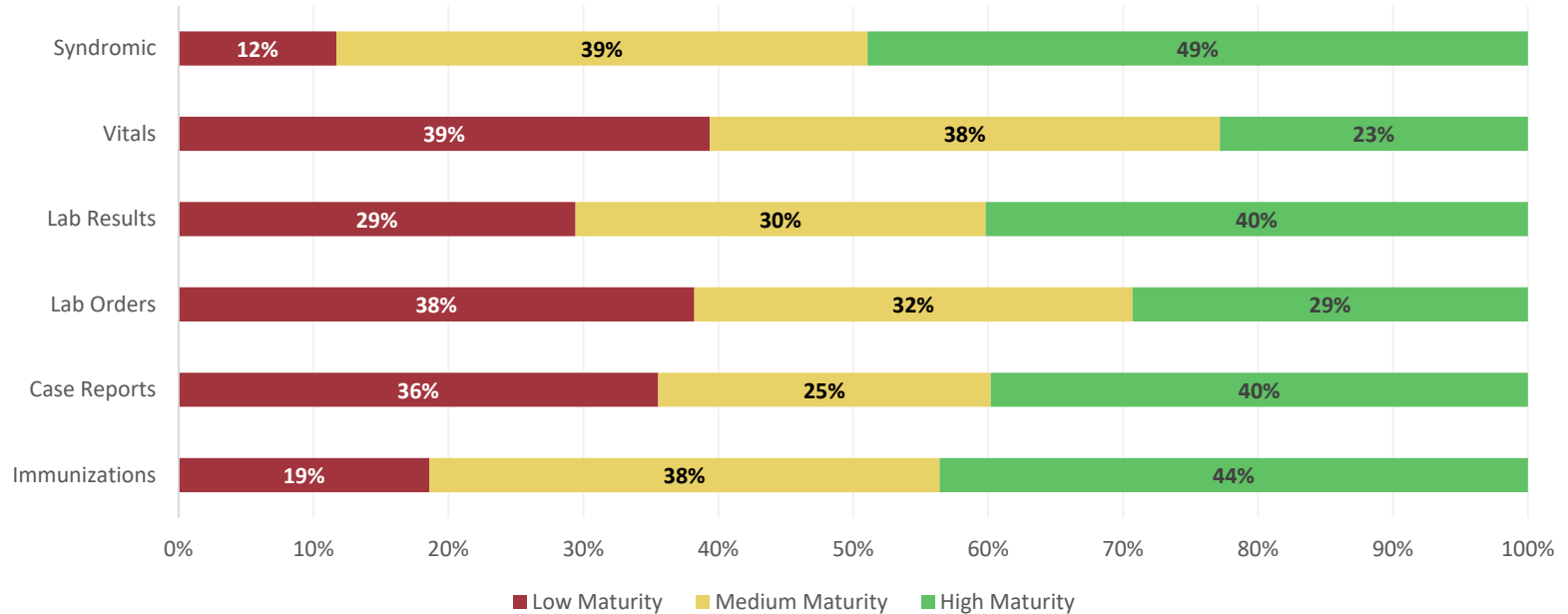
Although some jurisdictions' data exchange mechanisms are considered highly mature, many remain in the low/medium maturity levels



N = 384

Maturity of Data Exchange Receipt by Core Data System

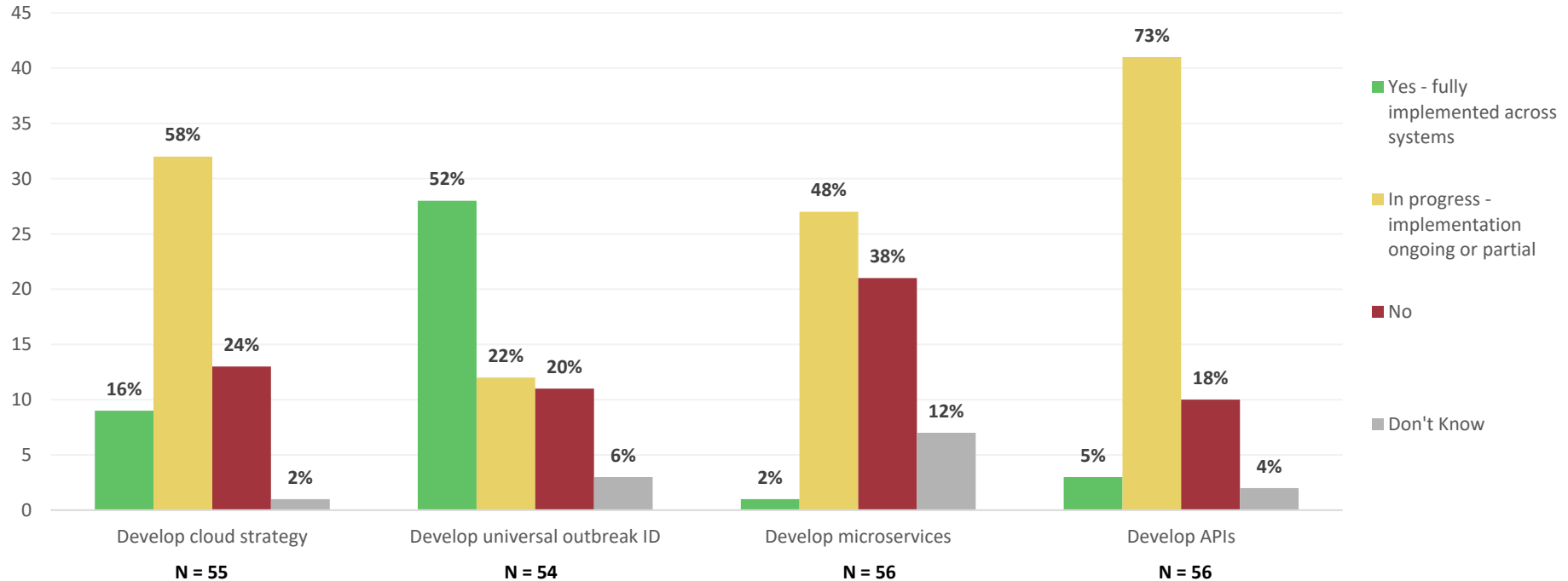
Data exchange mechanisms for **syndromic surveillance** are leading in maturity, followed by data exchange mechanisms for **immunizations**.



N = 384

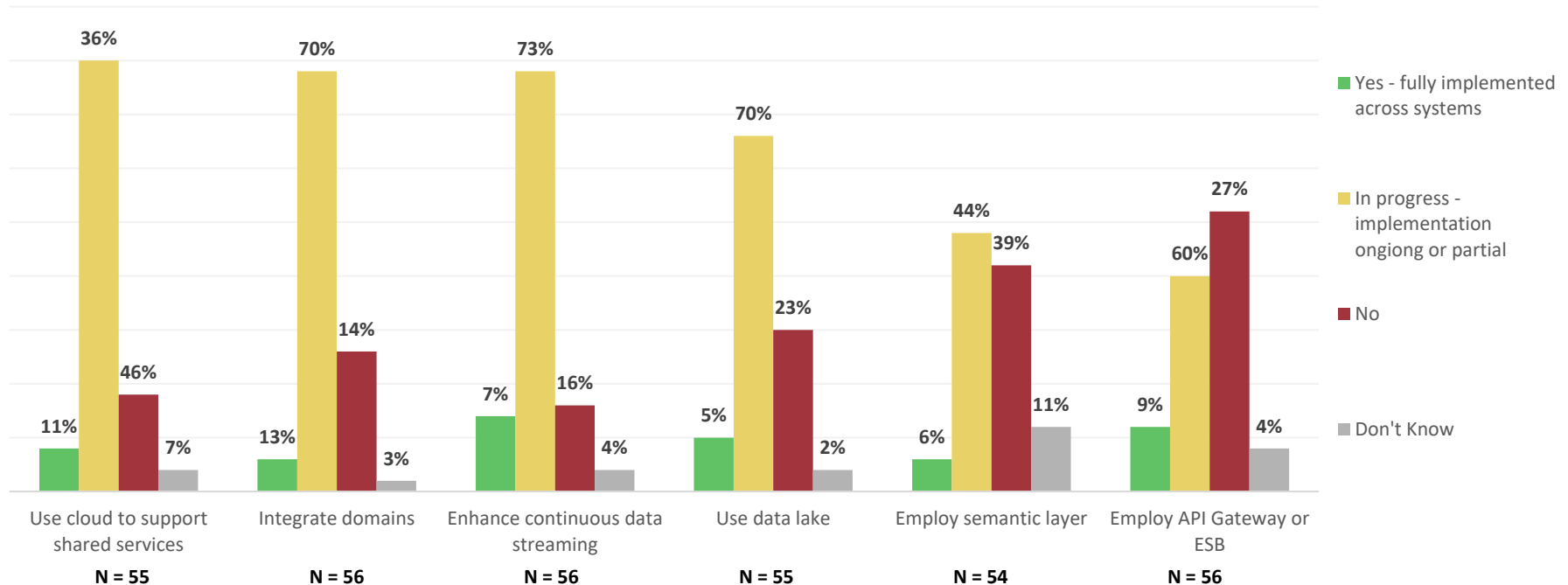
Current State: Data Exchange & Systems Interoperability

Most respondents have completed or are in the process of completing activities to enhance **data exchange and system interoperability** across the technical spectrum.



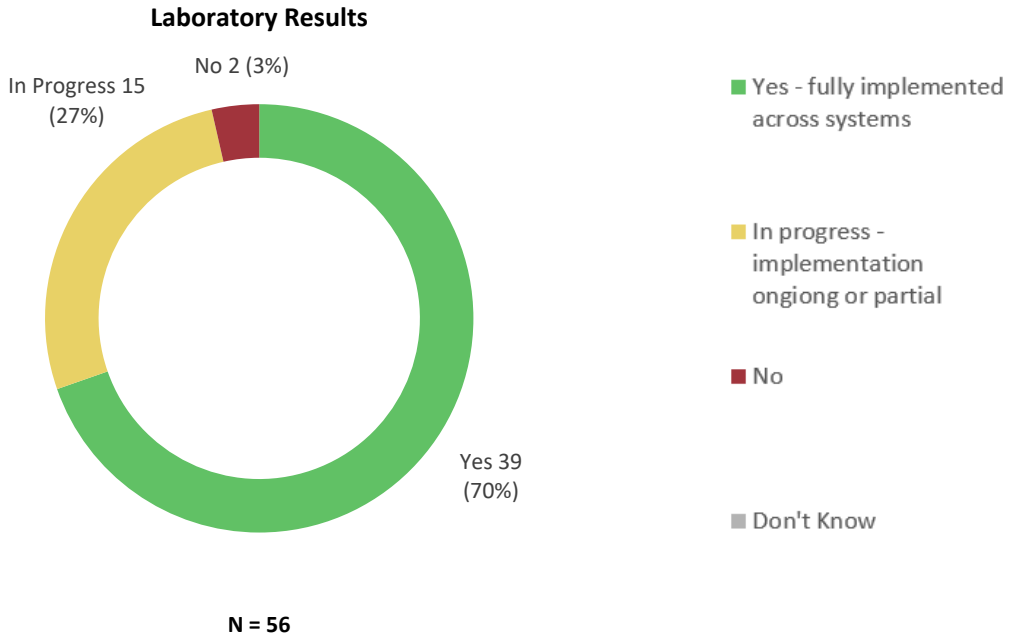
Current State: Data Exchange & Systems Interoperability

Most respondents have implemented or are in the process of implementing activities to **enhance data exchange and data quality**.



Electronic Laboratory Reporting

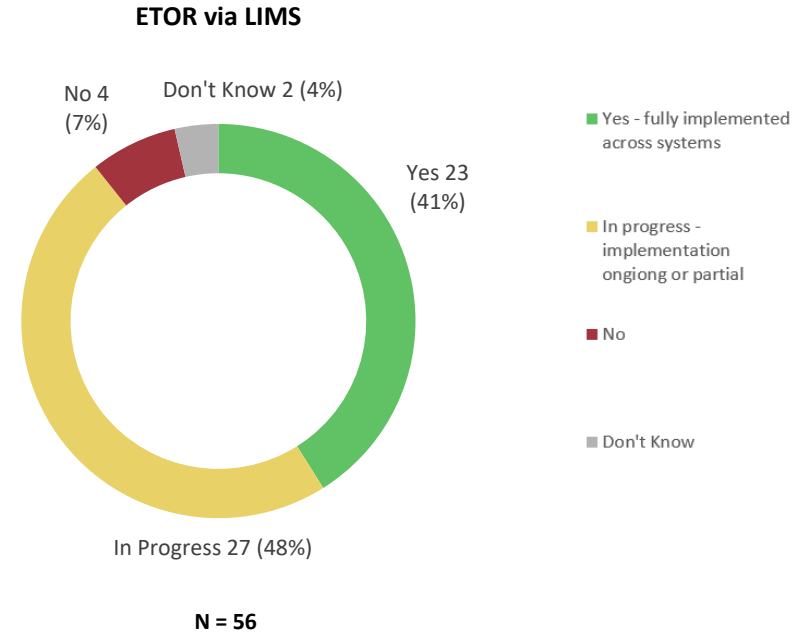
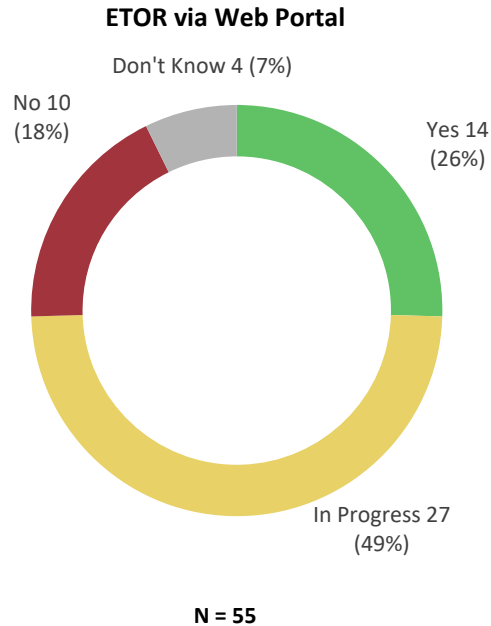
Respondents are making great strides toward receiving electronic lab results



Visual illustrates multiple Assessment questions and excludes varying "N/A" and "No Response" responses

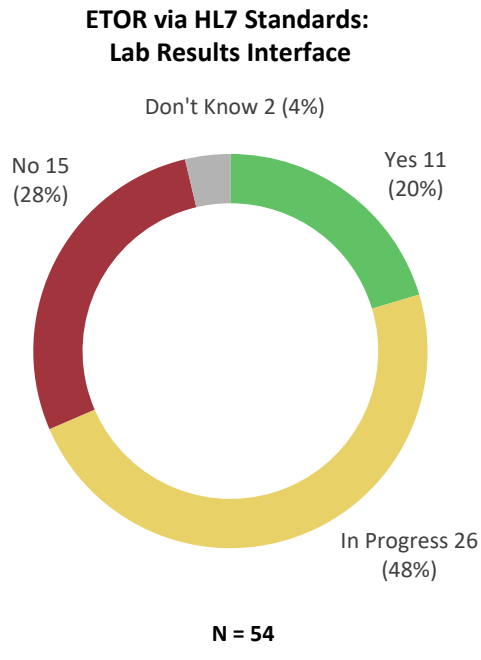
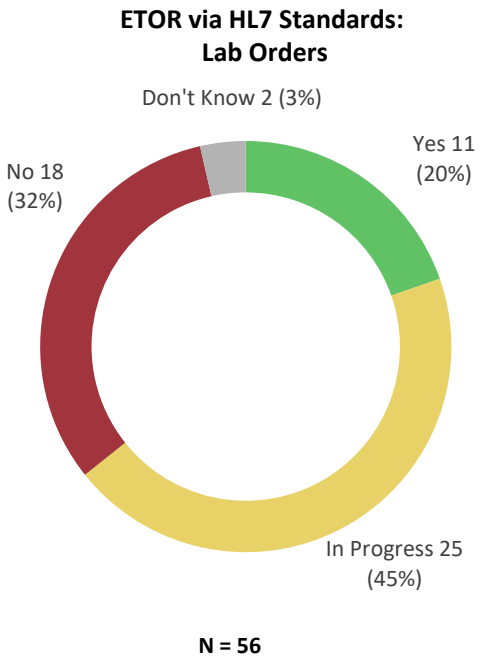
Implementation of Electronic Test Orders and Results (ETOR)

A majority of respondents are moving away from manual data entry and towards **electronic data transmission**



Implementation of Data Exchange Standards

A majority of respondents have implemented or are in the process of **implementing HL7 Standards** for ETOR

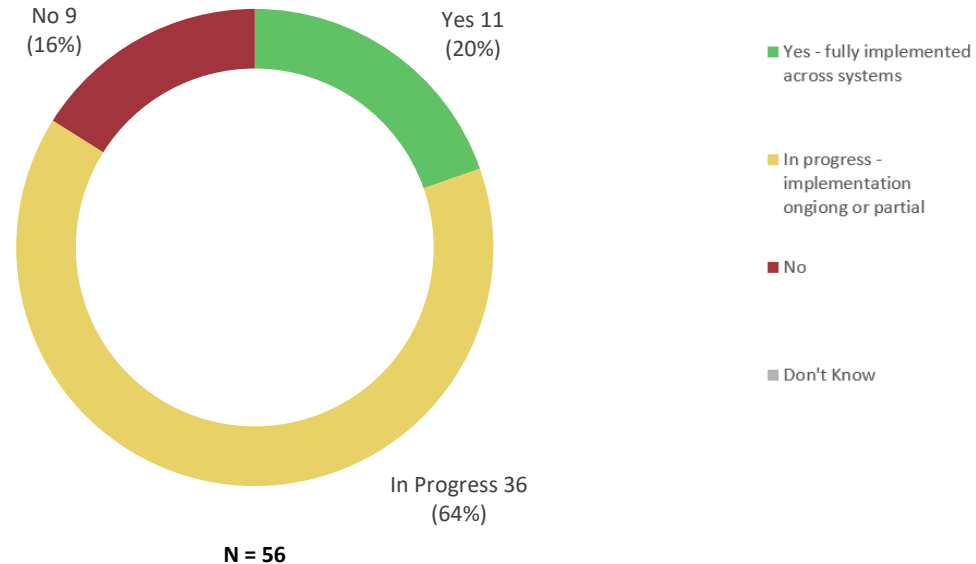


- Yes - fully implemented across systems
- In progress - implementation ongoing or partial
- No
- Don't Know

Receipt & Consumption of Electronic Case Reports (eCR) from AIMS

Over half of all respondents are in the process of or have fully implemented the ability to **receive and consume eICR data from AIMS** for disease surveillance.

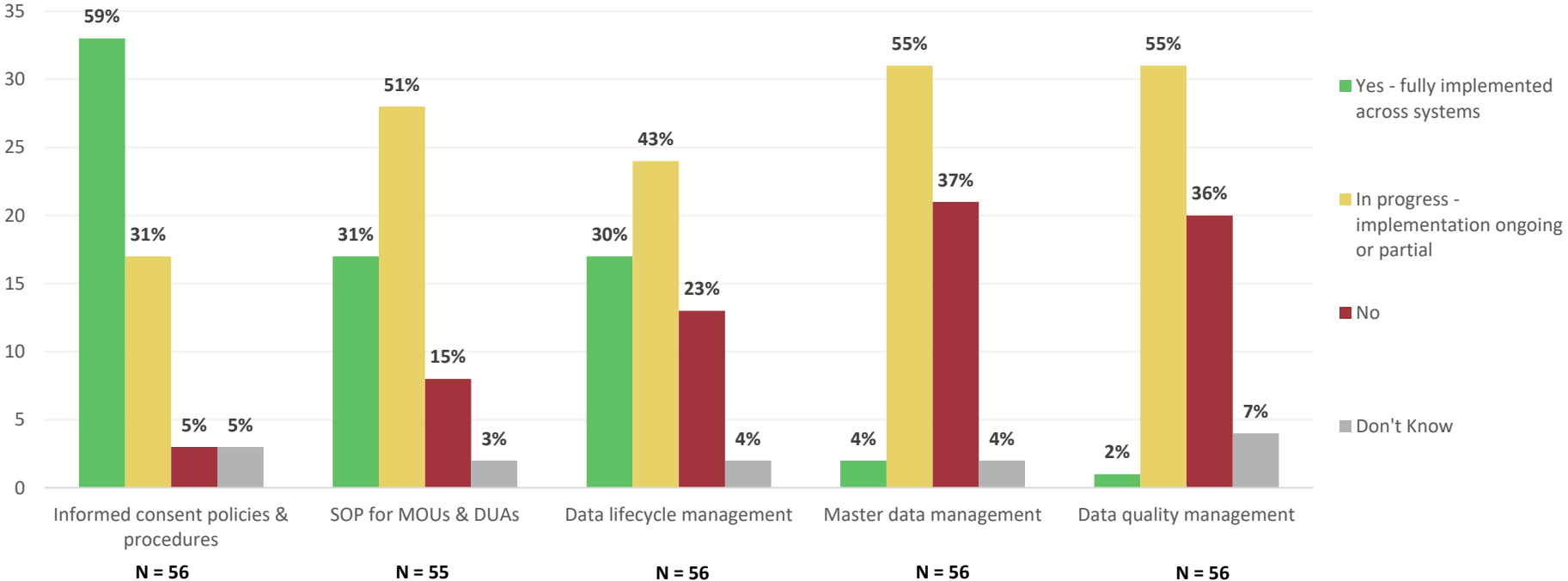
HL7 CDA R2 Implementation Guide



SECTION 4: DATA & IT GOVERNANCE

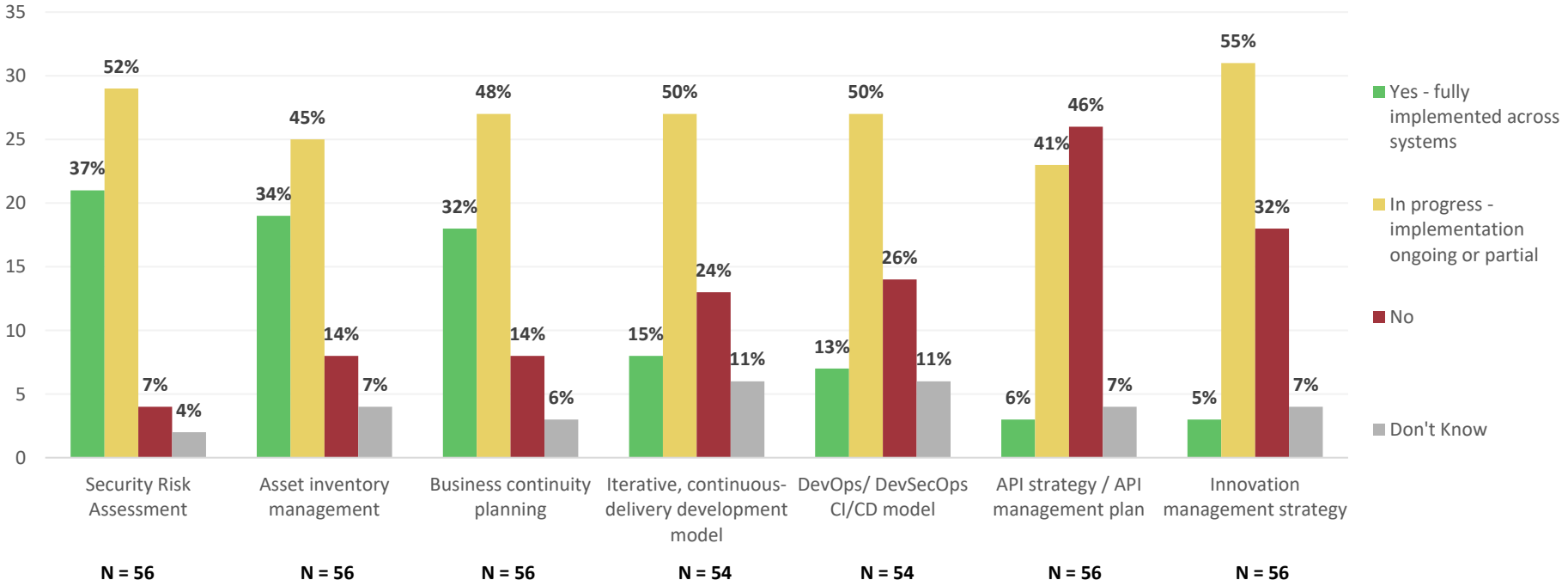
Current State: Data Governance

Most respondents have fully implemented or are in the process of implementing **data governance** strategies that impact how data is utilized within a jurisdiction and between collaborator groups.



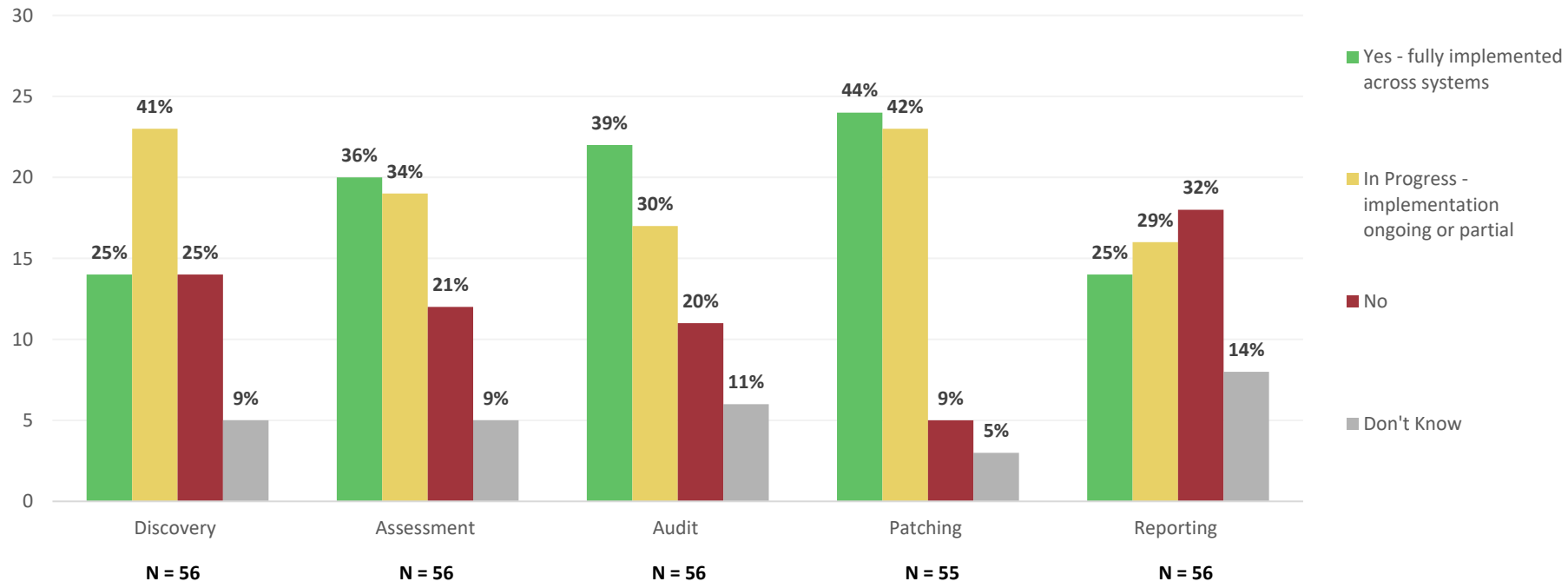
Current State: IT Governance

Most respondents are in the process of implementing **IT governance policies**, however, close to half of respondents have not implemented **API strategies** or **API management plans**.



Engagement in Continuous Monitoring Activities

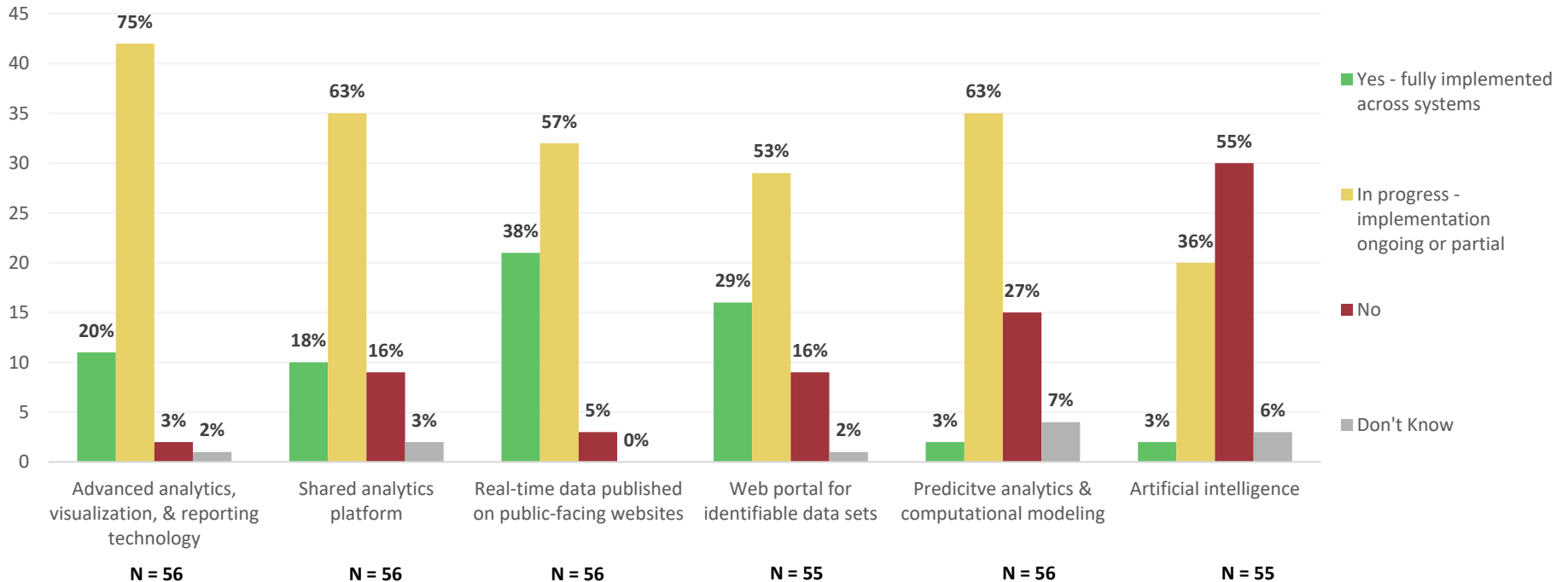
Implementation of **continuous monitoring activities** is quite variable across the jurisdictions.



SECTION 5: DATA ANALYTICS, VISUALIZATION, & REPORTING

Current State: Data Analytics, Visualization, & Reporting

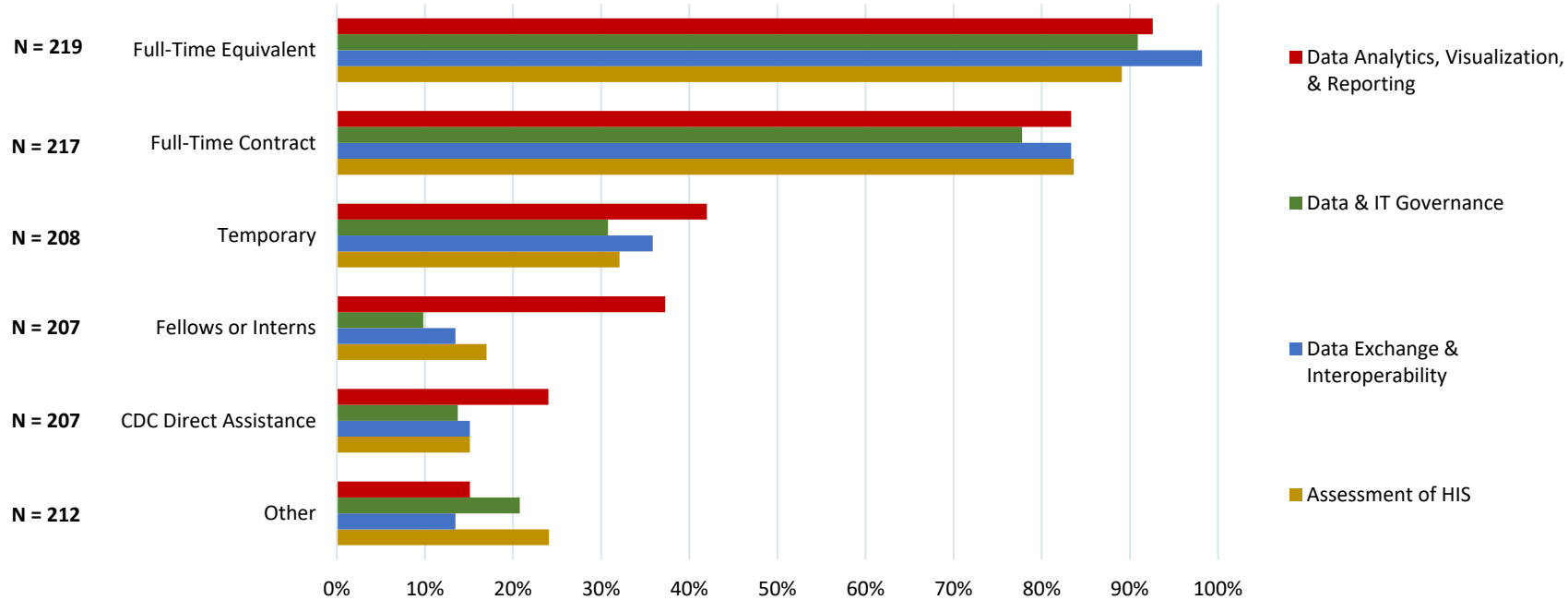
The majority of respondents are in the process of implementing **data analytics, visualization and reporting activities**; however, most respondents have not implemented the use of **artificial intelligence**.



DMI WORKFORCE

DMI Workforce: Staff Types

Respondents are utilizing a variety of staff types for their overall DMI efforts. However, most respondents believe the **numbers and proficiency levels of staff are insufficient** to meet the agency’s needs.



DMI Workforce: Proficiency Levels

Jurisdictions reporting having SUFFICIENT numbers and proficiency levels of staff by functional area:



- 15%** Data & IT Governance
- 14%** Data Analytics, Visualization, & Reporting
- 11%** Assessment of Health Information Systems
- 5%** Data Exchange & Systems Interoperability

CHALLENGES & OPPORTUNITIES

Key Challenges

We are facing a **challenging market** and finding it difficult to attract skilled workers. **Funding limitations** have impacted the ability to match national market salary requirements for professional staff.

Our DMI efforts require an in-depth knowledge of **state-specific systems** and processes; our limited staff with that knowledge are overburdened and fully extended with the **COVID response**.

Staff losses prior to and throughout the pandemic have created gaps in both staffing capacity and capabilities.

Prior **DMI efforts have been significantly siloed**. Historically, there has not been a balanced representation of staff that includes the business, program area, and IT point of view.

Key Opportunities

With additional funding, enough time, and appropriate staffing, we look forward to moving away from manual and **towards electronic data processing**.

We are focused on **exploring FHIR server** options for data submitted outside of the health department's systems.

Working internally and with vendors to **develop and maintain ETOR capacity**. Working with key submitters to assist them with adopting ETOR for submitting specimens and receiving results.

Addressing opportunities to **improve data sent from providers** to our jurisdiction will also create improvements in the data quality sent to NSSP.

NEXT STEPS

“We somewhat had a roadmap but after looking at this [assessment] it really **shed light on how we need to enhance our roadmap**. You know after this, I thought to myself we need to build out a very detailed extensive roadmap. And we need to cover all of these things. And a lot of them were things **I would've never thought about before**. So in that regard it was very helpful.”

- State Health Department

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

