Data Quality

AIRA Discovery Session – June 23, 2014

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION
Immunization Information Systems for a New Era

Topics for Today

- Why is data quality important
- Ways data enter systems
- Ensuring quality data
- Ongoing data quality

Why is data quality important?

- Increased provider trust
- Increased use of the data
- Improvements in clinical practices
- Improved the health of the patient
- Improved public health

Consequences of poor Data Quality:

- Incomplete picture of a patient's immunizations, and possible erroneous recommendations
- Incomplete and inaccurate data on patients
- Loss of provider participation
- Public policy decisions skewed by inaccurate summary data

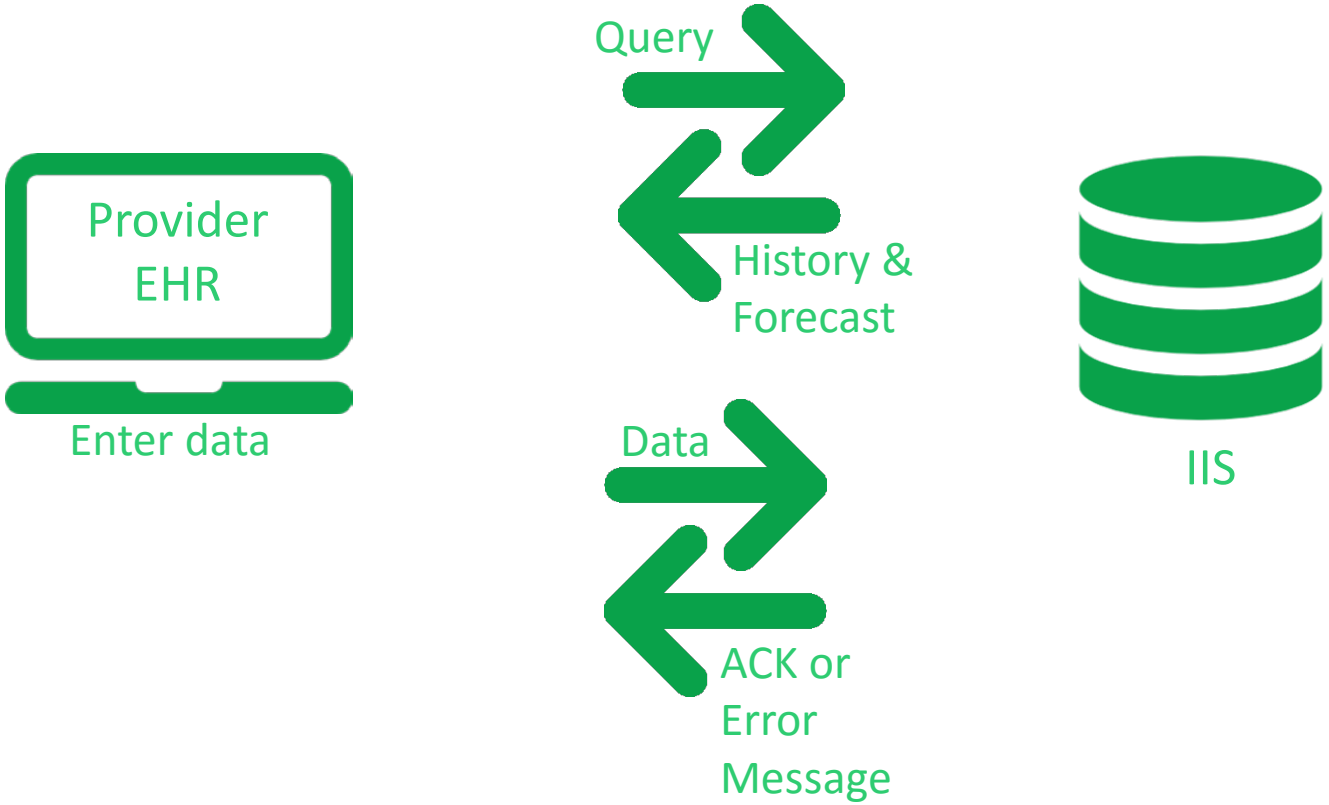
Common types of data quality problems include:

- Accuracy
- Completeness
- Timeliness

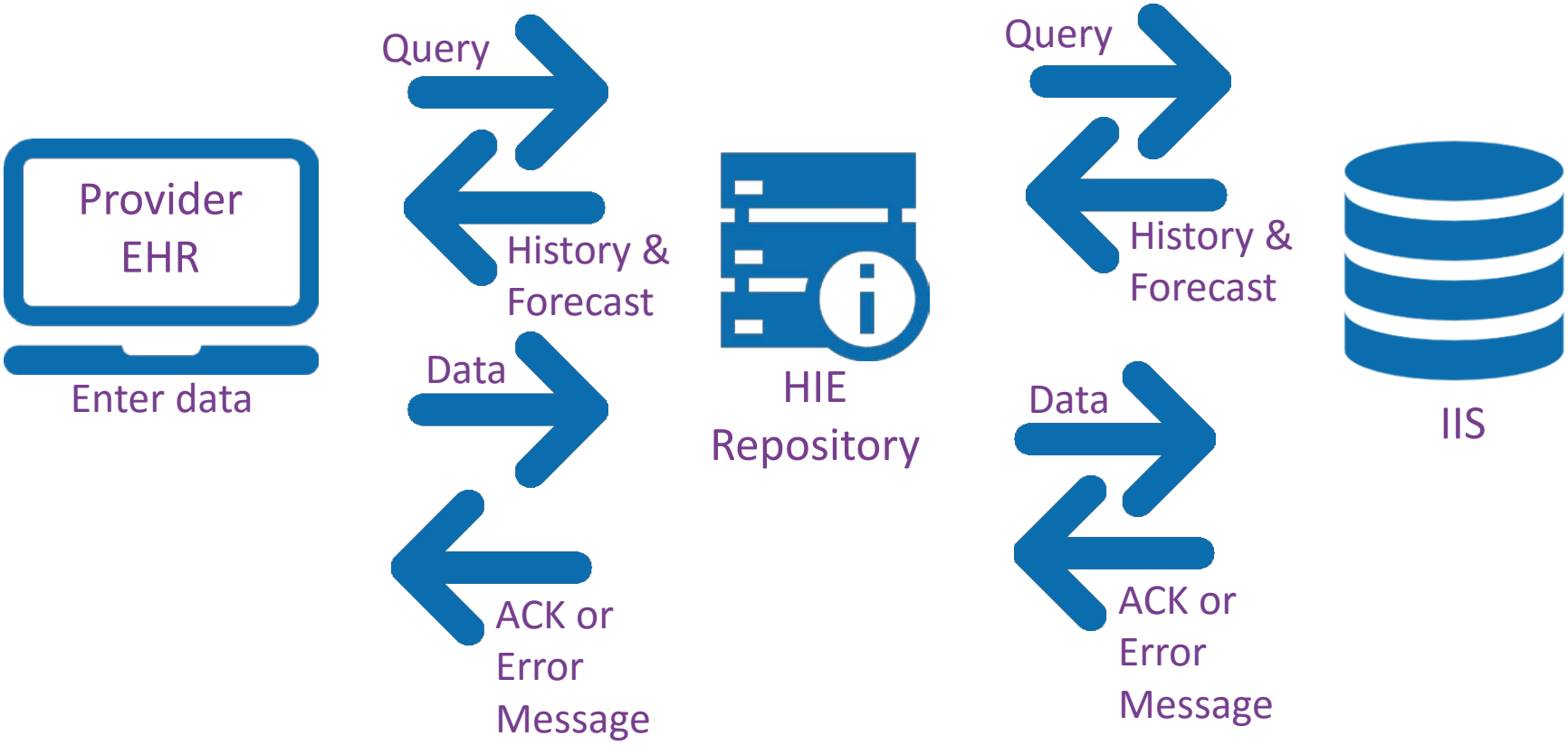
Ways Data Enters The System

- User Interface – direct IIS entry
- EHR to IIS
- EHR to HIE to IIS
- Accountable Care Organizations (ACOs) to IIS

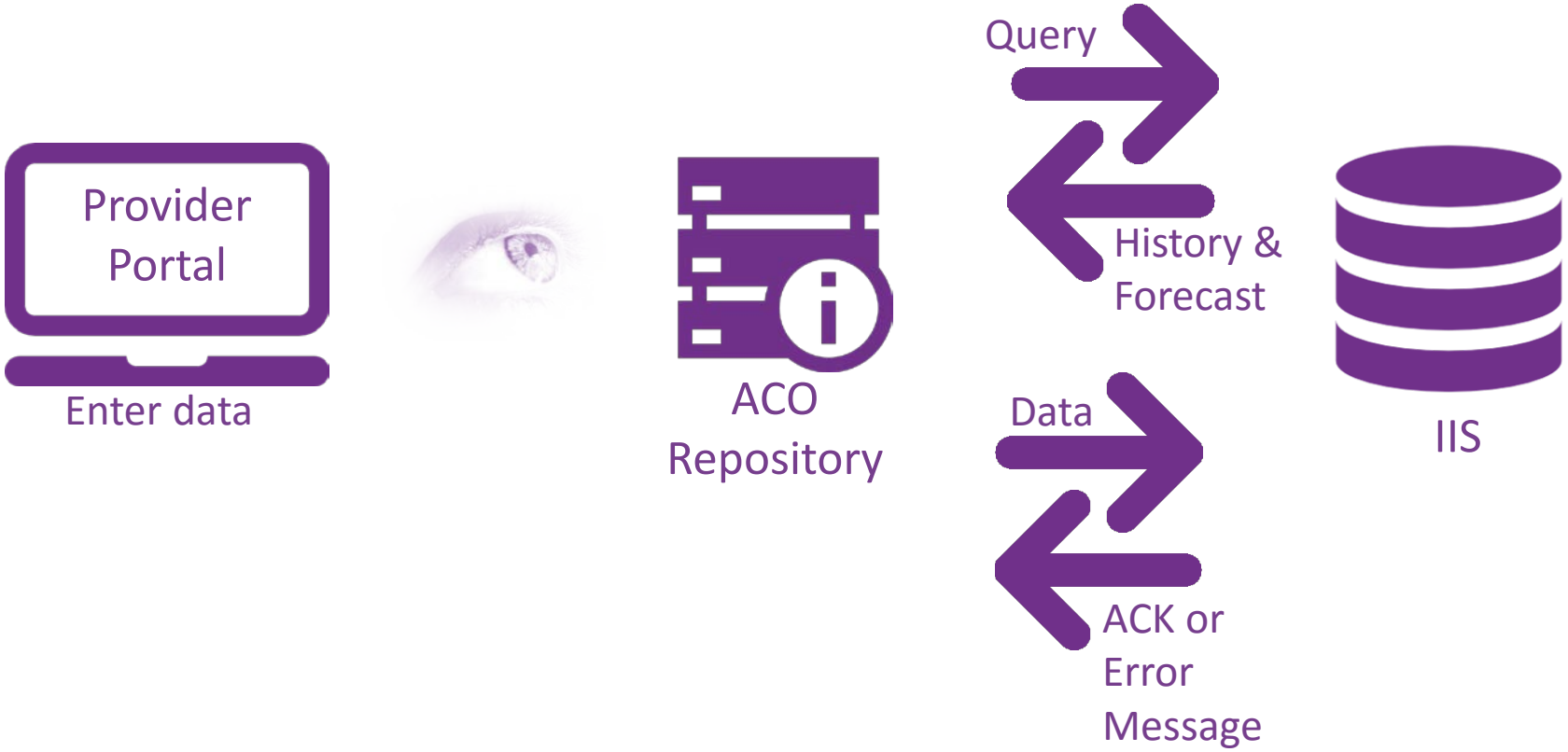
Data → EHR → IIS


Provider
EHR
Enter data
Query
History &
Forecast
Data
ACK or
Error
Message
IIS

Data → EHR → HIE → IIS

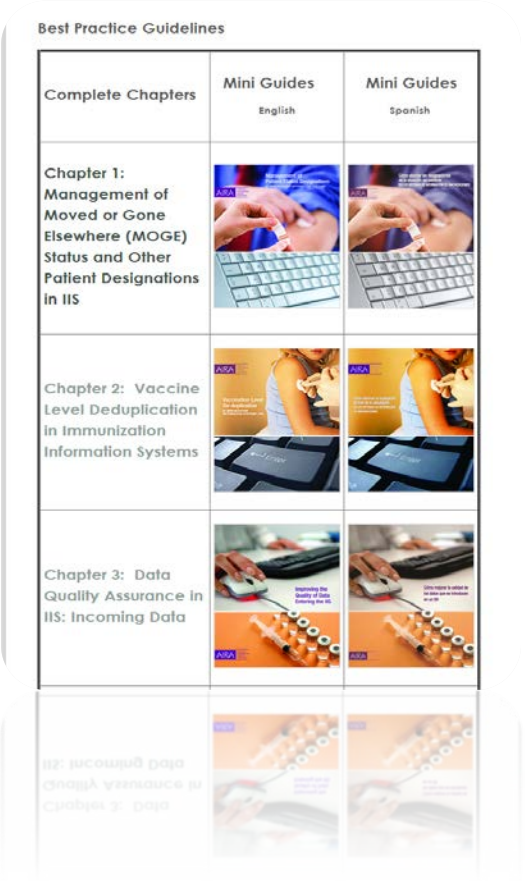


Data → ACO → IIS

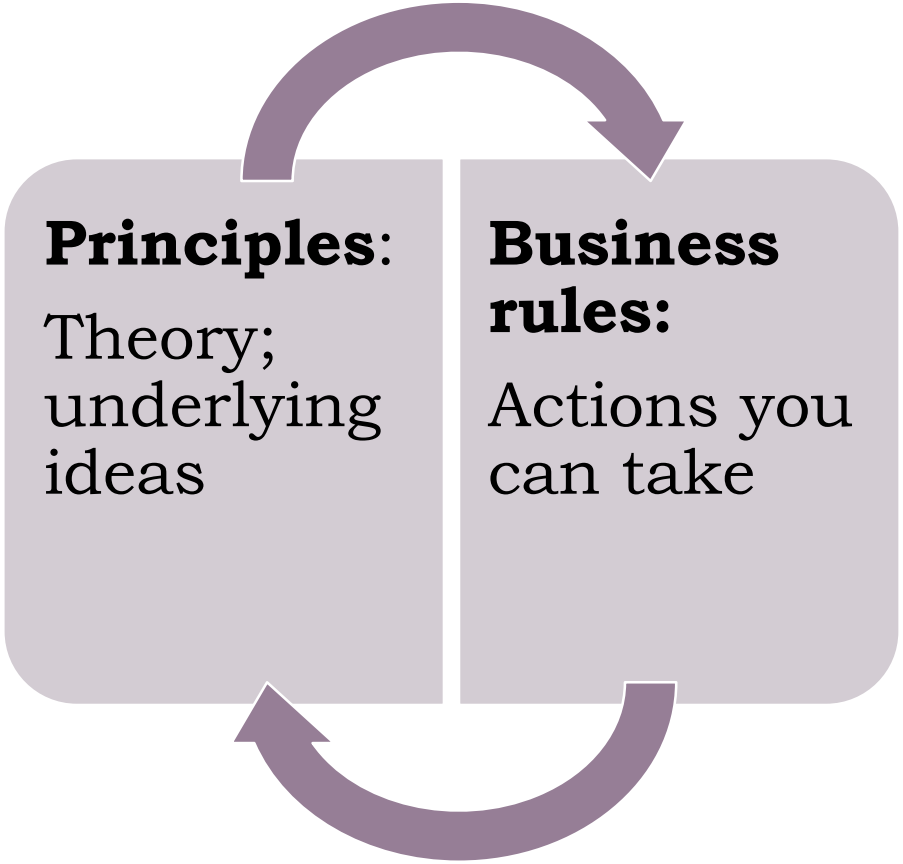

Provider Portal
Enter data
ACO Repository
Query
History & Forecast
Data
ACK or Error Message
IIS

How can you Ensure Data Quality?

- MIROW Guides!
- Chapter 3
  - P03 Rejected data principle
  - P05 Accuracy principle
  - P11 Timeliness principle
  - P12 Completeness principle
- Chapter 2
  - P11 Vaccination encounter dates
  - P13 Administered vs. historical
  - P18 Consolidated record
- Chapter 7
  - P801 Consistency principle
  - P802 Document approaches used principle



MIROW Guides



Getting Good Data Quality

During onboarding/ re-onboarding, before loading data into production

Ongoing checks of production database

Getting Good Data Quality

1. Onboarding
   - Utilize tools
     - Free HL7 message tester
     - Nathan's Open source tool
     - HLN's HL7 tester
2. Ongoing Checks
   - The best way to improve the quality of your data is *to use it*.

Data Quality Strategy

- Share the responsibility for monitoring data quality across the immunization program (e.g., recruit VFC Health Educators to be responsible for verifying appropriate submission of eligibility codes for the clinics they serve, etc.)
- Have providers sign a roles and responsibility form for ongoing data quality checks. It should include:
  - Who is responsible for reviewing acknowledgement (ACK) messages to resolve problems that caused messages to be rejected or returned with errors from the IIS
  - How the electronic HL7 error logs (AE's, exception errors) are viewed within the EHR, and who has the privileges to view them and fix the errors
  - Who is responsible for adding a new vaccine to the EHR and testing the new vaccine code with the IIS
- Who is responsible for viewing the Error Report that is generated from the IIS

- Run your own quality checks:
  - Run routines every night (or weekly) that look for possible duplicate records.
  - Run routines to look for possible duplicate vaccines.
  - Run routines monthly to look for unexpected drops or cessation of reporting from any given source.
- Determine how often IIS staff should review HL7 files for data quality errors per site (once or twice a year or more often).
- Develop procedures to manage provider offices that are not compliant with data quality policy. Can you turn the data feed off until the data quality standards are met?

Data Quality Plan

- What do you have in your plan?
- How do you implement a plan if you don't have one or aren't using one?

TABLE 1: DATA QUALITY DIMENSIONS MAPPED TO AIRA MIROW DQA CHAPTER 3 PRINCIPLES

DQ DIMENSION	MIROW PRINCIPLES, OTHER IIS AREAS
COMPLETENESS Data requirements should be clearly specified based on theinformation needs of the IIS and data collection processesmatched to these requirements. An expectation of completeness indicates that certain attributes should be assigned values in a data set. Completeness rules can be assigned to a data set in three levels of constraints: 1. Mandatory attributes that require a value, 2. Optional attributes, which may have a value based on some set of conditions, and 3. Inapplicable attributes, (such as maiden name for a single male), which may not have a value Completeness may also be seen as encompassing usability and appropriateness of data values.	P12 - COMPLETENESS PRINCIPLE: The information submitted to the IIS must contain the minimum/mandatory set of data items in order to be accepted by an IIS.
ACCURACY Data accuracy refers to the degree with which data correctly represents the "real-life" objects they are intended to model. In many cases, accuracy is measured by how the values agree with an identified source of correct information (such as reference data). There are different sources of correct information: a database of record, a similar corroborative set of data values from another table, dynamically computed values, or perhaps the result of a manual process. Data should be sufficiently accurate for its intended purpose,	P03 - REJECTED DATA PRINCIPLE: When information is rejected by the IIS, the following actions should be taken: ▪ If batch, then log the error and notify Submitter. ▪ If UI, then display an error message and offer the opportunity to correct. P05 - ACCURACY PRINCIPLE: The data recorded in the IIS should match exactly what happens in a clinical encounter, whether or not it is

Questions?

A special thanks to the Public Health Informatics Institute & the Oregon ALERT IIS for providing content and examples