Interoperability Basics

What is interoperability?
Interoperability is the ability for two systems to electronically exchange data AND use the data that is exchanged. Electronic data exchange is supported by use of common transport protocols, message formats (such as HL7), and code sets.

What is real-time, bi-directional exchange?
Real-time means communication between the systems is both ongoing and automated (without manual intervention). Bi-directional means both systems have the ability to communicate with each other to send and receive data back and forth. Real-time bi-directional exchange is the gold standard, but there are many different forms of electronic data exchange (see reverse). For example, some data exchange involves manual processes to batch and send data (not real-time) or a system may send an update automatically, but not in a response to a query (not bi-directional).

Who exchanges data with the IIS?
The partners and systems can vary, but may include EHRs (providers and hospitals), CDC's VTrckS system for vaccine inventory, Vital Records, Medicaid, Health Plans/Insurance, Schools, and other IIS (see reverse).

What is onboarding?
Onboarding refers to the work of the IIS to establish and test an electronic interface with a data exchange partner. An electronic interface is the mechanism the IIS and other system use to communicate and exchange data with one another.

What is EHR?
EHR stands for Electronic Health Record and is commonly used to refer to EHR technology and EHR systems. EHRs allow for the electronic storage and maintenance of patients medical histories over time by a provider. EHRs may offer additional functionality such as clinical decision support.

What is HIE?
HIE stands for Health Information Exchange. HIE organizations are designed to support the exchange of health-related information between disparate systems. The HIE may act as an intermediary beween systems. HIEs can vary in terms of the services they provide and partners they serve.

Why is interoperability important?
Establishing interoperability between the IIS and other data systems is desirable because it allows participants access to data with less effort.

Want to learn more?
This quick reference guide was adapted from **"Data Quality for IIS."** Find it and other useful training and resources for IIS at www.phii.org/iishub.

informatics ΛCADEMY A PROGRAM OF Public Health Informatics Institute
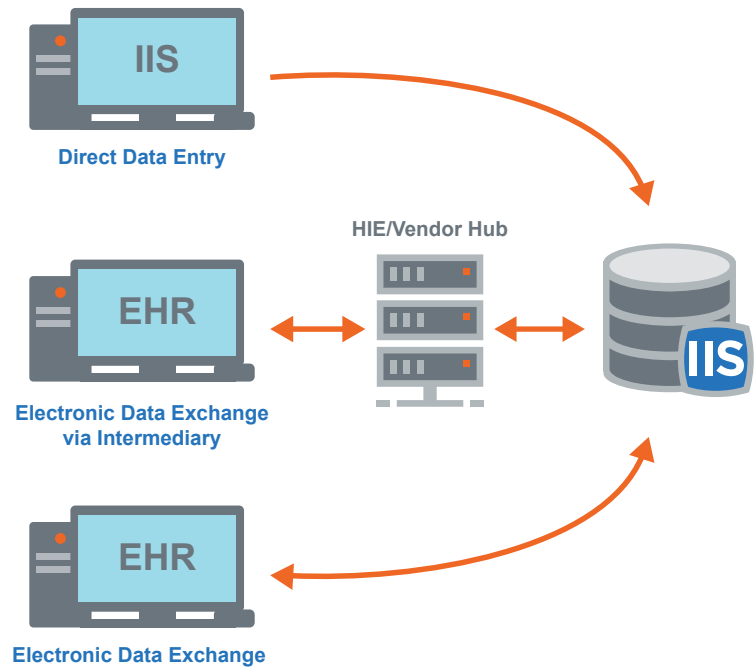
Interoperability Basics

Data Flow Models

Data exchange between a partner's data system and the IIS can take different forms.

Direct data entry involves users logging into an IIS web application to enter information or view records. This is less prevalent due to advances in electronic data exchange.
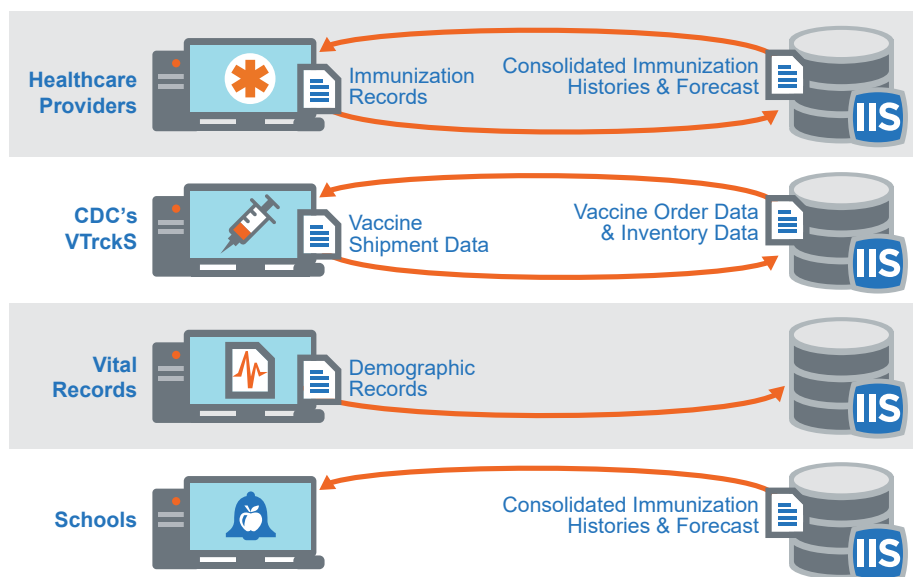
Electronic data exchange involves data flowing back and forth between the IIS and the partner's data system, such as an EHR. The data may flow through an intermediary, like an HIE, depending on the jurisdiction's health information exchange model.

IIS
Direct Data Entry

HIE/Vendor Hub

EHR
Electronic Data Exchange via Intermediary

EHR
Electronic Data Exchange

Data Partners

IIS consolidate and/or share data with a variety of partners and data systems. The data shared and degree of interoperability can vary.

For example, healthcare providers update the IIS with immunization records, and the IIS provides updated immunization histories. The IIS provides these same histories to schools, although schools may not send any data to the IIS.

Healthcare Providers — Immunization Records — Consolidated Immunization Histories & Forecast — **IIS**

CDC's VTrckS — Vaccine Shipment Data — Vaccine Order Data & Inventory Data — **IIS**

Vital Records — Demographic Records — **IIS**

Schools — Consolidated Immunization Histories & Forecast — **IIS**