

## Data Modernization Workshop – Technologies & tools

DMI directors selected two staff members to participate in maker sessions – small, collaborative work groups – at the 2022 Data Modernization Workshop: Accelerating Transformational Strategies for Lasting Change. On day two, they were asked to discuss technology and tools that could be implemented to address the service or function, known as a “building block,” identified on day one. At the end of the session, each small group provided a report-out to all maker session attendees.

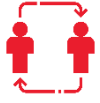
*Technology and tools included in this summary represent only the results of participant report-outs and have not been vetted by the Public Health Informatics Institute (PHII). The inclusion of a tool or resource within this report does not serve as an endorsement by PHII.*

## Technologies & tools



### Data exchange

- Health information exchanges (HIEs) – leverage jurisdictional HIEs to assist in exchange of information, especially with non-traditional providers for your information system
- [Association of Public Health Laboratories Informatics Messaging Services](#) (AIMS) – a shared service, secure, cloud-based platform that translates and transforms data for more efficient data routing
- [SimpleReport](#) – free and created by CDC for a fast and easy way for the health department to receive COVID-19 test results; designed for non-traditional reporters such as schools or nursing homes with potential for broader impact
- Integration engines (e.g., [Mirth](#) or [Rhapsody](#)) – allow for message type configurations and customization of interface channels
- [Reportable Conditions Knowledge Management System](#) (RCKMS) – allow for routing of cases among jurisdictions via AIMS platform
- [National Institute of Standards and Technology](#) – provides an HL7 version 2 resource portal with testing tools, publications and source code
- Non-technical resources:
  - [Public Health / Helios](#) – HL7 workgroups focused on public health data exchange standards
  - [Public Health FHIR Implementation Collaborative](#) – a forum led by MITRE to support real-world FHIR testing and peer-to-peer learning



## Patient matching

- [Master person index \(MPI\)](#) - utilize a HIE or IIS MPI if your system doesn't use one
- [Choicemaker](#) - an open-source tool that allows for patient matching
- [Link King](#) - an application within SAS to use for linkage of datasets
- [Rhapsody](#) - leverage Rhapsody filters



## Data cleaning and validation

- [DataQ](#) - tool for cleaning incoming data and providing help in de-duplication
- [R](#) - free and open-source statistical software that can be used to set-up code for HL7 validation
- [Rhapsody](#) - can set up a mapping process when electronic laboratory reports (ELRs) are received; also has a HL7 validator
- HIE - leverage tools available for cleaning and validation through jurisdictional HIE
- [AIMS validator](#) - an application that validates electronic initial case report (eICR) messages
- [Report Stream](#) - part of [SimpleReport](#) and created by the CDC, a free and open-source software that validates and transfers COVID-19 test results to the health department
- [Tableau](#) / [PowerBI](#) - data visualization software that can create data quality dashboards



## Location services

- [USPS](#) - has multiple tools available for address verification and cleaning
- [Project US@](#) - a project that published a specification for representing patient addresses
- [Smarty](#) (formerly SmartyStreets) - used by many IIS programs for address validation and standardization
- [ESRI](#) - licensed ArcGIS software that has street-level data available and offers location-based analytics
- Non-technical resources:
  - GIS program - work with jurisdictional GIS program within the health department or other government agency
  - Department of Safety - use 9-1-1 data location services for the health department