

## Data Modernization Workshop – Building Block Priorities

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 one, they were asked to select a service or function, known as a “building block,” that was of highest priority to their jurisdiction. All of the jurisdictions prioritized the list of building blocks within the data exchange, patient matching, data cleaning and validation, and location services categories. A summary of the top five of each category can be found below, with more specifics included on page two and three.



### Data exchange

1. Electronic data exchange
2. Standardization
3. Governance and implementation of data use agreements (DUAs)
4. Data integrity between systems
5. Data governance as we combine data into data lakes



### Patient matching

1. Master person index (MPI)
2. De-duplication
3. Data governance and policy
4. Matching across jurisdictions
5. Probabilistic and referential matching, and data enrichment for MPIs



### Data cleaning and validation

1. Bulk message validation services
2. Data standards
3. HL7 validation tools for onboarding and production feeds
4. Reliable and accurate data de-duplication
5. Data governance



### Location services

1. Address validation
2. Shared geocoding services
3. Address standardization
4. Need to account for tribal addresses, new construction and other addresses hard to geo-locate
5. Ability to collect the lowest geography possible to enable small area estimates



## Data exchange

### Benefits to modernization

- Reduces the number of feeds needing to be maintained by providers.
- Affects everyone – staff in a health department, citizens and neighboring jurisdictions.
- Provides a template, so once a data exchange feed is established, states can request information on new conditions.
- Allows for rapid decision-making through real-time data feeds that allow for timely exchange of data.
- Provides scalability to be able to appropriately respond to a pandemic.
- Improves downstream processes like data cleaning and matching.
- Empowers community members by getting them the right information at the right time to respond accordingly.
- Fundamental to other building blocks for data modernization.

### Improvements and suggestions

- Partake in reciprocal data exchange – sending data back to providers who have submitted to encourage providers to continue to send data.
- Develop relationships with less traditional data submitters, e.g., schools.
- Reduce the need for one-off feeds by having data flow through a central location.
- Leverage application programming interfaces (APIs).
- Update data exchange laws to be more consistent across providers, while also making policies less restrictive.
- Implement validation along data exchange route.
- Involve health information exchanges (HIEs).



## Patient matching

### Benefits to modernization

- Allows for holistic care of patients.
- Creates a sole source of truth.
- Enables the creation of service profiles for use cases where data sharing is important, e.g., social services, child and family services.
- Improves data integrity.
- Provides the opportunity to conduct studies related to various health risks through patient matching.
- Ensures more accurate public health data, which leads to more informed decisions.

### Improvements and suggestions

- Reduce redundancy of data by identifying ways for electronic case reporting (eCR) to only create one encounter.
- Find ways to increase completeness of record by collecting data from multiple sources and collating in one location.
- Add ability to link eCR cases, especially when a patient is seen at different locations for diagnostic imaging and lab testing.
- Use patient-preserving record linkage (PPRL) to allow for de-identified data to get to CDC, but still allow for linkage.



## Data cleaning and validation

### Benefits to modernization

- Affects all levels of government – federal, state and local.
- Provides data analysts with clean data, leading to accurate representation.
- Reduces burden of manual processes needed for data cleaning and validation.
- Increases community confidence in data.
- Makes data more reliable.
- Improves availability of data.

### Improvements and suggestions

- Conduct input validation, cleaning and validating data prior to the system receiving it.
  - Suggestion: Develop conformance tools, such as embedding an ELR validator in the AIMS platform to prevent invalid data from reaching the health department.
- Employ data cleaning throughout the data lifecycle – from data entry, to analysis, to usage.
- Implement standardization and collaboration with other jurisdictions.
- Balance the need for fast onboarding versus clean data.



## Location services

### Benefits to modernization

- Improves assignments to local health departments.
- Improves ability to contact a case, by receiving address information for mailing purposes.
- Enables ability to complete cluster analysis and social vulnerability mapping.
- Impacts internal public health systems.
- Leads to better information for health equity, data publication and data sharing.
- Improves interventions in communities.

### Improvements and suggestions

- Identify where the address is coming from – EMPI, geocoder, Google, etc.
- Align our location service efforts with ONC's address standardization considerations.
- Standardize geolocators across jurisdictions – many are using different versions.
- Account for tribal addresses, new construction and other hard to geo-locate addresses.
- Improve submission of address data; for certain providers, address data are usually missing.
- Enable ability to identify congregate addresses.
- Geocode and standardize addresses.