CHHS Master Data Management Strategy

Master Data Management (MDM) will provide the California Health and Human Services Agency (CHHS) and its Departments with a 360-degree view of CHHS clients, providers, and partners across programs to support service delivery, monitoring, and oversight. Consistent with CHHS' drive towards a client-centered focus, this strategy directs business and technical operations towards a federated approach to MDM.

What is the purpose of the strategy document?

This strategy document is intended to serve as a guidepost and a set of shared terminology to inform Master Data Management (MDM) planning and decision-making. This document demonstrates how MDM practices can advance programmatic objectives and align priorities across the Agency. This document is intended to further the goals and to be an addendum to the CHHS Information Strategic Plan.

What is MDM?

MDM is a systematized method to consolidate and manage data utilizing governance, policies, standards, and tools. MDM determines the most accurate and current data elements across multiple, overlapping datasets. An example of MDM is the use of a master identifier, or "golden record," to isolate and analyze elements across datasets. We already "perform MDM" by combining spreadsheets, linking datasets, and de-duplicating records. Adopting MDM can improve data quality and strengthen data analysis. Advancements in technology mean that we can perform these data management tasks more efficiently by making investments in software tools and by maturing our existing data management practices.

MDM is distinct from related concepts such as Identity Access Management (IdAM) and Identity Resolution Management (IRM). Select definitions are provided in *Attachment 1*.

Goals of MDM at CHHS

The goals of the MDM strategy at the CHHS Agency level are to:

- Provide direction for departments and programs to adopt MDM best practices for improving data interoperability, integrity, and availability;
- Enable data to be used as an enterprise asset across the Agency and statewide; and,
- Support and facilitate the organizational change implied by adopting MDM across departments and programs.
- Business and technical teams work together to achieve a single vision for aligning data across programs and departments.
- Continue to perform and support existing data matching efforts to identify data requirements and gaps to inform MDM solutioning

The objectives of the MDM strategy include, but are not limited to:

- A 360-degree view of CHHS clients, providers, and partners across programs to support service delivery, monitoring, and oversight
- Improved management of data as an asset to advance program objectives
- Improved efficiency and reduced workload of manual data analysis
- New opportunities for data analysis
- Educate and increase the overall understanding of MDM and its possible implications
- Examine the IT portfolio to determine which programs and project will benefit from master data

Following are areas that the Agency Advisory Governance Structure can support in achieving increased MDM maturity at CHHS:

- Sponsor pilot use cases;
- Develop policies and standards, as appropriate, for project review;
- Provide input and recommendations for IT project requirements and Request for Proposals (RFPs);
- Communicate the benefits and objectives of MDM maturity with department business leaders, partners, and practitioners; and,
- Facilitate collaboration and standardization through governance decision-making bodies.

The Role of Governance

Governance is critical to successfully adopting MDM practices and tools. The CHHS Data Subcommittee serves as an Agency-wide strategic-level governance and steering body. Other existing and emerging governance bodies at the department, program, and project levels support business, information, technology as well as strategic governance activities.

Organizational change management is supported through governance, collaborative decision-making, and executive participation. Providing for organizational processes through governance to make decisions and resolve disputes is critical for operationalizing MDM. The CHHS Advisory Governance Structure may serve as a model to support organizational change management for MDM.
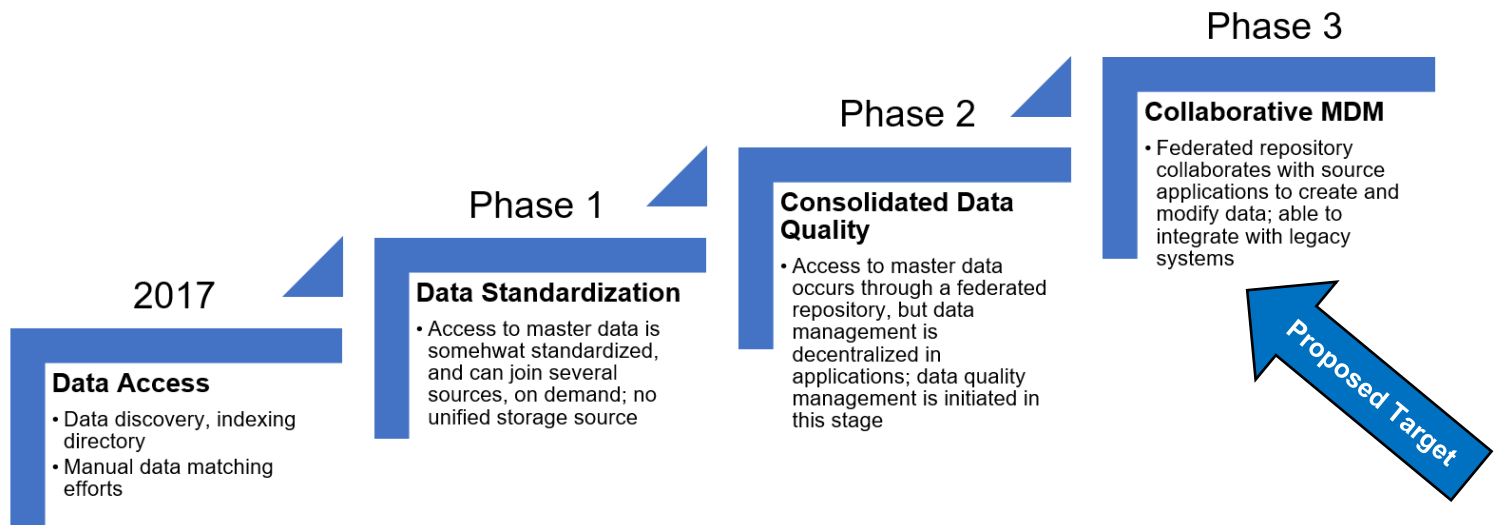
Proposed MDM Governance Model
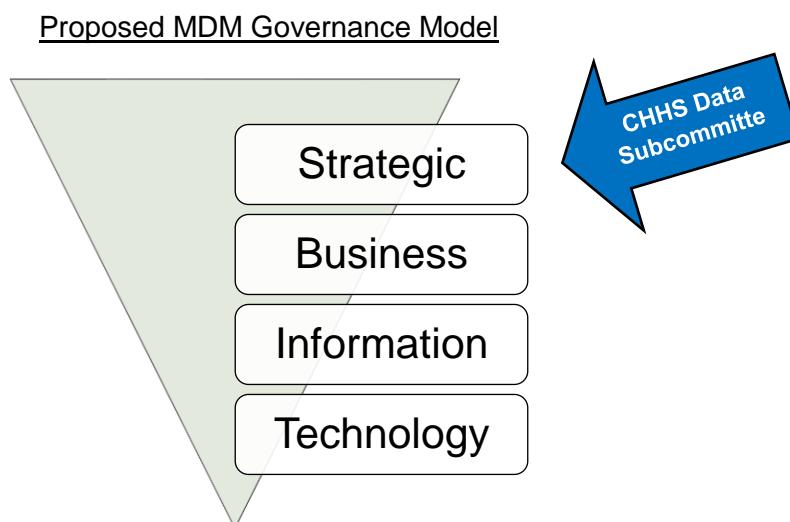
MDM Roadmap

MDM solutions can reflect various levels of end-state maturity, from a centrally-managed master data system to decentralized networks of data directories and linkages. An organization's current state maturity, degree of organizational centralization, complexity of business rules and ownership relationships, technological capacity, and other factors should be considered when selecting an MDM target state.

The following figure represents a high level proposed "roadmap" for MDM maturity progression at CHHS.

Proposed MDM Maturity Roadmap

Phase 3

Collaborative MDM
- Federated repository collaborates with source applications to create and modify data; able to integrate with legacy systems

Proposed Target

Phase 2

Consolidated Data Quality
- Access to master data occurs through a federated repository, but data management is decentralized in applications; data quality management is initiated in this stage

Phase 1

Data Standardization
- Access to master data is somehwat standardized, and can join several sources, on demand; no unified storage source

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Data Access
- Data discovery, indexing directory
- Manual data matching efforts

Potential Steps for Getting Started

Following are potential steps for CHHS MDM when undertaking or maturing MDM practices. Departments and programs responsible for implementing MDM solutions will work through existing governance processes and will develop project and tactical plans to ensure success in implementation.

Strategy Steps

1. Communicate CHHS MDM Strategy.
2. Identify ways to incorporate CHHS MDM Strategy into review and implementation of departmental projects.
3. Develop framework for data standardization across data sets and identify conflicts that will need resolution.

Agency Implementation Steps

1. Work with programs and data owners to identify high-value datasets and where that data currently resides.
2. Determine criteria for prioritization of data to be mastered. Mastering data includes activities such as linking data, standardizing data, and identifying business rules for maintaining accurate data.
3. Develop tactical governance processes and activities, such as data definitions, linkages, standards, etc.
4. Determine best data sources for integrity and accuracy, and identify data overlaps across datasets.
5. Consider alignment with CHHS Open Data Portal datasets.

Department/Project Implementation Steps

1. Load data into an MDM platform to compare against existing databases and analytic processes.
2. Use MDM as a framework to improve existing analytics.
3. Migrate, as appropriate, analytics processes to MDM platform.

Priority Focus Areas for MDM

Following are potential areas of focus for MDM in CHHS, due to the overlapping nature of their typical data sources:

Area	Description	Examples
Clients	People who utilize services	Patients and beneficiaries
Individual Providers	People who deliver services	Doctors and social workers
Facility Providers	Places where services are delivered	Hospitals and welfare offices
Partners	Entities that interface with CHHS programs	State departments, county and federal government

Attachment 1 – Select Definitions

Master Data Management (MDM)

One can view **master data management** (MDM) as comprising the processes, governance, policies, standards and tools that consistently define and manage the critical data of an organization […] enabling an enterprise to link all of its critical data to one file, called a master file that provides a common point of reference. When properly done, master data management streamlines data sharing among personnel and departments. A master data management tool can be used to support master data management by removing duplicates, standardizing data (mass maintaining), and incorporating rules to eliminate incorrect data from entering the system in order to create an authoritative source of master data. […] Master data management has the objective of providing processes for collecting, aggregating, matching, consolidating, quality-assuring, persisting and distributing such data throughout an organization to ensure consistency and control in the ongoing maintenance and application use of this information. ([Wikipedia](#))

Identity Access Management (IdAM)

Within MDM, one can view **identity access management** (IdAM) as the set of services (tools) to include authentication, user provisioning, password management, role matrix management, enterprise single sign on, enterprise access management, federation, virtual and metadirectory services and auditing. ([HIMSS Dictionary of Healthcare Information Technology Terms, Acronyms and Organizations](#))

Identity Resolution Management (IRM)

Within MDM, and related to IdAM, is **identity resolution management** (IRM), defined as a data management process through which an identity is searched and analyzed between disparate data sets and databases to find a match and/or resolve identities. Identity resolution enables an organization to analyze a particular individual's or entity's identity based on its available data records and attributes. ([Techopedia)](#)