CBER-CDER Data Standards Program Action Plan

Version: 1.9

FY2025 Q2 update

Document Date: August 2025

REVISION HISTORY

Version Number	Revision Date	Description of Change
1.0	January 25, 2023	Revision of document structure to align with FY23-FY27 CBER-CDER Data Standards Strategic Goals
1.1	May 9, 2023	• FDA Data Standards Catalog added to Goal 2 • IDMP Guidance added to Goal 2 • Technical Specifications and Conformance Guide Updates removed from Goal 4 • Appendix B updated
1.2	August 14, 2023	• IDMP Guidance removed from Goal 2
1.3	November 9, 2023	• Quarterly project updates
1.4	February 15, 2024	• Added 356H Modernization Project under Goal 1 Objective 1 • Removed Submission Data Standards Assessment Project from Goal 1 Objective 1 • Added Publication of Final Guidance for Industry "Data Standards for Drug and Biological Product Submissions Containing Real-World Data" Project under Goal 2 • Added "Dataset JSON" as its own project under Goal 1 Objective 1
1.5	May 8, 2024	• Added Common Data Model Harmonization (CDMH) under Goal 1 Objective 1

Version Number	Revision Date	Description of Change
		• Removed Source Data Captures from EHRs: Using Standardized Clinical Research Data from Goal 1 Objective 1 • Removed Publication of Final Guidance for Industry "Data Standards for Drug and Biological Product Submissions Containing Real-World Data" from Goal 2
1.6	August 9, 2024	• Removed Grant: Investigating Support for 21 CFR 11 Compliance Using HL7 FHIR from Goal 1 Objective 1
1.7	November 20, 2024	• Quarterly project updates
1.8	March 2025	• Quarterly Project Updates • Removed FDA Adverse Event Reporting System (FAERS) II Project • Removed eCTD v4.0 Project – Phase 1

1.9	August 2025	• Quarterly Project Updates
		• Reporting paused for the following projects:
		  ○ Study Data Standards Testing and Evaluation
		  ○ Post Approval Changes Rulemaking & Submission Standards

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Introduction

The purpose of the *CBER-CDER Data Standards Strategy* is to reinforce the ongoing commitment to the development, implementation, and maintenance of a comprehensive data standards program that will facilitate the pre- and post-market regulatory review process so that safe and effective medical products are available to patients.

This action plan aligns to the CBER-CDER Data Standards Strategy and reflects progress in CBER and CDER towards the defined goals and objectives. Projects selected for this action plan have started, are resourced and funded, and have a scope that is primarily standards related.

Purpose

This action plan provides a quarterly update to internal and external stakeholders, with an overview and progress update of current data standards initiatives. The plan will continue to be updated quarterly to reflect progress of current projects, as well as initiation of new projects. For information on prior quarters, refer to previous versions of the Action Plan.

Program Goals and Initiatives

The program goals are derived from the major areas of regulatory business activities. A detailed description of these major areas can be found in the CBER-CDER Data Standards Strategy.

The CBER-CDER Data Standards Program goals focus on four areas:

- Goal 1: Improve Data Standards for Regulatory Use
- Goal 2: Data Standards Policy
- Goal 3: Efficient Information Management
- Goal 4: Enhance Transparency and Stakeholder Engagement

The successful accomplishment of these goals may be achieved given sufficient resources, regulatory/legislative factors, and collaboration with stakeholders.

For each project in this section, the project title, description, update, and project stage(s) are provided. The project update reflects work done in the previous quarter (e.g., the FY2023 Q1 report highlights work from October to December 2022).

The project stage lists the typical stages a project might address during work for the project and are generally conducted in sequence from left to right. The definitions of the project stage are defined in **Appendix A**.

Project Stage
Requirements (REQT)
Analyze Alternatives (ALT)
Development (DEV)
Testing (TEST)
Adoption (ADOPT)
Implementation (IMPL)
Policy Coordination (POLICY)

Project Stage Status
In Progress
Pending
Complete
Not Applicable

Goal 1: Improve Data Standards for Regulatory Use

Projects related to Goal 1 address our continued collaboration with Standards Development Organizations to improve data standards and support initiatives for the adoption and adaptation of new and existing standards.

OBJECTIVE 1: Enhancement of Submission Formatting & Review

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Assessing Applicable Data Standards for Use in Submission of Real-World Data to FDA FDA is examining how to optimize data standards for Real-World Data (RWD) that is submitted as study data in applicable FDA submissions. This effort will help develop a roadmap to facilitate the development of such data standards.	**Q2:** Assembled internal and external presentation decks and made requested refinements to the RWD Domains and Concepts. Engaged with the HL7 FHIR community to review changes.	In Progress	In Progress	Pending	Pending	Pending	Pending	Pending

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Common Data Model Harmonization (CDMH) This project aims to build a data infrastructure for conducting patient-centered outcomes research using Real-World Data (RWD) derived from the delivery of health care in routine clinical settings. This project started in 2017, is currently in phase III (2023-2025) and is a multi-HHS agency initiative, funded by HHS/Assistant Secretary for Planning and Evaluation (ASPE) Patient-Centered Outcomes Trust Fund (PCORTF).	**Q2:** Developed the protocol for the cancer use case in collaboration with the oncologists at CDER/OND. Developed a Fast Healthcare Interoperability Resources (FHIR)-based query for the CDER clinical question. Registered the mappings from HL7 FHIR US Core to CDISC SDTM within NCI's metadata registry (caDSR). Collaborated with Adeptia (an ETL vendor selected by the FDA team for this project) on building the mappings between HL7 FHIR US Core and SDTM within their tool.	Complete	Complete	In Progress	In Progress	Pending	Pending	Pending

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Dataset-JSON Exchange Format This CBER & CDER project is a continuation of the collaboration with PHUSE and CDISC to test the use of CDISC Dataset-JSON as a potential replacement for XPT v5.	**Q2:** Continued testing of FDA tools and systems to assess impact on CDISC Dataset-JSON v1.1 processing and analysis capabilities. We have currently tested on several tools, e.g. JMP/JMP Clinical, SEND Explorer, Datafit. All these tools are compatible with Dataset-JSON v1.1 format.	Complete	Complete	In Progress	In Progress	Pending	Pending	Pending
eCTD v4.0 Project – Phase 2 (Forward Compatibility) This CBER-CDER project is focused on the development, testing, adoption, and implementation of Forward Compatibility (FC). FC enables any dossier that started in eCTD v3.2.2 to transition to eCTD v4.0.	**Q2:** Updated eCTD software suite to support FC delivered at end of Q1. Initial testing in Q2 revealed further development is necessary and will be included in the next software release scheduled for FY26Q1.	Not Applicable	Not Applicable	In Progress	In Progress	Pending	Pending	Pending

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
IDMP Project The International Organization for Standardization (ISO) Identification of Medicinal Products (IDMP) standards aim to harmonize specifications for the identification and exchange of medicinal product data between regulatory agencies, pharmaceutical companies, and manufacturers. This project has multiple use cases focused on the adoption of ISO Identification of Medicinal Product (IDMP) standards: 1. Medicinal Product ID (MPID), 2. Substance ID (SubID), 3. Pharmaceutical Product ID (PhPID), 4. Route of Administration, Dosage Form, and 5. Units of Measure. These ISO standards define medicinal product information for regional and global data sharing. Generally, the use cases focus on safety (e.g., ICSRs) and can support quality (e.g., PQ/CMC). Additionally, the Global IDMP Working Group (GIDWG) has been engaged with ISO and other regulators to ensure the standards are fit for global implementation.	**Q2:** Continued working with EMA and UMC, via GIDWG to promote the harmonized global ISO IDMP implementation framework. GIDWG phase 2end-to-end testing is completed. Test framework includes business rules, best practices, software and operating model for global IDMP implementation and maintenance of global identifiers for marketed drug products using several well-known individual drugs as examples. There is end to end demonstration of Global IDMP published for the test. PhPID end to end testing report is published.	Complete	Not Applicable	Complete	In Progress	Pending	Not Applicable	Not Applicable

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Pharmaceutical Quality/ Chemistry, Manufacturing, and Controls Data Standardization This CDER project with participation from CBER and CVM will identify and standardize data elements, terminologies, and data structures to enable automation of key analyses of Pharmaceutical Quality (PQ)/Chemistry, Manufacturing, and Controls (CMC) data to support more efficient and effective regulatory decision-making.	**Q2:** Iteratively updated the data standards, data model, and FHIR mappings for eCTD Module 3 (SDOF), achieving a milestone by publishing Stage 1 and getting Ballot approval for Stage 2 at HL7. Coordinated closely with the OBI developers building the implementation system, sharing the logic and code behind the AWS-hosted Reference Implementation, demonstrating that a FHIR message-based data standard published at HL7 could be validated, parsed, and reported from a database.	**Complete**	**Complete**	**Pending**	**Pending**	**Pending**	**Pending**	**Pending**

Project Title & Description	Project Status	Project Stages
Questionnaires, Ratings and Scales (QRS) Assessment This CDER project is focused on evaluations of proposed standardized data structures (supplements) that capture the information from Questionnaires, Ratings, and Scales (instruments) administered to subjects during a clinical study and prioritize the instruments indicated in the Clinical Outcomes Assessment (COA) area.	**Q2:** One (1) test initiated for supplements covering these instruments: - Richmond Agitation-Sedation Scale (RASS) v1.0 - SDS Two (2) tests continuing from Q3 for supplements covering these instruments: - Acute Physiology and Chronic Health Evaluation II (APACHE-II) v1.0 - ADaM - Hamilton Depression Rating Scale 17 (HAMD-17) v1.0 - ADaM Two (2) tests completed for the supplement covering this instrument: - Acute Physiology and Chronic Health Evaluation II (APACHE-II) v1.0 - ADaM - Hamilton Depression Rating Scale 17 (HAMD-17) v1.0 - ADaM	**Not Applicable**

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
SPL FHIR FDA is working towards replacing Structured Product Labeling (SPL) with HL7 FHIR. The FDA has created a proof-of-concept system that can receive labeling information using either SPL or FHIR standard (Dual Submission) in addition to a draft Implementation Guide (IG).	**Q2:** Completed the upgrade of their HL7 SPL-FHIR Implementation Guide (IG) from R4B to R5 as well as the migration from the LinuxForHealth server to the HapiFHIR server. Began series of sequential internal testing efforts (R5-related and end-to-end) following the migration, upgrade, and POC enhancements addressing the FY2024 pilot feedback with conclusion anticipated at the end of April 2025 in preparation for Connectathon.	Complete	Complete	In Progress	In Progress	Pending	Pending	Pending

Project Title & Description	Project Status	Project Stages
Study Data Standards Testing and Evaluation This CBER-CDER project tests new and updated study data standards and standards adjacent properties to establish FDA support and requirements.	**Q2:** Reporting for this project is on pause.	**Not Applicable**

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
356H Modernization This project will be assessing feasibility and working towards development of a machine-readable approach for receiving the data requested in Form FDA 356h.	**Q2:** No updates in Q2.	In Progress	Pending	Pending	Pending	Pending	Pending	Pending

OBJECTIVE 2: Improve Pre and Postmarket Safety Surveillance Data

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Biologics Effectiveness and Safety (BEST) Innovative Methods (IM) Leverages Artificial Intelligence, Machine Learning, FHIR standards and SMART-on-FHIR to develop a semi-automated adverse event (AE) reporting system from EHRs. The system uses such innovative methods to detect exposures/outcomes of biologics and facilitates validation and reporting of flagged cases to the FDA. Project goals include development of tools, methods and techniques needed to reduce the burden on providers to report AEs accurately and efficiently, which is critical to strengthen the post market active surveillance program of CBER regulated products.	**Q2:** Continued development, enhancement, and conducting studies in production. The BEST platform has been deployed On-Prem (in the HVIE environment) to facilitate FDA SMEs access to the BEST IM Platform and started the authorization to operate (ATO) process.	Complete	Complete	Complete	Complete	Complete	In Progress	Pending

Goal 2: Data Standards Policy

Projects aligned under Goal 2 provide governance and expertise for the development and revision of data standards policies related to the regulation of human drugs and biological products. The continued implementation and refining of governance processes ensure proper oversight during the development, publication, and maintenance of guidance documents detailing the use of data standards, terminologies, and exchange formats for regulatory submissions.

Project Title & Description	Project Status	Project Stages
FDA Data Standards Catalog	**Q2:** Published DSC v11.0 in March 2025.	**Ongoing Updates**

Project Title & Description	Project Status	REQT	ALT	DEV	TEST	ADOPT	IMPL	POLICY
Post Approval Changes Rulemaking & Submission Standards This CBER-CDER project is focused on improving the usability of post approval submissions data.	**Q2:** Rulemaking proposal is undergoing internal agency review.	Complete	Not Applicable	In Progress	Not Applicable	Not Applicable	Not Applicable	Pending

Project Title & Description	Project Status	Project Stages
Study Data Technical Conformance Guide (sdTCG)	**Q2:** Published the March 2025 edition.	**Ongoing Semi-Annual Publications**

Goal 3: Efficient Information Management

Projects aligned under Goal 3 promote efficient review process because the data submitted is in a predictable and consistent format that can be more easily used by analytic systems.

As outlined in the CBER-CDER Data Standards Strategy document, technology is critically important and serves as an enabler for reviewers to access and use large amounts of data and information that is received and generated. Several data standards development projects are already underway, as highlighted earlier in this document, to promote access to high-quality, standardized data including the PQ/CMC Standardization and IDMP projects. CDER and CBER also continues to define and enhance ways to better capture information created internally to support continued knowledge management activities. Progress towards the Goal 3 objectives will be highlighted annually in the Data Standards Program Annual Assessment and not tracked quarterly.

Goal 4: Enhance Transparency and Promote Stakeholder Engagement

Efforts supported under Goal 4 enhance transparency and promote stakeholder engagement in its decision-making regarding adoption of new standards, especially required standards. In addition, these efforts are promoted through the following activities:

Program Operations	Updates
Action Plan	FY2025 Q1 published March 27, 2025.
Annual Assessment	2024 Annual Assessment publication is on hold.
eCTD Submission Standards	Published updates to v3.2.2 and v4.0 specifications in February 2025.
Outreach Opportunities, Public Meetings & Educational Activities	FDA Webinars are planned to focus on various data standards topics.

Appendix A: Project Stage Definitions

Stage Name	Stage Description
Requirements	A project with the objective of developing a standard, or utilizing an existing standard for the receipt, processing, review, and archive of data used in regulatory review is considered a data standards project.
Analyze Alternatives	A project's approach to the identification and analysis of alternatives to solve a data standards problem.
Development	The approach to address approved changes to data standards or data standards policy.
Test	A project may be required to test (CDER) study data standards that is adaptable based on the situation. Provides a process to determine if a standard meets the needs of the FDA and should be accepted by the FDA.
Determine Data Standard Adoption (Adoption)	The project is approved and proceeds towards the adoption.
Implement Standard (Implementation)	The advancement to implementing an approved data standard need or change.
Policy	FDA may publish an FRN or guidance, as well as relevant technical specifications or technical conformance guides, as needed.

Appendix B: Glossary of Acronyms

Acronym	Definition
ADaM	Analysis Data Model
AE	Adverse Events
Catalog	FDA Data Standards Catalog
CBER	Center for Biologics Evaluation and Research
CDER	Center for Drug Evaluation and Research
CDISC	Clinical Data Interchange Standards Consortium
COA	Clinical Outcomes Assessment
eCTD	Electronic Common Technical Document
EHR	Electronic Health Record
FHIR	Fast Healthcare Interoperability Resource
FRN	Federal Register Notice
FY	Fiscal Year
GSRS	Global Substance Registration System
HL7	Health Level Seven
ICH	International Council for Harmonization
ICSR	Individual Case Safety Report
IDMP	Identification of Medicinal Product
IND	Investigational New Drug Application
ISO	International Organization for Standardization
PDUFA	Prescription Drug User Fee Act
PQ/CMC	Pharmaceutical Quality/Chemistry, Manufacturing, and Controls
QRS	Questionnaires, Ratings, and Scales
SDTM	Study Data Tabulation Model
SDTMIG	Study Data Tabulation Model Implementation Guide
SEND	Standard for Exchange of Nonclinical Data
SENDIG	Standard for Exchange of Nonclinical Data Implementation Guide
SENDIG-AR	Standard for Exchange of Nonclinical Data Implementation Guide: Animal Rule
SPL	Structured Product Labeling

Acronym	Definition
sdTCG	Study Data Technical Conformance Guide
TAUG	CDISC Therapeutic Area User Guide
TCG	Technical Conformance Guide
UMC	Uppsala Monitoring Centre
UNII	Unique Ingredient Identifier