

FDA Plenary Session: A Decade of FDA/PHUSE CSS Collaborations: An FDA Perspective

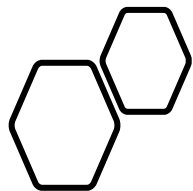
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Office of Computational Science

Office of Translation Science/CDER/FDA

Celebrating a Decade of Collaboration





The Inaugural Cast



The Agenda

Monday March 19th		
Session	Timing	Content (Speakers)
Introduction & Updates	8:30-10:00 Great Hall	<p>Welcome to the 3rd Annual Computational Science Symposium (CSS) (Chuck Cooper & Steve Wilson, FDA)</p> <p>What's Coming in PDUFA V (Theresa Mullin, FDA)</p> <p>Computational Science Center Progress and Next Steps (ShaAvhrée Buckman, FDA)</p> <p>CBER Progress and Next Steps (Mark Walderhaug, FDA)</p> <p>Standard Interactions: CDISC Standards and the CSS Workgroups (Wayne Kubick, CDISC)</p>
Break	10:00-10:30 Exhibit Hall	Exhibits & Networking



The Audience



The Inaugural Working Groups

Working Groups

Working Group 1: Data Validation and Quality Assessment

This working group will focus on collaborating to develop a robust process to rapidly validate and assess data quality as data moves through the product life cycle across both industry and regulatory review. The group will discuss current pains and potential solutions around topics such as the current data validation rules as well as the CDISC Data Validation Project, development and implementation of tools, terminology, and improving the quality of the data to support analytical needs.

Working Group 2: Standardizing Data within the Inspection Site Selection Process

This working group will focus on continuing the ongoing work developing standards for the dataset used in a risk model designed to improve the quality of clinical inspection site selection for drug trials. This working group will discuss ways to incorporate the site selection tool dataset variables into existing standards and identify potential standardized methods for both the industry and FDA to develop the datasets in the specified format.

Working Group 3: Challenges of Integrating and Converting Data across Studies

This working group will first discuss the challenges of analyzing and integrating data from retrospective studies from both an industry and regulatory perspective including the conversion of legacy data, effects of different study designs, and how the flexibility in standards leads to issues. The group will then work towards identifying best practices for topics that might include standard protocol design elements, consistent data collection rules, conversion of legacy data, and the application of other standards up front in the data collection process for all future studies, as well as the impact those would have on time, resources, and scope.

Working Group 4: Standards Implementation Issues with the CDISC Data Models

This working group will identify specific challenges with implementing the CDISC data standards on individual study elements including topics such as reviewing the CDISC common issues document, a similar issues list which will be provided from CBER, feedback from the legacy data conversion project, and other gaps identified across the review process. This group will prioritize the issues and begin to make recommendations for changes or best practices in using the standards as well as document successful implementation practices for sharing across the FDA and industry.

Working Group 5: Development of Standard Scripts for Analysis and Programming

This working group will identify potential standard scripts for data transformations and analyses across and/or within a therapeutic area and exploratory analysis. The goal will be to begin the process of standardizing analyses across the industry, but also include examples of what can be done with a standardized dataset. This will be an interactive session using online wiki to create and add input that can be shared openly between industry and regulatory.

Working Group 6: Non-Clinical Road-map and Impacts on Implementation

This working group will discuss various approaches to the standardization of nonclinical data and the possible implications to the development and implementation of data standards. The group will brainstorm and discuss approaches that may be used to meet the standardization needs for types of data that have no current standardization strategy. This session will help the working group develop a 'road map' to the standardization of nonclinical data over the course of the next year.

Computational Sciences Symposium Volunteers

Working Group 1: Data Validation and Quality Assessment

FDA	Industry
Amy Malla	Hany Aboutaleb
Armando Oliva	Max Kanevsky
Mitra Rocca	

Working Group 2: Standardizing Data within the Inspection Site Selection Process

FDA	Industry
Bhanu Kannan	David Handelsman
Paul Okwesili	Patty Gerend
	Sina Djali

Working Group 3: Challenges of Integrating and Converting Data across Studies

FDA	Industry
Chuck Cooper	Jim Johnson
Jingyee Kou	Sandra Minjoe

Working Group 4: Standards Implementation Issues with the CDISC Data Models

FDA	Industry
Helena Svirgin	Joanna Koft
	John Brega
	Liz Leahy
	Scott Bahlavooni

Working Group 5: Development of Standard Scripts for Analysis and Programming

FDA	Industry
Joy Li	Hanning Tu
Mark Walderhaug	Kevin Kane
Mat Soukup	Mary Nilsson
	Sally Cassells

Working Group 6: Non-Clinical Road-map and Impacts on Implementation

FDA	Industry
Lillian Rosario	Bill Houser
Tim Kropp	Lou Ann Kramer
Jeremy Wally	Shree Nath
	Susan DeHaven
	Troy Smyrniotis

Working Group Steering Committee

FDA
Chuck Cooper
Steve Wilson
Suzie McCune
Tim Kropp
Industry
Chris Decker
David Ibersen Hurst
Michael Brennan
Scott Getzin
Frank Newby

Planning Committee

FDA
Amy Malla
Chuck Cooper
Lillian Rosario
Mark Walderhaug
Paul Okwesili
Steve Wilson
Suzie McCune
Tim Kropp
Trish Koussis
CDISC
Frank Newby
PhUSE
Adrienne Bonwick
Chris Decker
Kevin Lee
Stephen Bamford
Vikash Jain

The Inaugural Posters

Melissa Blinn, Novartis Pharmaceuticals Corporation
Path to a metadata-driven Standard Environment – Collection to Submission

Taking advantage of defined standards to drive the collection, transformation and recording of clinical trial data requires a rich set of standards and a robust environment for managing this metadata as well as processes and processes which can then utilize the standards metadata appropriately. The objective is to demonstrate the process flow and applications used at Novartis to develop, utilize and govern clinical data and recording/submission standards.

Mike Caronella, Takeda Global R&D
SAS Template Programs for Building Derived Datasets, Tables and Listings

The design, development and maintenance of template SAS programs which generate standards-based derived datasets and data summaries are presented. The major challenge for this successful implementation involved building templates that were sufficient to support standards (not flexible enough to handle study-level specific).

Min Chen, Vertex Pharmaceuticals
Automatic Version Control and Track Changes of CDISC ADaM Specifications for FDA Submission

This poster introduces a SAS macro to automatically detect and record any revisions between the new version and the old version of programming specifications. It helps to generate necessary documents for version control, establishes traceability of different versions and achieves high efficiency in FDA submission.

Shafi Chowdhury, Shafi Consultancy
Risk based SDV (Source Data Verification)

The cost of on-site monitoring is soaring and with questionable results of 100% source data verification (SDV), regulators are encouraging risk based SDV (rSDV). We discuss the possible risks of rSDV and show how centralized rSDV approach is more effective in improving study quality.

Xiangchen (Bob) Cui, Vertex Pharmaceuticals
An Innovative ADaM Programming Tool for FDA Submission

This poster describes automated ADaM Programming Tool, consisting of six SAS macros, to streamline the process from creating programming specs to generating define.xml. It ensures consistency in metadata among data definition tables, reviewer's guide and ADaM datasets and achieves accuracy and efficiency.

Nate Freimark, Theorem Clinical Research
Adapting Trials and the Impact on SDTM Trial Design Model

The SDTM Trial Design Model is comprised of datasets used in capturing planned trial level information. This poster explores some of the issues an adaptive trial presents in creation of the trial domain datasets.

Ramshar Gundlapalli, ICON Plc
Achieving an 'Error Free' OpenCDISC Report - Realistic or Idealistic?

OpenCDISC is an open source community focused on building extensible frameworks and tools for the implementation and advancement of CDISC Standards. One of the useful tools is the OpenCDISC validator. This poster will focus on the SDTM and default content of the validator. We will discuss the many advantages to using the OpenCDISC validator tool, and also provide some real study examples of when an 'error free' OpenCDISC report has not been achievable.

Kit Howard, Kestrel Consultants, Inc.
Throwing the Data over the Wall: The Next Big Threat to Clinical Data Quality

As clinical data pass from investigative site to submission, each organization defines "data quality" differently based on how they use the data. They often have little understanding of each others' needs, and thus may handle or use the data inappropriately. This poster describes the problem, provides examples with implications, and suggests some solutions.

Pantaleo Macci, Novartis Vaccines and Diagnostics Srl
The Clinical Data Repository Initiative at Novartis Vaccines and Diagnostics: A Revolution

To address the challenge of running complex analyses on multiple studies in a short timeframe, NVD decided to implement a Clinical Data Repository where all historic clinical trial data will be migrated and data from ongoing trials will be collected in a near-real time fashion using CDISC-compliant data structures.

Alain Naneix, F. Hoffmann-La Roche Ltd
Nonclinical Safety Data Integration Platform

The Safety Data Integration System (SDI) platform allows knowledge consolidation in a systematic manner by integrating all relevant in vivo nonclinical safety data of in-house and CRO studies of the last 13 years. The system allows simple test searches and complex structured queries across imported data sources and provides tabular and graphical representation of selected data. With SDI scientists can analyze, exchange and interpret data, identify complex toxicological patterns of findings and their relevance, identify tool components for assay validation and develop predictive models.

Mary E. Nilsson, Eli Lilly and Company
Standardization in Medical Research Data: Improving Data Displays and Data Traceability

Industry standards have evolved over time for data collection (CDASH), observed data (SDTM), and analysis datasets (ADaM). This poster addresses the need for further advancement in the development of standards for analysis and recording, including standard Tables, Figures, and Listings and improved data traceability from collection to analysis.

Posters

Yun Oldeman, Takeda Global R&D
Describing Data from Capture to Operational Use to CDISC-Compliant Submission

Takeda is developing a CDISC-based standards system. Four data stores are used for the data flow from SDIC data collection, database look, to analysis and recording. A single Excel document is designed to manage the operational data stores (SDIC specifications, interim locked data and institutional programming to save SDTM), with the CDASH and SDTM standards providing the overarching governing activities.

Yvonnea Ruliano, Boehringer Ingelheim Pharmaceuticals USA
Using SAS® to Calculate Noncompartmental Urine Parameters

The industry standard used for calculating PK endpoints is the application of clinical trial data to WinNonLin® (VINTAL), a software modeling package that is based on mathematical equations. This poster aims to provide an introduction to PK urine assessments and describe a method, using SAS® programming, to derive PK endpoints for individual and cumulative amounts excreted (Ae), fractions of the administered dose excreted (f) and renal clearance (CLR) of drug from the plasma matrix to urine for a complete profile of a subject.

Paul H. Schwartz, FDA
An Evaluation of Data Mining Methods and Software for Adverse Events Occurring in Clinical Trials

We employed two CDISC software packages, Statistics and Spotfire Miner and a sponsor submission with a large number of subjects to evaluate the utility and usefulness of the software and underlying statistical methods. We present our findings for select adverse events of special interest, including an AE that occurs in the product label as well as one that does not.

Bruce Thompson, C-TASC
Preparing Data for Submission to the FDA – It's More Than SDTM

OpenCDISC checks are a way to address internal consistency of the SDTM data. In this poster we further address the consistency of the SDTM data using statistical and information technology methods. At the conclusion of this process, one is reasonably sure that FDA reviewers will be able to perform the necessary toxicology and adverse event analyses for their review.

Francois Yandenbende, Clinbay
Automation of Clinical Trial Reporting: From Shells to TFL Outputs Without a Single Line of SAS Code

In this poster we present a trial analysis and recording solution called ClinPORT that permits to produce tables, figures and listings (TFL) directly from the shell specifications. There is no need to program a single line of SAS code to generate the outputs. All the required SAS instructions are derived from the annotated model tables defined in Microsoft Excel. Any change to the outputs are fully controlled through changes made to workbook of shells. This feature permits to gain considerable time during the trial recording phase. It also improves quality as the generated work products always match perfectly the analysis plan requirements, even when these are changing during the study life cycle.

Michael Wall, Phastar
Comparing the Risk-Benefit of SDTM Software Solutions

When evaluating SDTM software solutions many costs are obvious. The focus of this poster is those perhaps less so.

Michael Whittemore, Quantiscate
Optimizing the Organizational Performance of the Clinical Trial Process Through Better Technology

Collaboration on documents and distribution of information to all the contributors to a clinical development program for a new product has never been easy. The process has never really changed much but technology can now deliver data, information and knowledge to the right customer in the format that the customer would like to see it. Predefined workflows and collaboration tools can make efficient the review cycles on the most complicated of documents, targeted dashboards/visualizations and unclassified notification on signal the need to improve. Real time access to data will also mean decisions can be made without the need for words.

Robert Willison, Rhin, Inc.
CDISC Standards in Reverse: A More Efficient Approach to Clinical Trials Design

A "bottom up" approach to the end-to-end concept that includes leveraging standards and metadata produces more targeted CDF design and data collection; more efficient database and data structure creation; and improved audit based on the elimination of redundant processes.

Fred Wood, Octagon Research Solutions
CDISC-AdvaMed Device Project

Clinical data standards for some medical device trial domains have been drafted and were sent for public review in January 2012. The standards were developed by a collaboration of CDISC experts, FDA-CDRH/CDER and medical device companies. This poster describes the standards, their relationships, and how they may impact the industry.

Marlon Yap, FDA
Business Process Management (BPM) at FDA: The Agency's Early Experience in Implementing BPM SW Tools

BPM is a business discipline to manage the business process lifecycle. FDA, as a leading U.S. agency entrusted to protect public health, has been adopting BPM for the last few years. This poster addresses the Agency's early experience in implementing BPM and presents lessons learned in deciding the future of BPM at FDA.



The Impact Across
the Years

FDA/PHUSE Collaborations



FDA/PHUSE Data Science Innovation Challenge

The [PHUSE/FDA Data Science Innovation Challenge](#) provides an opportunity for the greatest minds in data sciences to come together and collaborate on projects during a defined time frame.

- The Innovation Challenge was launched on October 8th, 2019
- Three challenges
 - Opioid/Substance Use Disorder
 - Drug Safety Surveillance
 - Approach For Predicting Drug Interactions
- Innovation Fridays-Spring 2020.
 - Presenters proposed a solution to answer the scientific question posed by the challenges



Innovation Challenge 2021

- You are invited to the Innovation Challenge Overview on Wednesday at 12:00 (EST)
- Join the Design Thinking Session to “Prime the Innovation Pump”



The Line Up

- The path of CSS collaboration in CDER
 - ShaAvhrée Buckman-Garner, MD, PhD, FAAP– Director, Office of Translational Sciences, CDER
- The path of CSS collaboration in CBER
 - Ginny Hussong, Acting Branch Chief, Data Standards Staff, CBER
- A regulatory journey from PDUFA, FDASIA, and Guidances for standardized study data
 - Heather Crandall, Operations Research Analyst, Office of Business Informatics, CDER
- Do collaborations work to advance regulatory science?
 - Steve Wilson, Ph.D. Senior Staff Fellow, Office of Biostatistics, OTS, CDER