U.S. Food And Drug Administration
Center for Drug Evaluation and Research and
Center for Biologics Evaluation and Research

PDUFA V
Information Technology Plan *(Draft)*
FY 2013 - FY 2017

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PDUFA IT 5-Year Plan

1.0 Introduction

This 5-year plan describes how the Food and Drug Administration (FDA) proposes to meet the information technology (IT) goals of the Prescription Drug User Fee Act Reauthorization Performance Goals and Procedures Fiscal Years 2013 through FY 2017 (PDUFA V Performance Goals). The plan includes FDA's proposed approach for enhancing business processes, data quality and consistency, supporting technologies, and IT operations. Industry can use this information to adequately plan for, resource, and implement the necessary IT changes to enable efficient and consistent adoption of the data standardization, IT, and informatics changes described in the PDUFA V Performance Goals Sections XII and XIV.

The plan considers assumptions, available resources, and statutory requirements of the Food and Drug Administration Safety and Innovation Act (FDASIA), signed into law on July 9, 2012. FDASIA, Section 1136, Electronic Submission of Applications, gives FDA the authority to require the electronic submission of certain information and data in standardized formats. Section 1136 addresses submissions to Investigational New Drug Applications (INDs), Biologics License Applications (BLAs), and New Drug Applications (NDAs) under the PDUFA program as well as Abbreviated New Drug Applications (ANDAs) under the GDUFA program. In addition, global collaborative initiatives, such as the International Conference on Harmonization (ICH), affect this plan.

Further, the plan relies on the development and acceptance of regulatory standards. Changes in those standards could result in changes to the plan; therefore, FDA intends to publish periodic draft revisions to the PDUFA V Plan to communicate minor updates and corrections. FDA intends to publish an annual assessment plan for measuring its progress on meeting milestones mapped directly to the PDUFA V IT goals. The assessment plan will also report key performance measures associated with these goals.

Background

Reauthorized on July 9, 2012 as part of FDASIA, PDUFA is designed to speed the delivery of safe and effective prescription drugs to the public. FDASIA also includes provisions that increase FDA's authorities and responsibilities to address issues such as drug shortages, drug supply chain, drug safety, drug security, and drug innovation. PDUFA authorizes FDA to collect user fees from industry that will provide funding to expand and modernize FDA's prescription drug regulatory process.

In connection with funding received from PDUFA, FDA has agreed to specific review performance procedural goals for drugs, biologics, and medical devices, such as reviewing a certain percentage of applications within an established time frame.

Overview of the 5-Year Plan

FDA has governance processes to ensure the alignment of IT investments with the PDUFA commitments. These processes define decision-making authorities and assign accountability for executing decisions. Within FDA, the Center for Drug Evaluation and Research (CDER) and Center for Biologics Evaluation and Research (CBER) are accountable for meeting the PDUFA commitments and for allocating resources to support PDUFA. Each Center has an Information Technology Investment Review Board (ITIRB) that recommends and prioritizes IT investment decisions. Through this governance process, each Center's ITIRB selects, evaluates, and controls the proposed IT investments.

As part of the overall governance process, the ITIRBs monitor performance and risks associated with each investment and work closely with stakeholders to ensure these investments support PDUFA objectives, including reuse of common business processes, shared best practices, and employment of common authoritative data sources. FDA's User Fee Board reviews the total PDUFA allocation to ensure alignment with Agency PDUFA goals. The alignment between the Center ITIRBs and FDA's User Fee Board ensures good stewardship.

FDA strives to achieve a fully automated standards-based IT environment that enhances the regulatory review processes for human drugs and biologics. This 5-year plan covers five topic areas and related key activities for achieving PDUFA IT goals:

1. Supporting Regulatory Operations—describing the approach to strengthening the Electronic Submissions Gateway to support the long-term exchange and review of drug and biologics applications.
2. Electronic Regulatory Submissions—providing a consistent approach to the creation and review of regulatory submissions.
3. Data Standards—defining and implementing standards supporting drug efficacy, drug safety, manufacturing, product identification, and other areas.
4. Metrics and Measures—tracking progress and assessing implementation of goals.
5. Communications and Technical Interactions—disseminating information to stakeholders to help improve the program.

Many of these key activities have dependencies that can affect the schedule, such as international guidelines, implementation timelines, and availability of resources. Charts depicted throughout this plan represent FDA's current expectation of when these activities may begin.

2.0 Supporting Regulatory Operations

FDA plans to strengthen the Electronic Submissions Gateway (ESG) to support the long-term exchange and review of drug and biologics applications. The 5-year Plan activities for Supporting Regulatory Operations include:

Supporting Regulatory Operations	FY13	FY14	FY15	FY16	FY17
Conduct analysis of the Electronic Submission Gateway Operations		x			

The ESG has been critical to the success of FDA's electronic submission initiatives. Originally implemented in May 2006, ESG has grown to support more than 1.4 million submissions a year. ESG initially supported CDER, CBER, and the Center for Devices and Radiological Health (CDRH) but has since expanded to support seven centers and the Office of the Commissioner. In addition, FDA has been working with Health Canada through the Regulatory Cooperation Council (RCC) to enable Health Canada to use ESG to receive regulatory submissions.

To ensure that the ESG is stable and can meet current demand and projected future increases in submission loads, FDA intends to analyze current ESG operations. This analysis will look at:

- Current program structure of the ESG
- Current ESG capacity and planning capabilities
- Effectiveness of the current ESG Communication Plan
- Adequacy of contingency planning and continuity of operations
- Long-term viability of the current technology and security provisions

The results of this analysis could lead to program changes that may become part of a future assessment of the PDUFA IT plan.

3.0 Electronic Regulatory Submissions

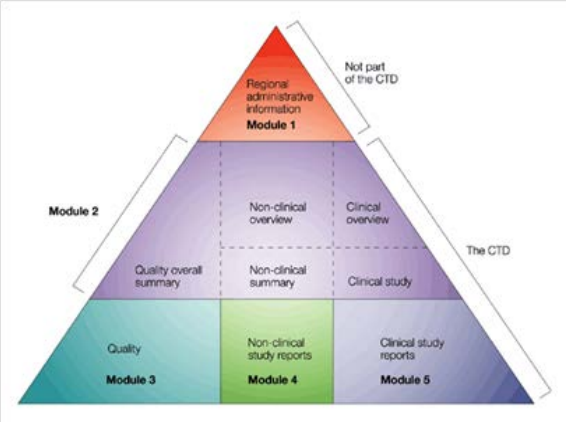
FDASIA calls for a consistent approach to the creation and review of regulatory submissions. The 5-year Plan activities supporting electronic regulatory submissions include:

Electronic Regulatory Submissions	FY13	FY14	FY15	FY16	FY17
Require submissions in the eCTD format:					
Publish Final eCTD guidance		x			
Require NDA, BLA, and ANDA submissions in eCTD format				x	
Require commercial INDs in eCTD format					x

Electronic Regulatory Submissions	FY13	FY14	FY15	FY16	FY17
Enhance eCTD format to provide additional capabilities:					
Implement Module 1 update		x			
Implement eCTD v4.0				x	

FDA ensures that the standardized format follows international guidelines. Since 2003, FDA has accepted electronic submissions using the International Conference on Harmonization (ICH) eCTD format.

The eCTD derives from the ICH Common Technical Document (CTD) and allows for the electronic submission of the CTD from applicant to regulator. The CTD has five modules shown in figure 1, CTD Module Structure. Module 1 is region specific. Modules 2, 3, 4, and 5 are harmonized.



The current harmonized version of the eCTD is 3.2.2. The next major version of the eCTD, version 4.0, uses the Health Level Seven International (HL7) Regulated Product Submission (RPS) standard. After RPS Release 2 becomes a normative HL7 standard, RPS is subject to International Organization for Standardization (ISO) approval.

FDA intends to require submissions in a standardized electronic format. Section XII of the PDUFA V Performance Goals describes the process FDA intends to follow to require submissions using the eCTD format. FDA agreed to publish draft guidance by December 31, 2012, and FDA agreed to publish final eCTD guidance "no later than 12 months from the close of the comment period on the draft guidance." The proposed phase-in period for the NDA and BLA submissions is 24 months after publication of final guidance. ANDA applications also follow the 24-month phase-in period under the GDUFA program. The proposed phase-in period for commercial INDs is 36 months. An increase in electronic submissions through the ESG is expected when the eCTD requirements are implemented.

FDA publishes guidance and specifications to describe the electronic submissions process and requirements. FDA published the "Draft Revision of Guidance for Industry on Providing Regulatory Submissions in Electronic Format – Certain Human Pharmaceutical Product Applications and Related Submissions Using the Electronic Common Technical Document Specifications" on January 3, 2013, and the comment period closed on March 4, 2013. The performance goals specify eCTD version 3.2.2 as the required harmonized format. After review of the public comments and internal discussions, FDA decided to issue a second draft for public comment, which will affect the schedule for publishing of the final guidance. FDA intends to issue the final guidance by the end of FY14. Per the requirements of FDASIA 1136, FDA intends to require submissions in eCTD format no sooner than 24 months after publication of the final eCTD guidance.

FDA enhances the standard eCTD format to provide additional capabilities. FDA has two initiatives: the update of our US regional Module 1 (M1) and development of the eCTD version 4 (v4.0). These initiatives enhance our electronic submission process and expand the eCTD capabilities. FDA published draft M1 specifications in October 2011 and published updated M1 specifications in August 2012. FDA continues work on the implementation of the updated M1 and plans to publish minor revisions to the specification found on the eCTD M1 update webpage. The updated M1 functionality includes updates to support the voluntary submission of Promotional Labeling in eCTD format through the ESG, the organization of submission types and submission numbering, functionality for grouped submissions, and additional headings and metadata to improve submission processing and review. The planned implementation of the M1 specifications is June 2014.

ICH also continues work on eCTD v4.0. ICH published the "ICH eCTD v4.0 DRAFT Implementation Guide v1.0" and conducted tests during the first half of 2013. The project documentation on the ICH eCTD v4.0 Step 2 for testing page includes a link to the US regional eCTD v4.0 webpage. The next major eCTD v4.0 milestone is the HL7 RPS Normative ballot in September 2013. ICH continues testing and updating the ICH and regional implementation guides with a Step 4, adoption of the eCTD v4.0, in June 2015. The ICH timeline determines when FDA can start receiving eCTD v4.0 submissions, estimated to begin in 2016.

FDA enables the exchange of FDA correspondence using the standardized electronic format. eCTD v4.0 functionality includes two-way communication capabilities. Although eCTD v4.0 can handle two-way communication, FDA and industry must define the process for sending messages to industry. FDA plans to start this analysis in FY14.

4.0 Data Standards

This 5-year Plan has two major activities for supporting the implementation of Data Standards:

Overarching Electronic Submission Guidance	FY13	FY14	FY15	FY16	FY17
Publish Draft Guidance Requiring Electronic Submission of Standardized Data		x			
Publish Draft Data Standards Catalog		x			

Currently, FDA can process, review, and archive electronic submissions that provide data as specified in its Data Standards Catalog. As PDUFA V progresses, FDA intends to require the electronic submission of data in standardized formats.

FDA follows an open, consensus-based process to develop and maintain data standards. Open, consensus-based data standards are necessary to integrate, analyze, report, and

share regulatory information. FDA's standards development and maintenance program aligns with three principles:

1. Ensure the use of high quality data standards through the use of voluntary, consensus-based standards development processes in accredited standards development organizations (SDO) in place of government-unique standards unless such standards are inconsistent with law or otherwise impractical.
2. Reduce the burden of regulation through alignment with existing health IT initiatives, laws, regulations, and mandates such as executive orders.
3. Ensure the efficiency of data standards through the adoption or adaptation of other standards currently in use, when feasible.

Good governance promotes the understanding and management of standards from both the regulatory and industry perspectives. This governance also helps in assuring the availability of the highest quality of data for FDA. FDA's data standards governance provides a framework of policies, procedures, accountabilities, and decision rights for the management of standards throughout their lifecycle. The management of regulatory data and submissions requires well-defined, recognized, and transparent governance. The centers accountable for meeting PDUFA goals have well-defined data standards governance structures that ensure cross-center collaboration, communication, and alignment with respect to data standards development, implementation, and policy. Furthermore, the centers strive to improve their alignment with the data standards functions at the Agency level.

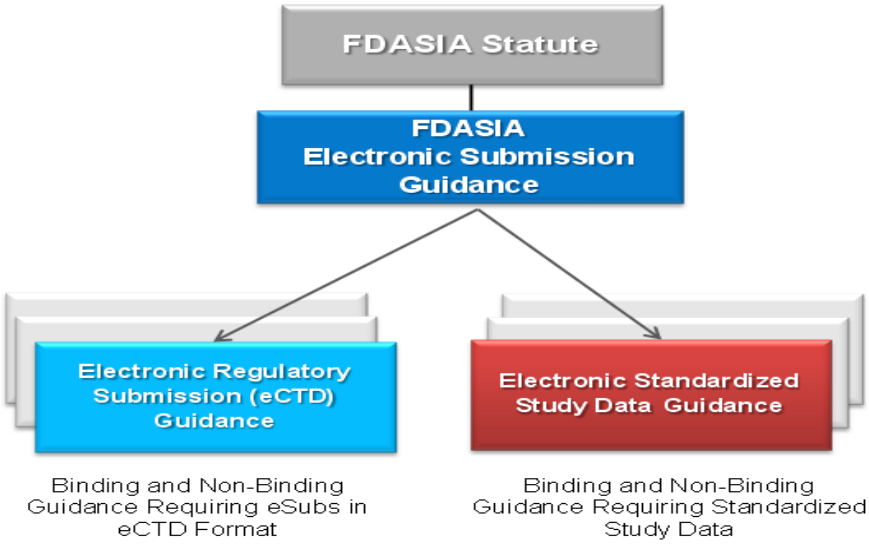
FDA collaborates with stakeholders to develop new and refine existing data standards. As specified in the PDUFA V IT Performance Goals, FDA fosters collaboration with industry, SDOs, and other stakeholders to develop or refine data standards. Data standards must show measurable value to the regulatory review process. FDA, working with stakeholders, will assess benefits. FDA reviewers must have the opportunity to review the standards and related implementation guides to ensure that the standards meet regulatory requirements.

FDA publishes Guidance to Industry and technical conformance specifications to improve understanding of the use of data standards in electronic submissions. In FY14, FDA intends to publish for public comment the draft guidance that will specify the required format for electronic submission of standardized data. After public comment, FDA will publish the final guidance.

In conjunction with the draft guidance, FDA intends to publish a Data Standards Catalog with essential information on what standards FDA supports, requires, or retires for different types of information. When finalized, this catalog becomes a source of information on data standards used for submitting data to FDA.

FDA intends to publish additional guidance relevant to specific types of submissions or when FDA implements new data standards. Examples include the eCTD Guidance and the Study Data Guidance. Other application data will be addressed separately in a similar

manner in other guidances for industry. As appropriate, the additional guidance will reference the Data Standards Catalog.



FDA intends to periodically update this 5-year plan with areas for additional data standardization as appropriate.

4.1 Study Data Standards

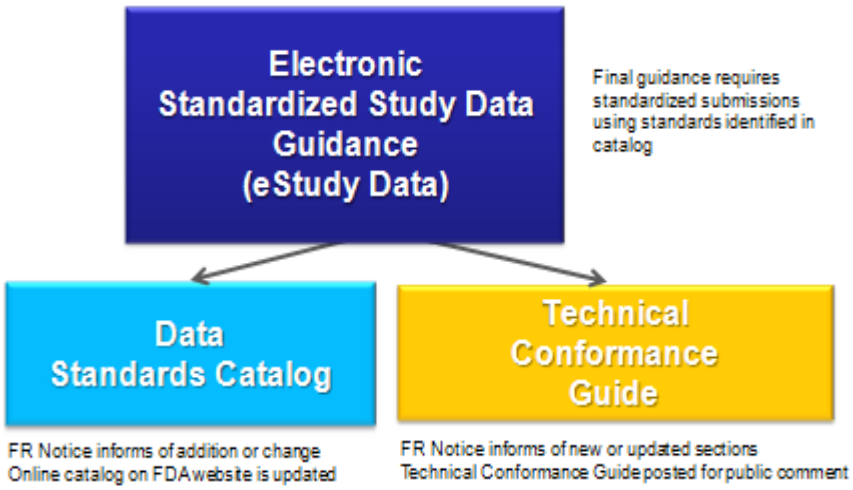
Study Data Standards	FY13	FY14	FY15	FY16	FY17
Publish FDA Therapeutic Area Standards Initiative Project Plan		x			
Publish draft guidance for requiring electronic submission of study data in standard formats		x			
Require electronic submission of study data in standard formats (as specified in Data Standards Catalog)				x	
Publish updates to technical guides for therapeutic area data standards		x	x	x	x

Study Data Standards comprise standards for both clinical and non-clinical trials data. FDA recognizes that Data Standards, when applied consistently by FDA and industry, can improve study efficiency, enable consistent data interpretation and enhance data quality to facilitate more rapid access to safe and effective medical products. FDA currently accepts CDISC, SDTM/SEND, and ADaM study data standards for the evaluation of clinical and non-clinical trials data.

As specified in the PDUFA V goals, FDA intends to publish a project plan for further developing and implementing open, consensus-based standards to support efficacy analysis of distinct therapeutic areas during new drug review.

In FY14, FDA intends to publish draft guidance specifying the requirements for electronic submission of standardized study data. As FDA, working with stakeholders, develops and supports study data standards for implementation, FDA will publish notices in the Federal Register announcing the FDA-supported standards and update the Data Standards Catalog to indicate the newly supported standards. FDA recognizes the importance of planning transitions to new data standards. Although updates to the Data Standards Catalog may occur periodically, the effective date for all updated standards will correspond to a single date every year.

For electronic study data, FDA may provide additional technical information to support industry with their submissions. Such technical guides will be announced in notices in the Federal Register and will reference the guidance to which they apply. The graphic below shows an example of this relationship:



4.2 Individual Case Safety Report Submission Standards

FDA collaborates with external SDOs to develop, test and implement electronic data exchange standards for pharmacovigilance reporting between ICH regulators and industry. The ICH E2B (R2) Individual Case Safety Report (ICSR) standard has been updated to use the new International Standards Organization/Health Level Seven (ISO/HL7) 27953 International Standard. ISO/HL7 27953 is a multi-part international standard developed to support adverse event, product problem and consumer complaint reporting for all FDA regulated products. ISO/HL7 27953 is an HL7 version 3 data

exchange standard, which ICH has adopted for the next major release of ICH E2B (R2). ICH completed its E2B (R3) Step 4 Implementation Guide in July 2013 and FDA will continue its efforts to pilot test and phase implementation of ICH E2B (R3) for electronic drug, biologics and vaccine adverse event reporting.

The 5-year Plan activities supporting ICSR include:

ICSR Standards	FY13	FY14	FY15	FY16	FY17
Require all ICSR submissions to be electronic and in E2B (R2) format for Drugs and Biologics		x			
ICSR submissions in the E2B (R3) format for Drugs and Biologics:					
Publish ICH E2B (R3) Implementation Guide	x				
Conduct pilot testing		x			
Issue FDA Regional E2B (R3) implementation guidance		x			
Require electronic submissions using E2B (R3)			x		
Require all ICSR submissions to be in E2B (R3) format for Vaccines:					
Publish ICH E2B (R3) Implementation Guide	x				
Conduct pilot testing		x			
Issue FDA Regional E2B (R3) implementation guidance		x			
Require electronic submissions using E2B (R3)		x			

ICSR provides a consistent approach to the creation and review of drug and biologics safety information and pharmacovigilance activities. The worldwide exchange of safety information involves a high volume of data and a large number of potential participants. Therefore, drug safety relies on the efficient exchange of formatted safety reports automatically generated and processed.

FDA has accepted ICSRs since the late 1990s using the ICH E2B (M) guideline. Subsequently, ICH E2B (R3) evolved through the ICH standards development process and the Implementation Guide, published in July 2013. FDA intends to implement ICH E2B (R3) in a phased manner. FDA works with the industry to conduct pilot testing of E2B (R3) formatted ICSRs to identify any technical issues that may require additional guidance.

FDA intends to continue accepting safety reports in E2B (M) format until FDA publishes regional guidance for E2B (R3). The timeline for this implementation is tentatively two years for drugs and biologics. CBER intends to implement the acceptance of Individual Case Safety Reports (ICSRs) pertaining to vaccines by 2014.

FDA intends to issue regional guidance and specifications to describe the electronic submissions process and requirements applicable for its regulatory processes. This

guidance helps facilitate pilot projects for regional requirements needed to implement the standard in the United States. CBER has already begun this pilot for vaccines. FDA anticipates a FAERS pilot will extend to 2014.

FDA intends to collect and publish clarifications and regional FDA requirements in a regional implementation guide. This guidance, in conjunction with the ICH Implementation Guide, provides information needed to implement electronic submission of E2B (R3) formatted ICSRs. FDA also intends to apply feedback from the ICH Implementation Working Group to address ICH E2B (R3) implementation questions emerging from the regulatory agencies and pharmaceutical manufacturers.

4.3 Identification of Medicinal Products

Identification of Medicinal Products	FY13	FY14	FY15	FY16	FY17
Issue FDA IDMP implementation draft guidance for public comment		x			

FDA is working with the European Union (EU) to implement the ISO Identification of Medicinal Products (IDMP) standards that define, characterize, and identify each regulated Medicinal Product for human use from approval through post-marketing. FDA and the EU are drafting a set of implementation guides for the IDMP standards to submit for ballot within ISO and HL7 and for public comment with a target date of 2014.

Following the finalization of the IDMP implementation guides, FDA plans to publish draft guidance on the use of the standards.

4.4 Drug Quality and Facilities

Facilities Data Standards	FY13	FY14	FY15	FY16	FY17
Issue draft guidance for pre-market manufacturing establishment information		x			

FDA plans to issue draft guidance in 2014 for the voluntary pre-market submission of manufacturing establishment information using the SPL standard. In addition, FDA is assessing standardization needs and uses for non-clinical data areas such as Chemistry Manufacturing and Controls (CMC), product, and facility. This assessment is likely to lead to other projects that may require additional guidance or standards development. Moreover, the assessment may support other efforts outlined in this plan such as IDMP implementation. FDA expects to share its thinking and solicit public input on standardization in these areas through Federal Register notices and public meetings.

As appropriate, FDA will update this 5-year plan with areas for drug quality standardization timing for guidance as the assessment progresses.

5.0 Metrics and Measures

FDA will track and report its progress towards achievement of targeted metrics and measures as established in Section XIV.A of the PDUFA Reauthorization Performance Goals and Procedures Fiscal Years 2013 through FY 2017 letter. FDA will report these performance metrics in the annual PDUFA Performance Report, prepared by FDA's Office of Planning.

In addition, PDUFA requires FDA to report annually on the financial aspects of its implementation. Through this process, FDA will report its financial metrics in the PDUFA Financial Reports submitted to Congress each fiscal year on PDUFA program activities, collections, and spending.

6.0 Communications and Technical Interactions

FDA develops, updates, and publishes a five-year PDUFA IT plan for business process improvement. To support improvements and to track these planning efforts, FDA will improves its processes for communicating timely, accurate, and consistent IT information. These processes include facilitating as well as participating in meetings and discussions to foster early and continued interactions between FDA and industry. As part of this process, FDA takes a collaborative approach to strengthening communications and sharing information technology data standards goals under PDUFA. FDA pursues opportunities for improving stakeholder collaboration through approaches aimed at reporting progress towards meeting these goals. The dissemination strategy also provides and obtains data from industry and other stakeholders that present important action-oriented information.

FDA uses a multi-tiered approach to improve communications and distribute IT and data standards information to industry at regular intervals. FDA improves communications between FDA and industry stakeholders that promote effective relationships. Among these activities, FDA employs both formal and informal written correspondence, electronic media, and interpersonal person-to-person communications. The media used to distribute information include FDA's website, face-to-face meetings, electronic mail, and media communications techniques. FDA meets with industry stakeholders to discuss ongoing implementation efforts, outcome measures, and potential revisions to the PDUFA IT plan.

As part of the overall communications and technical interactions approach, FDA develops and posts on its website the five-year PDUFA IT plan and as appropriate will provide updates to the plan. The IT plan frames FDA's approach for prioritizing IT-enabled business process change and identifies key business process improvements expected from each IT investment associated with PDUFA. Each year for the next five-years, FDA annually assesses progress against targeted goals and performance metrics.

FDA intends to report its performance in meeting these metrics in an annual summary report published on FDA's website.

A key component of the communications plan involves publishing program guidance and providing formal notifications to industry. FDA develops and disseminates guidance and policy to achieve IT goals and objectives of the PDUFA IT Plan. FDA continually publishes written communications that describes Agency and Center policy for industry to help improve decision making and planning. FDA also solicits feedback for facilitating two-way communication across a wide-range of industry stakeholders. Additionally, FDA performs monitoring, reporting and evaluation, which includes providing effective and relevant reporting of funds as they align to meeting IT and data standardization goals under PDUFA.

The IT Plan addresses targeted data standards that include therapeutic areas, which facilitate clinical research and the regulatory review of medical products. FDA is actively participating with external stakeholders to support the development of these therapeutic area standards as specified in PDUFA V. FDA intends to publish a therapeutic area plan for public comment.

FDA meets quarterly with stakeholders to discuss prospective implementation of the PDUFA IT plan. Fundamental to these efforts, FDA establishes a collaborative process to identify opportunities for continual quality improvement, to make modifications to the IT Plan when appropriate, and to assess potential impacts among FDA and stakeholders. Through this process, FDA encourages dialogue, particularly on the development of the PDUFA IT Plan and requisite impacts.

7.0 Next Steps

The next steps for this plan involve conducting assessments, engaging feedback from stakeholders, and issuing guidance. These steps depend on international organizations' decisions, stakeholder involvement, and agency resources. To this end, FDA remains committed to working with industry to successfully implement and address implementation challenges for collaboratively meeting the PDUFA V IT goals.