World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(REVIEW ARTICLE)

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Regulatory requirements in the preparation CTD and ECTD as Per CDSCO comparison with Brazil

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World Journal of Advanced Research and Reviews, 2023, 20(02), 046–053

Publication history: Received on 02 September 2023; revised on 15 October 2023; accepted on 18 October 2023

Article DOI: https://doi.org/10.30574/wjarr.2023.20.2.2076

Abstract

Stringent regulatory standards apply to the creation of Common Technical Documents (CTD) and Electronic Common Technical Documents (eCTD) for regulatory submissions in India, which are overseen by the Central Drugs Standard Control Organization (CDSCO). The essential regulatory considerations affecting the creation of CTD and eCTD submissions in accordance with CDSCO criteria are summarized in this abstract. It emphasizes how crucial adherence to these rules is to ensure the prompt and effective registration of pharmaceutical goods in India. The advantages of eCTD in simplifying the regulatory process are also briefly covered in the abstract, along with the changing environment of electronic submissions. For pharmaceutical businesses seeking market authorisation in India and for regulators striving to maintain the highest standards, understanding and adherence to CDSCO's regulatory requirements are essential.

Keywords: CTD is for Common Technical Documents; ECTD stands for Electronic Common Technical Documents; Central Drugs Standard Control Organization stands for central Drugs Standard Control Organization

1. Introduction

1.1. CDSCO (Central drug standard control organization)

CENTRAL DRUG STANDARD CONTROL ORGANISATION (CDSCO) regulates the nation's registered medical devices, cosmetics, and pharmaceuticals for quality.[1]

It is the National Drug Regulatory Authority of the Government of India and is in charge of establishing drug standards, approving clinical trials, monitoring the quality of imported drugs, coordinating the work of state drug control organizations, and giving professional advice in order to ensure consistency in the application of the drugs and cosmetics laws.Cosmetics Act in addition to the granting and renewal of licenses for certain key categories of drugs such blood and blood products, intravenous fluids, vaccines, sera, r-DNA products, and medical devices. The Indian government is currently working to improve the standards of the nation's regulatory practices and introduce a high level of uniformity in these activities. throughout the States. A strong regulatory framework should be built with the assistance of science to support and advance national research and development.throughout the States. A strong regulatory framework should be built with the assistance of science to support and advance national research and development. .[3].

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1.2. CTD (Common technical documents)

"Internationally agreed upon format for the preparation of applications regarding new drugs intended to be submitted to regulatory authorities in participating countries" is known as CTD. To ensure effective data review, the CTD is a "set off specifications for a dossiers for the registration of medicines" and is intended to be the standard format for submitting regulatory information (such as applications, supplements, and reports) to the relevant health authorities (HAS). [4].

A Common Technical Document (CTD) is a list of leaflets that must be submitted with a pharmaceutical registration application to the regulatory agency in order to get market authorisation. The data format is primarily described by CTD. It is common for RA specialists to be familiar with the paperwork required for the approval of a drug product. Contrarily, the orderly organization of information is the main focus of CTD. CTD documentation must to be clear, uncomplicated, and transparent. Regulators in Europe, Japan, and the US have endorsed and recognized the CTD format, which is one that the ICH has established[5] .The CTD is described by the FDA as an information package combining clinical, non-clinical, manufacturing, and technical data that would be submitted for registration of innovative pharmaceuticals in all three ICH territories, namely the US, the EU, and Japan. In semi-regulated markets like the ASEAN countries, paper submission of ACTD and CTD format dossiers as well as computer submission of CD format dossiers are employed. [6]

1.3. ECTD (Electronic common technical documents)

For regulatory bodies, it is quite challenging to sort through and evaluate this vast amount of data. For the evaluation process, a lot of time will be needed. Additionally, it might be quite time-consuming to identify a specific file in order to learn about a specific CTD issue during its review. The applicant finds it challenging to create numerous copies of this extensive CTD application. Hard copies, their color coding, and their organization into modules require the applicant to invest a significant amount of money, technical expertise, and time.

These CTD's shortcomings prompted ICH to create an electronic version of CTD. The HL7 RPS Project's specifications were prepared by the ICH M2 EWG. In 2010, ICH assembled the Expert Working Group for eCTD, gave them the go-ahead for eCTD development, and awarded the topic code M8. The task of further developing eCTD recommendations is under ICH M8. Under Step 2b of the ICH process, the Draft eCTD Implementation Guide (v.2.0) and associated papers were made available for regulatory consultation until May 22, 2015. In 2010, eCTD became necessary for centralized processes. While eCTD is not required in Europe, it is in the USA. For MAA, eCTD is submitted in addition to the paper submission. .[7]

Aim

To safeguard and advance India's public health. Mission: To protect and improve public health by ensuring the efficacy, quality, and safety of medications, cosmetics, and medical equipment.

The CTD is a globally accepted framework for the creation of new drug application submissions intended for regional regulatory authorities in participating nations.The CTD is intended to encourage regulatory requirements for the creation and registration of pharmaceuticals across various countries and regions. among other things, improving or adjusting the effectiveness of each RNA processing reaction necessary for the full completion of the synthesis of the mature RNA. The CTD's activity is greatly influenced by the state of phosphorylation in which it is.The introduction of eCTD was done to lighten the workload of the HAs' reviewers. Due to the fact that all Regulatory authorities use it as a standard format, it also streamlines the filing procedure.An interface and worldwide specification for the pharmaceutical sector to agency transfer of regulatory information is the electronic common technical document (eCTD).It is crucial to submit applications, modifications, supplements, and reports on pharmaceutical products to regulatory agencies during the progress of clinical trials. Electronic Common Technical Document (eCTD) is the standard format to enable worldwide regulatory submission

O*bjective*

The main objectives of CTD and ECTD

- The CTD is an internationally agreed format for the preparation of applications regarding new drugs intended to be submitted to regional regulatory authorities in participating countries.
- Enhancing or modulating the efficiency of all of the RNA processing reactions required for completion of synthesis of the mature RNA

- The CTD format influences the content of the review by imposing a consistent order of information and data
- Harmonization CTD has driven fundamental changes in regulatory practice
- The phosphorylation state of the CTD is critical in determining its activity.
- CTD presents the agreed common format for preparation of a well-structured dossier that will be submitted to regulatory authorities.
- A common format for the technical documentation will significantly reduce the time and resources needed to compile applications for registration and will ease the preparation of electronic submissions.
- The purpose of introducing eCTD was to reduce the burden on the reviewers of the Has
- It also simplifies the process of submission as all the Regulatory authorities use it as a standard format
- Local affiliates can review updates in real-time
- Handling, managing, and archiving trial and document-essential information is less time-consuming
- Documents are easily accessible via search and tracking
- CTD presents the agreed common format for preparation of a well-structured dossier that will be submitted to regulatory authorities.
- A common format for the technical documentation will significantly reduce the time and resources needed to compile applications for registration and will ease the preparation of electronic submissions.

2. Review on comparison CTD and ECTD

2.1. History

- Firstly introduced in 1995-1996
- CTD was agreed in harmonized structure and format for new product application
- CTD was developed by the European medicine's agency (EMA),food and drug administration (FDA),the ministry of health ,labour and welfare (japan) .[5]

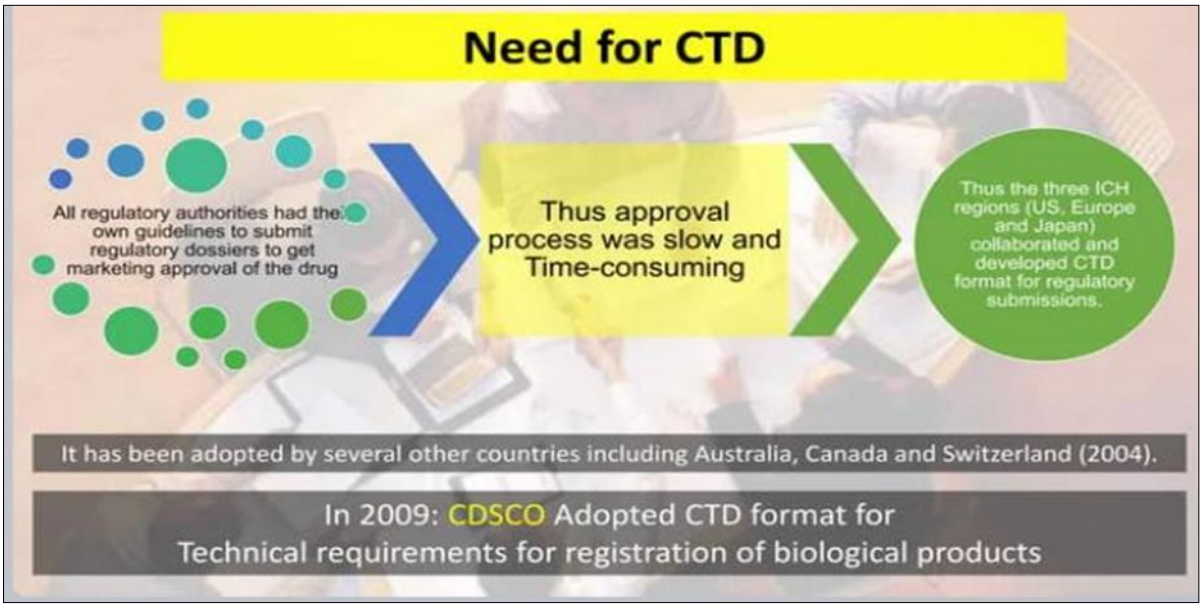

Figure 1 Need for CTD

2.2. Why CTD?

- Hurdles put down by the three major regulatory authorities
- Objective of ICH to prepare the CTD
- Reduce the time and resources used to compile application
- It will ease the preparation of electronic submission
- To facilitate easier exchange of regulatory information and there by faster availability of new medicine's.[7]

Figure Provide caption to the figure

2.3. ECTD benefits

- Easy to distribute and review
- More efficient use of resources, less cost and stress to the organization
- Highly organized electronic table of contents
- Searchable, Self-Validating
- Integrated document and life-cycle management
- Cross submission integration

2.4. CDSCO (Central drugs standard control organisation)

Figure 2 Electronic common technical documents

- Central Drugs Standard Control Organization (CDSCO) exercises regulatory control over the quality of drugs, cosmetics and notified medical devices in the country
- It is the National Drug Regulatory Authority of the Government of India and is responsible for laying down the standards for Drugs, approval for Clinical Trials, control over quality of imported Drugs, coordination of activities of State Drug Control Organizations and providing expert advice with a view to bring about uniformity in the enforcement of the Drugs and Cosmetics Act as well as granting and renewal of licenses for specified critical categories of Drugs such as blood and blood products, I. V. Fluids, Vaccine and Sera, r-DNA products and Medical devices. The Government of India is currently engaged in upgrading the quality of regulatory practices in the country and bring in a high degree of uniformity in these practices across the States.

A good regulatory system should help build a science based regulatory framework to support and promote Research and Development in country. .[9]

2.5. Functions of CDSCO

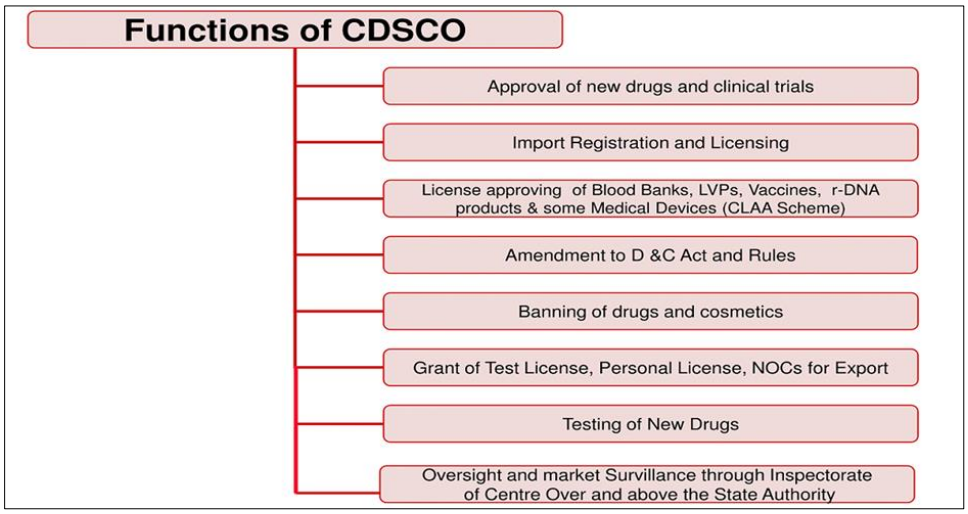

Figure 3 Function of CDSCO

2.6. Office of Drugs Controller General of India (CDSCO Offices/Labs)

- Zonal Offices: Mumbai, Ghaziabad, Chennai, Kolkata, Ahmedabad and Hyderabad.
- Sub Zonal Offices: Chandigarh, Bangalore, Jammu and Goa.
- Port Offices : Ahmedabad, Kandla, Tuticorn, Bangalore, Goa, Chennai (Sea and Air), Delhi, Kochi, Kolkata (Sea and Air), Mumbai (Sea and Air), Navasheva, Hyderabad.
- Central Drugs Laboratories: Mumbai, Chennai, Guwahati, Chandigarh, Kolkata, Hyderabad. .[10]

2.7. Five module of CTD AND ECTD

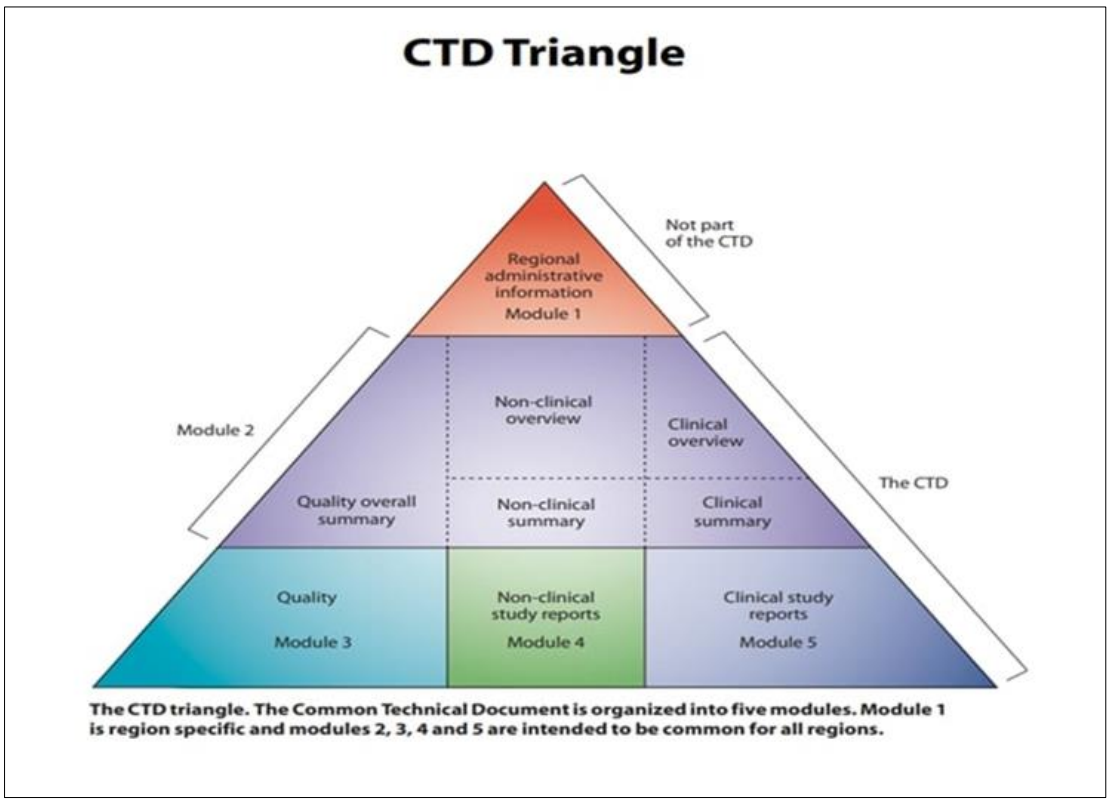

Figure 4 CTD Triangle

- Module 1: General Information
- Module 2: CTD Summaries
- Module 3: Quality
- Module 4: Nonclinical Study Reports
- Module 5: Clinical Study Reports

2.7.1. Module 1: General Information

Module 1 is region specific due to which it is not strictly included in CTD. It contains administrative information, labeling information, and application forms. Different countries have different formats and content for Module 1.

2.7.2. Module 2: CTD Summaries

This module should begin with a general introduction to the pharmaceutical, including its pharmacologic class, mode of action, and proposed clinical use

2.7.3. Module 3: Quality

Module 3 provides information on the chemistry of drug product and drug substance, their manufacturing, and controls

2.7.4. Module 4: Nonclinical Study Reports

Module 4 describes the format and organization of the non-clinical (pharmacotoxicological) data relevant to the application

2.7.5. Module 5: Clinical Study Reports

Module 5 includes clinical data of a drug product required for marketing approval on its efficacy, safety, pharmacokinetic, pharmacodynamics, and other relevant data.

3. Comparison of India V/S Brazil

Table 1 Comparison of Ctd of India V/S Brazil

Filing a CTD in India	Filing a ECTD in Brazil
Language: In India, the CTD dossier may need to be submitted in English. However, certain documents may also be required in hindi or other Indian languages	Language: In Brazil, the official language for regulatory submissions is Portuguese. The CTD dossier and accompanying documents must typically be in Portuguese
Clinical Data Requirements: India may require local clinical trials or bridging studies for certain drug approvals.	Clinical Data Requirements: Brazil may also require local clinical studies, particularly for new drugs.
Pharmacovigilance India has its pharmacovigilance requirements, and reporting of adverse events is mandatory.	Pharmacovigilance: Brazil also has pharmacovigilance regulations, and the reporting of adverse events is mandatory.
Compendial Requirements: India may require compliance with the Indian Pharmacopoeia or other relevant compendia.	Compendial Requirements: Brazil may require compliance with the Brazilian Pharmacopoeia or other applicable.
Import and Export: India may have specific regulations for the import and export of pharmaceutical products.	Import and Export: Brazil has its regulations for the import and export of drugs and pharmaceuticals.
Registration Renewal: In India, drug product registrations need to be periodically renewed as per regulatory requirements	Registration Renewal: In Brazil, registration renewal is also necessary, and the timing and requirements for renewal may differ from.
Data Exclusivity: India has provisions for data exclusivity and protection of clinical trial data for certain periods	Data Exclusivity: Brazil has its data protection regulations.

Regulatory Fees: Both countries may charge regulatory fees for various activities, including submissions and approvals. The fee structure may differ	Regulatory Fees: Both countries may charge regulatory fees for various activities, including submissions and approvals. The fee structure may differ
Post-Marketing Surveillance: Both India and Brazil have post-marketing surveillance requirements to monitor the safety and efficacy of approved Drugs.	Post-Marketing Surveillance: ANVISA in Brazil also has a post-marketing surveillance system.
Local Agent: Appointing a local agent or representative in India is often required.	Local Registration Holder: In Brazil, you must appoint a local registration holder (representanted legal).
Regulatory Authority: The regulatory authority in India is the Central Drug Standard Control Organization (CDSCO).	Regulatory Authority: In Brazil, the regulatory authority is the Brazilian Health Regulatory Agency (ANVISA).
Submission Format: The submission format in India may involve physical copies of the CTD dossier.	Submission Format: In Brazil, electronic submissions through ANVISA's website or specified electronic portals are typically required.
Review Process: The CDSC reviews the CTD dossier, which includes assessments of safety, quality, and efficacy.	Review Process: ANVISA evaluates the CTD dossier, including safety, quality, and efficacy data.
Local Regulatory Requirements: India may require additional local testing or studies, particularly for clinical trials.	Local Regulatory Requirements: Brazil may have specific requirements, such as pricing approval by the Chamber of Drug Market Regulation (CMED)
Marketing Authorization: In India, approval from the CDSCO grants marketing authorization.	Marketing Authorization: In Brazil, ANVISA's approval results in registration, allowing the drug to be marketed.
Timeline: The timeline for approval in India can vary and may involve interactions with the regulatory authority.	Timeline: The timeline for approval in Brazil can also vary, with potential interactions and clarification requests.
Data Protection: India may provide data protection for certain categories of drugs	Data Protection: Brazil has its data protection regulations.

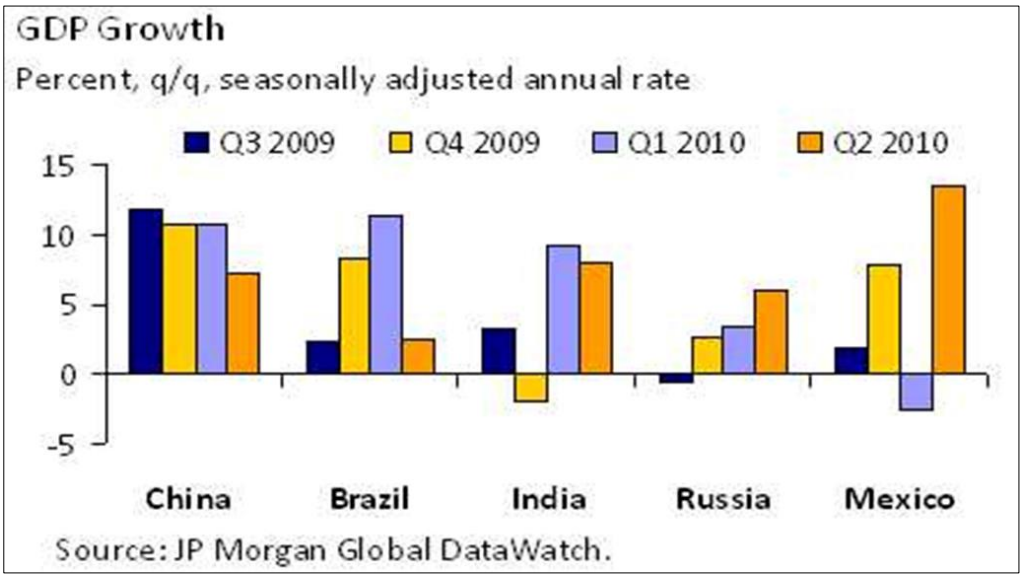

Figure 5 Graph of GDP Growth

4. Conclusion

In conclusion, the regulatory requirements for the preparation of Common Technical Document (CTD) and Electronic Common Technical Document (eCTD) submissions in India, governed by the Central Drugs Standard Control Organization (CDSCO), and those in Brazil, overseen by the Brazilian Health Regulatory Agency (ANVISA), have similarities and differences.

Compliance with ethical standards

Acknowledgments

The authors are wish to thank the management, facility of Sree Siddaganga College Of Pharmacy, Tumkuru , Karnataka for providing facilities to carry out this research

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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