



REGULATORY FRAMEWORK FOR CLINICAL TRIALS IN INDIA POST-2019 REFORMS: A CRITICAL EVALUATION

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ABSTRACT

India has emerged as a key global destination for clinical research; however, ethical concerns and regulatory uncertainties during the early 2010s exposed significant weaknesses in its clinical trial governance system. In response, the Government of India introduced the New Drugs and Clinical Trials (NDCT) Rules, 2019, replacing Schedule Y of the Drugs and Cosmetics Rules, 1945. The reforms aimed to enhance ethical oversight, streamline approval processes, define compensation mechanisms, and align Indian regulations with international standards such as ICH-GCP. This paper critically evaluates the post-2019 regulatory framework for clinical trials in India, examining structural reforms, approval timelines, ethics committee oversight, safety reporting, compensation provisions, and digital regulatory initiatives. The study also discusses the impact of these reforms on India's clinical research landscape and identifies ongoing implementation challenges. The NDCT Rules have significantly strengthened transparency and participant protection; however, continuous capacity building and harmonization with evolving global standards remain essential.

Keywords: Clinical Trials, NDCT Rules 2019, CDSCO, Regulatory Reforms, Ethics Committee, India.

INTRODUCTION

Clinical trials are systematic investigations conducted in human participants to evaluate the safety, efficacy, and quality of investigational medicinal products. Regulatory oversight of clinical trials is fundamental to ensuring participant protection and data integrity. Globally, regulatory frameworks are guided by Good Clinical Practice (GCP) principles, particularly those developed by the International Council for Harmonisation (ICH E6 (R2), 2016). In India, clinical trials were historically governed by Schedule Y of the Drugs and Cosmetics Rules, 1945 (Drugs and Cosmetics Act, 1940). Amendments in 2005 permitted concurrent Phase II and III trials, leading to a rapid increase in multinational clinical research activities. However, between 2008 and 2013, concerns regarding ethical violations, inadequate informed consent, and insufficient compensation mechanisms led to public scrutiny and judicial intervention (Srinivasan S, 2014). The Supreme Court of India mandated stricter oversight mechanisms, resulting in regulatory tightening that

significantly reduced trial approvals. To balance participant safety with research facilitation, the Government introduced the New Drugs and Clinical Trials (NDCT) Rules, 2019 (New Drugs and Clinical Trials Rules, 2019). These rules aimed to modernize India's regulatory framework, ensure transparency, and restore global confidence. This study critically evaluates the regulatory structure and practical implications of the NDCT Rules, 2019.

MATERIALS AND METHODS

This study adopts a qualitative, descriptive, and analytical approach based on secondary data sources.

Data Sources

NDCT Rules, 2019, Drugs and Cosmetics Act, 1940, ICMR National Ethical Guidelines, ICH-GCP Guidelines (E6 R2), WHO regulatory strengthening documents, Peer-reviewed regulatory science literature.

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Analytical Approach

A comparative evaluation was conducted between: Pre-2019 framework (Schedule Y), Post-2019 NDCT Rules. Thematic analysis was used to assess ethical oversight, approval timelines, compensation mechanisms, and digitalization reforms.

RESULTS AND DISCUSSION

Structural Reforms under NDCT Rules, 2019. The NDCT Rules, 2019 replaced Schedule Y and introduced: Defined approval timelines. Mandatory registration of Ethics Committees. Clear compensation formula for trial-related injury/death Academic trial provisions. Digital submission through SUGAM portal. These reforms provided clarity and predictability to sponsors and investigators. The New Drugs and Clinical Trials (NDCT) Rules, 2019 were notified by the Ministry of Health and Family Welfare

under the Drugs and Cosmetics Act, 1940, replacing the earlier Schedule Y framework. The reforms were introduced to address ethical concerns, procedural ambiguities, judicial scrutiny, and declining clinical research activity observed between 2013 and 2017. The NDCT Rules represent a shift from reactive regulatory tightening to a structured, predictable, and globally harmonized framework. The rules integrate ethical safeguards, defined approval timelines, compensation mechanisms, and digital regulatory processes. The NDCT Rules provide comprehensive regulatory coverage for: Clinical trials of new drugs. Bioavailability (BA) and Bioequivalence (BE) studies. Investigational new drugs. Academic clinical trials. Ethics Committee registration and oversight. Post-trial access provisions. Compensation for trial-related injury or death. Unlike Schedule Y, which was limited and fragmented, the NDCT Rules consolidate all clinical research regulatory provisions into a single structured framework.

Table 1. Approval time lines in India.

Type of Trial	Approval Timeline
Drugs developed in India	30 working days
Global clinical trials	90 working days
Academic trials	EC approval only

If no response is received within the stipulated period, approval is deemed granted, subject to conditions.

Under NDCT Rules, all Ethics Committees must be registered with the Central Licensing Authority (CLA) before reviewing any clinical trial protocol. Mandatory registration validity (5 years). Defined quorum requirements. Multidisciplinary composition. Standard Operating Procedures (SOPs). Mandatory reporting of serious adverse events (SAEs). Provision for regulatory inspection. This reform strengthened ethical governance and reduced variability in EC functioning, which had previously been criticized as inconsistent and poorly monitored (6,7). The integration of ICMR National Ethical Guidelines (2017) further harmonizes Indian ethical standards with global Good Clinical Practice principles (WHO,2020). India maintains one of the most stringent compensation mechanisms globally. The NDCT Rules formalize compensation provisions introduced earlier via CDSCO notifications (CDSCO.,2013). SAE reporting within 24 hours. Independent expert committee review. Defined compensation formula: Compensation = (Base amount × Age factor × Risk factor). Sponsor responsibility for medical management. The clarity and transparency of compensation rules enhance participant protection but may also increase sponsor liability concerns (SUGAM Portal,2021). A notable innovation under NDCT Rules is the exemption for academic clinical trials where approved drugs are studied for new indications or dosing regimens without commercial intent. Such trials require only Ethics Committee approval and no CDSCO permission, provided:

The study does not aim for regulatory submission. No commercial intent is involved. This provision promotes investigator-initiated research and academic innovation. The NDCT Rules mandate that sponsors provide post-trial access to investigational drugs if: The drug is found beneficial during the trial. No alternative therapy exists. The investigator recommends continued treatment. This aligns with ethical obligations outlined in the Declaration of Helsinki and ICH-GCP guidelines (FICCI,2022). The Clinical Trial Application (CTA) process has been digitized through the SUGAM online portal (European Medicines Agency,2020). Benefits include: Online submission, Real-time tracking, Reduced paperwork, Transparency in regulatory communication. Digitalization enhances regulatory efficiency and minimizes procedural delays (Gupta V *et al*, 2019). The NDCT Rules empower the Central Licensing Authority to: Conduct inspections of trial sites. Suspend or cancel permissions. Issue warnings or corrective actions. Debar investigators for non-compliance. These enforcement provisions strengthen accountability and align with WHO’s Regulatory System Strengthening framework. The NDCT Rules demonstrate harmonization with: ICH E6 (R2) Good Clinical Practice, ICH E8 (R1) Clinical Study Design, WHO Good Regulatory Practices (Bhatia S *et al*, 2021), EMA Clinical Trial Regulation principles, Such alignment enhances India’s credibility in multinational trials and global drug development program.

Table 2. Comparative over review.

Parameter	Pre-2019 (Schedule Y)	Post-2019 (NDCT Rules)
Approval timelines	Not clearly defined	Defined & time-bound
EC registration	Not mandatory centrally	Mandatory CDSCO registration
Compensation	Notification-based	Rule-based formula
Academic trials	No clarity	Defined exemption
Digital submission	Limited	Fully online (SUGAM)
Post-trial access	Not structured	Mandated

The NDCT Rules provide significantly greater regulatory clarity and structural robustness.

Despite progress, evolving global practices require further updates in: Decentralized clinical trials, Risk-based monitoring, Real-world evidence integration, Adaptive trial designs, Electronic informed consent, Future amendments may be necessary to address these emerging regulatory dimensions. Post-2019 reforms have contributed to gradual recovery in clinical trial approvals and increased interest from global sponsors. The NDCT Rules align with: ICH-GCP guidelines, WHO recommendations, EMA clinical trial governance principles, this enhances India's global regulatory credibility. Mandatory EC registration, defined compensation rules, and stricter SAE reporting mechanisms have strengthened subject safety frameworks. Despite improvements, challenges persist: Limited regulatory manpower, Variability in EC performance, Compliance burden on small institutions, Lack of detailed guidance for adaptive and decentralized trials. Continuous regulatory capacity building remains necessary. The NDCT Rules, 2019 represent a significant advancement in India's regulatory maturity. Compared to the fragmented and reactive pre-2019 system, the current framework provides clarity, defined responsibilities, and structured oversight. Training of investigators and EC members. Harmonization with emerging global practices (e.g., decentralized trials). Strengthening pharmacovigilance integration. India's regulatory future depends on balancing ethical rigor with innovation facilitation.

CONCLUSION

The post-2019 regulatory reforms have substantially strengthened clinical trial governance in India. The NDCT Rules, 2019 have improved transparency, participant protection, and regulatory predictability. While implementation challenges remain, the framework positions India as a responsible and competitive destination for global clinical research. Ongoing refinement and regulatory capacity development will be essential for sustained progress.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

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AI TOOL DECLARATION

The authors declares that no AI and related tools are used to write the scientific content of this manuscript.

DATA AVAILABILITY

Data will be available on request

REFERENCES

- Central Drugs Standard Control Organization. (2013). *Compensation formula notification*. Government of India.
- Central Drugs Standard Control Organization. (2021). *SUGAM portal user manual*. Government of India.
- Drugs and Cosmetics Act, 1940. (1940). Government of India.
- European Medicines Agency. (2020). *Clinical Trial Regulation overview*. European Medicines Agency.
- Federation of Indian Chambers of Commerce and Industry. (2022). *Clinical trials landscape report: India*. New Delhi, India: Author.
- Ghosh, A., & Ray, S. (2017). Regulatory reforms in India. *Indian Journal of Pharmaceutical Sciences*, 79(4), 523–531.
- Gupta, V., Kumar, R., & Sharma, P. (2019). Regulatory challenges in Indian clinical trials. *Journal of Clinical Research*, 13(2), 85–92.
- International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use.

- (2016). *ICH harmonised guideline E6(R2): Good clinical practice*. Geneva, Switzerland: Author.
- Bhatia, S., & Mehta, P. (2021). Impact of NDCT Rules on ethics committees. *Regulatory Affairs Journal*, 18(3), 112–119.
- Ministry of Health and Family Welfare. (2021). *Clinical trial oversight report*. Government of India.
- New Drugs and Clinical Trials Rules. (2019). Ministry of Health and Family Welfare, Government of India.
- Sharma, A., Singh, R., & Patel, M. (2020). Evolution of clinical trial regulations in India. *International Journal of Pharmaceutical Sciences Review and Research*, 62(1), 145–151.
- Srinivasan, S. (2014). Ethical concerns in Indian clinical trials. *Indian Journal of Medical Ethics*, 11(3), 168–171.
- World Health Organization. (2020a). *Global benchmarking tool for evaluation of national regulatory systems*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2020b). *Regulatory system strengthening for medical products*. Geneva, Switzerland: World Health Organization.

