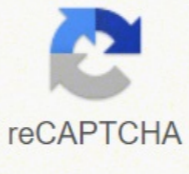


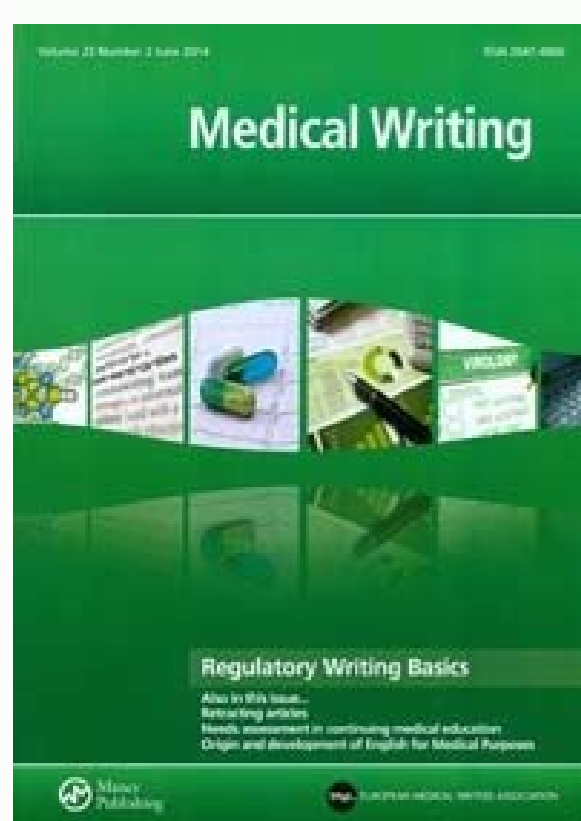


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Regulatory

## Clinical Investigation of Medical Devices: Promoting Convergence



**Abstract**  
The safety, performance and effectiveness of medical devices are evaluated by clinical investigation before they enter the market. The integrity of the data is ensured using international standards like ISO 14155:2011 Clinical Investigation of Medical Devices for Human Subjects – Good Clinical Practice, or ICH E6 Guideline for Good Clinical Practice (GCP) or other GCPs. A clinical investigation design should be made which is appropriate and acceptable by many regulatory authorities that acts as a “gateway” for data transparency and removes all trade barriers. This article brings out the differences between ISO GCP and ICH GCP. Also, it discusses the need for harmonising various GCP standards. Since consistency is essential among GCPs to avoid duplication of work and to allow data from a clinical investigation to be used in another country for marketing approval (data transparency); so it is important that the standards are harmonised.

**Keywords:** Clinical Investigation Plan, Harmonisation-by-Doing, ISO14155, Convergence, Good Clinical Practices

**Introduction**  
Regulations for conducting medical device (MD) clinical trials around the world have varied widely. Complications that arise between trials conducted under different protocols make bringing a device to market difficult in a stricter country. Data may be considered questionable given different requirements. Reciprocal acceptance of Good Clinical Practices (GCPs) would facilitate multinational studies and promote the use of clinical data to support regulatory submissions in multiple countries.<sup>1</sup>

**Objectives**

- To bring out the differences between international standards like ISO 14155:2011 Clinical Investigation of Medical Devices for Human Subjects – Good Clinical Practices (GCP) or ICH E6 GCP.
- To discuss the advantages of harmonisation of these guidelines for the benefit of the medical device industry and public health.

**ISO 14155:2011**  
ISO 14155:2011 addresses good clinical practice for the design, conduct, recording and reporting of clinical investigations carried out in human subjects to assess the safety or performance of medical devices for regulatory purposes. The principles set forth in ISO 14155:2011 also apply to all other clinical investigations and should be followed

as far as possible, depending on the nature of the clinical investigation and the requirements of national regulations. ISO 14155:2011 specifies general requirements intended to protect the rights, safety and wellbeing of human subjects, ensure the scientific conduct of the clinical investigation and the credibility of the results, define the responsibilities of the sponsor and principal investigator, and assist sponsors, investigators, ethics committees, regulatory authorities and other bodies involved in the conformity assessment of medical devices.<sup>2</sup>

**ICH GCP**  
The ICH-GCP is a harmonised standard that protects the rights, safety and welfare of human subjects, minimises human exposure to investigational products, improves quality of data, speeds up marketing of new drugs and decreases the cost to sponsors and to the public. Compliance with this standard provides public assurance that the rights, safety and wellbeing of trial subjects are protected and consistent with the principles of the Declaration of Helsinki, and that the clinical trial data is credible.<sup>3,4</sup>

ISO 14155:2011	ICH GCP
ISO 14155:2011 addresses regulatory and pharmaceutical medical device industry.	ICH GCP addresses regulatory and pharmaceutical industry.
Local, international manufacturers of clinical investigations of medical devices.	Local, international manufacturers of clinical investigations of medical devices – to all global drug development.
ISO 14155 assesses clinical performance.	ICH GCP assesses efficacy.
Investigator is qualified by education, training and experience.	Investigator is a qualified physician or dentist.
ISO 14155:2011 investigate brochures to include a summary of clinical investigation purpose and related information.	ICH GCP – in accordance with applicable Good Manufacturing Practice.
ISO 14155:2011 Clinical Investigation of Medical Devices for Human Subjects – GCP – not globally adopted.	ICH GCP guidance introduced in 1996 – widely adopted in USA, Europe, Japan and other sites.
Adverse events – Adverse device effect – health-care professionals responsible for site, institution, or sponsor, or any combination of the investigating medical device.	Adverse event is related to the drug. One or more serious adverse events will need to be reported and evaluated as potentially related to the drug.
Device deficiencies – inadequacy of a medical device with respect to its safety, quality, durability, reliability, safety or performance.	Adverse events not related to the subjects – can also be seen in other patients.
Reporting – ISO 14155:2011 does not differentiate the reporting of adverse events and unintended adverse device effects from unexpected adverse effects.	Reporting serious adverse product quality problems, however, report adverse failures with drugs.

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17 Differences<sup>5</sup>

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### Medical writing for regulatory submission in clinical research and its challenges

**Regulatory medical writing in clinical trials** requires medical writers to possess sufficient knowledge of the regulatory guidelines of concerned authorities of specific countries and needs to have dedication and commitment to handle large volumes of regulatory data. A professional regulatory writer needs to have sufficient understanding of the drug development process to determine the important documents that need to be written and submitted for regulatory submissions.

### Regulatory submissions challenges in clinical trials

**Regulatory Writing and Publishing** poses many challenges for the medical writers in the writing and development of critical documents like Clinical Study Report, Investigator’s Brochure, and clinical trial protocol development and in the preparation of documents for FDA meetings and briefings.

The Clinical Study Report (CSR) is a critical document that provides an integrated report comprising the clinical and statistical description of the investigational study of therapeutic or prophylactic drugs in a single report with relevant tables, figures, and appendices. A medical writer will face challenges in understanding the guidelines and statutory requirements and also developing suitable document template that covers all current regulatory requirements.

Investigator’s Brochure is an essential regulatory document that provides an overview of the clinical and non-clinical findings of the trial study and is primarily used as an investigator guide to assessing the risks and benefits of the product under investigation. The major challenge commonly faced by the regulatory medical writer in the preparation of Investigator’s brochure include



