

Clinical Evaluation Reports under the new EU MDR

Introduction

The new EU Medical Device Regulation (MDR) was published in the Official Journal of the European Union on May 5, 2017, marking the beginning of the transition period for any medical device manufacturer selling devices in Europe.¹ This new regulation replaces the Medical Devices Directive and the Active Implantable Medical Devices Directive and includes changes to several critical requirements. Medical device manufacturers will notice that there are updated requirements for technical files, and specifically for clinical evaluation reports. In this paper, we will cover what a clinical evaluation report is and how the requirements under the new regulation differ from the previous directive.

History of Clinical Evaluation Reports and Their Purpose

In 1993, the European Union's Medical Device Directive came into force with the intent of harmonizing regulations relating to the safety and effectiveness of medical devices sold in Europe. To ensure uniformity by both manufacturers and Notified Bodies performing conformity assessments to the new Directive, legally non-binding MEDDEV guidelines were created. As the medical device industry continued to develop, the MEDDEV guidelines were revised to continue to police the safety and performance of advancing technologies.² In December 2009, MEDDEV 2.7.1 Rev 3 was introduced, establishing the requirement for clinical evaluations of medical devices which the guidance defines as “the assessment and analysis of clinical data pertaining to a medical device in order to verify the clinical safety and performance of the device.”³

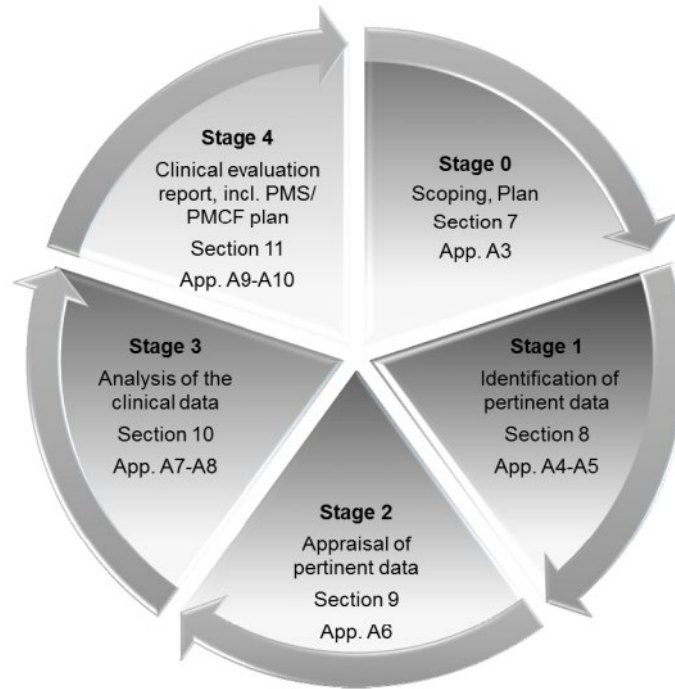
A clinical evaluation of a device is typically completed in four steps. Step one is defining the scope and planning of the clinical evaluation. Step two is identifying clinical data from existing literature, clinical experience, and/or clinical trials. This step is contingent upon if your device is novel or if it has a predicate device; if the device is new and does not have a substantial predicate, clinical trials will have to be performed and there will be fewer data from literature or existing clinical experience. Step three is evaluating the data's quality and scientific validity; you will want to make sure all the data is significant and reproducible. Finally, step four is authoring a clinical evaluation report summarizing all the data collected. Every medical device sold in Europe must have an up-to-date Clinical Evaluation Report (CER) included with its Technical File. A CER is required to demonstrate clinical evidence that your device achieves its intended purpose. By analyzing clinical

¹ European Union (2017) REGULATION (EU) 2017/745 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC. *Official Journal of the European Union*, 60 (L117) retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2017:117:FULL&from=EN>

² Achakri, Fennema, Udofia (n.d.) Generating Clinical Evaluation Reports retrieved from: https://www.bsigroup.com/LocalFiles/EN-AU/ISO%2013485%20Medical%20Devices/Whitepapers/WP2_BSI_md_generating_clinical_evaluation_whitepaper_UK_EN.pdf

³ European Commission (December 2009) MEDDEV 2.7/1, Rev 3. Clinical Evaluation: A Guide for Manufacturers and Notified Bodies

data obtained from various sources, a CER is intended to be a standalone document that proves the clinical safety and effectiveness of the medical device. The figure below is provided in the MEDDEV guidance document on Clinical Evaluations and outlines the stages of how a clinical evaluation is performed:



Key Changes Under the New EU MDR

The new guidance document on Clinical Evaluations is MEDDEV 2.7.1 Rev 4. Meeting all the requirements of the new revision will support a transition into the EU MDR, as the regulation aligns with the guidance document. Many will notice that the new revision is more detailed, but it functions mainly to clarify existing requirements rather than to introduce new requirements. It was a common concern across the European medical device industry that the previous guidance on clinical evaluations was unclear and didn't have specific enough objectives; so, the new revision clarifies key points and introduces new requirements that aim to aid manufactures with their clinical evaluations.

The new revision defines the requirements on the frequency of updates to the CER. For high risk or new devices, the CER must be updated annually, and for lower-risk devices it is only required every 2 to 5 years. Device manufacturers will be required to justify the frequency of their CER updates, based on applicable device information and associated risks. Clause 6.2.3 also defines that a device's CER will need to be updated whenever there is new and clinically significant

⁴ European Commission (June 2016) MEDDEV 2.7/1, Rev 4. Clinical Evaluation: A Guide for Manufacturers and Notified Bodies

information from the Post Market Surveillance (PMS) that has the potential to change the current clinical evaluation. A PMS supplies new data for medical devices from adverse event reports, post-market clinical follow-up studies (PMCF), and other device usage databases. For this reason, post-market clinical follow-up studies and other post-market surveillance are highlighted in the newest revision.⁵ Appendix 12 of the guidance enforces the requirement for Notified Bodies to make certain that a PMCF is appropriately planned relevant to any data or conclusions documented in the CER.

In Rev 3 of MEDDEV 2.7.1, there was a requirement to document the scope of the CER and to define the objectives in terms of safety, performance, and risk factors related to the essential requirements of the device. For many, the bridge between the scope and the objectives was muddled and not well defined. Rev 4 makes the requirements clearer, as provided in Section 7 and Appendix A3 of the guidance. The resources in the guidance provide a list of key examples for defining scope and objectives of a device's clinical evaluation, although it is not an exhaustive list.⁴

Rev 4 of the guidance also further defines some ambiguous terms introduced in the earlier revision, such as what a “state of the art” device is, and how to prove the scientific validity of data. The newest revision also expands upon how equivalence of devices is determined and how what should be provided as evidence. Several terms that were simply defined in brief footnotes in revision 3 were expanded upon in revision 4 to help manufacturers and Notified Bodies understand and conform to the regulations.

While most changes to the new revision are clarifications, there are some new requirements introduced as well. One new requirement is for the qualifications of CER authors and evaluators. For both authors and evaluators (all CER's are required to be evaluated prior to publication), a relevant degree and five years of related professional experience are required. In lieu of a degree, an author or CER evaluator must have ten years of professional experience.⁴ This requirement is to ensure people with the proper background are assessing the CER and qualifying its validity. The idea is that if someone who does not have the proper experience is authoring or evaluating the CER, major issues or fundamental safety and performance issues could be overlooked.

The second major new requirement is based on access to data for equivalent devices. Under the EU MDR, if a medical device manufacturer claims equivalence to a different manufacturer's device, a contract must be in place allowing access to data for competitor devices. There is also a requirement for Notified Bodies to assess a manufacturer's access to data on equivalent devices.⁶ Data that is accessible for competitor devices includes technical documentation and clinical evaluations of the predicate device.

⁵ TUV (n.d.) Clinical Data for Medical Devices retrieved from: <https://www.tuvsud.com/en-us/industries/healthcare-and-medical-devices/medical-devices-and-ivd/clinical-services/clinical-data-for-medical-devices>

⁶ BSI (n.d.) The Top Ten Changes in MEDDEV 2.7.1 Rev 4 retrieved from: <https://www.bsigroup.com/meddev/LocalFiles/en-CA/Documents/MedDev-brochure.pdf>

Final Thoughts

Clinical evaluations are an essential part of medical device development since it is the part of the process where you get to prove the design and engineering are satisfactory, safe, and effective. A device's Clinical Evaluation Report is the key piece of evidence that a device is safe to be marketed and meets users' needs. Prior to the EU MDR requirements, how to begin working on a clinical evaluation, and what the exact requirements were, was an ambiguous maze for many device manufacturers. Even with the help of Notified Bodies, there were parts of the process where the requirements were unclear. The new regulation adds clarity to existing requirements and introduces new requirements that improve the process for medical device manufacturers. Considering the criticality of the clinical evaluation process, and the corresponding CER for a device, the new and expanded requirements introduced with the EU MDR should be a welcome change since it will lead to a better device evaluation and ultimately safer devices.

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