The EU Regulatory Framework for Medical Device Early Feasibility Studies: What Do We Know to Date?

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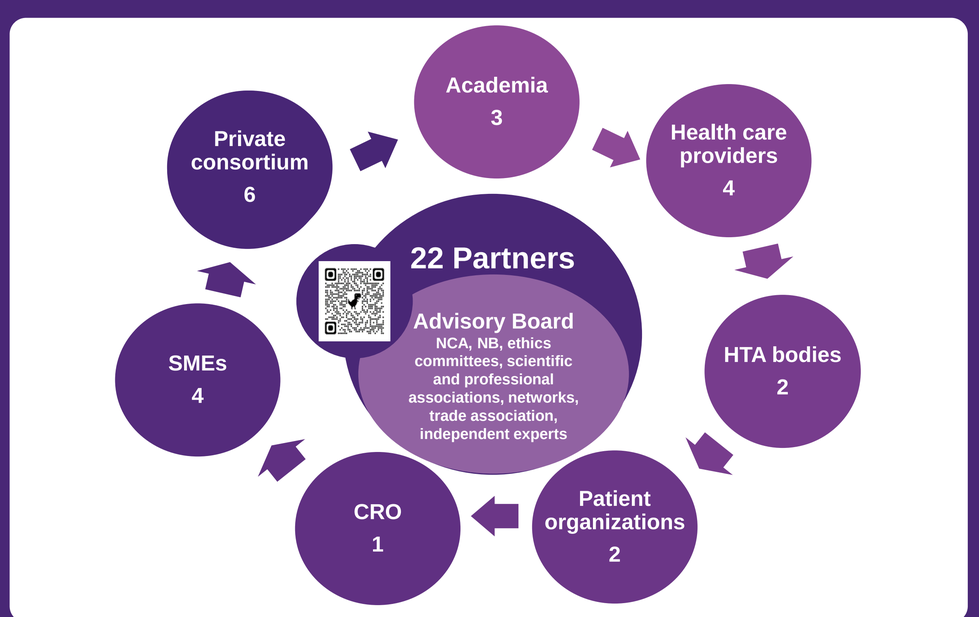
AIMS OF HEU-EFS PROJECT

Formulate recommendations for the establishment of an Early Feasibility Studies (EFS) Program within the European Union (EU), with a focus on ensuring patient safety and enhancing the EU single market competitiveness.



INTRODUCTION

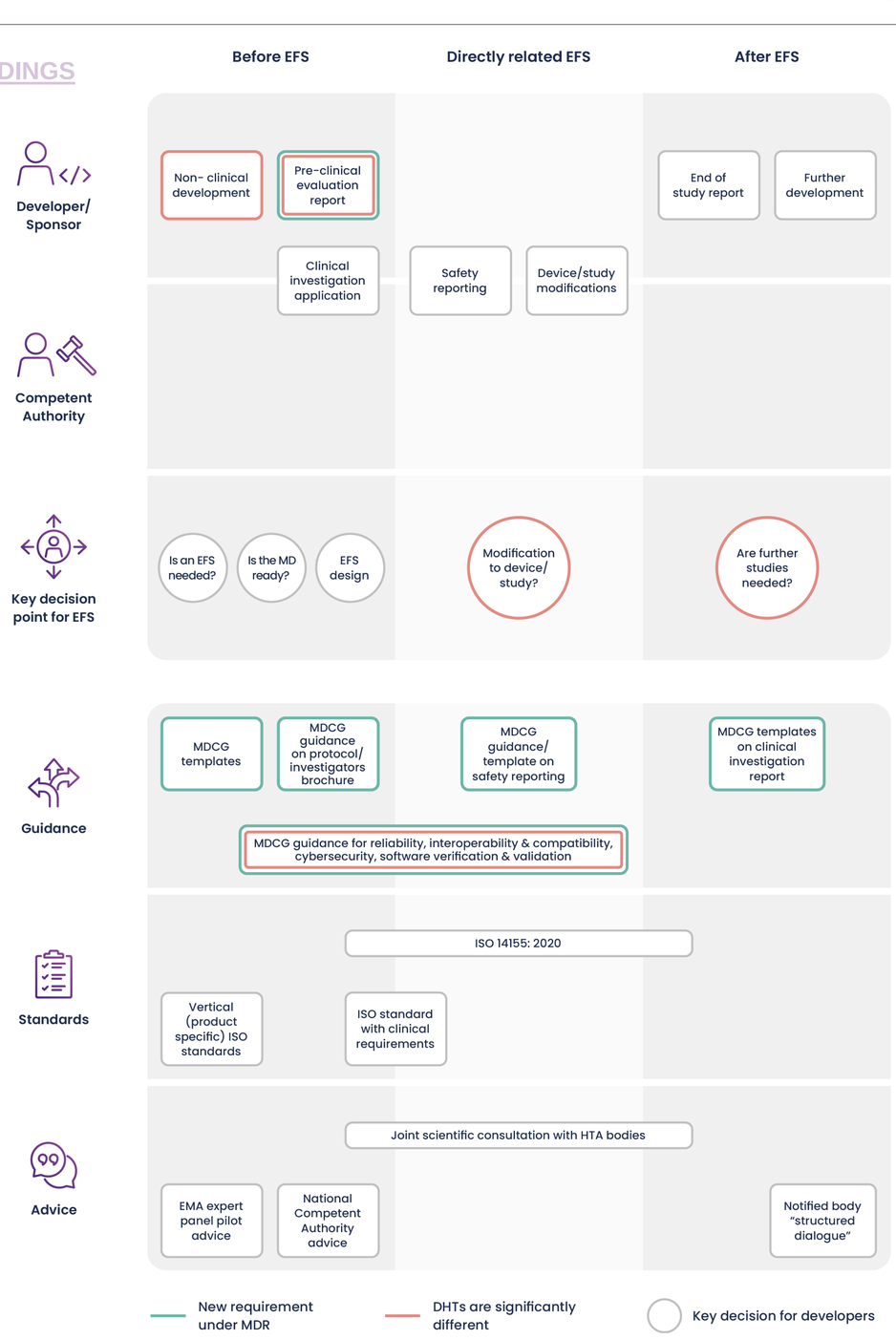
EFS are clinical investigations, early in the development of a medical device to evaluate the design concept and understand initial safety and performance, in a small number of subjects. Device developers engaged in clinical development, need to comply with EU regulations, guidance and international standards. We conducted an analysis of the EU regulatory framework relating to EFS of medical devices to identify the current requirements, and to make recommendations that will support the development of a future EU EFS program. A sub-analysis of digital health technologies was also undertaken, due to the unique considerations that apply to EFS of these technologies.

METHODOLOGY

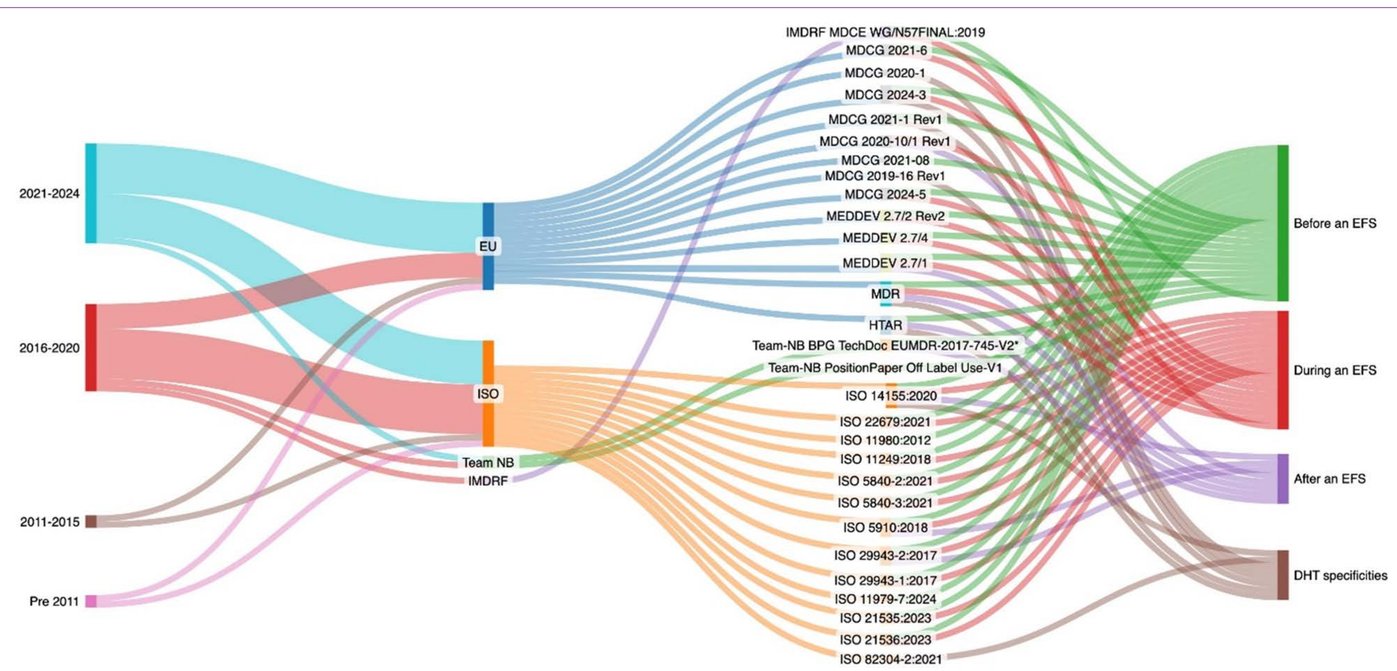
We systematically analysed the Regulations (MDR* and HTAR*), international standards (ISO and IEC*), and regulatory guidance documents MDCG*, MEDDEV* NBOG*, IMDRF*, NBCG* relevant to EFS.

This included: 1) the collection of documents pertaining to clinical investigations; 2) a screening of the full text of the documents; and 3) the extraction of relevant data on clinical investigations and EFS. A systematic literature review was conducted following PRISMA guidelines to identify international practices and challenges in executing an EFS. The data was synthetised to understand the key activities relating to stages before, during and after an EFS.

FINDINGS



An overview of the current EU regulatory framework for generating clinical evidence for medical devices and digital health technologies, focusing on early feasibility studies.



Sankey diagram: Guidance and standards documents that contain information relevant to activities, before, directly related and after an EFS.

- EFS possible in EU but not explicitly facilitated
- Key decision points are not completely addressed in any single framework and available guidance and standards only provide partial information.
- Phased evidence generation not standardised for medical devices or DHTs.
- The impact of device risk classification on EFS need is unclear
- Some national advice structures are available; the EMA expert panels advice pilot for high-risk medical devices is underway (MDR, Article 61(2))
- MDR requires a clinical development plan with milestones and acceptance criteria, however, there is no standardised guidance/template available
- MDR mentions patients 138 times however, it does not integrate them into any regulatory procedures, either in general or specifically for processes related to EFS
- Systematic literature review revealed benefits and challenges to implementing EFS programs internationally

CONCLUSION: MDR requirements and associated regulatory guidance are predominantly framed towards clinical investigations generally rather than EFS specifically. Available guidance, standards and templates do not tend to address EFS specific considerations. A future EU EFS pathway needs a structured framework for clinical evidence generation.

***Acronyms**: HTAR (Health Technology Regulation 2021/2282), IMDRF (International Medical Device Regulators Forum), IEC (International Electrotechnical Commission), ISO (International Organisation for Standards), MDCG (Medical Device Coordination Group), MDR (Regulation 745/2017), MEDDEV (Medical Device), NBOG (Notified Body Operations Group)

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