

# CDRH Medical Device Development Tools (MDDT) Program

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- MDDT Program
- MDDTs
- MDDT Submission Process
- MDDT & Regulatory Review





Qualification through MDDT Pathway



Using MDDTs to support marketing applications

Why the  
MDDT  
Program?



# MDDT Program qualifies tools to advance medical device development

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Voluntary

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Reduces regulatory burden in evaluating medical devices

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Facilitates development and timely evaluation of medical devices

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Supports regulatory submissions and decision-making

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Tool submitters may be a person, group, consortium, or organization (including the federal government)



## Medical Device Manufacturers

- Reduce individual resource expenditure
- Minimize uncertainty in review process

## Regulators (FDA/CDRH)

- Efficiency in CDRH Review
- Acceptance of Tool in Regulatory Review

## Regulatory Scientists & Tool Developers

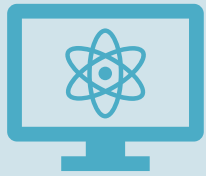
- Bridge gap between research and development
- Further innovation & Collaboration

## Patients

- Enable Patient Voices to be incorporated [PROs]

**MDDT  
Qualification  
plays many  
roles in the  
medical device  
ecosystem**





Method,  
material, or  
measurement

to assess safety,  
effectiveness, or  
performance of a  
medical device



Scientifically  
substantiated

May be qualified for  
use in device evaluation  
and support regulatory  
decision-making

# What is an MDDT?



# Examples of Common MDDTs

## Non-clinical Assessment Models



A non-clinical test model or method that measures or predicts device function or in vivo device performance.

- *e.g., computational models, animal models, phantoms.*

## Biomarker Test



A defined characteristic that is measured as an indicator of normal biological processes, pathogenic processes, or biological responses to an exposure or intervention, including therapeutic interventions.

- *e.g., measures of molecular, histologic, radiographic, or physiologic characteristics.*

## Clinical Outcome Assessment



Assessment of a clinical outcome reported by a clinician, a patient, a non-clinician observer or through a performance-based assessment. May include digital health technologies.

## Other



Tools that do not fit directly into any particular category, however can be used to support regulatory decision making

- *e.g., databases.*



# Qualification Process

## Proposal Phase (~90 Days)

1. Determine suitability of MDDT based on ability to facilitate regulatory decision making.
2. Review **Qualification Plan** with performance criteria and plan for collecting and gathering evidence in support of proposed and context of use.

## Qualification Phase

1. Evaluate strength of evidence in **Qualification Package** to determine whether evidence meets the performance criteria and supports the Qualification Plan for proposed context of use.
2. Qualify tool if the evidence supports the proposed context of use.

FDA only intends to qualify tools where FDA can make public certain high-level information about the existence of qualified tools and their utility





# Key Content to Include in Proposal Phase



<b>MDDT Description</b>	Concept of Interest/Description of principle Method and mode of measurement
<b>Context of Use Statement</b>	Use within regulatory submission Specific output(s), measure(s), endpoints, timing of assessments, etc.
<b>Performance Criteria</b>	Performance characteristics of measurement outputs Measurement properties (reliability, meaningful change, etc.) Scientific justification for strength of evidence collected to support qualification
<b>Qualification Plan</b>	Methods and Performance data to be collected Design verification and validation/validity evidence to be collected Relationship between measurement outputs/validity evidence to context of use
<b>Assessment of Advantages and Limitations</b>	Advantages should highlight impact of tool use on regulatory decision making Limitations should highlight conditions under which tool cannot provide a meaningful assessment



# Key Content to Include in Qualification Phase



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## Proposal

Contents of Proposal including:

- Tool description
- Context of use statement
- Performance criteria
- Qualification plan

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## Tool Evidence

Evidence

Clinical Outcome Assessment (COA) Dossier

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## Assessment of Advantages and Limitations

Advantages should highlight impact of tool use on regulatory decision making

Limitations should highlight conditions under which tool cannot provide a meaningful assessment



## Summary of Evidence and Basis of Qualification (SEBQ)

- SEBQ includes:
  - Brief description of tool and principle of operation
  - Qualified context of use
  - Summary of evidence to support qualification
  - Assessment of advantages and limitations
  - Contact information for tool developer
- SEBQ does not include proprietary information



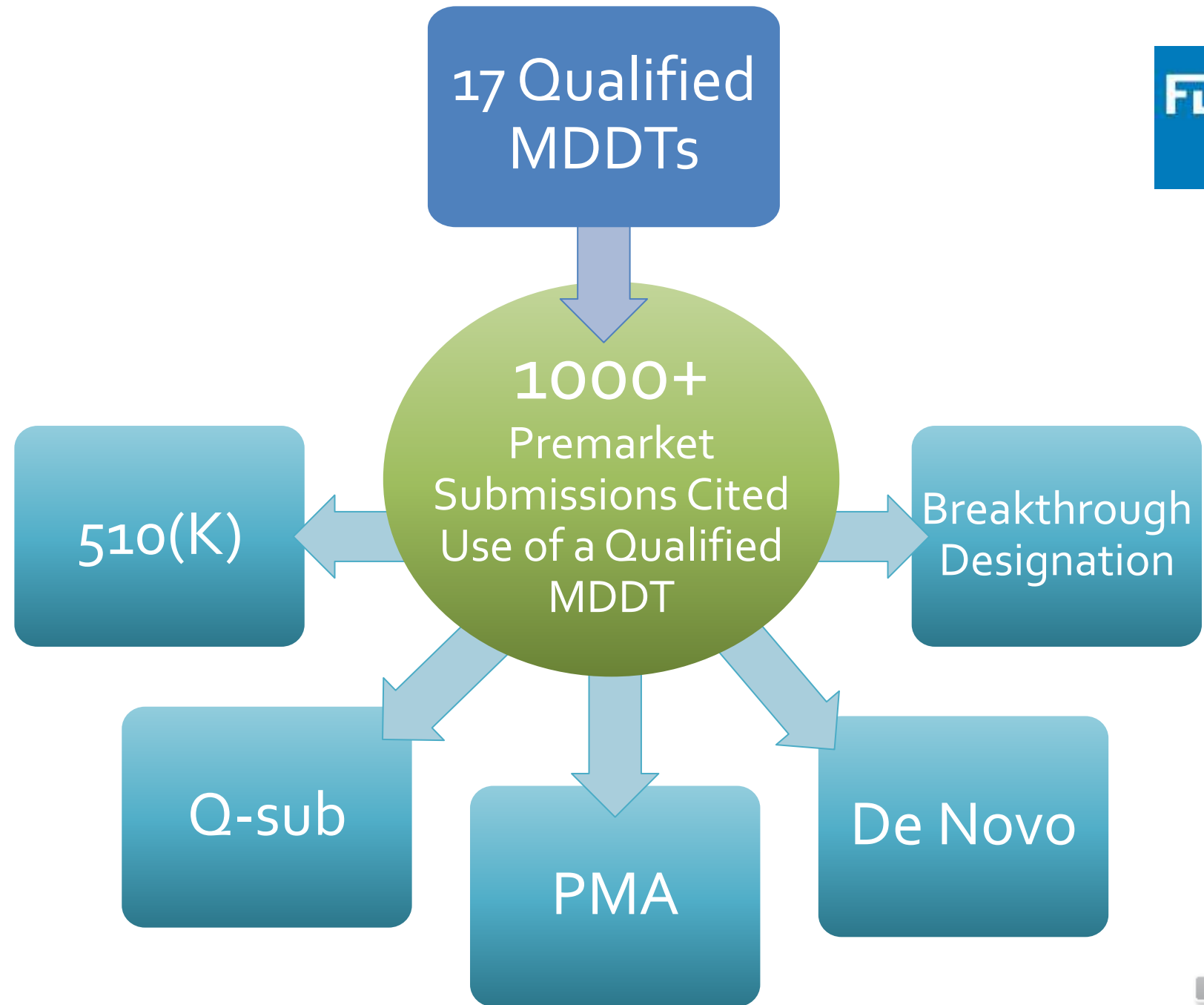
# MDDT Proposal Submission Process



- Any tool developer, medical device sponsor, or others, such as research organizations and academia can voluntarily submit a proposal
- No Fees
- MDDT Proposal Submission Content
  - [www.fda.gov/medical-devices/medical-device-development-tools-mddt/medical-device-development-tool-mddt-proposal-submission-content](https://www.fda.gov/medical-devices/medical-device-development-tools-mddt/medical-device-development-tool-mddt-proposal-submission-content)
- Submission Methods:
  - Electronically through the CDRH Customer Collaboration Portal
    - [www.fda.gov/medical-devices/industry-medical-devices/send-and-track-medical-device-premarket-submissions-online-cdrh-portal](https://www.fda.gov/medical-devices/industry-medical-devices/send-and-track-medical-device-premarket-submissions-online-cdrh-portal)
  - Mail to the CDRH Document Control Center
    - [www.fda.gov/medical-devices/how-study-and-market-your-device/ecopy-medical-device-submissions](https://www.fda.gov/medical-devices/how-study-and-market-your-device/ecopy-medical-device-submissions)
- Email questions to [MDDT@fda.hhs.gov](mailto:MDDT@fda.hhs.gov)



Qualified  
MDDTs are  
routinely cited  
by Sponsors



# 17 Currently Qualified MDDTs

FDA

## COA (7)

- [Assessment of IntraOcular Lens Implant Symptoms \(AIOLIS\) instrument](#) (5/16/22)
- [FACE-Q | Aesthetics](#)(4/26/22)
- [Patient-Reported Outcomes with LASIK Symptoms and Satisfaction \(PROWL-SS\)](#) (6/17/21)
- [BREAST-Q Reconstruction Module](#) (8/20/20)
- [Insulin Dosing Systems: Perceptions, Ideas, Reflections, and Expectations \(INSPIRE\) Questionnaires](#)(6/24/20)
- [Minnesota Living with Heart Failure Questionnaire \(MLHFQ\)](#)(3/19/18)
- [Kansas City Cardiomyopathy Questionnaire \(KCCQ\)](#)(10/19/17)

## BIO (2)

- [Apple Atrial Fibrillation History Feature](#) (5/1/24)
- [OSIRIX CDE Software Module](#) (3/12/19)

## NAM (7)

- [Accelerated Testing to Prove Long-Term Material Biostability](#) (8/9/23)
- [Computational Tool Comprising Visible Human Project Based Anatomical Female CAD Model and Ansys HFSS/Mechanical FEM Software for Temperature Rise Prediction near an Orthopedic Femoral Nail Implant during a 1.5 T MRI Scan](#) (3/30/23)
- [Chemical RiSk Calculator \(CHRIS\) - Color Additives](#) (11/28/23)
- [Virtual MRI Safety Evaluations of Medical Devices](#) (11/16/21)
- [IMAnalytics with MRlxViP1.5T/3.0T And BCLib](#) (5/20/21)
- [Rubric for Applying CVSS to Medical Devices](#) (10/20/20)
- [Tissue Mimicking Material \(TMM\) for Preclinical Acoustic Performance Characterization of High Intensity Therapeutic Ultrasound \(HITU\) Devices](#) (7/10/29)

## Other (1)

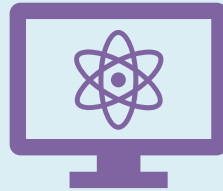
- [The University of California San Francisco \(UCSF\) Lethal Arrhythmia Database \(LAD\)](#) (3/28/24)



# Summary



MDDT PROGRAM IS A VOLUNTARY  
PATHWAY TO QUALIFY REGULATORY  
SCIENCE TOOLS

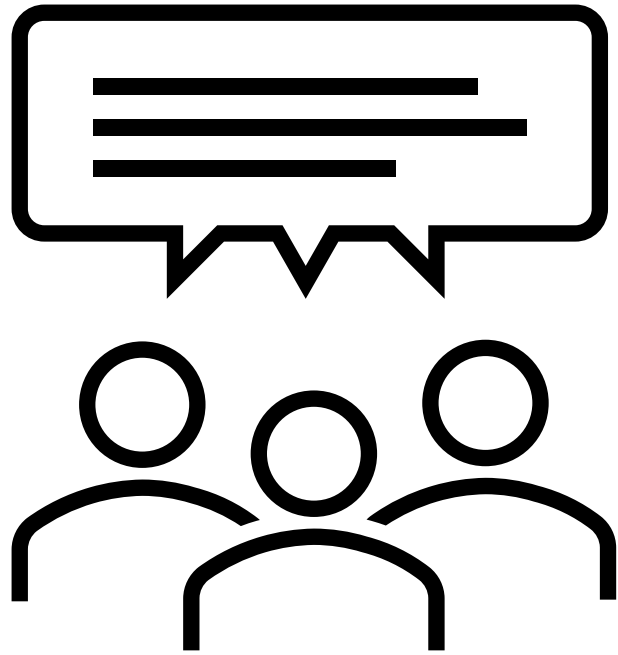


MDDTS ARE TOOLS THAT ASSESS  
SAFETY, EFFECTIVENESS OR  
PERFORMANCE OF A MEDICAL  
DEVICE.



DEVICE MANUFACTURERS ARE  
ENCOURAGED TO USE IN SUPPORT  
OF THEIR PREMARKET  
APPLICATION.





## Resources



MDDT Program & Qualified tools

[MDDT Webpage](#)



[MDDT Guidance](#)



Questions or Concerns:

[MDDT@fda.hhs.gov](mailto:MDDT@fda.hhs.gov)

