Clinical Evidence Guidelines for Medical Devices - What's New?

Dr Simon L. Singer

Principal Medical Adviser

Medical Devices Authorisation Branch

Department of Health and Aged Care, TGA

Outline

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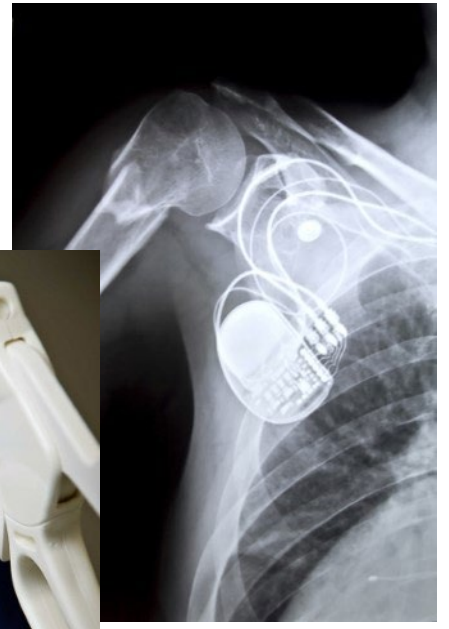
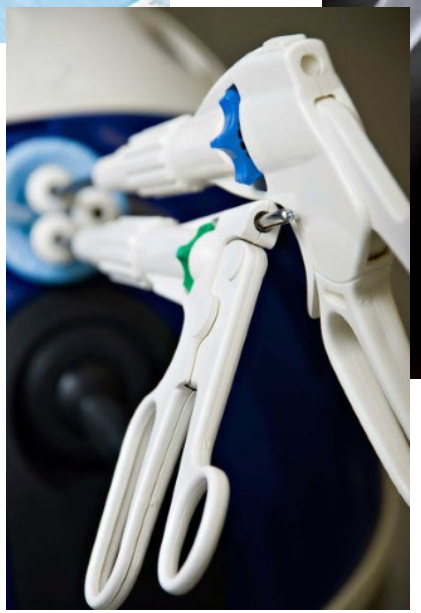
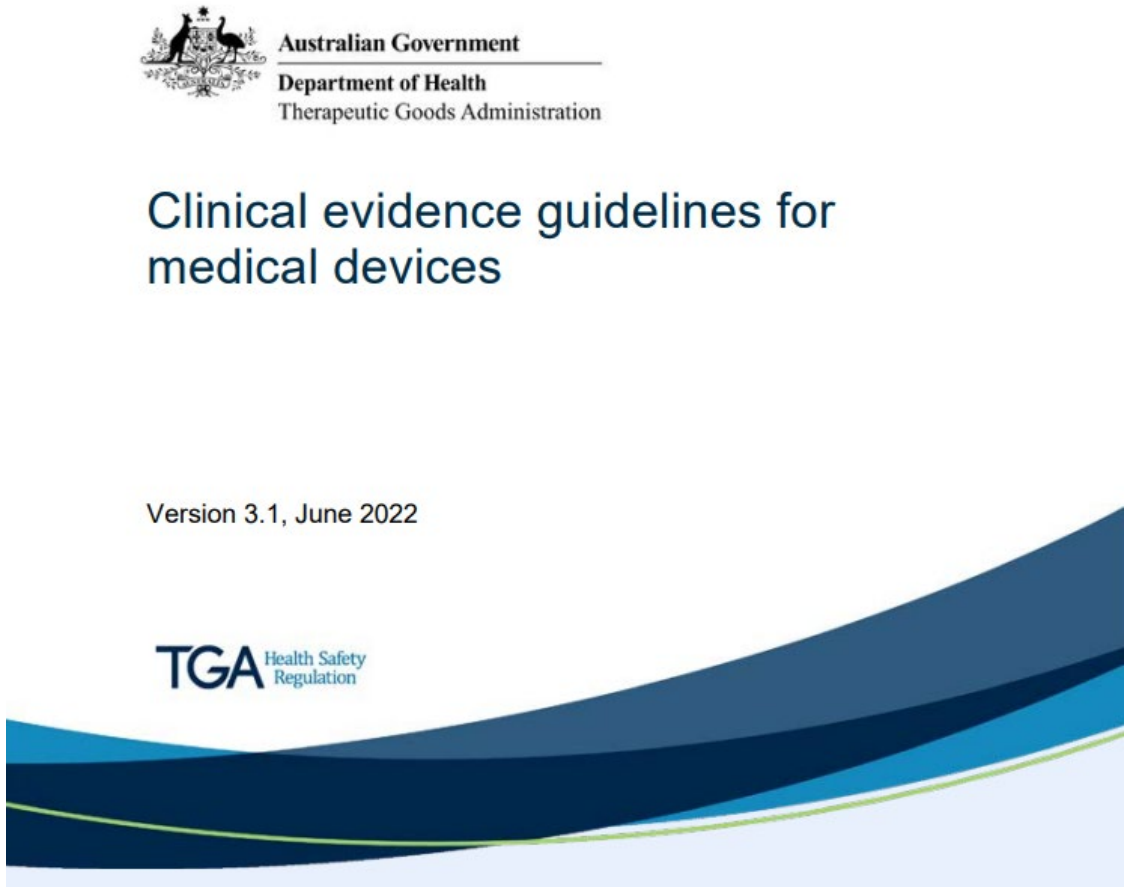
  - Software as a medical device
  - Total and partial joint prostheses
  - Real World Evidence





Clinical Evidence Guidelines for Medical Devices (CEGs)

- First published 2017
- V1.1 November 2020
- V2.0 March 2021
- V3.0 November 2021
- Current V3.1 June 2022
- Update (V3.2) planned late 2023
- Part of Australian Regulatory Guidance for Medical Devices (ARGMD)



Purpose of the guidelines

Complements principles-based legislative framework

Assists manufacturers and sponsors by defining what constitutes clinical evidence, and how relevant data are generated and evaluated

- Critical review of available data with a discussion which weighs risks and benefits
- Details will vary by device type, class and intended purpose
- Provides clinical assessor with balanced view of relevant treatment modality and device evaluated

Aligned with:

- Guidance from GHTF, IMDRF, EU MEDDEVs, EU MDCG
- Specific USFDA guidance

Legislative basis

Therapeutic Goods Act, 1989

Requires ongoing compliance with the essential principles

Essential principles set out the safety and performance characteristics of medical devices

Medical Device Regulations, 2002

- Schedule 1 – Essential principles
- Regulation 3.11 – Medical devices to which clinical evaluation procedures must be applied
- Schedule 3, Part 8 – Clinical evaluation procedures

Essential principles

Essential Principle 14: Clinical Evidence

"*Every medical device requires clinical evidence, appropriate for the use and classification of the device, demonstrating that the device complies with the applicable provisions of the essential principles.*"

And in particular:

- EP 1 - Use not to compromise health and safety
- EP 3 - Must perform the way manufacturer intended
- EP 6 - Benefits must outweigh any undesirable effects
- EP 13 - Information provided with the device

Essential Principles - Schedule 1

Principle 1: Use not to compromise health and safety

Key considerations from a clinical perspective include:

- The context of how the device is to be used. For example, whether it is to be used by specialist medical practitioners only, or by the general public. This is relevant to the safety assessment for many devices.
- How the device is used. For example, the type of treatment administered, or procedure or testing undertaken, and any inherent dangers that have implications for the safety of the device.
- Any inherent dangers in the proposed treatment setting should also be taken into account. The patient, user and any other person in the vicinity of the device may need to be considered.
- The number of patients exposed to the device and whether this sample is large enough to ensure that all health and safety issues have been described and quantified accurately.

Scope of Clinical Evidence Guidelines

Applies throughout life cycle of medical device on ARTG

- Data requires periodic re-evaluation post-market
- Maintain appropriate records of compliance
- May be requested at any stage by the TGA

Specific information for device types:

- Implantable devices - MRI considerations
- **Personalised Medical Devices**
- **Joint Prostheses**
- Cardiovascular devices to promote patency or flow
- Implantable pulse generator systems
- Heart valve replacements using a prosthetic valve
- Supportive devices - meshes, patches & tissue adhesives
- **Software as medical devices**

Sources of clinical data & critical evaluation

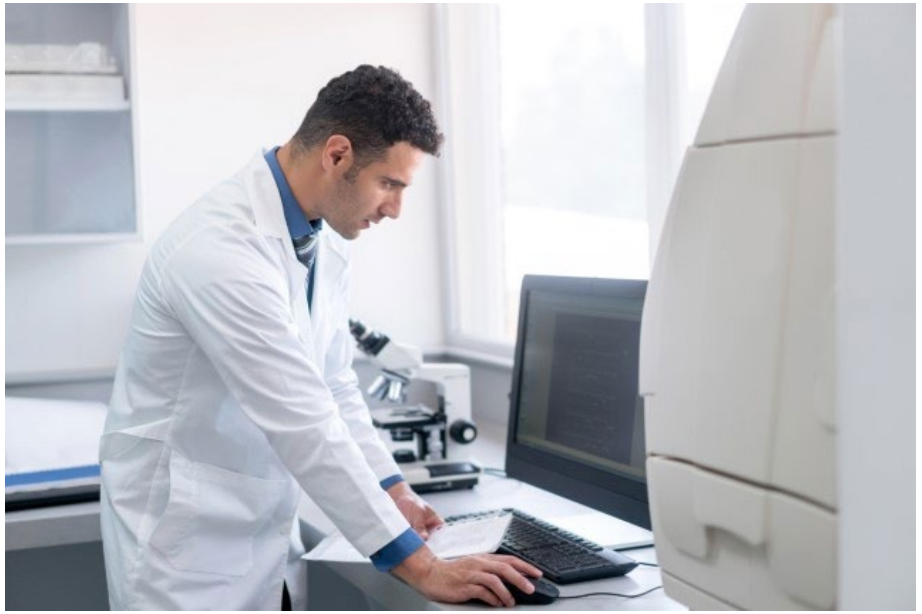
Types of clinical data:

- Clinical investigation data
- Literature review
- Post market data
- Real World Evidence (RWE)

Critical evaluation of all clinical data

- By expert in the relevant field

Clinical evaluation report (CER)

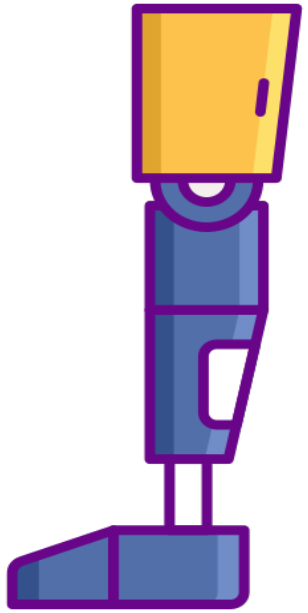


June 2022 updates

The following updates have been made for Version 3.1:

- New chapters have been added on medical device software and personalised medical devices
- The joint prostheses chapter has been updated
- References to Real World Evidence, also known as “other clinical experience data’ have been updated throughout the guidelines
- Other sections have been updated to reflect recent TGA experience with clinical evidence for a range of medical devices

Personalised medical devices (PMDs)



Legislative changes came into effect 25 February 2021

New medical device definitions:

- patient-matched medical devices
- adaptable medical devices
- custom-made medical devices

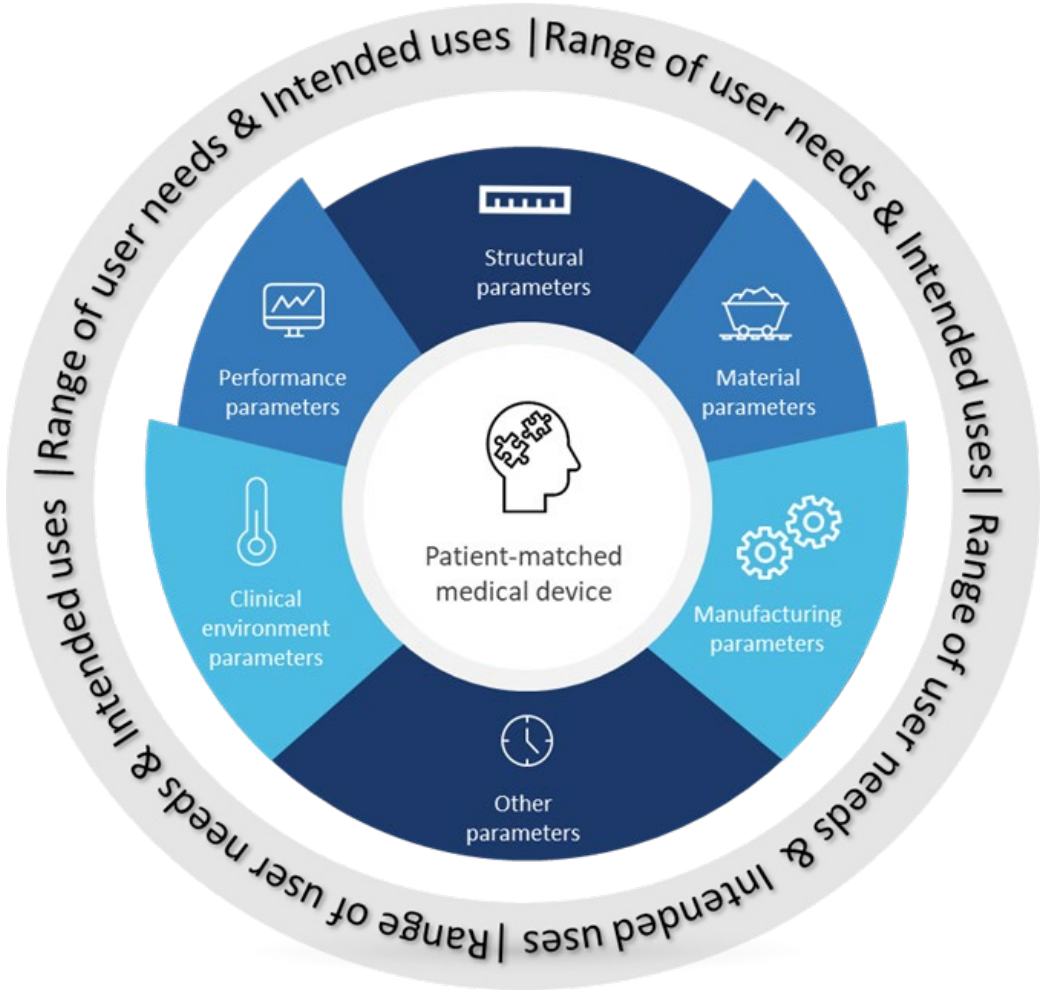
Medical Device Production Systems (MDPS):

- new regulatory concept (currently not in effect)

Other new definitions:

- **specified design envelope** means minimum and maximum dimensions, performance limits or other relevant factors that: (a) characterise a medical device for production purposes; and (b) may be based on a standard device template.

Personalised medical devices cont.



Specified design envelope:

- Structural parameters
- Material parameters
- Manufacturing parameters
- Clinical environment parameters
- Performance parameters
- Other parameters

Clinical evidence considerations

For Patient-matched medical devices and Adaptable medical devices:

- Specified design envelope
- Generalisability of devices within the design envelope (external validity)
- Substantial equivalence
- Clinical investigation
- Literature review
- Post-market data
- Other clinical experience data

Clinical evidence considerations cont.

For Custom-made medical devices:

- Exempt from the requirement to be included in the ARTG, however:
  - must comply with all applicable essential principles including EP 14
  - follow clinical evaluation procedures in Part 8 of Schedule 3 of the MD Regulations

Manufacturer should consider the following factors:

- Reasons why a custom-made medical device was requested
- The design inputs and outputs
- Pre-clinical and clinical data to support the claims of safety and clinical performance

Software as a Medical Device

Clinical benefit of software as a medical device includes obtaining or collating clinical information which assists with clinical decision making

Terminology:

- Standalone software - Software as a Medical Device (SaMD)
- Software that drives or influences a medical device - sometimes called software in a medical device (SiMD)
- Medical device software - collective term for both

Evaluation of SaMD

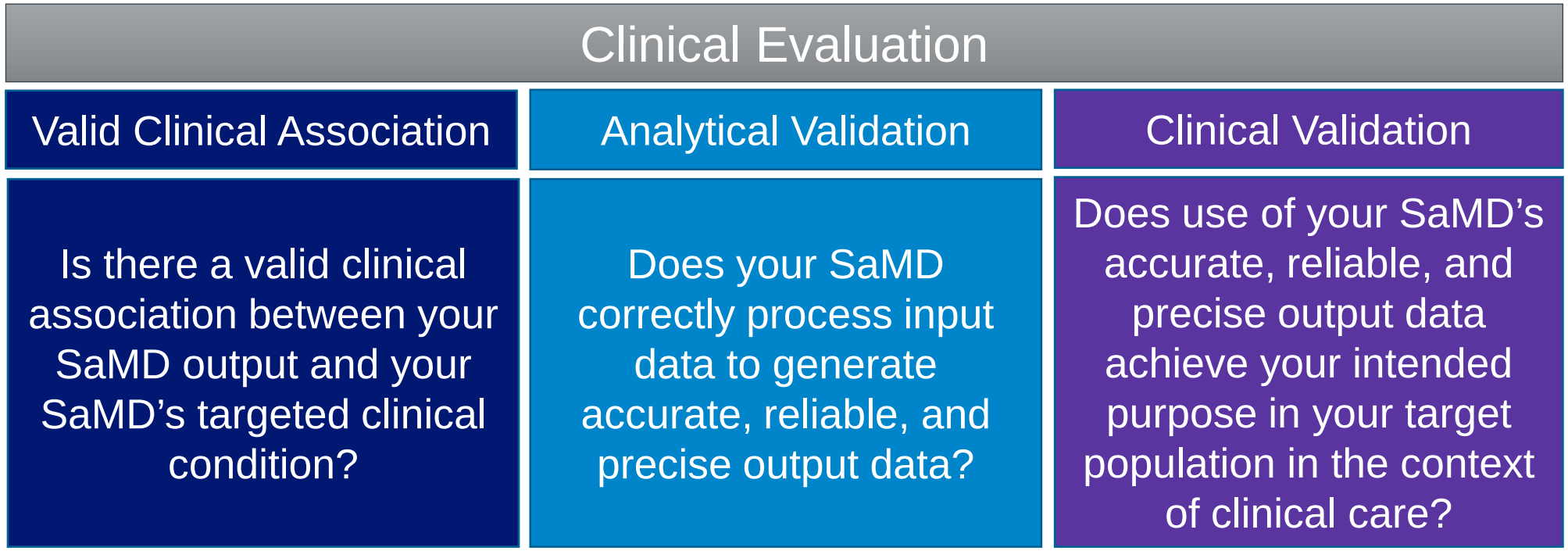
The TGA follows the recommendations for evaluation outlined below:

Software as a Medical Device (SaMD): Clinical Evaluation
https://www.imdrf.org/documents/software-medical-device-samd-clinical-evaluation

Guidance on Clinical Evaluation (MDR)/Performance Evaluation (IVDR) of Medical Device Software

https://ec.europa.eu/health/system/files/2020-09/md_mdcg_2020_1_guidance_clinic_eva_md_software_en_0.pdf

Key components of SaMD clinical evaluation



Source: IMDRF/SaMD WG/N41FINAL:2017

Total and partial joint prostheses

Regulatory challenges due to the need of a long in vivo life without exposing the patient to undesirable effects

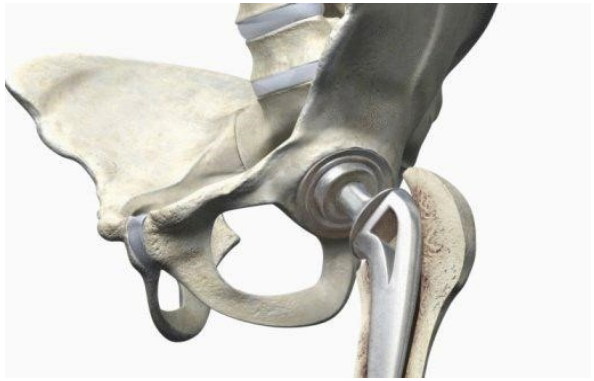
Updates in the Guidance:

Substantial Equivalence:

- Sub-classification
- Biological and technical characteristics
- Separate equivalence claim for each component in a multiple device system

Post Market Surveillance:

- AOANJRR
- Intervention and mitigate risks
- Patient Reported Outcome Measures (PROMs)



Real World Evidence (RWE)

Real-World Data (RWD) are data relating to patient health status and/or the delivery of health care routinely collected from a variety of sources:

- Primary vs Secondary:
  - Electronic Health Records (EHRs)
  - Claims and billing activities
  - Product and disease registries
  - Patient-generated data including in home-use settings
  - Data gathered from other sources that can inform on health status, such as mobile devices.

Data regarding the usage, or the potential benefits or risks, of a therapeutic good derived from sources other than traditional clinical trials

It is not the fact that it is RWE,
it is the quality of the evidence that matters

Use of RWE and RWD

Possible practical applications

- Pre market clinical evaluation
- Post market control

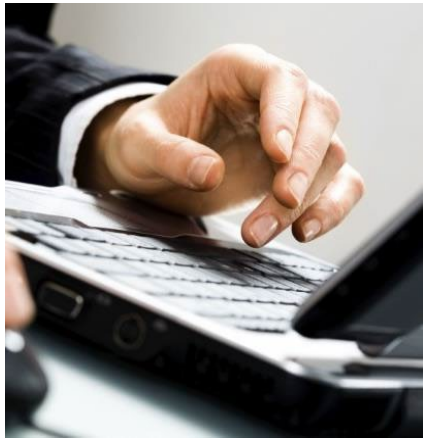
Manufacturer use

- Novel clinical trial designs
- Use of data from different sources
- What does it tell us

TGA use

- Australian and International registries
- What is in/out
- Use in various regulatory activities

Common problems with clinical evidence



- Absence of required components of clinical documentation
- Unclear intended purpose
- Literature review:
  - Inadequate documentation of strategy
  - Lack of demonstrated comprehensive review
- Provision of publications with little or no reference as to why they are important and no critical discussion
- Substantial equivalence claim not demonstrated or not acceptable
- Little or no critical assessment of data
- No post-market data in cases where it is possible to supply it

CEG future topics

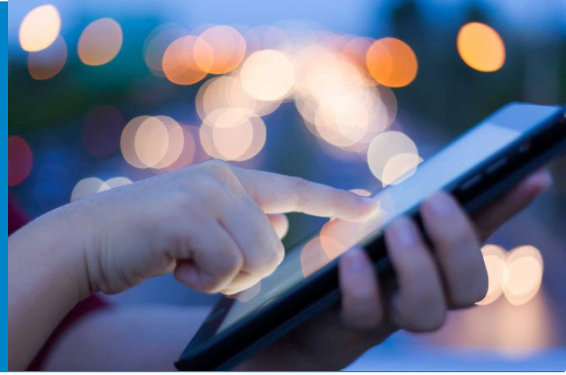
- Devices that incorporate a medicine
- Breast implants
- Ophthalmic

Contact us at TGA

Phone: 1800141144

Email: devices@health.gov.au

Website references



TGA website	www.tga.gov.au
RWE Hub	www.tga.gov.au/real-world-evidence-rwe-and-patient-reported-outcomes-pros
Medical device RWE and PRO	www.tga.gov.au/real-world-evidence-and-patient-reported-outcomes-medical-devices
Clinical evidence guidelines for medical devices	www.tga.gov.au/resources/resource/guidance/clinical-evidence-guidelines-medical-devices

Therapeutic Goods Administration (TGA)

Exhibition booth **No.1**

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