Medical Device Regulation, Safety, and the FDA

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CENTER FOR DEVICES AND RADIOLOGIC HEALTH
OFFICE OF DEVICE EVALUATION
DIVISION OF CARDIOVASCULAR DEVICES
VASCULAR SURGERY DEVICES BRANCH

Center for Devices and Radiological Health

- **The mission of the CDRH is to protect and promote the public health**
- **Assure that patients and providers have timely and continued access to safe, effective, and high-quality medical devices**

Vascular Access Products Regulated by FDA

CENTER/ OFFICE/ DIVISION/ BRANCH	PRODUCTS
CDRH /ODE / DCD/ VSDB	Synthetic AV grafts, bovine AVG Stents, stent-grafts & DCB used in access Devices to create AVF
CDRH / ODE / DRGUID	CV catheters, dialysis needles
CDER / Division of CV and Renal Products	Drugs & therapeutic proteins to improve AVF maturation and function
CBER / Office of Tissues & Advanced Therapy	Tissue engineered grafts; cell , gene and tissue based therapies

FDA Regulatory Perspectives for Studies on Hemodialysis Vascular Access

Frank P. Hurst, Robert E. Lee,* Aliza M. Thompson,† Brian D. Pullin,* and Douglas M. Silverstein**

Abstract

In an effort to foster innovation and new product development, the American Society of Nephrology and the US Food and Drug Administration partnered to form the Kidney Health Initiative in 2012. Part of the Kidney Health Initiative's mission is to foster development of therapies by creating a collaborative environment where the US Food and Drug Administration and the greater nephrology community can interact to optimize product evaluation. This particular Kidney Health Initiative project focused on products related to hemodialysis vascular access, with the goal of clarifying appropriate trial end points that could subsequently inform clinical, regulatory, and coverage decisions. Both the lack of common definitions and the lack of consensus on trial end points have been viewed as barriers to innovation in this area. Toward this end, the Kidney Health Initiative convened teams of expert stakeholders to address these issues for each major vascular access category (arteriovenous grafts, arteriovenous fistulas, and central venous catheters), and each team provided recommendations. This commentary provides an overview of the US Food and Drug Administration centers that regulate hemodialysis vascular access and certain laws and regulations that affect these products as well as our perspectives on some of the issues raised and end points proposed by the Kidney Health Initiative teams. The standardized definitions and clinical trial end points proposed by the teams represent an important step forward to improve innovation in this area.

Clin J Am Soc Nephrol, 2018, Vol.13, No. 3, pp 513-518

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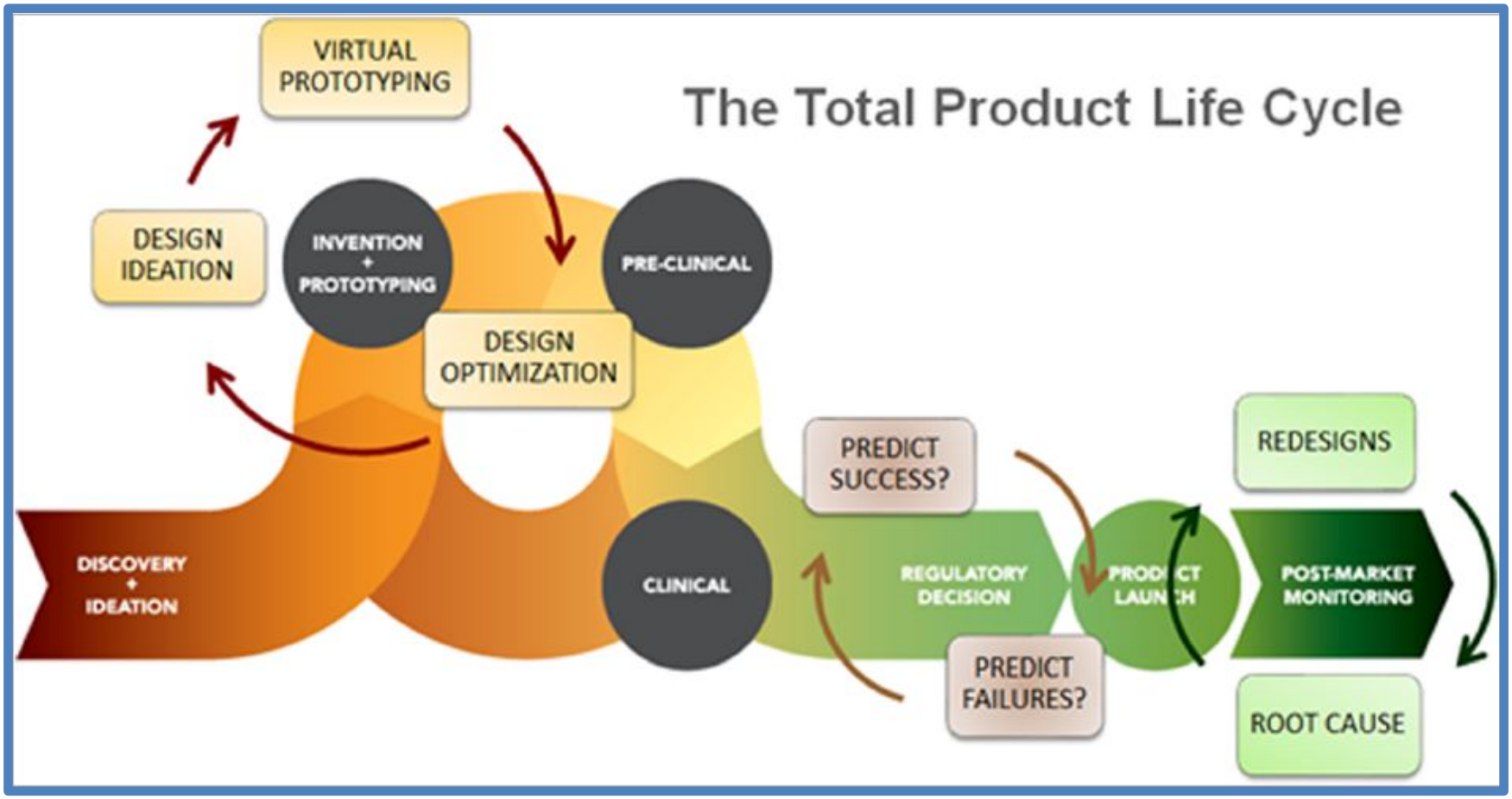
https://www.ncbi.nlm.nih.gov/pubmed/28739575

Risk Classification vs. Pathway

CATEGORY	EXAMPLE	REGULATORY PATHWAY
Class I	Scalpel	Exempt from pre-market Notification
Class II	PTFE Graft	Premarket notification: 510(k)
Class III	Bovine Carotid Artery Graft	Pre-Market Application: PMA



The Role of Computational Modeling and Simulation in the Total Product Life Cycle of Peripheral Vascular Devices. **TM Morrison, et. al.**
Journal of Medical Devices, 2017;11(2):024503-024503-5

Medical Device Safety Reporting Needs You!

Medical Device Reporting

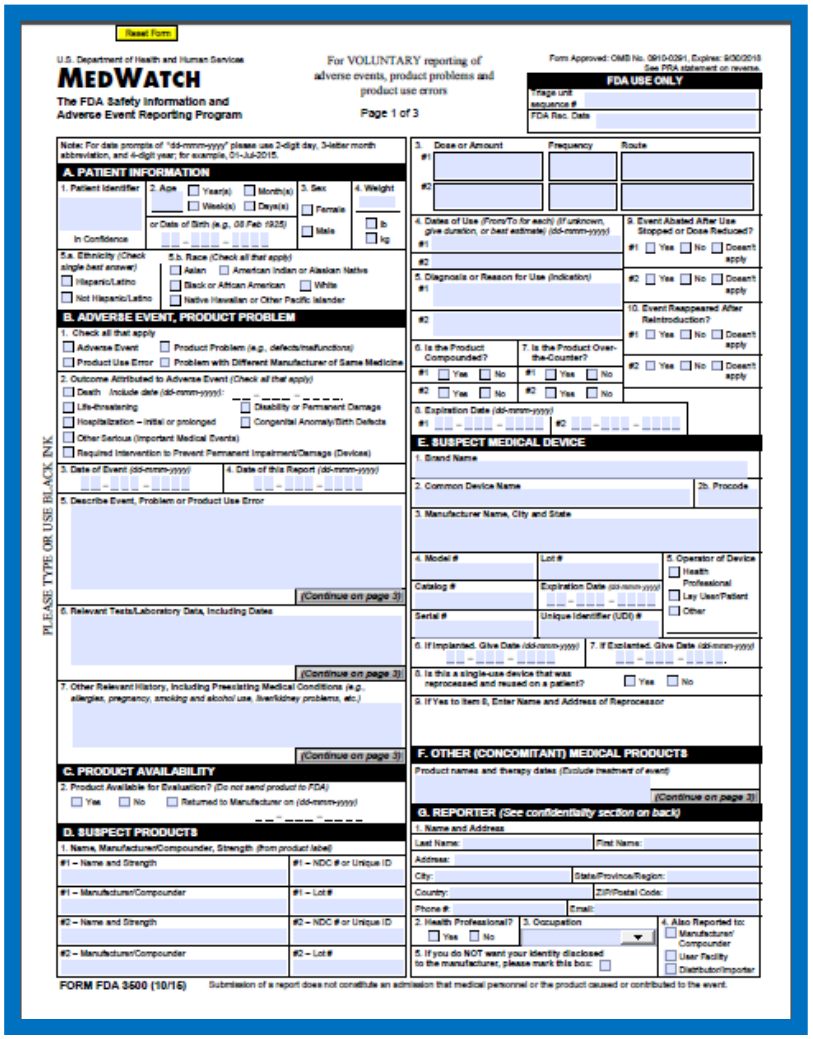
WHO?

- **MANDATORY: 21 CFR 803**
  - **Manufacturers**
  - **Importers**
  - **Health Care Facilities**
- **VOLUNTARY**
  - **Health Care Providers**
  - **Consumers**

WHAT?

- **Therapeutic Failures**
- **Product Quality Issues**
- **Serious Adverse Events (SAEs)**
  - **Death**
  - **Life threatening**
  - **Disability / Hospitalization**
  - **Requiring intervention**
  - **Congenital anomalies**

MedWatch Voluntary Reporting



MEDWATCH
The FDA Safety Information and Adverse Event Reporting Program

For VOLUNTARY reporting of adverse events, product problems and product use errors

Page 1 of 3

FDA USE ONLY

A. PATIENT INFORMATION

B. ADVERSE EVENT, PRODUCT PROBLEM

C. PRODUCT AVAILABILITY

D. SUSPECT PRODUCTS

E. SUSPECT MEDICAL DEVICE

F. OTHER (CONCOMITANT) MEDICAL PRODUCTS

G. REPORTER (See confidentiality section on back)

FORM FDA 3500 (10/16)

Download FDA Form 3500

Web based report form

1-800-FDA-1088: Phone

1-800-FDA-0178: FAX

Form 3500 B for Consumers

Post-Market Safety Assurance

- **Post-approval studies mandated by conditions of PMA approval**
- **Postmarket surveillance studies (also referred to as "522 studies") for devices:**
  - **failure would be reasonably likely to have serious adverse health consequences,**
  - **significant use is expected in pediatric populations,**
  - **intended to be implanted in the body for more than one year; or**
  - **life-sustaining or life-supporting and used outside a device user facility.**

MEDICAL DEVICE ACTION SAFETY PLAN

Announced on April 18 by FDA Commissioner Scott Gottlieb, MD

Outlines a vision for how FDA can enhance programs and processes to bring added assurance of medical device safety to the public.

Focus of Medical Device Safety Plan

- Establish a robust medical device patient safety net;
- Explore regulatory options to streamline and modernize timely implementation of postmarket mitigations;
- Spur innovation towards safer medical devices;
- Integrate CDRH's premarket and postmarket offices and activities to advance the use of a Total Product Life Cycle (TPLC) approach to device safety; and
- Advance medical device cybersecurity.

Use of Real World Evidence

- **2017 Strategic Goal of FDA: Increase use of RWE to support regulatory decision making**
- **Real-world evidence: that derived from multiple sources outside typical clinical research settings**
- **Provides insight into device performance outside the controlled environment of studies**

Contains Nonbinding Recommendations

Use of Real-World Evidence to Support Regulatory Decision-Making for Medical Devices

Guidance for Industry and Food and Drug Administration Staff

Document issued on August 31, 2017.

The draft of this document was issued on July 27, 2016

For questions about this document regarding CDRH-regulated devices, contact the Office of Surveillance and Biometrics (OSB) at 301-796-5997 or CDRHClinicalEvidence@fda.hhs.gov. For questions about this document regarding CBER-regulated devices, contact the Office of Communication, Outreach, and Development (OCOD) at 1-800-835-4709 or 240-402-8010.

U.S. Department of Health and Human Services
Food and Drug Administration

Center for Devices and Radiological Health

Center for Biologics Evaluation and Research

FDA U.S. FOOD & DRUG ADMINISTRATION

FDA Guidance Document on Use of Real World Evidence

August 2017

Challenges of Access Trials

- Sick patients, 20% mortality
- High attrition rates
- Predialysis subjects may not need access use
- AVF may not mature in the best of hands
- Lack of uniformity in study endpoints

Benefits of Access Registry

- Real world treatment success rates
- Effectiveness of pre-maturation interventions
- Durability of novel therapies
- Identify patient subgroups likely to benefit
- Outcome trends, modify treatment paradigms
- Economic benefits and cost savings

Conclusions:

- **Medical device safety begins with a careful premarket evaluation**
- **Demands the engagement of multiple stakeholders over the total product life cycle of a device, including users and patients**
- **Establishing an access registry would yield many benefits, providing a solid foundation of RWE to enhance patient outcomes**

Questions?

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