Center for Devices and Radiological Health (CDRH)

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U.S. FOOD & DRUG ADMINISTRATION & Devices

CDRH 2019 Update

Jeff Shuren

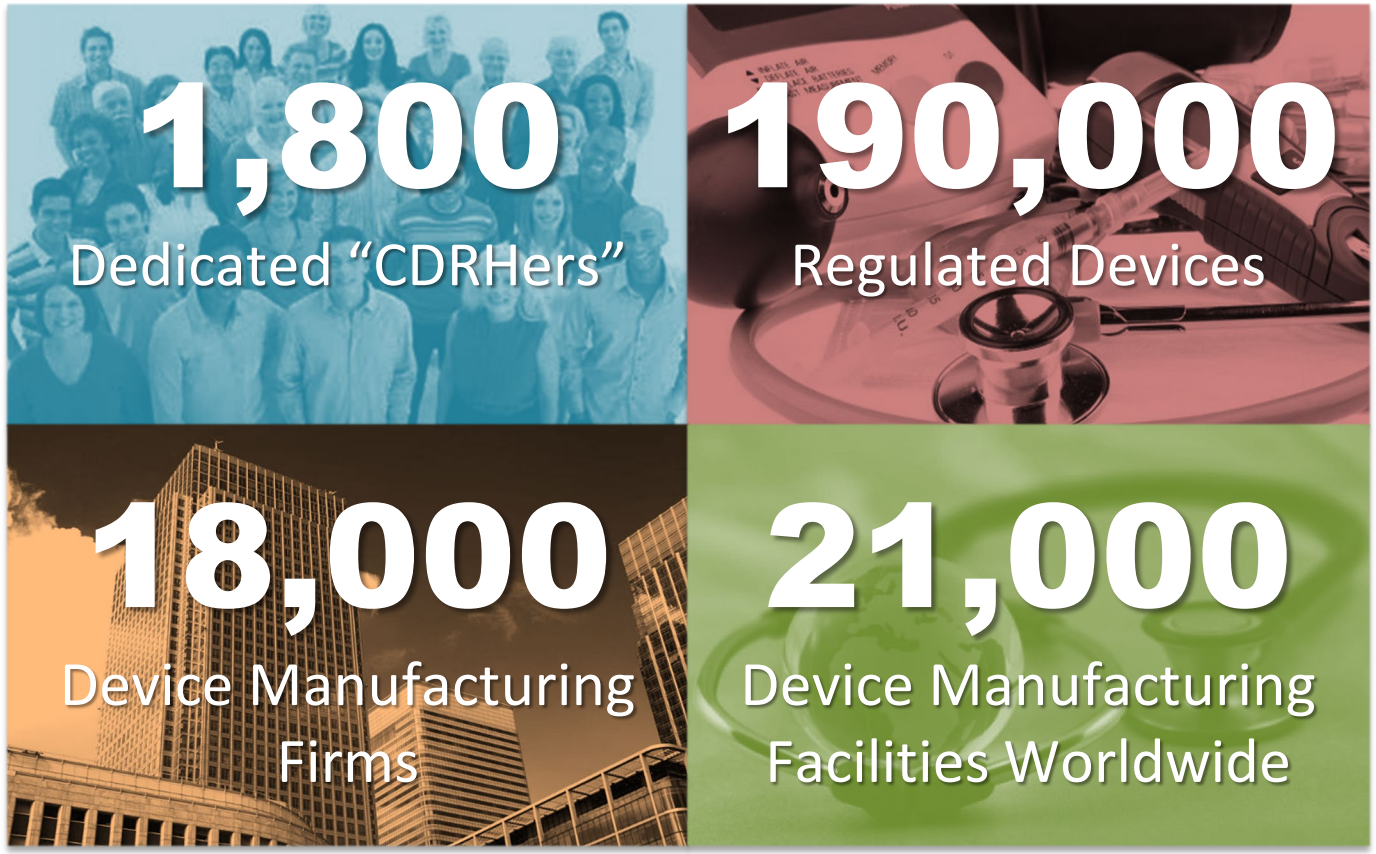
May 2, 2019

Patients are at the Heart of What We Do

CDRH Vision

Patients in the U.S. have access to high-quality, safe, and effective medical devices of public health importance first in the world

The Challenge



The Misperception

Innovation and Safety

are not polar opposites but rather two sides of the same coin

REALITY: CDRH has been advancing both safety and innovation for almost a decade

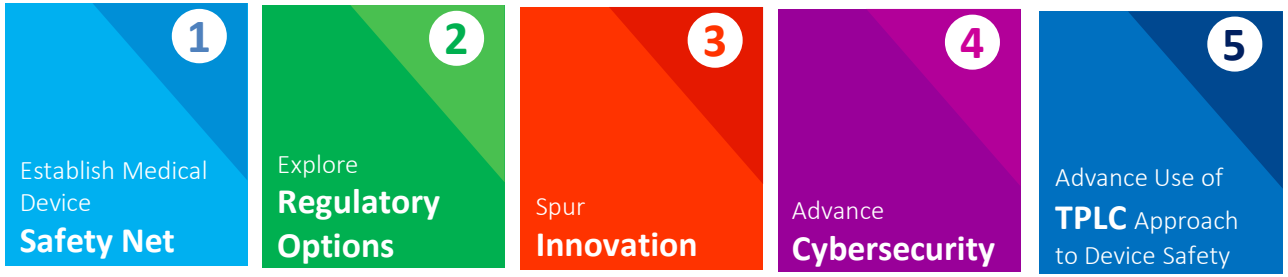
APPROACH: CDRH first enhances existing programs then advances innovative solutions and promotes global harmonization

For the device industry to successfully innovate and for the FDA to optimally safeguard the public, the FDA must be and must be supported to be innovative

Medical Device Safety Action Plan

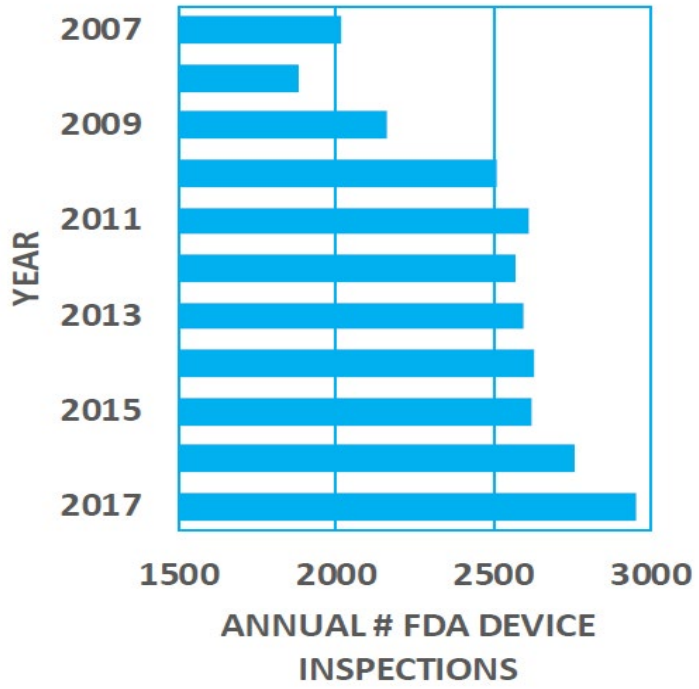
Outlines a vision for how CDRH can continue to enhance our programs and processes to assure:

- Safety of medical devices throughout the TPLC
- Timely identification and resolution of safety issues
- Advance innovative technologies that are safer, more effective and address unmet needs



Ensure that FDA is consistently first among the world's regulatory agencies to identify and act upon safety signals related to medical devices

FDA Device Inspections



46% INCREASE

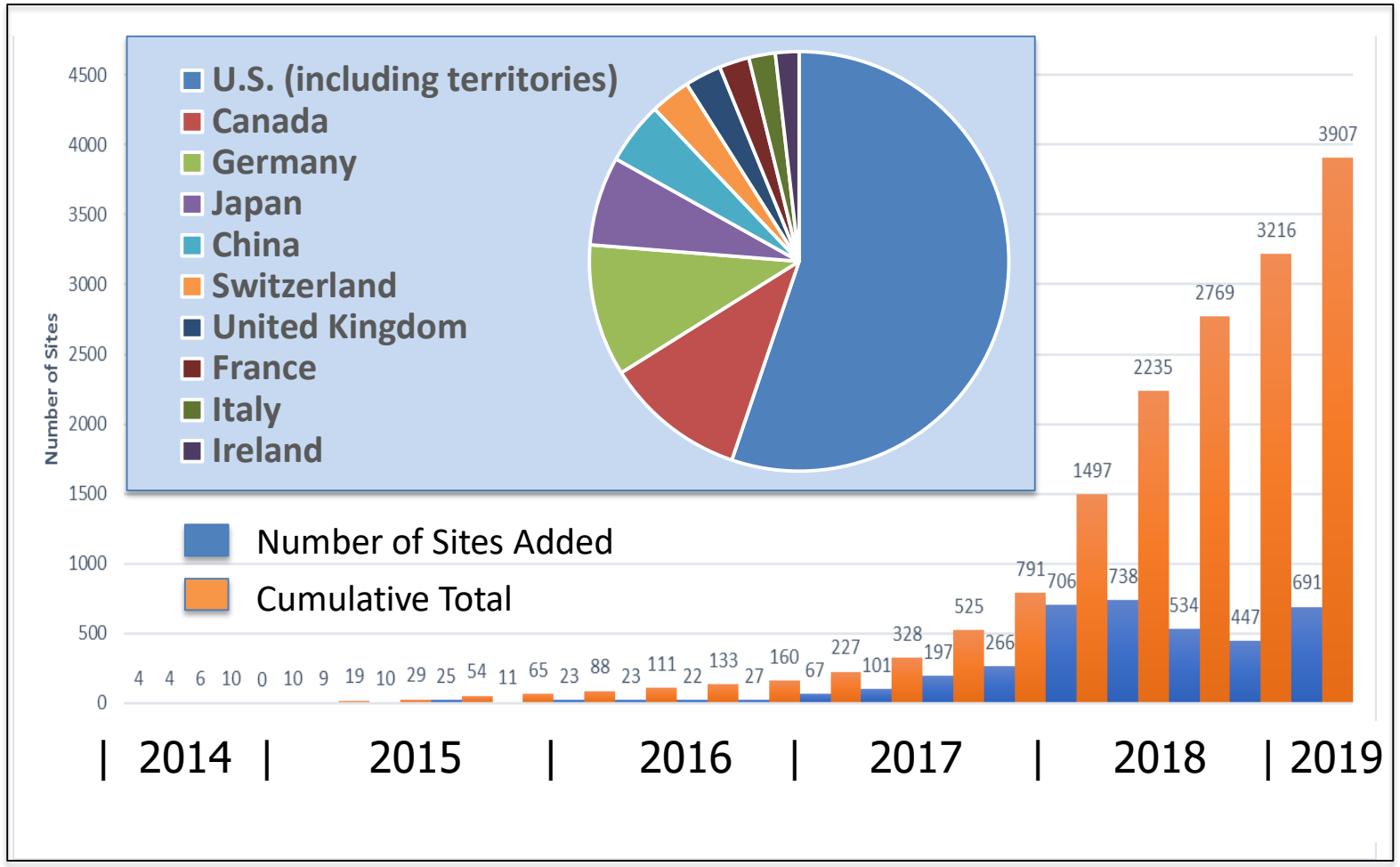
In the annual number of device inspections since 2007

243% INCREASE

In the annual number of foreign device inspections since 2007

- Firms are **8 times** more likely to report a recall after 21 CFR 806 violations
- Firms report **3 times** more adverse events following 21 CFR 803 violations
- FDA's actions contributed to a **50% increase** in annual number of voluntary recalls reported and a **doubling in annual number of AERs** since 2009

MDSAP Participating Manufacturer Sites



FDA Quality System Regulation and 13485

- FDA announced its intention to harmonize and modernize the Quality System regulation for medical devices
- The revisions will supplant the existing requirements with the specifications of ISO 13485:2016
- The revisions will help harmonize domestic and international requirements
- This approach is consistent with and complements MDSAP

See Spring 2018 Unified Agenda of Regulatory and Deregulatory Actions

Novel Approaches to Promoting Product Quality

Case for Quality 2011

MDIC Collaborative Forum 2014

Voluntary Quality Maturity Appraisal Pilot 2018

- Third-party certified by Capability Maturity Model Integration Institute (CMMI) conducts appraisal
- Collaboration and feedback on quality objectives
- Removal from the surveillance work plan
- Reduction in manufacturing submission requirements and faster approval for implementation
- Waive some pre-approval inspections

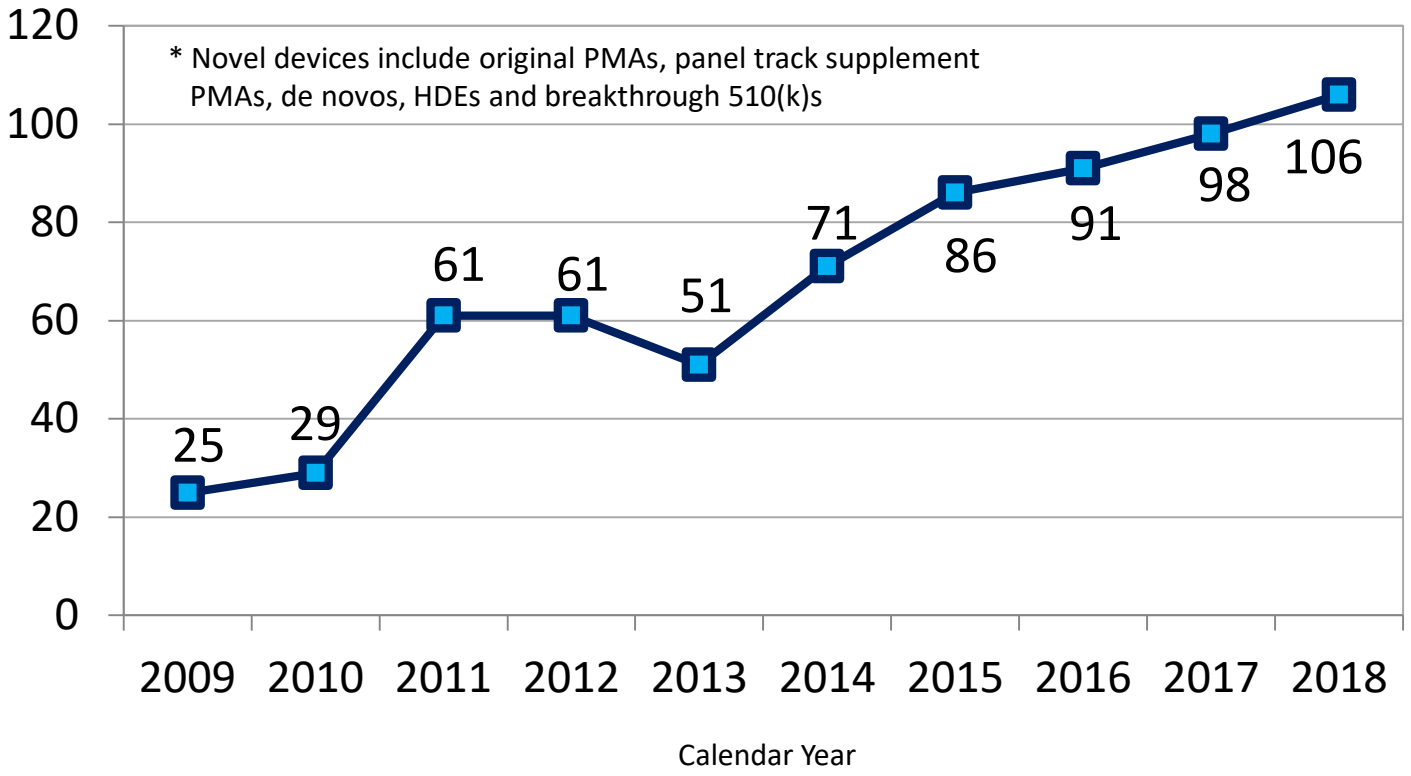
- ✓ **23** participating firms
- ✓ **>35** appraisals
- ✓ **86%** report appraisal had a positive impact on product quality

Device Safety 2019

- MDIC to develop a governance structure for Case for Quality Voluntary Improvement Program
- MDIC/NEST Coordinating Center task force to develop active surveillance roadmap
- CDRH to issue draft guidance on the Safer Technologies Program (STeP)
- CDRH to issue peer-reviewed white paper on hypersensitivity to metal implants and hold advisory panel

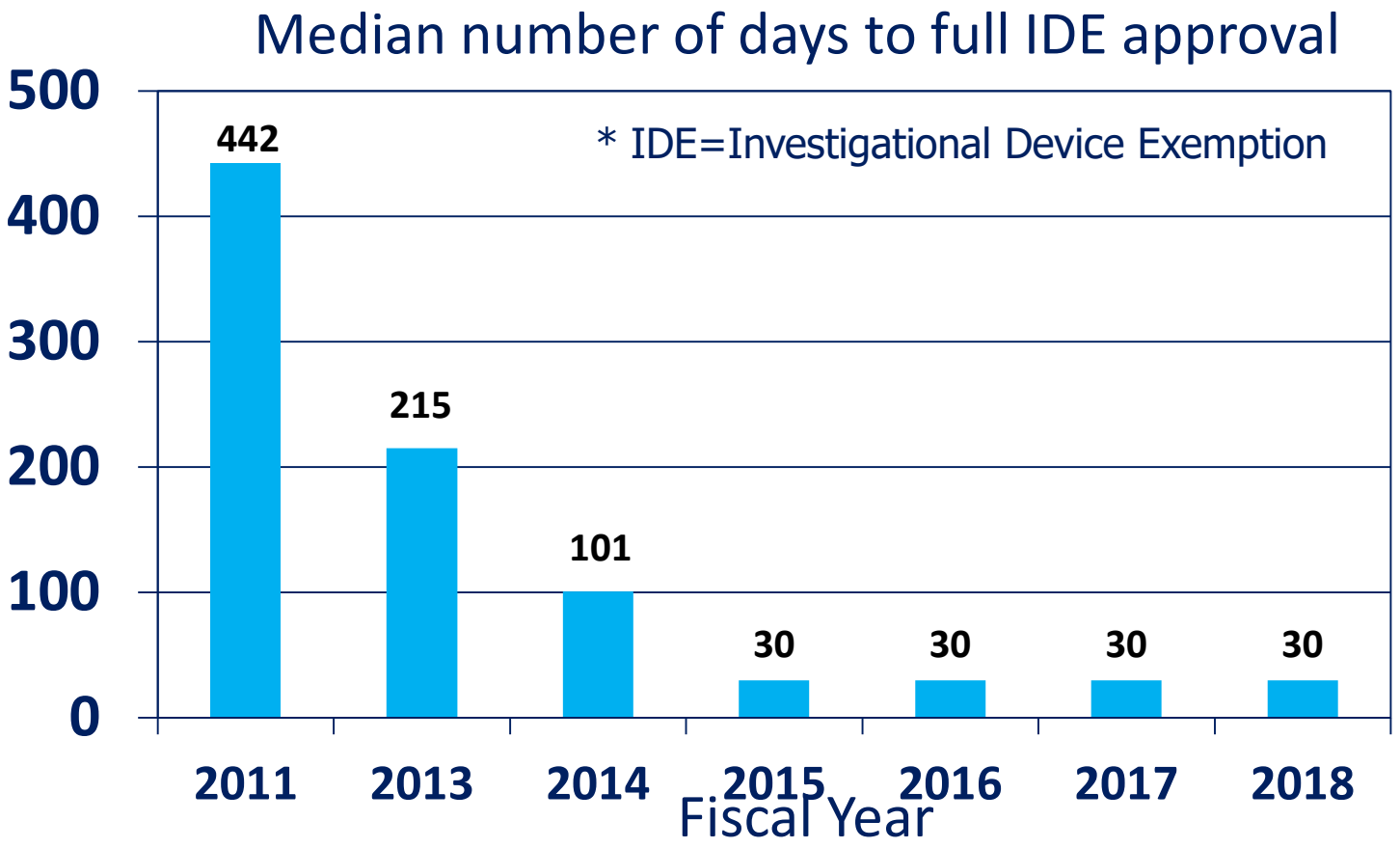
Novel Device Approvals

>4-fold Increase in # of Novel Device Approvals



Clinical Trials (IDEs)*

>90% Reduction in Time to IDE Approval



Early Feasibility Studies: Perceptual Shifts in Ease of Conduct

	2014	2015	2016	2018
1	Australia	Australia	Australia	Australia
2	New Zealand	New Zealand	New Zealand	United States
3	Central America	Canada	Canada	Central America
4	Germany	Netherlands	Netherlands	New Zealand
5	Denmark	Germany	Denmark	Canada
6	Netherlands	United States	United States	Germany
7	Canada	Central America	Central America	Brazil
8	Brazil	Denmark	Germany	Netherlands
9	United Kingdom	United Kingdom	Brazil	France
10	United States	Brazil	United Kingdom	United Kingdom

*Data provided by Aaron Kaplan/Dartmouth Device Development (3D) Symposium Annual Survey of 3D Participants

Importance of Early Feasibility Studies

- Earliest patient access
- Close collaboration between developers & users
- Clinical study continuity from early clinical use to post-approval
- U.S. leadership and contributor to medical device innovation

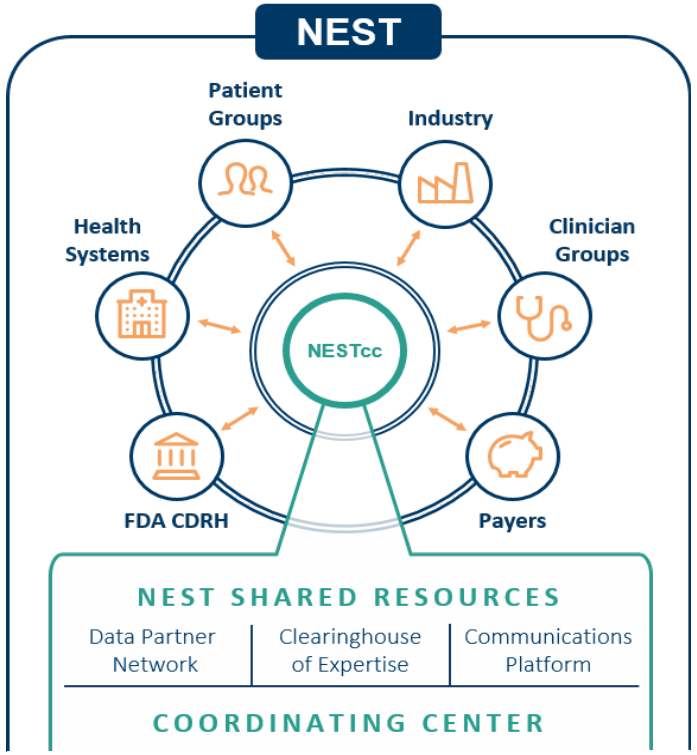
U.S. Sites Re-engaging in Early Clinical Research

FDA Early Feasibility Study Program 2015-2018

>50	>180	121%
Company Participants	Early Feasibility IDEs Approved	Increase in Annual # of EFS IDEs Approved

MDIC to begin EFS Clinical Site Consortium Pilot

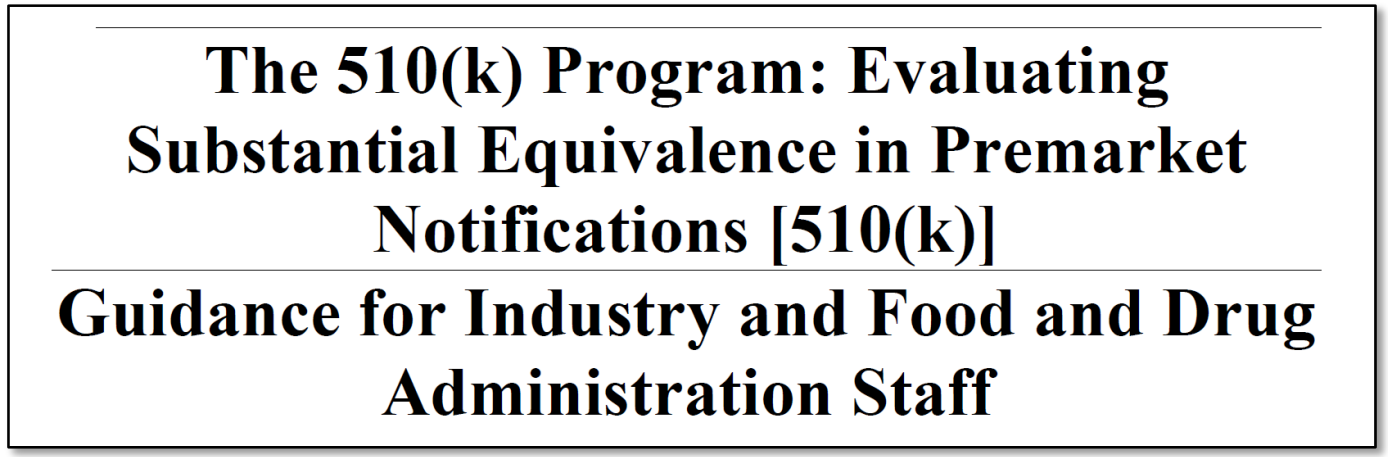
National Evaluation System for health Technology



NEST
National Evaluation System for health Technology
Coordinating Center

MDIC
MEDICAL DEVICE INNOVATION CONSORTIUM

FDA Has Taken Steps to Strengthen the 510(k) Program



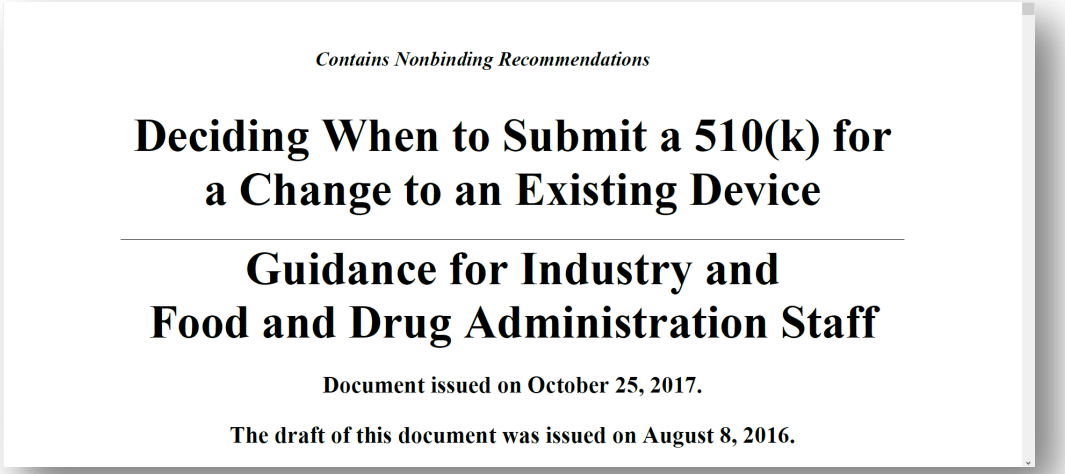
2014 Foundational Guidance

- Established concept of primary predicate and reference devices
- Clarifies when a change in indication is a new intended use
- Addresses when technological differences raise different questions of safety and effectiveness

Modernized Approach to 510(k) Device Modifications

Final Guidance 2017

- Clarifies when device modifications require a new 510(k)
- Relies on Quality System regulation
- Leverages risk-based assessments and risk management principles
- Clarifies role of testing (i.e. verification and validation activities)



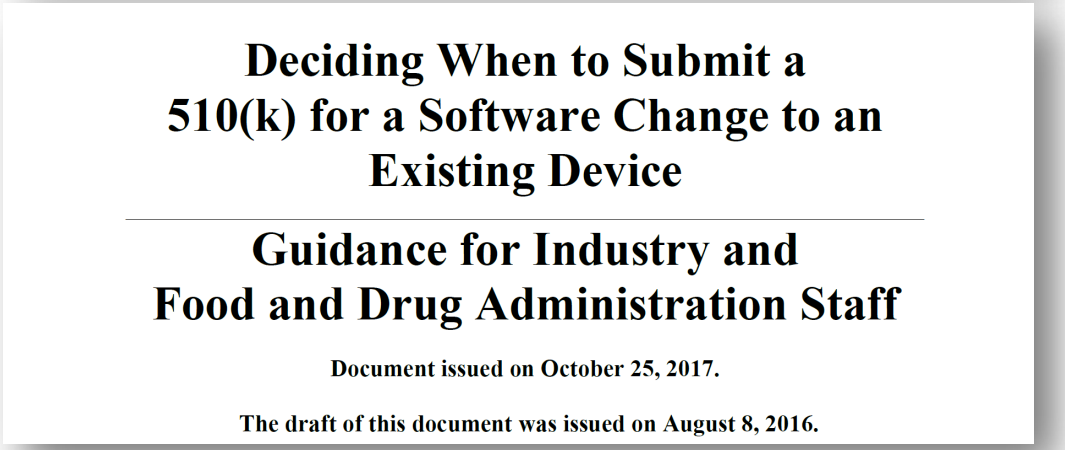
Contains Nonbinding Recommendations

Deciding When to Submit a 510(k) for a Change to an Existing Device

Guidance for Industry and Food and Drug Administration Staff

Document issued on October 25, 2017.

The draft of this document was issued on August 8, 2016.



Deciding When to Submit a 510(k) for a Software Change to an Existing Device

Guidance for Industry and Food and Drug Administration Staff

Document issued on October 25, 2017.

The draft of this document was issued on August 8, 2016.

Eliminated the Use of Some 510(k) Devices as Legal Predicates

1477 Number of 510(k) cleared devices eliminated for use as legal predicates since 2012

84% of devices eliminated for use as 510(k) predicates have been eliminated since 2012

More Information – More Thorough Review

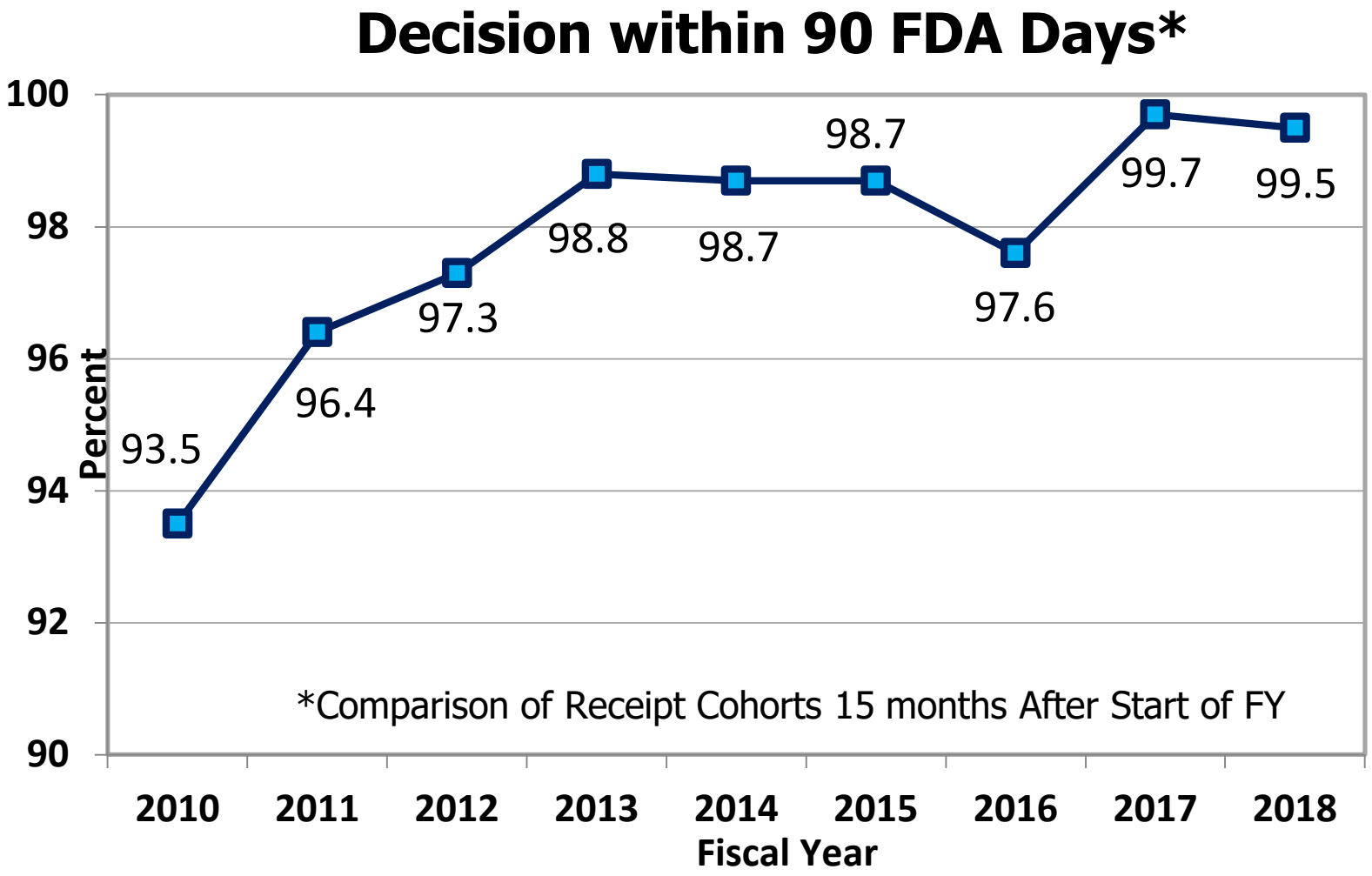
1185 Average number of pages in a 510(k) in 2017

150% Increase in the number of pages per 510(k) since 2009

32% increase in the time spent by FDA review staff reviewing each 510(k) submission since 2009

Moderate Risk Devices - 510(k)

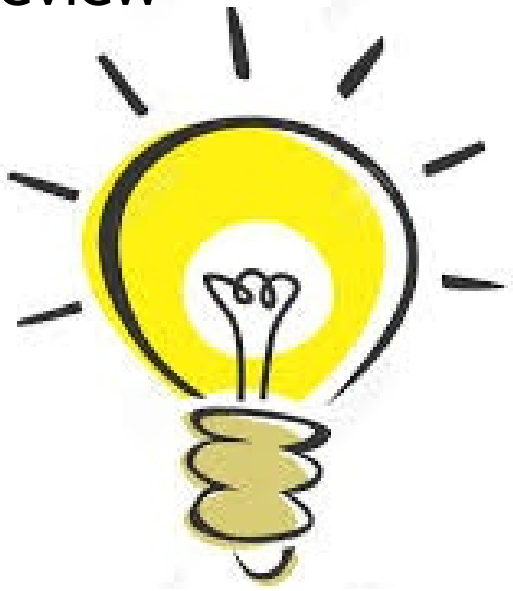
92% REDUCTION in Files that Miss Day 90



Introduced "SMART Template"

MANDATORY SMART MEMO TEMPLATE USE BY THE FDA'S REVIEWERS BEGAN IN OCTOBER 2015

- Formatted guide/template for review staff
- Promotes consistency in review and documentation
- Includes links to help/advice to facilitate review



Quality 510(k)
Review Pilot Program

- “Turbotax” for 510(k)
- Sponsor completes formatted eSubmission
- In return, CDRH will:
  - Skip RTA phase
  - Commit to interactive review without hold (where possible)
  - Strive to reduce FDA review time by 1/3 (goal: 60 days)

Launched Pilot (for ~ 40 product codes)
Fall 2018

Imagine: Single Submission

- Regulatory Submission with Common Data Elements
- Electronic Submission
- IMDRF Work Item to define common ‘Table of Contents’

Safety and Performance Based Pathway

- Moderate risk devices are evaluated through 510(k) Program
- Require demonstration of “substantial equivalence” to a predicate device
- Direct comparison to a predicate device may be burdensome and unnecessary
- Abbreviated 510(k) submission program relies on guidance documents, special controls, and FDA-recognized consensus standards to facilitate 510(k) review

Guidance Issued on February 1, 2019 Expands Abbreviated 510(k) Approach

- Optional approach for certain, well-understood device types
- Demonstrate new device meets FDA-identified performance criteria based on performance of modern predicates
- Transparency about device performance for health care providers and patients
- Provides opportunities for international harmonization and support the establishment of a Medical Device Single Review Program

Modern Predicates

- Nearly 20% of 510(k)s are cleared based on predicates that are > 10 years old
- That does not make them inherently unsafe
- The goal in focusing on older predicates is to drive sponsors to offer patients devices with the latest improvements and advances

CDRH is considering making public on its website those cleared devices that demonstrated substantial equivalence to older predicate devices

Breakthrough Devices Pathway

(Formerly Expedited Access Pathway)

142 devices accepted into the program since April 2015

1st breakthrough device approved December 2017

11 breakthrough devices granted marketing authorization

Breakthrough Devices Program
Guidance for Industry and Food and Drug Administration Staff

Document issued on December 18, 2018.

- Interactive & Timely Communication
- Pre-Postmarket Balance
- Flexible Clinical Study Design
- Senior Management Engagement
- Priority Review

Consideration of Uncertainty In Making Benefit-Risk Determinations in PMA, De Novo, and HDE Approvals

- Some degree of uncertainty generally exists around benefits and risks for regulatory decisions
- The regulatory standard is reasonable assurance – not absolute assurance
- Flexible regulatory paradigm

Clarified Through Draft Guidance Issued on September 5, 2018 the Circumstances Where FDA is More Likely to Accept More Uncertainty

- For example:
  - Breakthrough Devices
  - PMAs with small patient population
  - De Novos with minimal risk
  - Particularly if established postmarket data collection mechanism
- Provides opportunities for international harmonization, where appropriate, and supports the establishment of a Medical Device Single Review Program

Digital Health Program

Unified and collaborative environment;
applying best practices, conducting research, support, training for software and digital health technologies.

CENTER OF EXCELLENCE

Supplementing bench strength @ FDA

TECH POLICY SUPPORT

Manage/Respond to Inquiries

- Regulatory Submissions Support
- Policy Implementation
- Identify and develop staff training

STRATEGIC PARTNERSHIP

IMDRF International Medical Device Regulators Forum harmonization through IMDRF

- Strategic Industry partnership
- Academic partnership
- Federal partnerships: HealthIT.gov, FC

STRATEGIC INITIATIVES

DH FDA Pre-Cert Explore tailored pathway: Software Precertification Pilot

- Medical Device Interoperability
- Cybersecurity

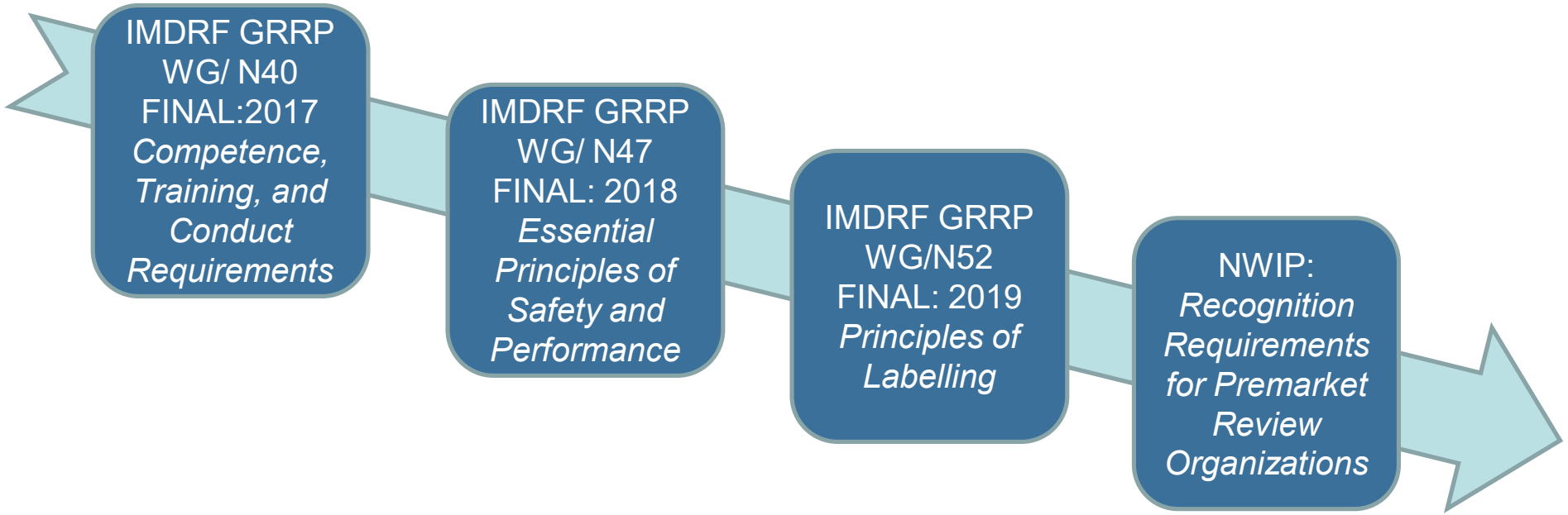
POLICY DEVELOPMENT

Cybersecurity
Interoperability

- Artificial Intelligence / Machine Learning
- Software Policies under 21st Century Cures Act
- Policy Intelligence

Imagine: Single Review

The IMDRF Good Regulatory Review Practices (GRRP) working group has focused efforts on harmonizing premarket requirements in alignment with the IMDRF strategic priority to improve the effectiveness and efficiency of premarket review.



IMDRF GRRP
Current Work Item

- Developing a conformity assessment/recognition program for medical device premarket review organizations
  - Models the Medical Device Single Audit Program (MDSAP) by leveraging existing documents where possible and making modifications as necessary to accommodate premarket review requirements
  - Utilize some requirements outlined in ISO/IEC standards (e.g. ISO/IEC 17065)
- Draft document to be submitted to IMDRF MC in June 2019 for public consultation

CDRH Reorganization

Once fully implemented, the CDRH reorganization will:

OPEQ

Establish the Office of Product Evaluation and Quality (OPEQ) - Combines the Offices of Compliance, Office of Device Evaluation, Office of Surveillance and Biometrics and the Office of In Vitro Diagnostics and Radiological Health into one "super office" focused on a Total Product Lifecycle approach to medical device oversight.

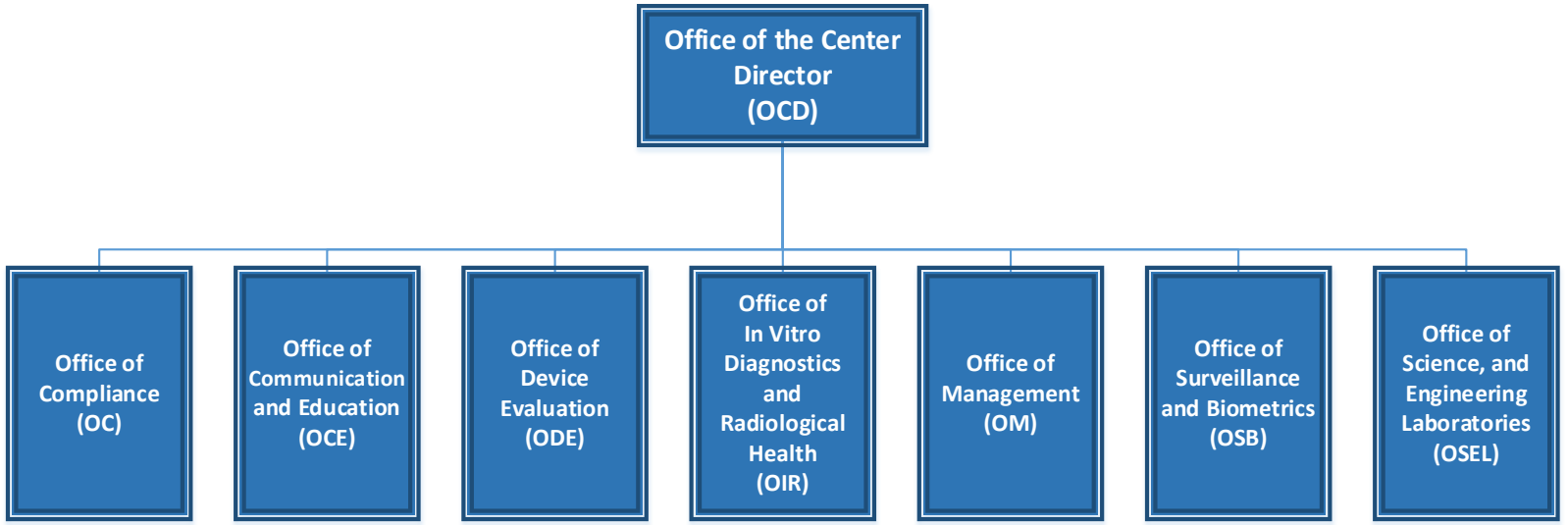
OP

Establish the Office of Policy (OP) - Establishes two teams, the Guidance, Legislation and Special Projects Team and the Regulatory Documents and Special Projects Team. There are no changes in the functions for CDRH Policy.

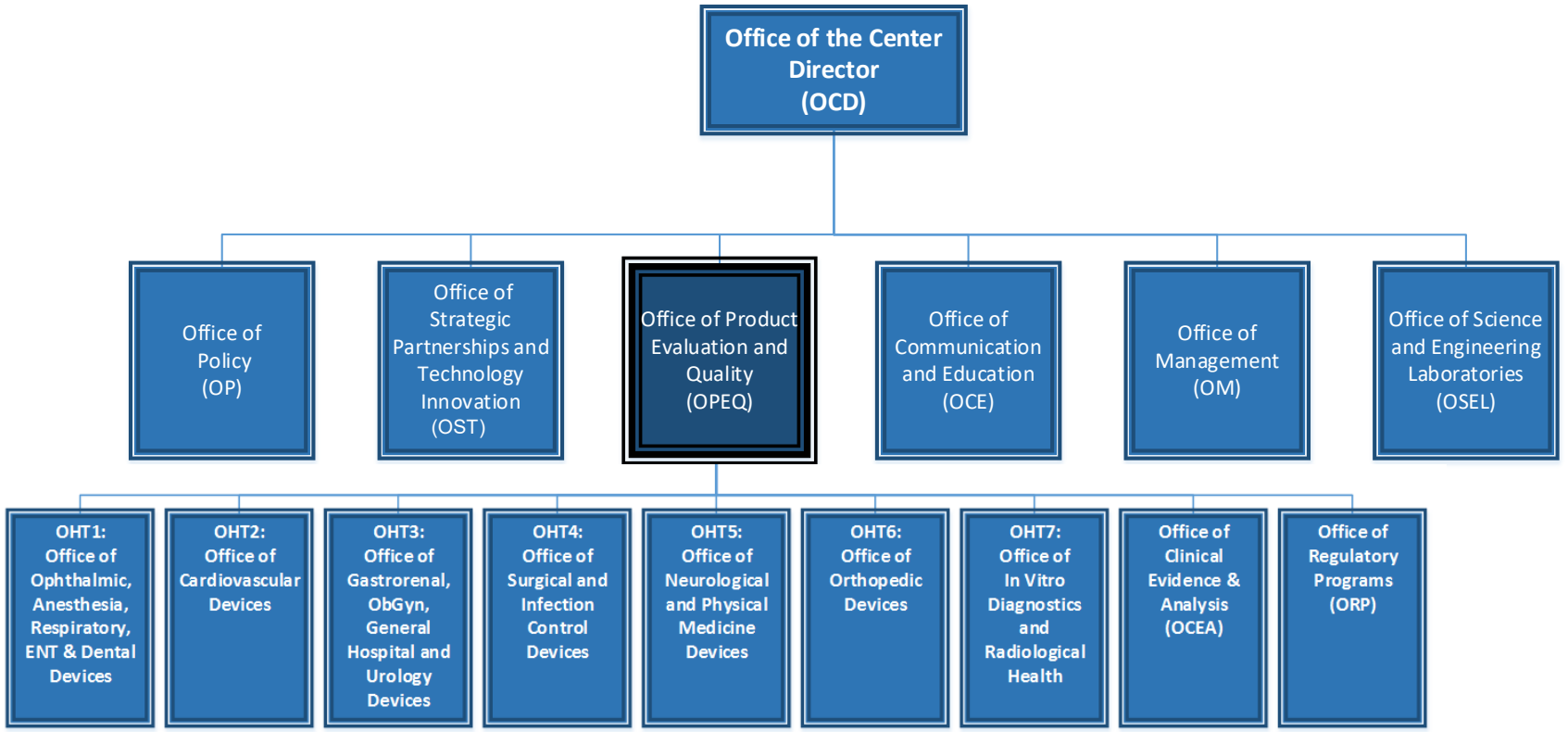
OST

Establish the Office of Strategic Partnerships and Technology Innovation (OST) - Combines the Science & Strategic Partnerships, Digital Health, Health Informatics and Innovation teams. There are no changes in functions within the different teams.

CDRH (Before Reorganization)



CDRH (After Reorganization)



For the device industry to successfully innovate and for the FDA to optimally safeguard the public, the FDA must be and must be supported to be innovative

Do you believe the FDA has the right tools, authorities, and support to be optimally innovative?

Thank You

& Devices

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