# Introduction of Harmonization By Doing (HBD) 2003-2017

Mitchell W. Krucoff MD, FACC, FSCAI, FAHA Professor of Medicine / Cardiology Duke University Medical Center Director, Cardiovascular Devices Unit Director, MDEpiNet Coordinating Center Duke Clinical Research Institute mitchell.krucoff@duke.edu





### September 2003

#### TCT 2003: 15th Annual Transcatheter Cardiovascular Therapeutics

September 15 - 19, 2003; Washington, DC



**David Feigal MD** 

**Director, CDRH 1999-2004** 



#### The Maureen and Mike Mansfield Foundation Promoting Understanding and Cooperation in U.S.-Asia Relations since 1983

#### **Program Overview**

The Mansfield Fellowship Program—named after Mike Mansfield, former U.S. Ambassador to Japan, Senate Majority Leader, U.S. Senator and U.S. Congressman from Montana—is a first-of-its-kind program for both the United States and Japan. The two-year Fellowships enable U.S. federal government employees to develop an in-depth understanding of Japan, learn how its government works, and establish relationships with their counterparts in the government of Japan as well as in the business, professional and academic communities.







## December 2003







### 2003-2004: Japan MHLW launches PMDA











### **April 2004: PMDA Adopts Early Consultation**



Early discussion of clinical trial science & strategy Potential to coordinate with pre-IDE discussions in USA





go

#### EDA U.S. Food and Drug Administration

Home | Food | Drugs | Medic

Medical Devices Home > Medical Devices > Device

# *June 2009*: The "Collaborative Scheme" for parallel medical device development

A-Z Index

#### Device Advice: Device Regulation and Guidance

#### International Information (Medical Devices)

Important New Changes to Canadian Regulatory Quality Systems Requirements

 Japan - U.S. "Harmonization By Doing" HBD Pilot Program Initiative

Contacts

#### Japan - U.S. "Harmonization By Doing" HBD Pilot Program Initiative

Search

ANNOUNCEMENT (June 23, 2009): U.S. – Japan Pilot Program Regarding Medical Device Collaborative Consultation and Review of Premarketing Applications

Japan MHLW/PMDA and U.S. FDA announced this week the launch of a bilateral pilot program on collaborative consultation and review of new cardiovascular devices. The goal of the pilot program is to advance both the speed and quality of clinical/statistical consultations and the regulatory review process for potential earlier market access and improved public health benefit. This collaboration would permit the scientific review staff of both MHLW/PMDA and FDA to discuss the contents of an individual submission in order to gain valuable regulatory information pertaining to device development and clinical trial design.

The Collaborative Scheme is one of several focused topics that will be discussed at the upcoming <u>Japan-US Harmonization By Doing (HBD) West 2009 Meeting, July 16-17</u> at the FDA White Oak Campus.

- FDA announcement (English)
- MHLW announcement (tsuchi) (Japanese)

http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/InternationalInformation/ucm053067.htm





### HBD: 15 Years & Beyond Identifying & Transforming Barriers to Device Innovation

- Pre-competitive collaboration, trust & good will
- International regulatory convergence
- Research infrastructure efficiencies
- Structured data elements & definitions
- Stakeholder education & engagement
- Pilot "POC" projects

#### Medical Device Innovation:

#### **Prospective Solutions for an Ecosystem in Crisis**

#### Adding a Professional Society Perspective

Mitchell W. Krucoff, MD,\* Ralph G. Brindis, MD, MPH,† Patricia K. Hodgson, BA,\* Michael J. Mack, MD,‡ David R. Holmes, JR, MD§

Durham, North Carolina; San Francisco, California; Dallas, Texas; and Rochester, Minnesota

#### Global Cardiovascular Device Innovation: Japan-USA Synergies

 Harmonization by Doing (HBD) Program, a Consortium of Regulatory Agencies, Medical Device Industry, and Academic Institutions –

Takahiro Uchida, MD; Fumiaki Ikeno, MD; Koji Ikeda, PhD; Yuka Suzuki, PhD; Koji Todaka, MD; Hiroyoshi Yokoi, MD; Gary Thompson, BSc; Mitchel Krucoff, MD; Shigeru Saito, MD on behalf of the Harmonization by Doing Program Working Group

Background: Global medical devices have become more popular, but investment money for medical device development is not easily available in the market. Worldwide health-care budget constraints mean that efficient medical device development has become searchial. To achieve efficient development, globalization is a key to success. Spending large amounts of money in different regions for medical device development is no longer feasible.

Mathodra and Results: In order to streamine processes of global model device development, an academic, govemmerial, and industried consortium, called the Hearnonization by Doing program, has been set up. The program has been operating between Japan and the USA since 2003. The program has 4 working groups: (1) Global Cardiovascular Device Trails; (2) Study on Pras-Market Registry; (3) Clinical Trails; and (4) Infrastructure and Mathodoorg/ Regulatory Convergence and Communication. Each working group has as its goals the achievement of speedy and efficient motioal device development in Japan and the USA. The program has held multiple international meetings to deal with obstactes against difficient medical device development.



Krucoff MW et al, J Am Coll Cardiol Intv 2012;5:790–6) Uchida T et al, Circulation Journal 2013





### **Global regulatory convergence**





### Regulatory Convergence: Ethics, Methods and Science of Human Studies

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#### REGULATORY MANAGER



#### Comparing GCP R Trials in the US ar

By Harmonization-by-Doing W

#### Introduction

The convergence of US and Japa device regulations and practices opportunity to accelerate deliver tive medical devices to patients i medical treatment. Reciprocal ac Good Clinical Practices (GCPs) w multinational studies and promo

#### Regulatory Focus, April 2010



GCP Convergence Improves Transportability of Medical Device Clinical Data

#### By Harmonization by Doing Working Group 4

The safety, performance and effectiveness of medical devices are often evaluated by well-controlled clinical investigations before marketing autoinstation. The integrity of these clinical studies is obtained by compliance with visualitary standards or government segstations known as Good Clinical Practices (ICPR). Four GCPs are most approach to US and Jopanese marketing approvals: US food and Drug Administration (ICA) registories and guidance, Japanese GCP retrainance and notifications (ICA) registrainstigation of Medical Devices for Human Subjects-Good Clinical Practice<sup>1</sup> and ICI (G (ICL) Gardwine for Good Clinical Practice.<sup>3</sup>

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Regulatory Focus, January 2013





### Research infrastructure efficiencies





### Advancing Research Infrastructure: Study processes – time lines



### HBD Site Visits March 2004: Shonan Kamakura









### Stakeholder education & engagement





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Duke Clinic

#### Global Regulatory Harmonization and Medical Devices Clinical Trials:

Impact to Cardiology in Japan and Worldwide

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DUKE UNIVERSITY MEDICAL CENTER

### Japan Circulatory Society *March 2004* Tokyo, Japan



# From "Japan-USA Barriers"

to "Japan-USA Synergies"

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**PS** 

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### December 2004: Kamakura Public Forum

#### Attention to the Patient's Perspective

kipo International TRI Network





The 12th Kamakura Live Demonstrat



#### Medical Technology Leadership Forum Washington D.C.

**April 2005** 

#### Mitch Krucoff Duke/DCRI



Hiroshi Yamamoto MHLW

Dan Schultz U.S. FDA



JKE UNIVERSITY



#### 11TH CONFERENCE OF THE GLOBAL HARMONIZATION TASK FORCE





### **October 2007**

#### Tomiko Tawaragi MHLW

### October 2011

## IMDRF

#### **International Medical Device Regulators Forum**

#### About IMDRF

The International Medical Device Regulators Forum (IMDRF) was conceived in February 2011, as a forum to discuss future directions in medical device regulatory harmonization. It is a voluntary group of medical device regulators from around the world who have come together to build on the strong foundational work of the Global Harmonization Task Force on Medical Devices (GHTF). The Forum will accelerate international medical device regulatory harmonization and convergence.

In October 2011, representatives from the medical device regulatory

#### IMDRF contacts

#### Chair:

Dr Larry Kelly Group Coordinator Monitoring and Compliance Group Therapeutic Goods Administration Australia Email: <u>imdrf.chair@tga.gov.au</u>

Secretariat: Email: imdrf.secretariat@tga.gov.au

authorities of Australia, Brazil, Canada, China, European Union, Japan and the United States, as well as the World Health Organization (WHO) met in Ottawa to address the establishment and operation of this new Forum.

A copy of the outcome statement from this meeting is available on the Therapeutic Goods Administration website.

httb://www.imdut.oud/ A copy of the <u>outcome statement from this meeting</u> is available on the Therapeutic Goods Administration website.

alth Organization (WHO) met in Ottawa to address the establishment and operation of this new Forum



from the medical device regulatory nada, China, European Union, Japan and the Unite



# HB Doing

# Pilot "POC" Projects: Novel Informative Data-structure "Harmonization By Data"





### Linking Post-Market Surveillance: LVADS









JACC

JOURNAL of the AMERICAN COLLEGE of CARDIOLOGY

J Am Coll Cardiol, 2010; 56:738-740, doi:10.1016/j.jacc.2010.05.021 © 2010 by the American College of Cardiology Foundation

INTERMACS (Interagency Registry for Mechanically Assisted Circulatory Support): A New Paradigm for Translating Registry Data Into Clinical Practice

Marissa A. Miller, Karen Ulisney, and J. Timothy Baldwin









### **Peripheral Academic Research Consortium (PARC)**

Face to Face Workshops FDA Headquarters, White Oak, Maryland

February 2012 & 2013









HARVARD CLINICAL RESEARCH INSTITUTE



Duke Cinical Research Institute

STATE-OF-THE-ART REVIEW

#### Evaluation and Treatment of Patients With ( Lower Extremity Peripheral Artery Disease



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#### **Consensus Definitions From Peripheral Academic** Research Consortium (PARC)

Manesh R. Patel, MD, Michael S. Conte, MD, Donald E. Cutlip, MD, Nabil Dib, MD, Patrick Geraghty, MD, William Gray, MD, #\*\* William R. Hiatt, MD, 11 Mami Ho, MD, PHD, 1 Koji Ikeda, PHD, 8 Fumiaki Ikeno, MD, Michael R. Jaff, DO, 99 W. Schuyler Jones, MD, Masayuki Kawahara, MD, 1 Robert A. Lookstein, MD, ## Roxana Mehran, MD,# ## Sanjay Misra, MD,\*\*\* Lars Norgren, MD, 111 Jeffrey W. Olin, MD,## Thomas J. Povsic, MD, PHD,\* Kenneth Rosenfield, MD, ttt John Rundback, MD, 555 Fadi Shamoun, MD, James Tcheng, MD,\* Thomas T. Tsai, MD, ¶¶ Yuka Suzuki, PHD, ### Pascal Vranckx, MD,\*\*\*\* Bret N. Wiechmann, MD, 1111 Christopher J. White, MD, 1111 Hiroyoshi Yokoi, MD, 8 58 Mitchell W. Krucoff, MD\*

#### ABSTRACT

The lack of consistent definitions and nomenclature across clinical trials of novel devices, drugs, or biologics poses a significant barrier to accrual of knowledge in and across peripheral artery disease therapies and technologies. Recognizing this problem, the Peripheral Academic Research Consortium, together with the U.S. Food and Drug Administration

UCSE at artery disease therapies and technologies. Hecognizing THE FOCK OF CONSISTENT OFFICIAL STORE AND THE SOUTH OF SOUTH AND THE SOUTH OF STORE AND THE SOUTH OF SOUTHOF SOUTH OF SOUTH OF SO

Patel MR et al, JACC 2015: 65:931-41

#### Duke Clinical Research Institute

### Integrated Definitions & Registries: Harmonization By Data

#### STS/ACC TVT Registry

An initiative of the STS National Database and the ACC's NCDR

#### the ACC's NCDR



#### AMERICAN COLLEGE# CARDIOLOGY FOUNDATION

Participant Login

#### Thursday, February 02, 2012

#### Home

Participation Requirements Data Collection Collaborators Information & Enrollment TVT Resources

#### Tracking Real-World Outcomes

The TVT Registry<sup>™</sup> is a new benchmarking tool developed to track patient safety a introduced transcatheter aortic valve replacement (TAVR) procedure. Created by Th American College of Cardiology (ACC), the TVT Registry is designed to monitor the the treatment of aortic stenosis.

Employing a first-of-its-kind transcatheter heart valve technology, TAVR provides a considered to be inoperable for conventional aortic valve replacement surgery.

Through the capture and reporting of patient demographics, procedure details, and Registry provides a data repository capable of delivering insight into clinical practic

#### For Participating Hospitals, the TVT Registry Offers:

- Quarterly reports containing practice patterns, demographics and outcomes of p performance with that of the national experience
- · Standardized, evidence-based data elements and definitions
- A web-based data collection tool
- A wide range of other quality improvement tools to advance quality improvement

#### The TVT Registry Measures:

- Patient demographics, provider and facility characteristics
- · History/risk factors, cardiac status and detailed health status
- · Well-defined indications for the procedure
- · Pre, intra and post procedure data points and adverse event rates
- · Outcomes at 30 days and one year

#### Providing an Invaluable Data Source

**Providing an Invaluable Data Source** 

https://www.ncdr.com/TVT/Home/Default.aspx



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### **Real World Evidence Structure, Quality & Capture**

#### Recommendations for a National Medical Device Evaluation System

Strategically Coordinated Registry Networks to Bridge Clinical Care and Research

> A Report from the Medical Device Registry Task Force & the Medical Devices Epidemiology Network

## August 24, 2015



#### BRIDGING UNMET CLINICAL CARE AND **CLINICAL RESEARCH NEEDS WITH** STRATEGICALLY COORDINATED REGISTRY NETWORKS

Report from the National Medical Device Registry Task Force & The Medical Devices Epidemiology Network

Mitchell W. Krucoff, Sharon Lise Normand, Fred Edwards, Theodore Lystig, Eve Ross, Elise Berliner, Kristi Mitchell, James Tcheng, David Blaser, Ralph Brindis, Jack Cronenwett, Pamela Gavin, Linda Harrington, Amy Helwig, Kevin Larsen, William Maloney, Matthew McMahon, Bray Patrick-Lake, John Rumsfeld, Julia Skapik, Art Sedrakyan, Danica Marinac-Dabic

#### Bridging Unmet Medical Device Ecosystem Needs With Strategically Coordinated Registries Networks

#### Mitchell W. Krussell Duniam of Cardinings Department of Matkins, Duka University Allectrical Cavitian Eharlegen,

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In June 2014, the Medical Device Epidemickup/Network (MDEpiNet) Public Private Partnership,1 on behalf of the 1/57 cold and Drug Administration Caritie for Devices and Radicikagis Health (CDRH), conversed the Medical Device Registries Task Force (MDRTF) (see eAppendix in the Supplement). The task force was launched to all best the CORHscummitments<sup>1,3</sup> to absing then the medical device postmarket surveillance system using existing resources. and under current authorities, and to develop an energy and system that efficiently and effectively achieves its family functions, from timely identification of postmarket signals to facilitating premarket device clearance and approval.

The MORTZ are lucked broad stakefulder representatron and was manufated to examine the objectives and kogatos of leveraging existing electronic registries and in Remator repositores in support of a rational system. If as work yeas done in parallel with efforts at the Engelberg Center at the Brookings Institution, which in 2015 reported recommendations from their planning board for a "rutional medical device surveillance system." These roc emmondations depicted a system that "supports cotimal patient care by leveraging the experiences of pa-

The MONTF recognized that most existing registries. electronic health records (EHRs), and data sources do not containal the doments recensery for device evaluations. me bading device and processional details, patient descriptions, or long-term outcomes. However, the MORTF recognized that such limitations could be mitageted through intercoerability scilutions that strategically link complicitions ary regi ethies and data sources to produce networks for which the datacomposite could apport indust developed attorn. The MORTY terrard the structure the strategically coordinated registries network, or CRN - with the recognition that many key elements in such retworks (such as ()-His, administratwo classes data, as readile device campacts) are not regelines. per se. The MDRTF recommends strategic CRNs as the foundational architectural construct for the rutional system that well-wappened real-condinensity development and unique device sheriffer an elementation rather than registered term.

The proposed CRN structure could provide rovel, important attributes to the national system. Creation of CRNA could encourage efficient "dual purpose" inversigned os istingregistries. Ei-Rs. administrative dataresources, and levators isomed from exciting licked registry models such



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Krucoff MW, Normand SL et al, JAMA 2015

#### **NEST:** The Vision Real World Evidence of Device Benefit/Risk, Safety

#### VIEWPOINT

Need for a National Evaluation System for Health Technology

Jeffrey Shuren, ND, D. US Food and Drug Administration, Silver Spring, Nandard

Robert M. Califf. MD US Food and Drur Administration, Silver Spring, Manufand products are designed to (1) provide evidence that often not identified until many patents have been exa product benefits patients when used as intended posed to risks, leading to greater potential for avoidable and should be available despite accompanying risks and that maxwell as greater tability and bosof consumer con-(2) ensure timely access to needed therapies and dag-fidence rithe manufacture: Sportaneous portings not nostics. Historically, policy makers and product develop-systematic and can be based by estimesus factors such ershave viewed these objectives as being intension. How- an every exports. Other safety issues also depend on comever, ensuring safety, expediting patient access, and panies appropriately assimilating and reporting data. enabling innovation can be complementary goals within a regulatory framework for medical devices.

Federal regulatory frameworks governing medical allow veiable not estimation. Safety issues are therefore However, a strategic approach to linking and using clinically based data sources such as registries, elec-The US standard for marketing a medical device is trank health records (EHRs), and claims data, could ge-"reasonable assurance of safety and effectiveness" tentially educate budges of obtaining appropriate ex-(RASE) Generally, clinical studies must be conducted to dence across the life cycle of a device. By leveraging demonstrate RASE for both high-risk and introvative clinical data and applying advanced analytics and flexlower-risk devices and US patients and clinicians have ible regulatory approaches tailored to the unque data greater assurances that the benefits of devices out-needs and imposition cycles of specific device types, a weigh the potential risks. In contrast, other countries apmore comprehensive and accurate framework could be ply a standard of safety and performance with limited created for assessing the risks and benefits of devices.

Opinion.

- More real world
- Less unique effort & cost
  - More value across ecosystem:
    - Regulatory decisions
    - Best practice guidelines
    - > Payer decisions
    - Patient information
  - Learning model:
    - Use/re-use structure solutions
    - Linked architecture
  - International application

#### JAMA Published online July 11, 2016



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### **MDEpiNet PPP PASSION CV Registries**





#### Predictable And SuStainable Implementation Of National CardioVascular Registries:











# **Registry Assessment of Peripheral Interventional Devices (RAPID)**

Jack L. Cronenwett, M.D. Dartmouth-Hitchcock Medical Center Lebanon, New Hampshire



### **RAPID Partners**

- 3 Major U.S. Societies / Registries
  - American College of Cardiology (ACC)
    - National Cardiovascular Disease Registry (NCDR)
  - Society of Interventional Radiology (SIR)
    - National Interventional Radiology Quality Registry (NIRQR)
  - Society for Vascular Surgery (SVS)
    - Vascular Quality Initiative (VQI)
- 5 International Partners
  - Japan's Pharmaceuticals and Medical Devices Agency (PMDA)
  - Global Medical Device Nomenclature Agency (GMDNA)
  - Australian Vascular Audit
  - German Vascular Society
  - Northern German Association for Vascular Medicine



### **RAPID Partners**

#### • 7 U.S. Agencies

- FDA (CDRH pre- and post-market, and CDER)
- Agency for Healthcare Research and Quality (AHRQ)
- Centers for Medicare and Medicaid Services (CMS)
- Department of Defense (DOD) Healthcare Resources
- Office of the National Coordinator (ONC)
- National Heart, Lung and Blood Institute (NHLBI)
- National Library of Medicine (NLM)
- 6 EHR / Registry / Clinical Research Companies
  - Epic

Healthjump

• M2S

- Boston Biomedical Assoc.
- MedStreaming
- Novella Clinical, Quintiles



### **RAPID Partners**

#### • 12 Device Manufacturers

- Abbott
- Aortic Medical Inc.
- Avinger
- Boston Scientific
- Cardiovascular Systems Inc
- Cook Medical
- CR Bard
- Medtronic
- Spectranetics Corp
- Terumo
- Volcano Corp/Phillips Health Technology
- WL Gore



### Data Elements

Data Element Label	Data Element Definition	Value set	Definitions of the elements of the value set	Reference source
CONDITION - MODIFIED RUTHERFORD CLASSIFICATION				
Modified Rutherford Category	Categorical description of the symptoms associated with the obstruction of the lumen of the peripheral arteries (NCI C78533).	0	Asymptomatic: documented peripheral arterial disease, without symptoms of claudication or ischemic pain	Adapted from VQI PVI registry, Rutherford J Vasc Surg 1997;26:517- 38, ACC/AHA PAD Data Standards Circulation 2012;125:395-467, and PARC J Am Coll Cardiol 2015.
		1	Mild claudication: ischemic limb muscle pain that does not limit walking, or limits walking only after >2 blocks (>600 feet, or 2 football fields)	
DEPINE 2		2	Moderate claudication: ischemic limb muscle pain that limits walking to 1-2 blocks (300-600 feet, or 1-2 football fields)	
		3	Severe claudication: ischemic limb muscle pain that limits walking to <1 block (<300 feet, or 1 football field)	
		4	Ischemic rest pain: pain in the distal foot at rest felt to be due to limited arterial perfusion	
		5	Minor tissue loss: nonhealing ischemic ulcer(s) on distal leg, or focal gangrene with diffuse pedal ischemia	X
XX		6	Major tissue loss: ischemic gangrene extending above TM level, functional foot no longer salvageable without extensive revascularization efforts	31



# Pilot "POC" Projects: Clinical Trials





### 2005: Endeavor Japan (Medtronic)



arduning MOLECULAR INTERVENTIONS

The clinical evaluation of the Endeavor zotarolimus-eluting coronary stent in Japanese patients with de novo native coronary artery lesions: primary results and 3-year follow-up of the Endeavor Japan study

Shigeru Saito , Ross Prpic, Jeffery J. Popma, John Alexander, Mitchell W. Krucoff, on behalf of the ENDEAVOR Japan Investigators

Cardiovascular Revascularization Medicine Volume 12, Issue 5, Pages 273–279, September–October, 2011

- Identical inclusion/exclusion
- Identical endpoints
- Identical core laboratories
- Enhanced poolability
- Enhanced interpretability







### 2007: SPIRIT III Japan (Abbott Vascular): Enhanced poolability & interpretability



Mid-Term Results of Everolimus-Eluting Stent in a Japanese Population Compared With a US Randomized Cohort: SPIRIT III Japan Registry With Harmonization by Doing

Wednesday, 08/29/12 | 9993 reads

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Issue Number: Volume 24 - Issue 9 - September 2012

- Concomitant enrollment
- Identical inclusion/exclusion
- Identical endpoints
- Identical core laboratories







### 2009: Zilver PTX (Cook Medical) Single protocol global RCT



#### Zilver® PTX® Drug-Eluting Peripheral Stent - P100022

This is a brief overview of information related to FDA's approval to market this product. See the links below to the Summary of Safety and Effectiveness Data (SSED) and product labeling for more complete information on this product, its indications for use, and the basis for FDA's approval.

Product Name: Zilver® PTX Drug-Eluting Peripheral Stent PMA Applicant: Cook, Inc. Address: 750 Daniels Way, P.O. Box 489, Bloomington, IN 47402-0489 Approval Date: November 14, 2012 Approval Letter: http://www.accessdata.fda.gov/cdrh\_docs/pdf10/p100022a.pdf





w.accessdata.fda.gov/cdfh\_docs/pdf10/p100022a



### COAST Study (CSI)



Diamondback 360<sup>®</sup> Coronary OAS Micro Crown

- To evaluate the performance of the Coronary OAS Micro Crown in treating *de novo*, severely calcified coronary lesions
  - Prospective, single-arm, multi-center Investigational Device Exemption (IDE) study conducted in Japan and the USA
  - Harmonization by Doing (regulatory collaboration between Japan and the USA)



#### Harmonized Assessment by Randomized Multicenter Study of OrbusNEich's COMBO StEnt

### Japan-USA HARMONEE: Primary Report

Of A Randomized Trial of a Bioabsorbable Polymer-Based DES With A Luminal CD34+ Antibody Coating vs A Durable Polymer-Based DES in Patients With Coronary Artery Disease



### **The COMBO Plus Dual Therapy Stent**





#### Enrollment & Follow-Up: ITT population





HARMONEE











# Pilot "POC" Projects: New Directions





### Early Feasibility Studies: Can We Do Together?

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Investigational Devi (IDEs) for Early Medical Device Cli Including Certain F (FIH) Stu

# Guidance for Induand Drug Adminis

Document issued on: Octobe

Document issued on: Octob

and Drug Admini

https://www.fda.gov/downloads/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm279103.pdf





Based on our experiences of EFS in Japan and discussions in HBD activity, we'd like to build up the successful framework of EFS and make the environment to perform it better in Japan.

### **EFS in Japan: PMDA View**

#### Sara Takahashi

#### Reviewer Office of Medical Devices III Pharmaceuticals and Medical Devices Agency (PMDA), Japan







Japan-USHBD East 2017 Think Tank Meeting



# HBD-for-Children Progress and Challenges

Satoshi Yasukochi, MD Nagano Children's Hospital JSPCCS vice-president

December 7<sup>th,</sup> 2017 National Center for Global Health and Medicine (NCGM)

### Regulatory

- Promote approval process & regulation
- Simplified of clinical trial
- Adjusting regulation between US and Japan

# HBD for children

Industry

Public grant

Academia

- Cost of approval process
- Market scale
- Contribution to society

Research & development of new device

- Investigator-oriented clinical trial
- Collaborative clinical trial Enlighten and education
- Promote Certification system

### HBD-Children Work Report & schedule



# Introduction and achievement of HBD-for-Children

### Yasuko Nakamura

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### Reviewer, Office of Medical Devices III Pharmaceuticals and Medical Devices Agency (PMDA)





# An established scheme HBD

- Development of pediatric medical device tends to delay in the U.S. and Japan but there are high needs in clinical institutions.
- Regulatory authorities have to resolve problems in the U.S. and Japan.



We will find problems of development of pediatric medical devices in the U.S. and Japan and propose solutions by Doing.







### POC candidate

	Covered CP Stent	Medtronic Melody Transcatheter Pulmonary Valve	AMPLATZER muscular VSD occluder	
industry	NuMED	Medtronic	ST.JUDE MEDICAL	

### HBD East: Tokyo 2008





# Remember, Luke Skywalker:

# "Don't try... Do!"

### Harmonization By Doing Thank you!





# Introduction of Harmonization By Doing (HBD) 2003-2017

Mitchell W. Krucoff MD, FACC, FSCAI, FAHA Professor of Medicine / Cardiology Duke University Medical Center Director, Cardiovascular Devices Unit Director, MDEpiNet Coordinating Center Duke Clinical Research Institute mitchell.krucoff@duke.edu





### Flow to the approval



#### application approval

### **Global Clinical Evaluation**





# 2012: MDEpiNet PPP

 $\underline{http://www.fda.gov/MedicalDevices/ScienceandResearch/EpidemiologyMedicalDevices/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceS/ScienceandResearch/EpidemiologyMedicalDeviceS/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/MedicalDeviceEpidemiologyNetworkMDEpiNet/default.htp://www.fda.gov/NetworkMDEpiNe$ 

...to develop and maintain national and international scientific infrastructure and...methodological approaches...to overcome and eliminate discontinuities in evaluation and surveillance that currently exist within the TPLC...

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