Early Feasibility Studies (EFS) in the U.S. with a Focus on Valvular Heart Disease: Updates, Impact and Future Directions

Chip Hance

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Disclosure Statement of Financial Interest

I, Robert Hance, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.

All TVT 2017 faculty disclosures are listed online and on the app.

MDIC: Medical Device Innovation Consortium

A Public-private Partnership Created to Advance Medical Device Regulatory Science for Patient Benefit.

- Members (n=60)
  - Public: FDA, CMS, NIH
  - Private: Large and Small Manufacturers
  - Not-For-Profit: Patient organizations
- MDIC
  - Established 2012
  - Bill Murray, CEO
  - Offices: Washington DC and Minneapolis

MDIC: A Sample of Ongoing Initiatives

- **NEST:**
  National Evaluation System for Health Technology
- **'Virtual Patient':**
  Use of 'virtual patients' to reduce clinical study sample size
- **Private Payers:**
  Piloting involvement of payers in pivotal study design
- **EFS** Administrative and Clinical Practice Improvements

FDA: Early Feasibility Studies Program Objectives

- **Earliest Patient Access:** Potentially beneficial medical devices in the U.S.
- **U.S. Leadership:** Maintain or regain leadership in medical device innovation
- **Encourage Close Collaboration:** Between developers & users
- **Clinical Study Continuity:** Early clinical use, Pivotal studies, U.S. approval, Post-approval

FDA's Leadership Has Allowed U.S. Sites to Re-engage in Early Clinical Research

Andrew Farb, MD and Dorothy Abel, FDA, CDRH, ODE
Investigational Device Exemptions (IDEs) for Early Feasibility Medical Device Clinical Studies

FDA
CDRH Center for Devices and Radiological Health

EFS Program: Up and Running

Guidance Established in 2013

Investigational Device Exemptions (IDEs) for Early Feasibility Medical Device Clinical Studies, Including Certain First in Human (FIH) Studies

Guidance for Industry and Food and Drug Administration Staff

Document issued on: October 1, 2013

The draft of this document was issued on November 10, 2011.

For questions regarding this document, contact CDRH's Andrew Farb, 301-769-6343, Andrew.Farb@fda.hhs.gov or Dorothy Abel, 301-796-6366, Dorothy.Abel@fda.hhs.gov, or CBER's Office of Communication, Outreach and Development at 1-800-835-4709 or 301-827-1800.

FY2015/2016/2017 EFS Participant Data

FY15-FY17 EFS IDE Participants	Company	Hospital/ academic	Total per division	% of all EFS IDEs submitted in FY15, FY16, and FY17
DCD (cardiovascular)	27	8	35	27.6
DSD (surgical)	5	4	9	7.1
DOED (eye, ear, nose, throat)	5	1	6	4.7
DNPMD (neuro, physical medicine)	8	28	36	28.3
DRGUD (reproductive, gastrorenal, urological)	5	21	26	20.5
DOD (orthopedic)	1	2	3	2.4
DAGRID (anesthesiology, respiratory general hospital, infection control, dental)	6	3	9	7.1
OIR (Office of In Vitro Diagnostics and Radiological Health)	0	3	3	2.4
totals	*57*	*70*	*127*	*100%*

39 EFS submissions to-date in FY2017 (50+ expected)

Growing Interest:
EFS Process Efficiency

Overcoming the Challenges of Conducting Early Feasibility Studies of Medical Devices in the United States

David R. Holmes, Jr, MD,[a] Robert Califf, MD,[b] Andrew Farb, MD,[b] Dorothy Abel, BSBME,[b] Michael Mack, MD,[c] Tamara Syrek Jensen, JD,[d] Bram Zuckerman, MD,[b] Martin Leon, MD,[e] Jeff Shuren, MD[b]

ABSTRACT

Initial clinical studies of new medical technologies involve a complex balance of research participant benefits versus risks and costs of uncertainty when novel concepts are tested. The Food and Drug Administration Center for Devices and Radiological Health has recently introduced the Early Feasibility Study (EFS) Program for facilitating the conduct of these studies under the Investigational Device Exemption regulations. However, a systematic approach is needed to successfully implement this program while affording appropriate preservation of the rights and interests of patients. For this to succeed, a holistic reform of the clinical studies ecosystem for performing early-stage clinical research in the United States is necessary. The authors review the current landscape of the U.S. EFS and make recommendations for developing an efficient EFS process to meet the goal of improving access to early-stage, potentially beneficial medical devices in the United States. (J Am Coll Cardiol 2016;68:1908–15) © 2016 by the American College of Cardiology Foundation. All rights reserved.

Source: Journal of the American College of Cardiology, October 25, 2016

Newly Formed Executive Committee

- David Holmes (Chair/Mayo)
- Karen Alexander (Duke)
- Dan Burkoff (CRF)
- Joseph Chin (CMS)
- Chip Hance (MDIC/Industry)
- Aaron V. Kaplan (Dartmouth)
- Martin Leon (CRF/Columbia)
- Michael Mack (Baylor)
- Jeff Shuren (CDRH/FDA)
- Tamara Syrek-Jensen (CMS)
- Bram Zuckerman (CDRH/FDA)

MDIC-EFS Working Group:
Administrative and Clinical Practices

Co-Chairs:

- Andrew Farb (CDRH/FDA)
- Chip Hance (MDIC/Industry)
- Aaron V. Kaplan (Dartmouth)

Program Management:

- Shawn Ahmad (Dartmouth)
- Dan Schwartz (MDIC)
- Jing Xie (MDIC)
- Jamie Walkowiak (Baylor)

- 16 Industry Contributors

Focus Areas:

I. FDA/Sponsor: IDE Approval

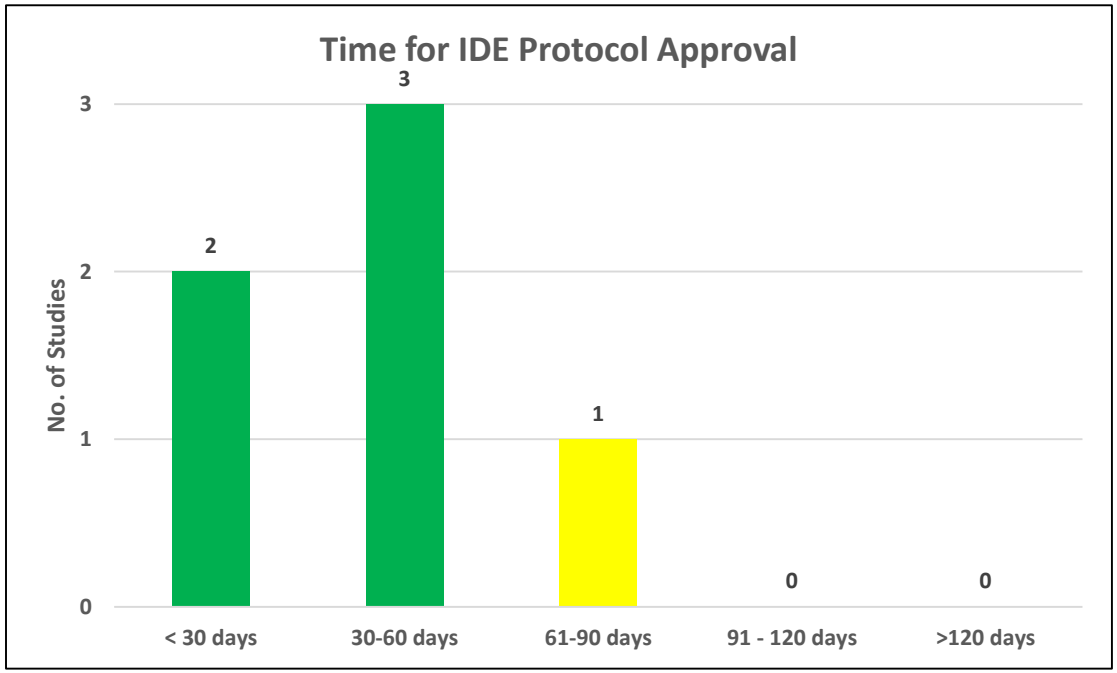
II. Site Ethics (IRB) Approval

III. Site Contracting

IV. Site Patient Recruitment

I. FDA: IDE Approval

Results from Identified Structural Heart Studies



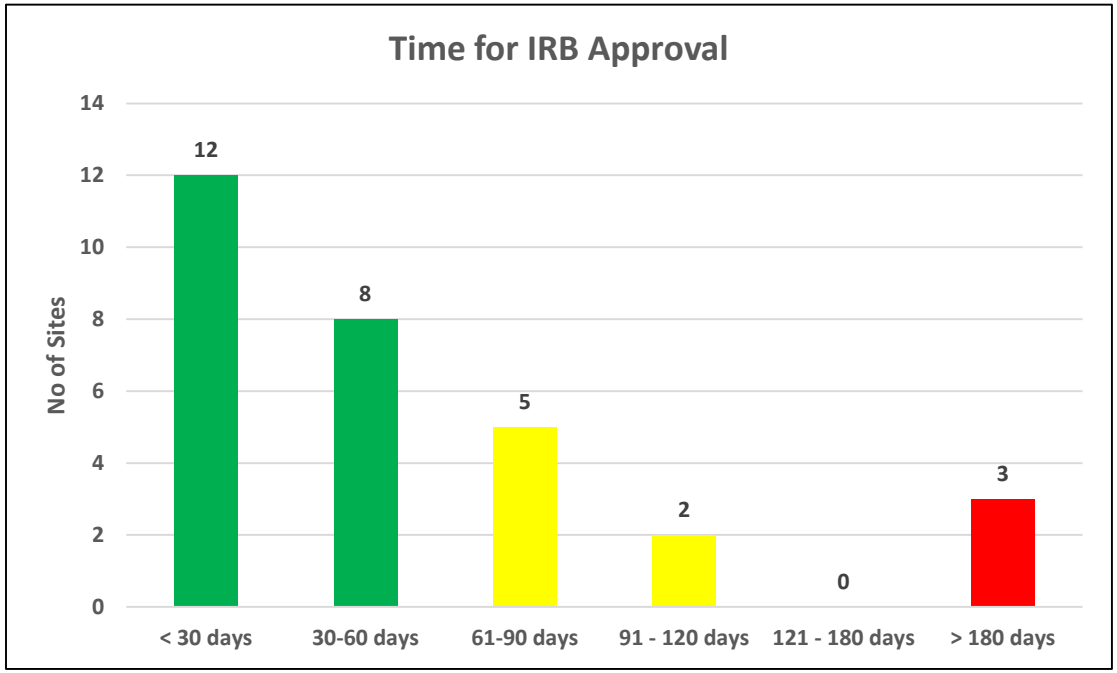
Structural Heart Studies: 6

- Average IDE Approval Time = 38 days
- Close Sponsor-Investigator-FDA Collaboration

Source: MDIC Survey of EFS Structural Heart Sponsor Participants – Results as of 6/9/2017

II. Ethics (IRB) Approval

Results from Identified Structural Heart Studies



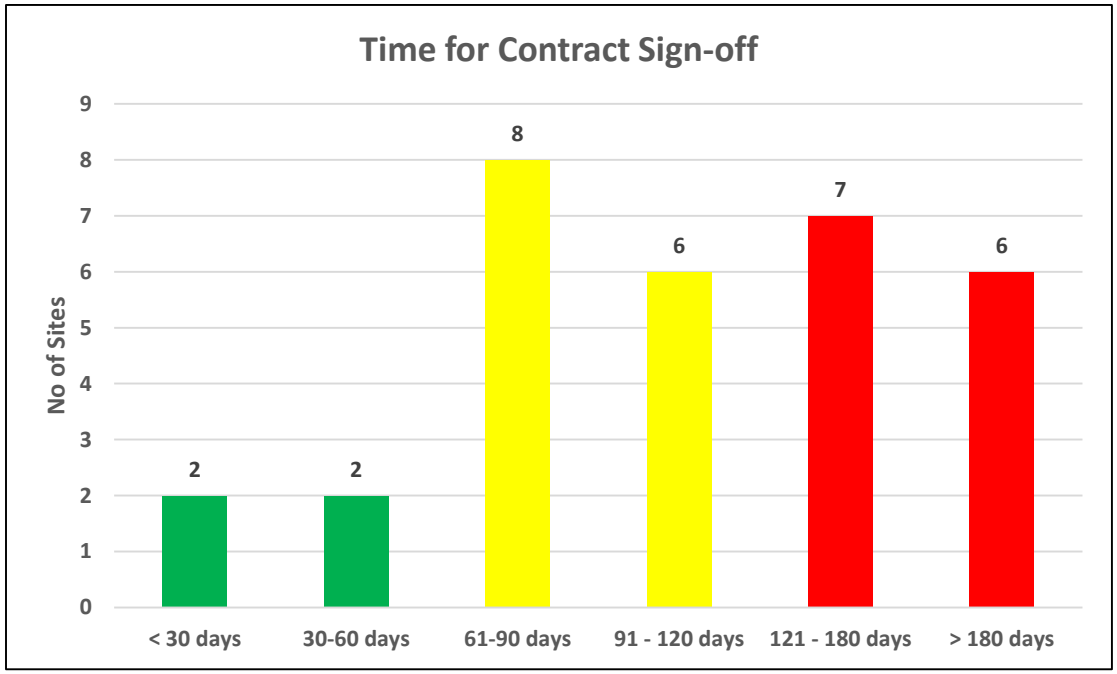
Structural Heart
Studies: 6
Sites: 30

- ~2/3 of Approvals Within 60 Days
- Results May Reflect IRB Submission *Following* Contract Approval

Source: MDIC Survey of EFS Structural Heart Sponsor Participants – Results as of 6/9/2017

III. Site Contracting Agreement

Results from Identified Structural Heart Studies



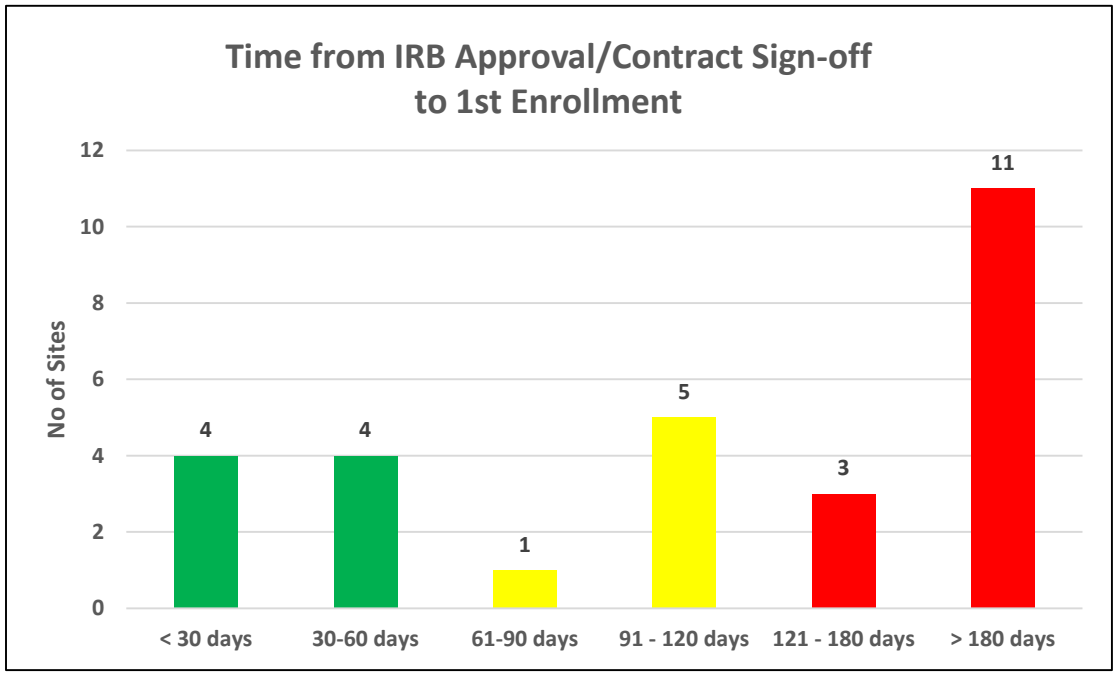
Structural Heart
Studies: 6
Sites: 31

- Biggest Roadblock
- Site/Sponsor Site Indemnification Problematic

Source: MDIC Survey of EFS Structural Heart Sponsor Participants – Results as of 6/9/2017

IV. Patient Recruitment

Results from Identified Structural Heart Studies



Structural Heart
Studies: 6
Sites: 28

**Represents 28 of 38 participating sites with complete reported data.*

Variability Possibly Reflects Differences in:

- Protocol/Patient Population
- Investigator Training & Proctoring

Source: MDIC Survey of EFS Structural Heart Sponsor Participants – Results as of 6/9/2017

Conclusions:

Early Feasibility Testing in the US

- FDA Changes Enable (IDE) Early Feasibility Studies in the U.S.
- Companies Have Embraced FDA's New Pathway
  - Structural Heart/Valvular Studies in the U.S. Increasing
- MDIC-EFS Analysis
  - Administrative Challenges Now the Largest Barrier, Especially Contracting
- Further Collective Efforts Required to Make U.S. Clinical Ecosystem Competitive

MDIC-EFS: Key Deliverables

Your Help & Support Required

- Build Data Bank & Performance Metrics
- Streamline Contracting
  - Develop Template Language
- Site Operations: Share Best Practices
- Establish Site Network
  - Sites Committed to Best Practices

- **Success Requires Sharing Anonymized Data**
  - Medical Device Companies (Big & Small)
  - Clinical Sites

MDIC-EFS: Thank You

Your Help & Support Required

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