IHE | Integrating the Healthcare Enterprise

Inside IHE: Cardiology Webinar Series 2018

IHE Integrating the Healthcare Enterprise

Paul Dow

2018 Webinar Agenda

1. Introductions
2. Cardiology and Domain Overview
3. Cardiology Profile Update
4. Next Steps for Cardiology Domain
5. Questions and Answers

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Jerry Serwer MD, University of Michigan
David Slotwiner MD, Weill Cornell Medical College
Nick Gawrit, heartbase
Rebecca Baker, American College of Cardiology
Shinichi Nakano, Canon Medical
Takeshi Oozeki, Canon Medical
Charles Thomas, University of Washington
Paul Dow, American College of Cardiology

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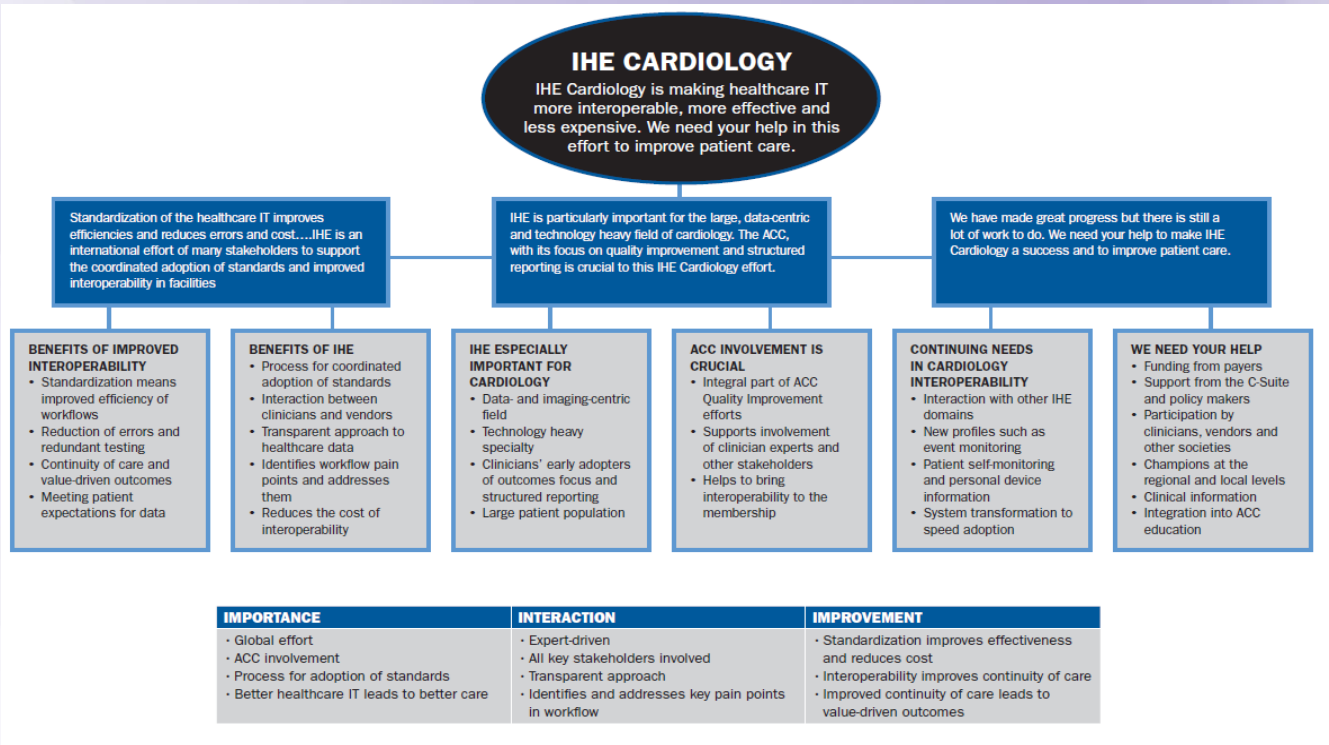
David Slotwiner MD

IHE Cardiology Key Message Goals and Mission



Windle JR et al: ***2016 ACC/ASE/ASNC/HRS/SCAI health policy statement on integrating the healthcare enterprise.*** J Am Coll Cardiology 2016; 68:1348-64.

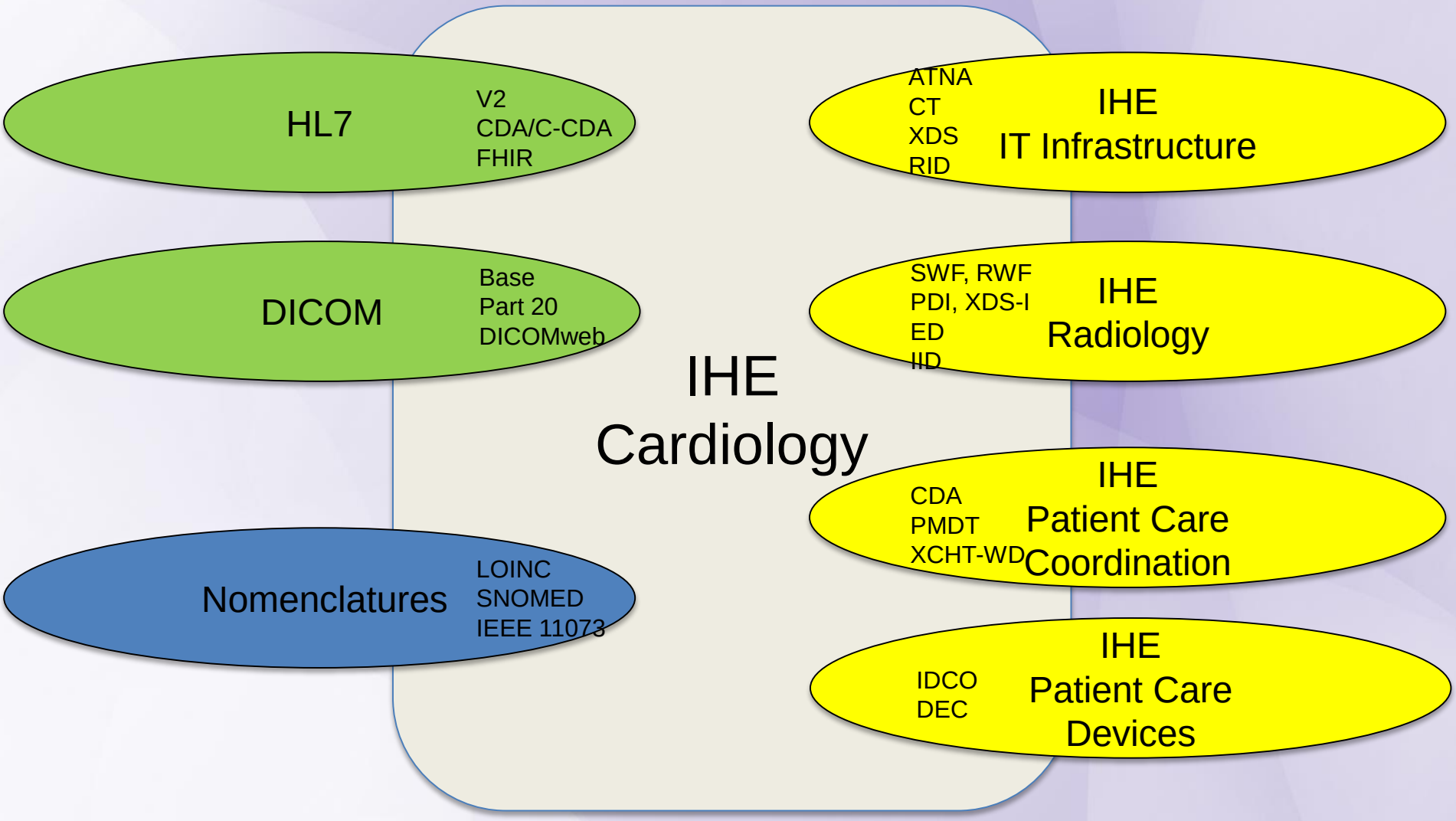
Today's Cardiology Challenges

- **Both inpatient and outpatient settings (increasingly blurred)**
- **Heavily procedure oriented – diagnostic and interventional**
- **Many people require data and contribute to data acquisition**
  - Clinicians
  - Nursing/extenders/technicians/medical assistants
  - Anesthesia
- **Huge data sets that may be in different "silos"**
- **Numerous reports generated from same data**
  - Pre procedure report
  - Anesthesia record
  - Nursing record
  - Procedure report
  - Post procedure record
  - Discharge report and referring clinician letters
  - Patient letter and instructions

Cardiology Data Needs to Flow Seamlessly

- **Avoid entering data multiple times**
- **Workflow Issues**
- ***EVERYONE*** **requires access to** ***ALL*** **the discrete data**
- **Report consumers**
  - EHR
  - HIE
  - Billing - Payers
  - Regulatory agencies
  - Registries
  - Patients
  - Oh yea - Clinicians

Cardiology in the World of Interoperability Standards



Cardiology Needs to Deliver for the C-Suite

- **Return on investment (ROI)**
- **Increased efficiency, while decreasing costs**
- **Meeting the complex patient and clinician needs**
- **Quality Improvement initiatives**
- **Accreditation Issues**
- **Rapid response by vendors to new needs**
  - Data fields and structure
  - Changes in practice
  - Governmental regulations

Cardiology Needs To Standardize

- **Data Models**
- **Nomenclatures**
- **Workflows**
- **Structured Reporting**
- **Semantic and Syntactic Interoperability**

Cardiology Needs to Avoid

- **Proprietary, Site Specific Data Elements**
- **Duplicative Testing**
- **Manual Data Entry**
- **Reinventing**
- **Addressing Only Very Specific Situations**

Cardiology Domain Opportunities

- **Allow bidirectional communication between clinicians and industry**
- **Develop closer ties with other IHE domains, professional societies, and policy makers**
- **Engage clinical end users to drive vendors to adopt and implement IHE profiles in day-to-day workflows**
- **Links to existing profiles and use cases**

http://wiki.ihe.net/index.php/Profiles#IHE_Cardiology_Profiles

Paul Dow

Cardiology Projects

Current

Cardiac Procedure Note (CPN) Extensions

Cardiac Procedure Note (CPN) Implementation Guide

- Clinicians / End Users
- C-Suite

Future

Cardiology Connectathon @ ACC.19

Partnering with IHE - Japan

Takeshi Oozeki

Shinchi Nakano

IHE Japan / Cardiology Projects

Potential International Collaborations

- Proposing a mechanism for collecting cardiology examination and treatment information (i.e., CPN for US, and cath report part of the SEAMAT [Standard Export datA format] for Japan as national extension) and outputting those information, so that it can be used for research and registration purposes as ISO 215 Technical Report.
- Note that the contents of data registry information is different from country to country, so the contents can be the national extension.
- But the mechanism for collecting data and outputting those data can be same.

Intra Vascular Imaging: What and Why

Background

- IVUS and IVOCT are frequently used in Japan.
- Requested procedure for IVI is like a “Ad hoc” in the Cath-lab.
- Cardiologist judge whether if the IVI is used or no during the procedure.
- Mobile device like a Ultrasound cart.

Needs

- Do not want to type demographic information (ID, name, etc.).
- May want to manage instances same as HD and XA.

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Table 3.2-1: Cath Workflow - Actors and Options

Actor	Option Name	Optionality	Vol & Section
ADT Patient Registration	*No options defined*	-	-
Order Placer	*No options defined*	-	-
Department System Scheduler/Order Filler	Multi-modality Procedure Update	R	CARD TF-2: 4.1
	PPS Exception Management	O	RAD TF-2: 4.7
	Availability of PPS-Referenced Instances	O	RAD TF-3: 4.49
Acquisition Modality	Patient Based Worklist Query	O	RAD TF-2: 4.5
	Broad Worklist Query	R (see note)	RAD TF-2: 4.5
	PPS Exception Management	O	RAD TF-2: 4.7
Image Manager/ Image Archive	PPS Exception Management	O	RAD TF-2: 4.7
	Intermittently Connected Modality	R	CARD TF-2: 4.3
	Cardiac Cath	R	CARI
	Availability of PPS-Referenced Instances	O	RAD
	Intravascular Imaging	**O**	**CARI**
Image Display	**Intravascular Imaging**	**O**	**CARI**
Performed Procedure Step Manager	*No options defined*	-	-
Evidence Creator	*No options defined*	-	-

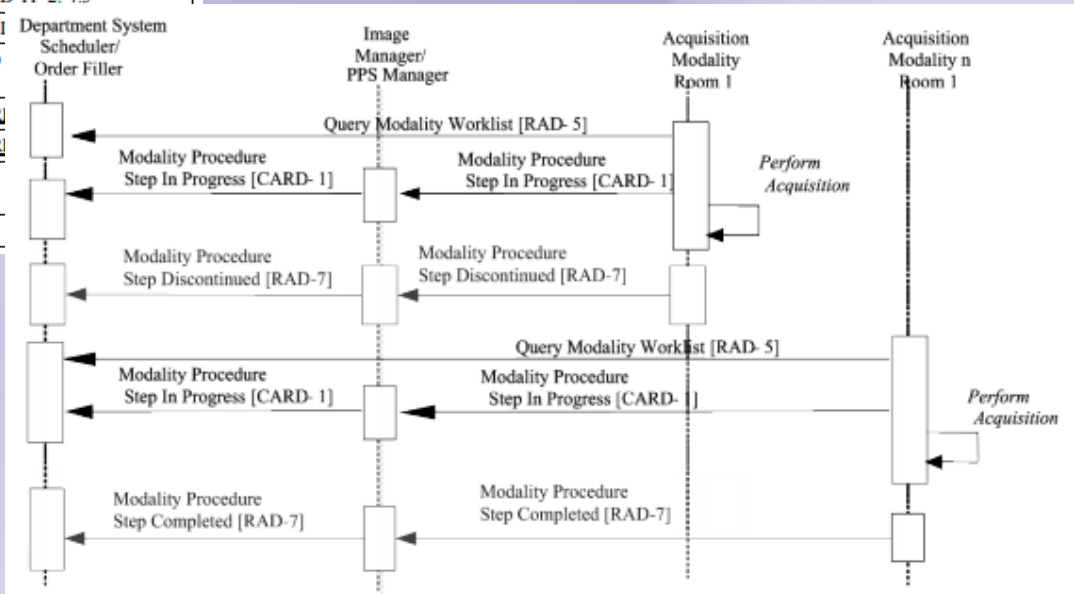

Figure 3.4-10: Change Equipment during Procedure – Case C11

Add Intravascular Imaging as an O for IM/IA and ID.
Almost same sequence diagram with other area.

Reference:

https://www.ihe.net/Technical_Framework/upload/IHE_CARD_Suppl_IVI_Option_for_Cath_Workflow.pdf

Highlight in the Connectathon

Pros

- FY2017: CAS* (trial) was used for IVOCT SOP Class images.
- FY2015: 2 ID vendors could displayed IVOCT SOP Class Images.
- FY2014: Terumo (IVOCT) and Carina (IVUS) has joined.
- FY2013: 1st Connecathon as a Trial Implementation.

Cons

- Only one vendor of IVI involved.
- Hard to go through to next stage from TRAIL to FINAL.

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Rebecca Baker

Here's the Problem

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Sophia Chaidez

Cardiac Procedure Note (CPN) White Paper
AKA "*Implementation Playbook*"

Health-Care Community Target Audience: Executives		Vendor Community Target Audience: CV Vendors
Disconnect between vendor technology and needs of the cardiovascular healthcare community	Background	Disconnect between vendor technology and needs of the cardiovascular healthcare community
Looking for vendor partnerships to reduce administrative burden	Call-to-Action	Strengthen standards in the vendor community to support the needs of healthcare customer base
Improve foundational structure for Interventional Cardiology: Cath and EP	Objective	Drive vendors to support a standards-based framework to reduce the inherent administrative burden faced in healthcare community
Consistency in documentation, practice and operations, which reduces variability and incremental costs	Benefit	Technical solutions support clinical workflows
Engagement	Next Steps	Adoption

https://www.ihe.net/resources/public_comment/#cardiology

Charles Thomas

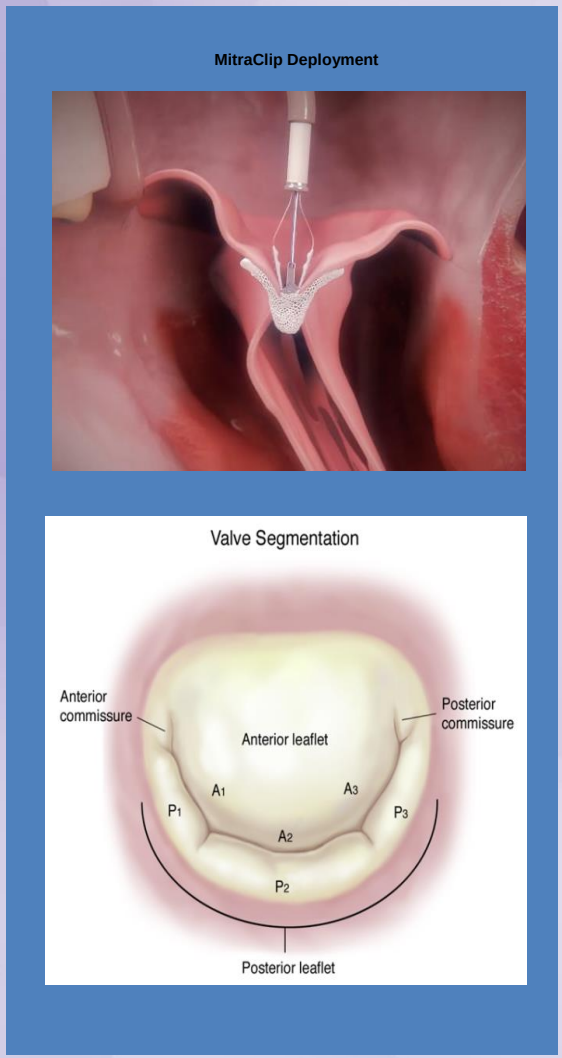
Mitral Valve Repair

Content Development Methods

- FDA & CMS approval and appropriate use guidance
- Clinical registry content
- Patient selection process EMR documentation.
- Existing procedure reports from an academic site
- Patient follow-up

Challenges

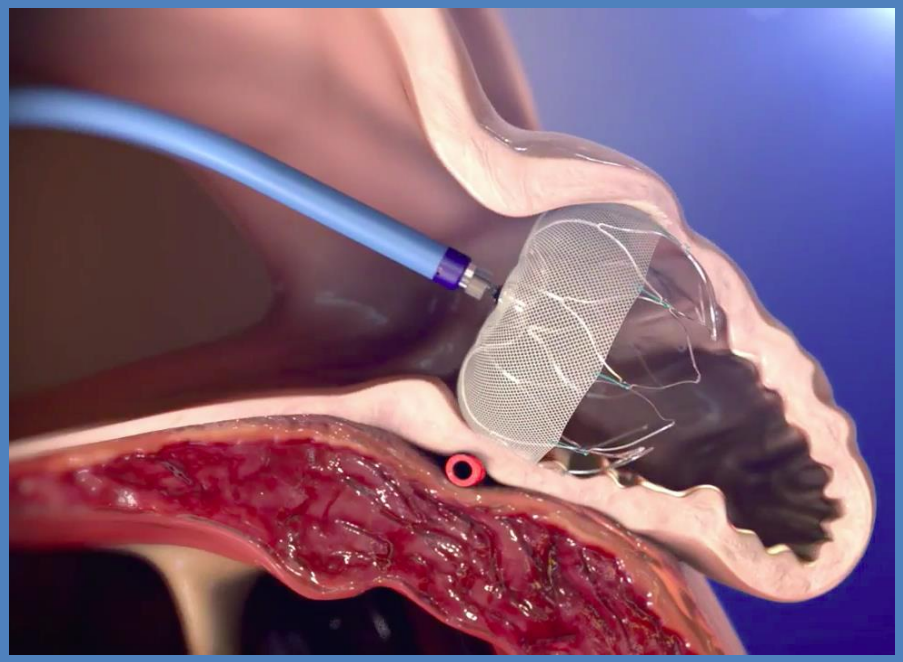
- SNOMED CT mitral valve morphology and deployed device location description



Left Atrial Appendage Occlusion (LAAO)

Content Development Methods:

- FDA & CMS approval and appropriate use guidance
- Registry Content
- Patient selection process EMR documentation.
- Existing procedure reports from an academic site



Challenges

- SNOMED CT Left Atrial Appendage morphology and deployed device measurements.

Conformance

Mitraclip

Is included in the Structural Heart options for both Content Creator and Content Consumer.

LAAO

A separate Content Creator Option was defined as this procedure is performed at sites where other structural heart procedures may not be performed per clinician input.

Note: Left Atrial Appendage Procedures Results Observation constraints are separately defined in the CPN

Nick Gawrit

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David Slotwiner MD

Upcoming Areas of Emphasis

Cardiac Procedure Note (CPN) Extensions

Clinical expert consensus for report content

SNOMED CT Additions for valve and LAA morphology

LOINC additions for needed LAA measurements across multiple modalities

Planning Committee Rejuvenation

Recruiting new members

Areas of Emphasis

Developing a Domain Roadmap

3-Year Plan

Document Financial Impact and ROI for Profiles

Potential Writing Projects

Upcoming Cardiology Projects

ACC Data Harmonization Strategy

1. Health Policy Paper generated from the HIT Summit
2. Structured Reporting in the EP Lab
3. Clearly Defining the Data and Workflow for CathPCI 5.0
4. Plotting Top 500 Cardiovascular Data and Metadata Definitions
5. Defining the Best Reports for common cardiac conditions (coronary artery disease, hypertension, atrial fibrillation and heart failure)
    - Inpatient Note
    - Discharge Summary
    - Outpatient Notes

Paul Dow

IHE Cardiology Planning Committee

Responsibilities

- Identifying priority issues for the cardiology community
  - Liaison to sponsor organizations
- Soliciting and developing IHE Profile Proposals
- Evaluation of Technical Committee work
- Marketing IHE Cardiology profiles to user community

Contact Information

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Co-Chair, Gerald Serwer, MD

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Co-Chair, David Slotwiner, MD

djs2001@med.cornell.edu

Committee's wiki page

http://wiki.ihe.net/index.php?title=Cardiology_Planning_Committee

IHE Cardiology Technical Committee

Responsibilities

- Development of IHE Profiles and white papers
- Maintenance of IHE Cardiology Technical Frameworks
- Liaison with other IHE domains
- Support for Planning Committee marketing

Contact Information

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Co-Chair, Chris Melo

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Committee's wiki page

http://wiki.ihe.net/index.php?title=Cardiology_Technical_Committee

For More Information

Links to IHE Resources

IHE Cardiology Domain Page

Technical Committee Wiki

Planning Committee Wiki

Call for Participation

For Info please contact Paul Dow, IHE Cardiology Secretary
pdow@acc.org

For more details on IHE's domains and its processes please refer to other webinars at http://www.ihe.net/Webinars

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Thank you for your attention!