

EHRA SUMMIT 2007
Successes and priorities
Educational events: Beyond
Europace



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Educational events

Components

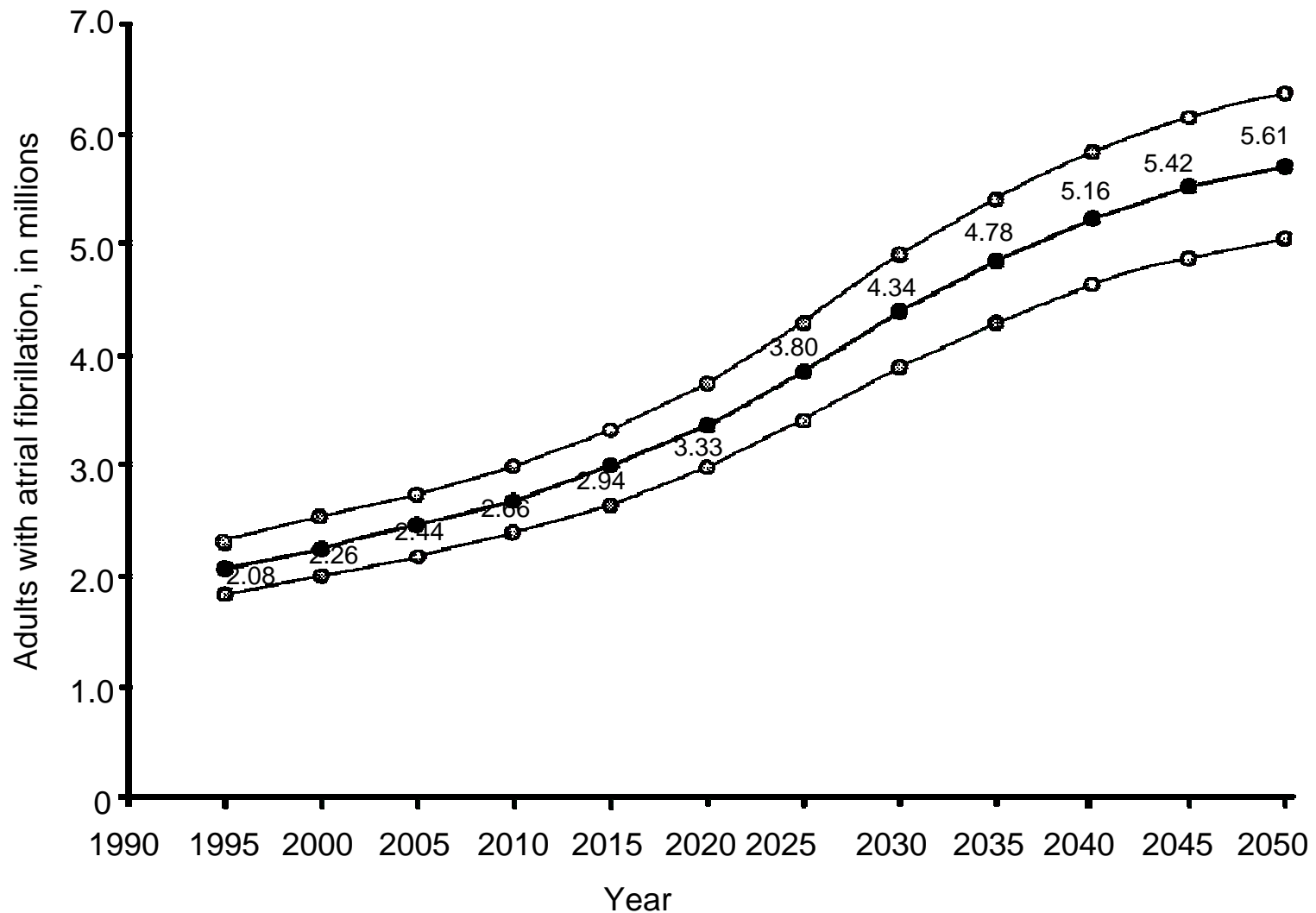
- **Clinical training**
 - Theoretical part
 - Practical part
- **Teaching**
- **Science/Research**

Educational events

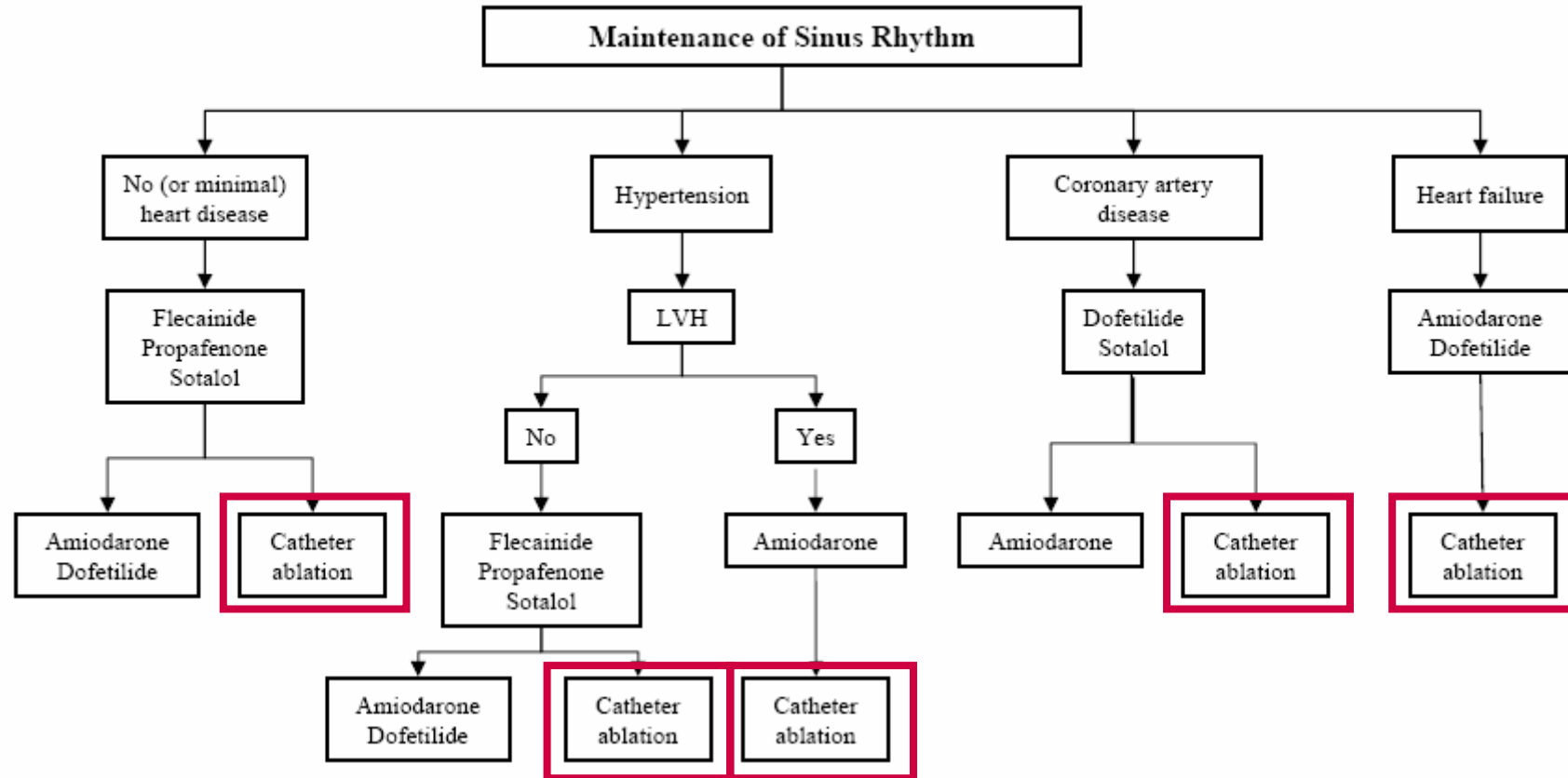
Clinical training

- Increasing number of
 - AF cases, requiring catheter ablation
 - Patients at risk for SD, requiring ICD`s
 - Heart failure patients, requiring CRT

Prospective Increase of AF

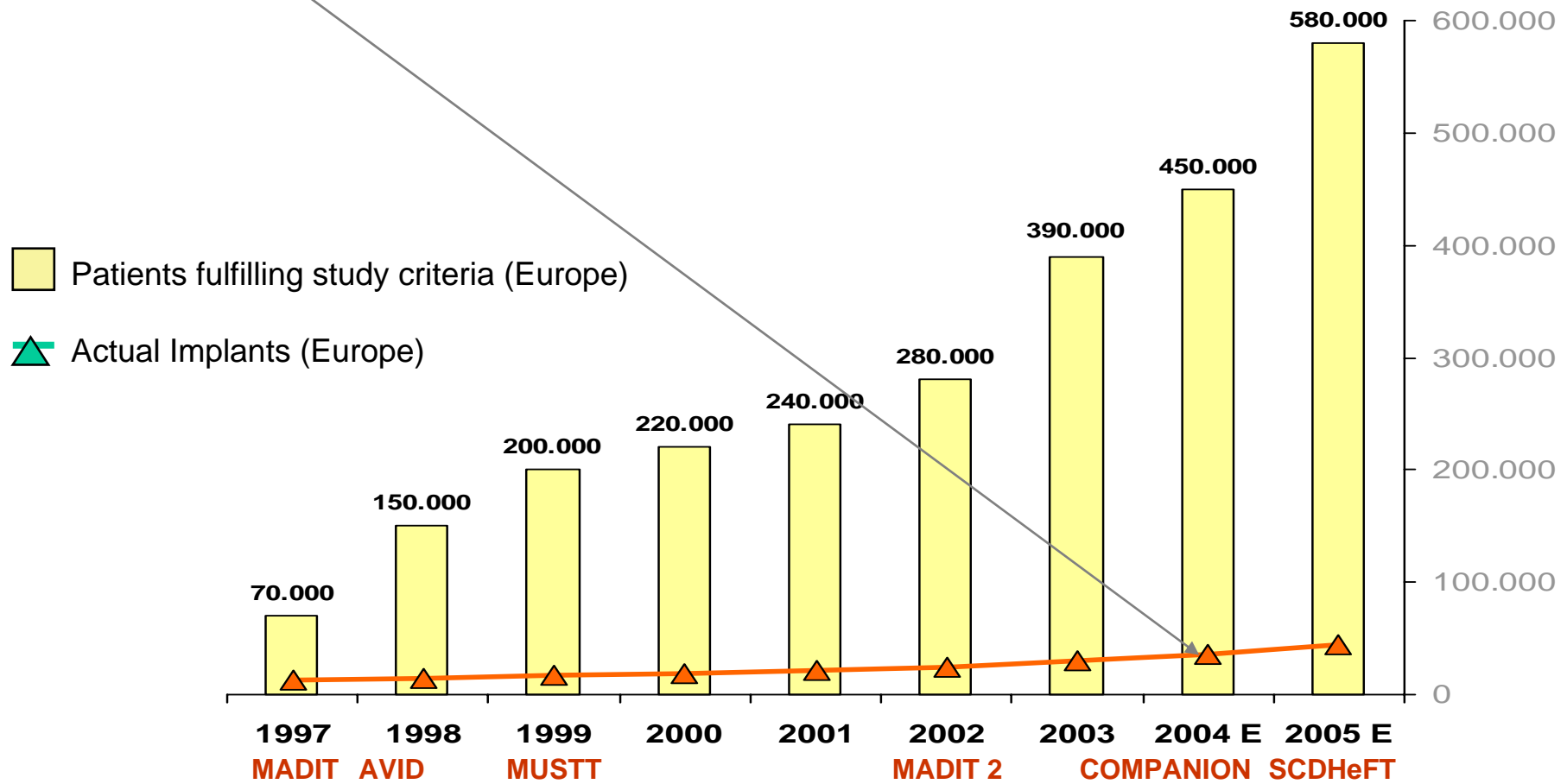


Atrial fibrillation

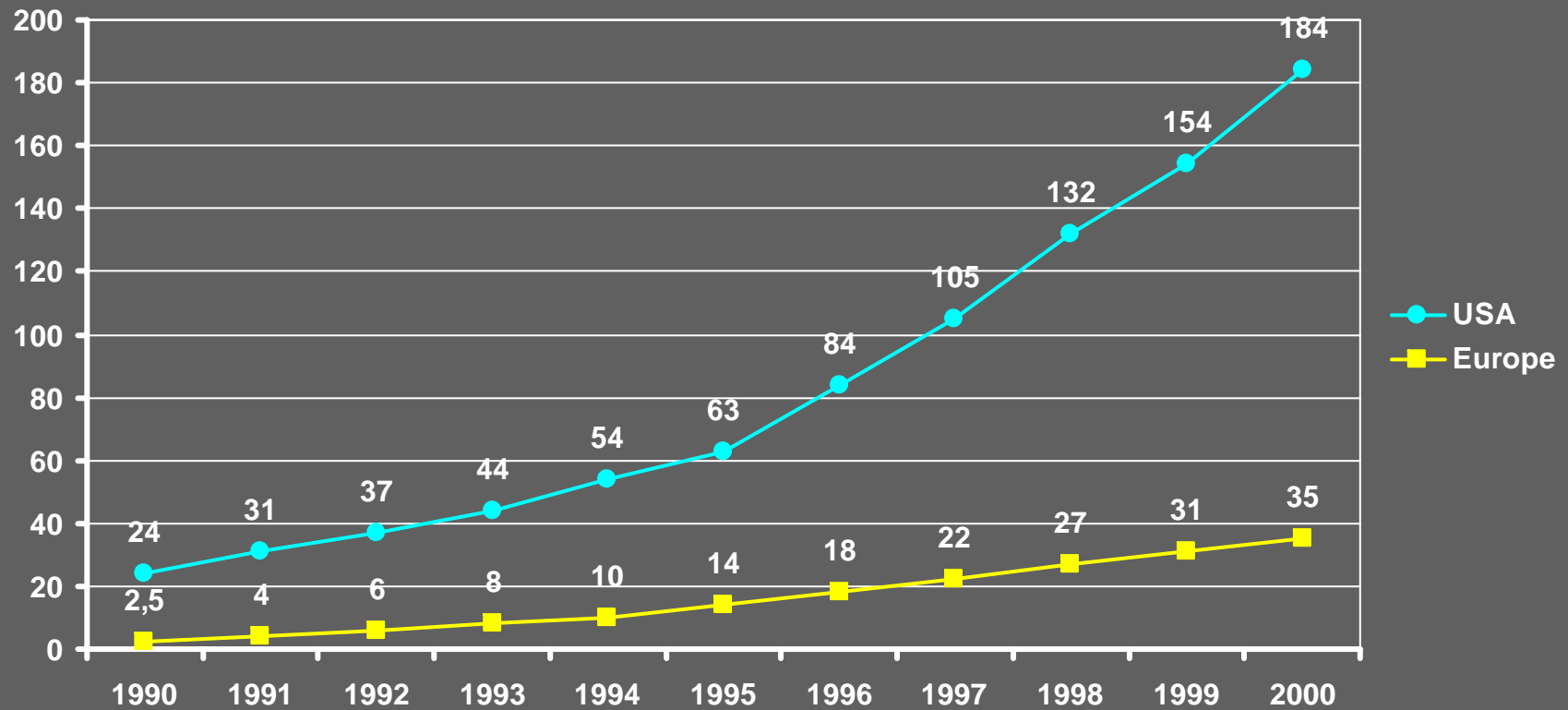


ICD – Primary prevention

☐ Only 8 % of patients with a class I indication receive an ICD



Estimate of ICD Implantation Rates



Steinbeck, JCE 2001

Heart Failure

Prevalence

Overall: 3 – 20 cases pro 1000 inhabitants
> 65 years: > 100 cases pro 1000 inhabitants

Heart failure

Incidence – USA

5.000.000 people suffer from heart failure
550.000 newly diagnosed patients / year

Incidence – Europe

10.000.000 people

Incidence – Germany

1.600.000 people

Educational events

Components

- **Clinical training**
 - **Theoretical part**
 - **Books/Journals (guidelines)**
 - **State of the art lectures at meetings**
 - **Review and preparatory course (2-4 times/year), made available via internet (EHRA web-site)**
 - **EP Academy (2 times 4 weeks/year)**
 - involving `active in the field retirees` such as
.....
 - **Live cases on the internet (EHRA web-site)**
 - **Practical part**

EHRA EDUCATIONAL REVIEW AND PREPARATORY COURSE FOR
ACCREDITATION EXAMINATION

Invasive Cardiac Electrophysiology
examination preparatory course

February 1-3, 2007

Key note lecturer: H. Wellens

Course directors: Janet McComb & Sabine Ernst

1st EP review and preparatory course

Program reviewed scientific data from basic electrophysiology and anatomy to dedicate treatment options such as pharmacology and catheter ablation

panel of scientific experts

C. Blomström-Lundqvist, A. Zaza, JY Le Heuzey, J. Brugada, SY Ho, M Antz, D Shah & P Della Bella

1st EP review and preparatory course

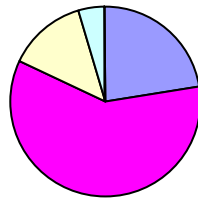
Day 1 – February 1st

Lecturers

12:45 – 13:00	Welcome Information about EHRA accreditation and examination	J. Mc Comb & S. Ernst JL. Merino
13:00 – 14:30	Basic Science: “Concept of conduction and cellular electrophysiology”	A. Zaza
14:30 – 15:00	Break and Coffee	
15:00 – 17:00	Basic anatomy and imaging technologies: Relevant Cardiac and non-cardiac anatomy for clinical electrophysiology	Siew Yen Ho
17:00 – 17:15	Break	
17:15 – 18:15	Basic ablation: Concept of catheter ablation	M. Antz
18:15 – 18:45	Keynote lecture: "The value of the surface ECG in localizing and determining the mechanism of an arrhythmia."	H. Wellens
18:45	Adjourn	
20:00	Group Dinner	

1st EP review and preparatory course

How would you rate the course in general
(1= Best - 5= Worst)



■ 1 ■ 2 ■ 3 ■ 4 ■ 5



Total of 30 participants (from 12 different countries) with the majority in training for 1-5 yrs attended the 3 days-program

1st EP review and preparatory course

Day 2 – February 2nd

Lecturers

08:30 – 10:00	Pharmacology: “Antiarrhythmic medication: from basic pharmacology to clinical trial results”	J-Y Le Heuzey
10:00 – 10:30	Break	
10:30 – 12:00	Bradycardia and conduction problems	J. Mc Comb
12:00 – 13:00	Lunch	
13:00 – 14:15	Supraventricular 1: “Differential diagnosis SVT”	H. Wellens
14:15 – 15:15	Supraventricular 2: “Accessory pathway conduction including different types of AV reentry”	C Blomström
15:15 – 15:40	Break and Coffee	
15:40 – 16:40	Supraventricular 3: “AVN reentry, atrial ectopy, etc	J. Mc Comb
16:40 – 17:40	Supraventricular 4: “Atrial reentry including typical and atypical flutter, incisional tachycardia”	D. Shah
18.00	Adjourn	
20:00	Group Dinner	

1st EP review and preparatory course

Day 3 – February 3rd

Lecturers

08:30 – 09:30	3D mapping in EP; General concept of available mapping systems, simultaneous vs. sequential mapping, substrate vs tachy map	P. Della Bella
09:30 – 10:00	Break and Coffee	
10:00 – 11:30	Atrial fibrillation; ablation techniques, imaging, complications, results	S. Ernst
11:30 – 12:30	Lunch	
12:30 – 13:30	Congenital ventricular arrhythmias/Sudden death Long QT, Brugada Sx, Short QT	J. Brugada
13.30 – 14:30	Ventricular tachycardia 1: idiopathic VT	S. Ernst
14:30 – 15:00	Break and Coffee	
15:00 – 16:00	Ventricular tachycardia 2 VT in structural heart disease	P. Della Bella
16:00 – 16:30	Summary & Feedbacks	All
16:30	Adjourn – Certification of course attendance	
16:45	Participants departure	

Educational events

Components

- **Clinical training**
 - **Theoretical part**
 - **Practical part**
 - **EHRA - EP fellowship program**
 - **Grant by Biosense-Webster**
 - **Program committee**
 - **KH Kuck (chair), HHJ Wellens, P Jais**

Educational events

Components

- **EHRA - EP fellowship program**
- **Grant by Biosense-Webster**
- **Program committee**
 - **KH Kuck (chair), HHJ Wellens, P Jais**

EP Fellowship Program

Target Audience

Aim of this initiative is to offer a full-time educational program in electrophysiology to fellows who will be elected in accordance to selection criteria.

During this time, candidates will be provided with a theoretical and practical program in all fields of interventional electrophysiology, cardiac pacing and defibrillation

EP Fellowship Program

Program and Objectives

Preliminary surveys indicate the need for 2 types of fellowship programs which are based on the candidate's backgrounds:

EP Fellowship Program

Program and Objectives

1. A fellowship program oriented towards the physicians with a pure cardiology only background with no or little practical experience in EP (at the stage of deciding to continue in interventional Cardiology or move to EP).

Basic fellowship program, which will last 2 years with an induction program to be put into place prior to the commencement of their training.

EP Fellowship Program

Program and Objectives

2. A fellowship program oriented towards the physicians with a basic clinical experience in EP but want to complete their training.

Advanced fellowship program, which will last 1 year.

EP Fellowship Program

Program and Objectives

It is expected that after completion of their program, all participants will complete the EHRA accreditation examination

EP Fellowship Program

Program and Objectives

All participants are expected to return to their country of practice for a minimum of 3 years, to apply their new skills in the institution that gave them the opportunity to take place in this training program.

EP Fellowship Program

Program and Objectives

All participants are expected to submit at least 1 article to the EHRA journal, EUROPACE for publication by the end of their program.

EP Fellowship Program

Program and Objectives

The program will include the theory and practice of:

- Electrophysiology diagnostic investigation,
- Catheter ablation of cardiac arrhythmias, such as atrial tachycardia, atrio-ventricular reentrant tachycardia, atrio-ventricular nodal reentrant tachycardia, ventricular tachycardia and atrial fibrillation,
- Implant and programming of cardiac pacemakers and cardioverter defibrillators.

EP Fellowship Program

Program and Objectives

The program will include the theory and practice of:

- **In addition, fellows will be required to take active part in one or more research programs identified together with the different centers where they have been allocated**

EP Fellowship Program

Training Sites

Training centers in the EP fellowship program need to have an established ongoing program in Interventional Electrophysiology and Device Implantation with a minimum of cases performed per year.

EP Fellowship Program

Competency Matrix

	Basic Program (2 years)	Advanced Program (1 year)
Applicants	Clinical Research	
Training Centers	Clinical Research Equipment	
Expected Outcome	Clinical Research	
Program Validation	EHRA examination	

EP Fellowship Program

Applicants → Basic Program → Clinical

- **Medical Doctor**
- **3-4 years of internship post medical degree**
- **Some training in Cardiology**
- **No experience in clinical electrophysiology**
- **Be fluent in English**

EP Fellowship Program

Applicants → Basic Program → Research

- One (1) publication in a peer review journal
and/or
- Two (2) abstracts at peer review congress
and/or
- Prepared and defended a Medical Thesis

EP Fellowship Program

Applicants → Advanced Program → Clinical

- **Cardiologist or Medical doctor with extensive experience in cardiology**
- **The applicant will have a basic theoretical and practical knowledge of:**
 - **Pacemaker and ICD (1 and 2 lead),
*Will have implanted 25 pacemakers and 25 ICDs***
 - **Diagnostic EP studies**
 - **Catheter ablation of simple arrhythmias (Flutter, WPW, AV nodal re-entry tachycardia and Right AT)
*Will have performed 50 catheter ablations***
 - ***Be fluent in English***

EP Fellowship Program

Applicants → Advanced Program → Research

- Two (2) or more publication in a peer review journal
and
- Three (3) or more abstracts at peer review congress

EP Fellowship Program

Training Centers → Basic + Advanced Program → Clinical (1)

Active program with local government recognition for implantation of:

- Pacemakers: 100/year
- ICDs 100/year
- Bi-ventricular (advanced program) 10/year

EP Fellowship Program

Training Centers → Basic + Advanced Program → Clinical (2)

Active program with local government recognition for catheter ablation:

- Catheter Ablations: 350 / year
 - Afib: 100 / year (advanced program)
 - VT: 10 / year (advanced program)
 - LA Tach.: 10 / year (advanced program)
- A minimum of 1 procedure/day should be performed
- Have an active fellowship program
- Be fluent in English

EP Fellowship Program

Training Centers → Basic + Advanced Program → Research

- **Five (5) publications in a peer review journal/year**
and
- **Fifteen (15) abstracts at peer review congress/year**

EP Fellowship Program

Training Centers → Basic + Advanced Program → Equipment

- **A minimum of 1 dedicated EP lab**
- **Active use of a 3D mapping system**

EP Fellowship Program

Expected Outcome → Basic Program → Clinical

The fellow will at the end of this 2year program have an advanced theoretical and practical knowledge in the field of:

- Pacemaker and ICD (1 and 2 lead)
- Diagnostic EP studies
- Catheter ablation of simple arrhythmias (Flutter, WPW, AV nodal re-entry tachycardia and Right AT)

EP Fellowship Program

Expected Outcome → Basic Program → Research

- One (1) publication in a peer review journal
and
- Two (2) abstracts at peer review congress

EP Fellowship Program

Expected Outcome → Advanced Program → Clinical

The fellow will at the end of this 1 year program have an advanced theoretical and practical knowledge in the field of:

- Pacemaker and ICDs (Bi-Ventricular)
- Diagnosis (Advanced Mapping) and ablation of complex substrates
 - Atrial Fibrillation
 - LA re-entry tachycardia
 - Ischemic VT
- Difficult anatomic access procedures
 - Aortic Root
 - Epicardial mapping
- Proficient in transseptal punctures

EP Fellowship Program

Expected Outcome → Advanced Program → Research

- One (1) publication in a peer review journal
and
- Two (2) abstracts at peer review congress

EP Fellowship Program

Fellow / Center applications

- 42 Fellows (4 uncompleted forms)
 - 18 Basic program (2 years)
 - 23 Advanced program (1 year)
 - 14 Centers
 - 12 Basic program (2 years)
 - 9 Advanced program (1 year)
- (After deadline 2 additional applications from fellows and 1 from a center)

Educational events

Components

- **Clinical training**
 - Theoretical part
 - Practical part
- **Teaching**
- **Science/Research**

Educational events

Components

- **Teaching**
 - Who teaches the teacher?
 - Mostly depends on the personal gift of an individuum
 - No educational program
 - Some presentations give room for improvement
 - A good clinician or a good scientist is not necessarily a good teacher

Educational events

Components

- **Teaching**
 - EHRA should set up a 'teach the teacher' program
 - 2 seminars/year
 - Define standards
 - Program chair could be somebody like HJJ Wellens or even himself

Educational events

Components

- **Clinical training**
 - Theoretical part
 - Practical part
- **Teaching**
- **Science/Research**

Educational events

Components

- **Science/research**
 - **How to do basic /clinical research**
 - Guidelines on GCP
 - **How to set up a clinical study**
 - Aim of the study
 - Hypothesis
 - Primary/secondary endpoints
 - Statistics
 - Number of patients to prove the hypothesis
 - Predefined substudies etc

Educational events

Components

- **Science/research**
 - How to do a RCT (monocenter vs multicenter)
 - Study coordinating center
 - Endpoint committee
 - DSMB
 - Core labs
 - Study nurse etc

Educational events

Components

- **Science/Research**
 - EHRA should set up a program on `how to do basic/clinical research`
 - 2 seminars/year
 - Define standards
 - Program chairs could be somebody like S. Priori/C. Napolitano (basic research) or S. Hohnloser/S. Connolly (clinical research)

Educational events

Components

- **Science/Research**
 - EHRA could become the driver over time to set up a study coordinating center at the heart house
 - This includes the potential for a central data base, statistical competence etc

Educational events

Conclusions

- Education/Training is one of the most interesting challenges in EP over the next 10 years
- EP numbers will increase dramatically (up to 10 fold)
- There is already now a relevant gap among patient needs and **highly qualified** physicians