

Educational background, professional needs and
expectations of the
Interventional Junior Members
of the AEPC

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METHODS

- A questionnaire was sent to all the JMs participants to the current AEPC course with open and closed questions concerning:
 - Educational background
 - Experience in the cath lab
 - Aspirations and expectations
 - Perception of the training
 - Needs and difficulties in daily practise
 - Suggestions for the AEPC Interventional Group



RESULTS: Participation

- $17/35 = 45\%$
- Mean 35 year-old and median 36 year-old (range 31-39)



RESULTS: Participation

- 11 European countries:
 - Greece
 - Turkey
 - Germany
 - France
 - Italy
 - Spain
 - United Kingdom
 - Sweden
 - Netherlands
 - Hungary
 - Romania
- 4 extra European countries:
 - Egypt
 - Malaysia
 - India
 - South Africa



Background: Mobility

- 12/17 JMs were trained in Paediatric Cardiology in their own countries
- 5/17 (30%) moved in a different country:
 - Greece -> UK
 - India -> UK
 - Malaysia -> UK
 - Italy -> France
 - South Africa -> Belgium



Background: *Paediatric Cardiology* Training

Organized and Structured
(11):

- Turkey (3 years)
- Germany (2-3 years)
- Spain (2 years)
- UK (5 years)
- Sweden
- Netherlands (3 years)
- Hungary
- Malaysia
- India (2 years)
- South Africa (2 years)
- Belgium (3 years)

NOT Organized and Structured
(5):

- Greece
- Romania
- France
- Italy
- Egypt



Background: *Paediatric Cardiology* Training

- In most countries (13/18) a **General Paediatrics training or Diploma** is required before Paediatric Cardiology training/specialization
- In **France, Italy, Greece** and **Romania** the Paediatric Cardiologists may be both Cardiologists and Paediatricians without a specific diploma. Cardiologists may not have a specific training in Paediatrics, and Paediatricians may not have a specific training in Adult Cardiology



Background: *Paediatric Cardiology* Training

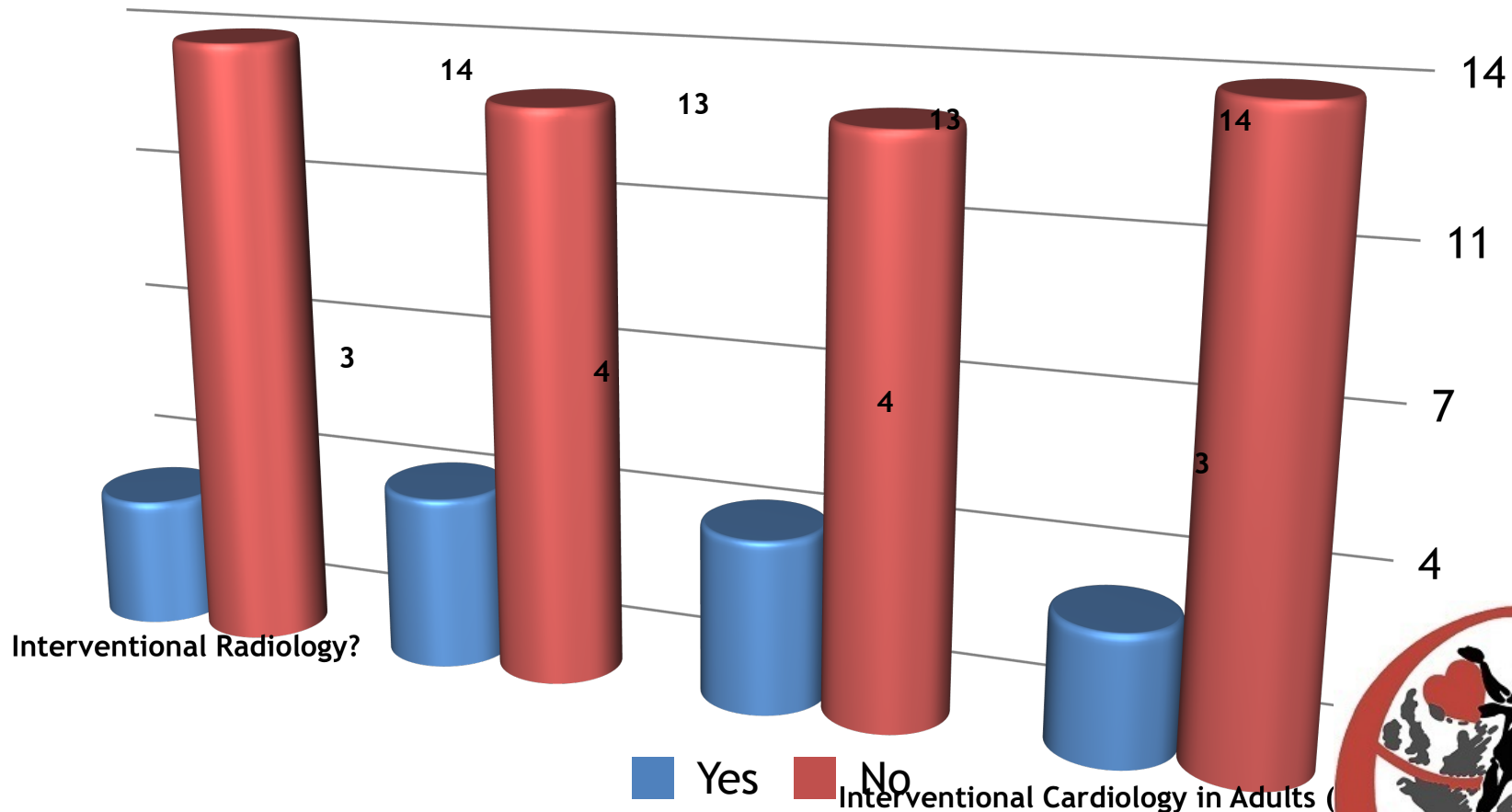
Have the JMs any training in **non-invasive Imaging?**

- Transthoracic echocardiography: 100%
- Transoesophageal echocardiography: 65%
- Cardiac Magnetic Resonance: 18% (N=3)
- Cardiac Computed Tomography: 12% (N=2)



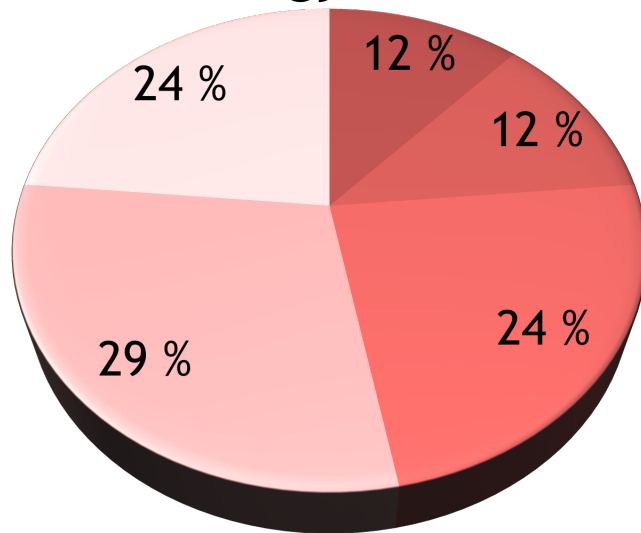
Background: *Paediatric Cardiology* Training

Does the JMs have any training/experience in...



Background: *Interventional* Training

For how many years
have the JMs been
training in
Interventional
Cardiology for CHD?

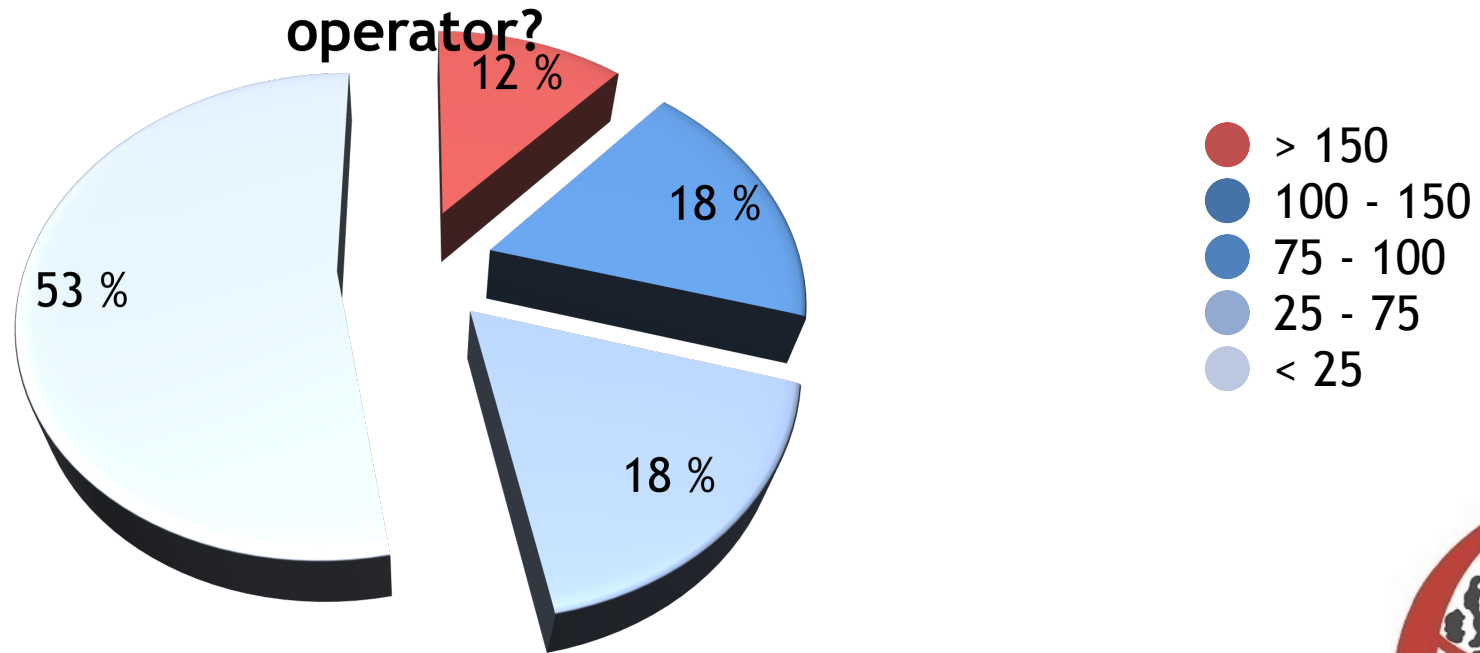


- Beginners
- < 6 months
- < 1 year
- > 1 but < 2 years
- > 2 years



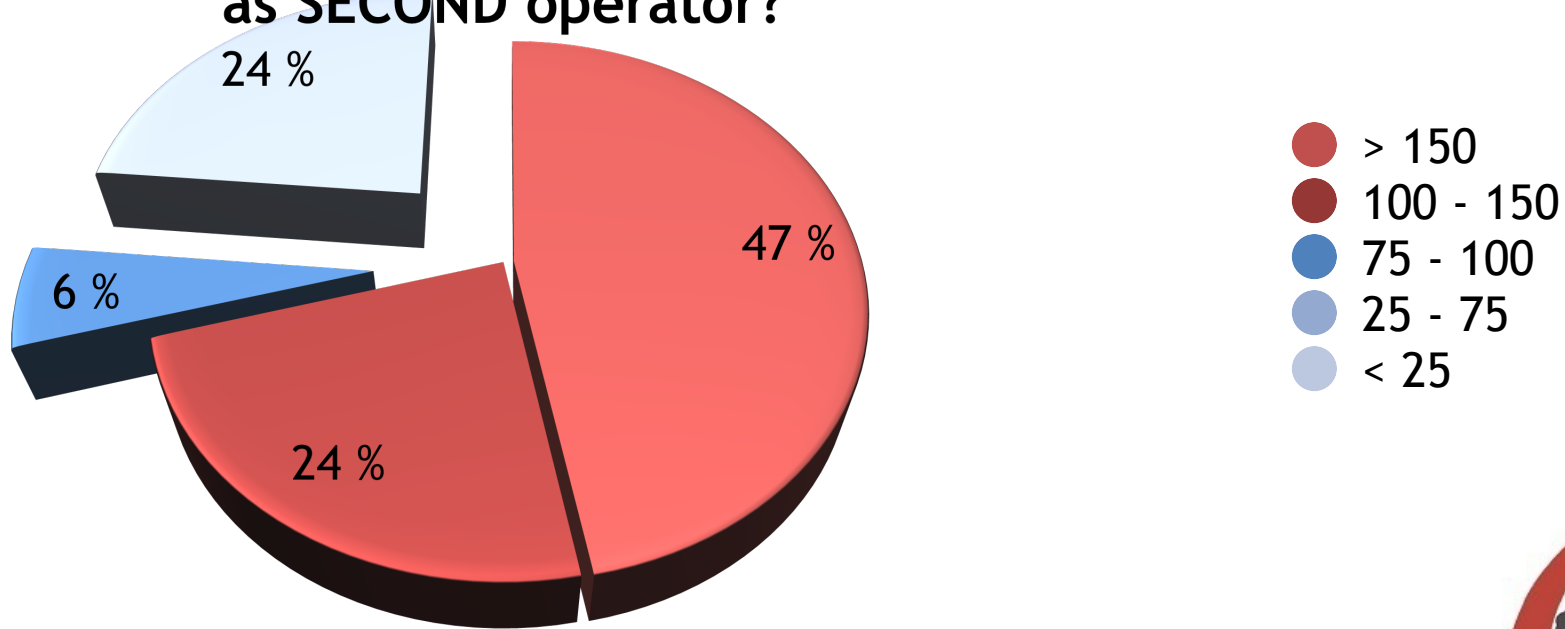
Background: Interventional Training

How many procedures
have the JMS
performed as FIRST
operator?



Background: Interventional Training

How many procedures have the JMS performed as SECOND operator?



Current situations

- **N = 5 JMs wish to enter into a proper structured program/fellowship** (N=3 in a foreign countries)
- **N = 4 JMs (23%) are attending a proper structured program/fellowship** (UK, Italy, Germany, Belgium)
- **N = 8 JMs (47%) are training in a catheterization laboratory **without** a proper structured program/fellowship for training in Interventional for CHD**



Aspirations

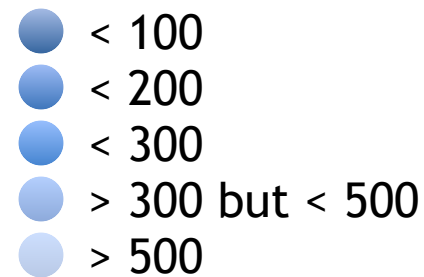
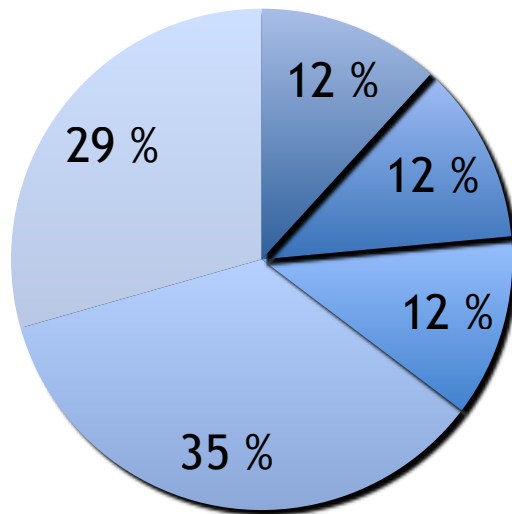
JMs want to be trained in Interventional Cardiology for CHD because:

- There is **already a permanent position** destined to the JM in Interventional for CHD: 2/17
- There is a **project** designed for the JM in order to get a permanent position in Interventional for CHD: 4/17
- 5/17 JMs want to do Interventional as a career and **looking for a position after training**
- Others:
 - “To understand better the physiology of the CHDs”
 - “To upgrade our interventions in our country”
 - “Because the team needs a new interventionalist and I would love to be the one”
 - “As a part of the training”



Interventional Training

How many procedures, the centre where the JMs are in training, carries out each year?



Interventional Training

In how many procedures of the centre the JMs work as **FIRST** operator?

- >30% but < 50%: 4/17 (23,5%)
- <30%: 11/17 (65%)
- NA: 2/17

65% of the JMs work as I operator in < 30% of total cases of the centre

In how many procedures of the centre the JMs work as **SECOND** operator?

- 100% : 3/17
- >50% but <100%: 2/17
- 50%: 4/17
- >30% but <50%: 5/17 (29%)
- <30%: 3/17 (18%)

53% of JMs work as II operator in at least 50% of total cases of the centre



Interventional Training

During the training JMs are doing:

- only Interventional: 2/17
- not only Interventional (on-call, in-patient and/or outpatient care... etc): 15/17

What percentage of his total amount of work time do the JMs dedicate to Interventional (including preparations the procedures/ patients.... etc)?

- 100%: 2/17
- <100% but >50%: 5/17
- <50% but >20%: 8/17
- <20%: 1/17

52% of the JMs dedicate to Interventional <50% of their working time



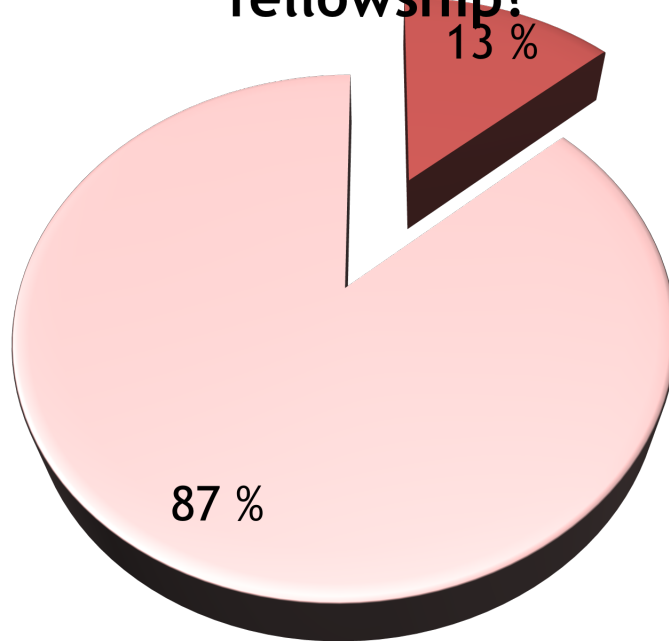
Personal perception of the training

In their training JM's think they are currently learning to:

1. Recognize the right indications and contraindications of a procedure: 17/17
2. Understand exhaustively patient's history and his clinical conditions: 17/17
3. Study and check personally all the previous different non-invasive examinations: 17/17
4. Establish a sympathetic therapeutic alliance with the patient and the parents: 16/17
5. Define clearly **the objectives** of the procedure **and prepare meticulously the procedure step by step (what to do): 12/17**
6. Get wide **knowledge** and **availability of the necessary materials (what to use): 10/17**
7. **Control the manoeuvres of the catheters** and assure **the accuracy of the measurements: 11/17**
8. **Manage disturbing factors, accidents, complications: 12/17**
9. Transmit a coherent and efficient report of the procedure: 16/17
10. Take care of the post procedural fate of the patient: 16/17



Personal perception:
based upon your
experience, does the
real practice/job fit to
the program of the
Interventional
fellowship?



- Yes
- Not at all
- In part



What are the *needs* for a fellow in order to be trained in Interventional?

- “A professional project”
- To work in a “complete Cardiology Unit) (fetal... GUCH...) with high numbers of wide range of cases, age and complexity and teaching culture
- To have a mentor
- To have a well-defined core-curriculum with set goals
- To practise with simulators and to have adequate infrastructures and instruments
- To know to use all the devices available in the cath lab
- To discuss the procedures before (*what to do*) and after (*what was wrong*) and how to improve the performed procedure (*how to do*)
- “A trouble shooting approach”
- To share knowledge with other colleagues of other centres
- To attend hands-on international courses, fellowship and congresses



What is the *most relevant need* for a fellow?

- “A professional **project!**”
- “Maximum **exposure** in cath lab with high numbers as first operator”
- To have a “**mentor** who you can trust and also wants to teach you, a mentor who trusts you so he lets you to do some procedures”
- To have a mentor that guide through the learning process, disposal for **life-long collaborative working** and “supports you through highs and lows”
- To have a solid **methodology** of work
- To have gradually the **responsibility** of the choices and the decisions



Based upon your experience, is there any *difference* between daily reality and your *expectations/needs*?

- “There are few positions in my country”
- Not enough exposure
- “Because millions of reasons, there is not time in cath lab for teaching and training, which makes the procedures longer...”
- “Too much time and energy spent in non-interventional duties which preclude attendance at the cath lab”.... “Duplication/triplication of paperwork...”
- “Other fellows also have to be trained...”
- “The senior does not let me to be the first operator unless is on holiday...”



What is the most important *difficulty* you have encountered in order to be trained in Interventional?

- To find the training centre: 3
- To put the hands on the catheters: 9
- Competition between fellows: 2
- To find the mentor: 2
- Other:
 - “dividing the time between cath lab and other fellow duties”
 - “to find a scholarship and to leave at home my family...”



Which are, in your opinion, the most important *knowledge, skills and expertise* a fellow should have in order to succeed in Interventional?

- Knowledge of anatomy, pathophysiology, hemodynamic
- Knowledge of the relative and complementary roles of the different non-invasive and invasive diagnostic resources
- Knowledge of the relative and complementary roles of the interventional and surgical therapeutic options
- Manual dexterity
- Capacity to understand indications and contraindications of the interventions
- Capacity to plan the procedure, anticipating the different scenarios
- Capacity to interpret multiple information sources (echo, patient anamnesis, fluoroscopy, tactile feel, pressure tracing...) for problem solving and decision making
- Capacity to manage complications



Which are, in your opinion the most important *attitude and/or aspects of character* a fellow should have in order to succeed in Interventional?

- Hardworking, dedicated, patient and persevering
- Rigorous and meticulous
- Enthusiastic and optimistic
- Self-confident but aware of his own limits
- Able to think and to make decisions fast
- Able to handle stress, to keep the self control and the concentration
- Able to take the lead but also working well in team
- Capable to accept criticisms and to improve from the mistakes
- Capable to deal with un-satisfactory procedures complications, mistakes



Rate from 1 to 9 how much these attitudes and aspects of character are important in order to succeed in Interventional (9 is the maximum):

- Talented hands: 7,5
- Self-confidence: 7,7
- Capacity to work hard: 8,3
- Capacity to work in team: 8,3
- Capacity to maintain the concentration: 8,6
- Capacity to overcome feelings of guilt in case of complications: mean 6,6



Conclusions (Background)

- Despite the existence of AEPC guidelines for training in Paediatric Cardiology with a core curriculum of knowledge and skills, not all the European countries have specific, organized and structured training program/Diplomas both in *Paediatric Cardiology* and in *Interventional*: there is a consistent lack of uniformity
- The desire/choice/necessity to move in other countries with specific training programs is very common



Conclusions (Training)

- Most of the JMs are working/training in cath labs without a proper structured program/fellowship
- Between the JMs attending this course, there is a consistent difference in term of:
 - cultural background
 - interventional experience
 - activity of centre of training
 - total amount of work time dedicated to Interventional



Conclusions (Aspirations)

- JMs attend this course because there is already **position or a project** to do Interventional (33%) but also because there is a **personal interest or dream** (30%) and just to improve their **knowledge** in CHD or as a part their training



Conclusions (Needs)

- Following a well conceived **PROJECT**, with **PASSION HUMILITY** **HARD WORK** and **METHODOLOGY**, in accordance with an accurate **RESPONSIBILITY**, an Interventional fellow needs to put the **hands on catheters**, with growing **MENTOR** **HIGH LEVEL** and increasing autonomy, under the supervision of an illuminate **ACTIVITY** centres for care and training with large **Y**



PERSPECTIVES

How international societies (ex. AEPC) can help the training of interventional cardiologists?

- Promoting hands-on training courses
- Defining protocol and guidelines for the most frequent procedures
- Increasing the number of founded fellowships, adopting examinations as selection criteria
- Submitting a list of international centres with interventional fellowships available and a list of potential fellows to match
- Promoting an AEPC Degree / Accreditation Certificate of Interventional Cardiology with a standard core curriculum
- Promoting multicentre projects of research lead by Juniors

