Challenges in acquisition of theoretical knowledge related to innovative technologies

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Educational Objectives

- **Mission EHRA:**
  - To improve quality of life of the European population by reducing the impact of cardiac arrhythmias and reduce sudden cardiac death
- **Transfer of Theoretical Knowledge**
- **Enhancing Practical Skills**

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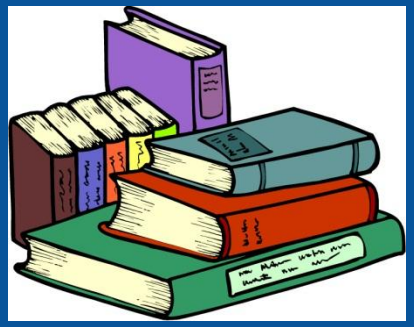
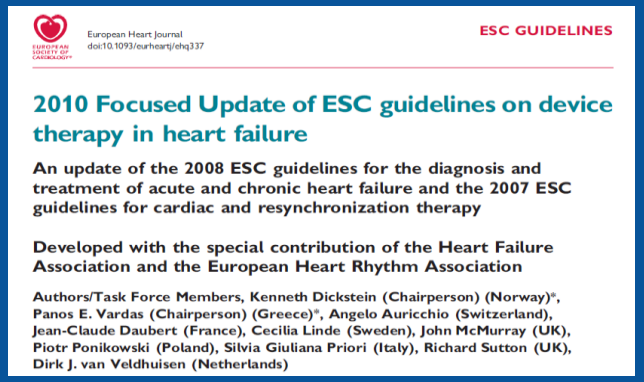
Theoretical Knowledge





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Some Challenges for Innovations

- Books are quickly out of date
- Published guidelines often do not mention or give limited recommendations concerning innovations
- Knowledge is the basis when implementing innovations in clinical practice

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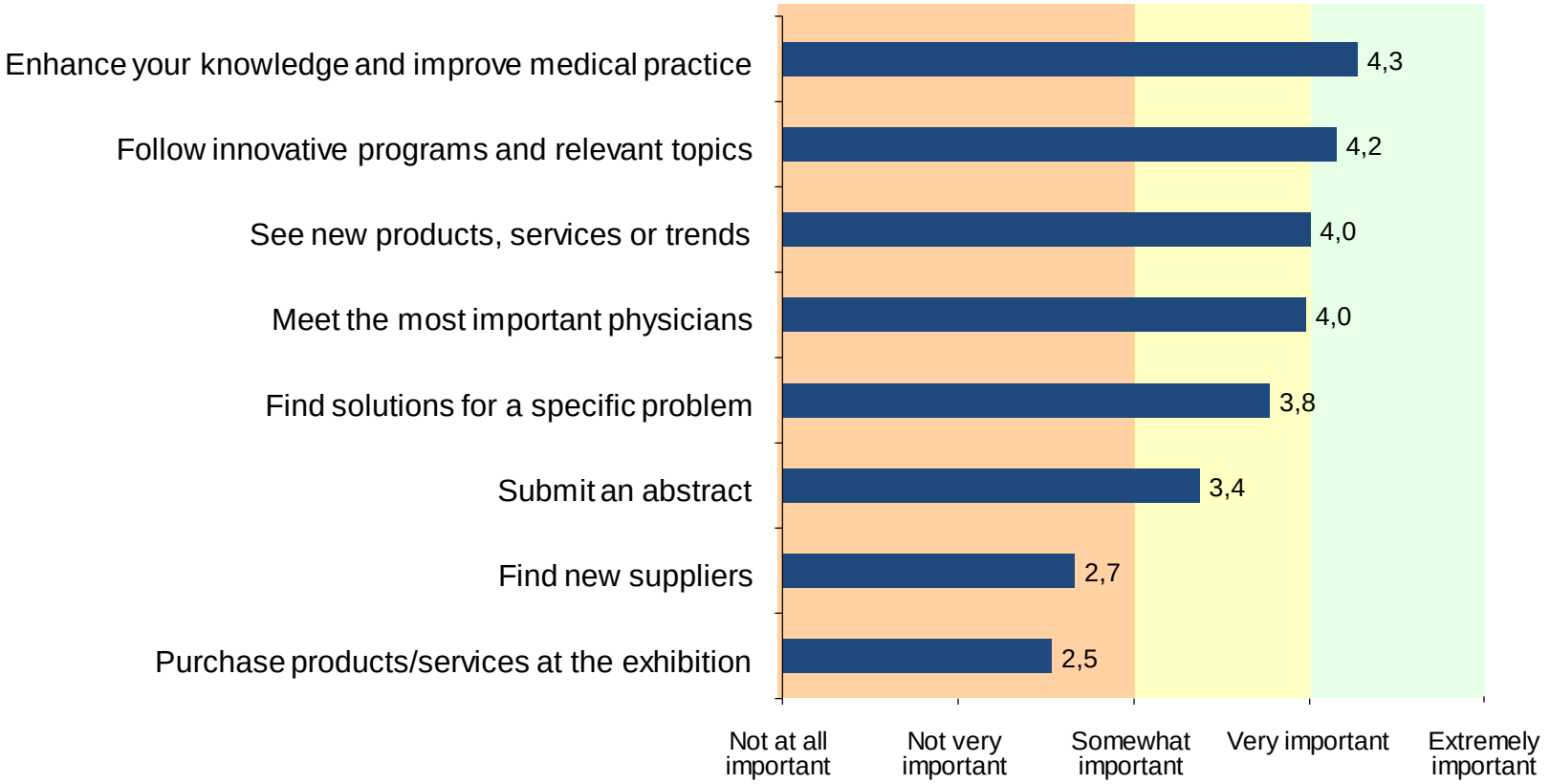
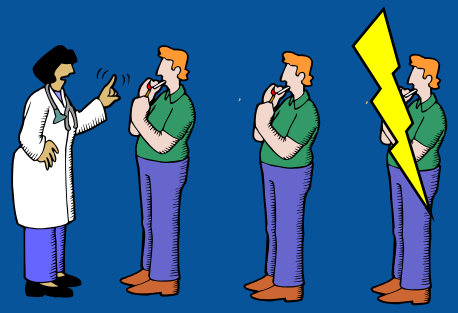
Objectives for Congress Participation



Complications and Adverse Events

- **Medical errors & adverse events in healthcare during hospital admissions:**
  - **1/3** patients are victim[1]
    - 10x previous estimates have indicated
    - 187,000 deaths and 6.1 million injuries in US



  - Social cost up to **45%** of total US healthcare spending[2]
    - Up to $958 billion in 2006

AT THE INTERSECTION OF HEALTH, HEALTH CARE, AND POLICY
Health Affairs
April 2011 Vol. 30 No. 4 healthaffairs.org
Year 2011

1. Classen DC et al., Health Affairs 2011 Apr;30(4):581-9.
2. Goodman JC et al., Health Affairs 2011 Apr;30(4):590-5.

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Medical Education: Knowledge vs. Skills

Lecture training

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Skills-based training

- **Knowledge**
  - To understand the anatomy, physiology, functional aspects of the therapy etc.
- **Skills**
  - To properly use devices and tools
    - Reduce complication rate
    - Reduction of costs and time

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REVIEW

How much training is required to implant and manage CRT?

David O'Donnell[a] and Mathew J. Swale[b]

KEY POINTS

- Cardiac resynchronization therapies are associated with a considerable rate of complications.
- Increased procedural experience can reduce the complications associated with cardiac resynchronization therapies.
- Psychological, visuospatial and fine motor skills can affect the ability to learn and perform procedures; these factors should be taken into account during selection and training for cardiac resynchronization procedures.

O'Donnel D. *Curr Opin Cardiol* 2012; 27: 29-35

Learning How to Fly a Plane

Flight simulator

Dealing with complications

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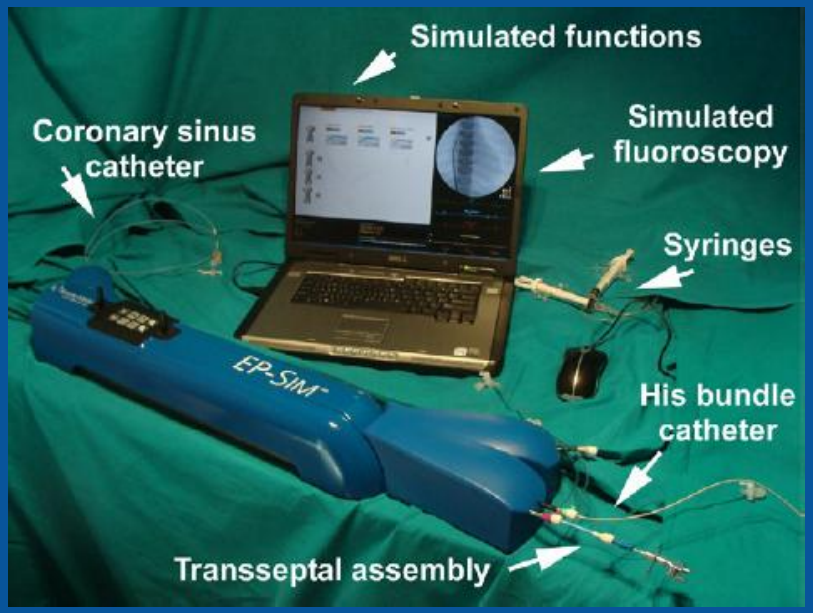
Simulator based Training

- **14 EP fellows randomized to conventional or simulator based training for transseptal catheterization**

- **Simulator trained group:**
  - Shorter training time (30 vs 4d)
  - Higher performance scores
  - Less errors (3 vs 0)



De Ponti R. *J Am Coll Cardiol* 2011; 58: 359–63

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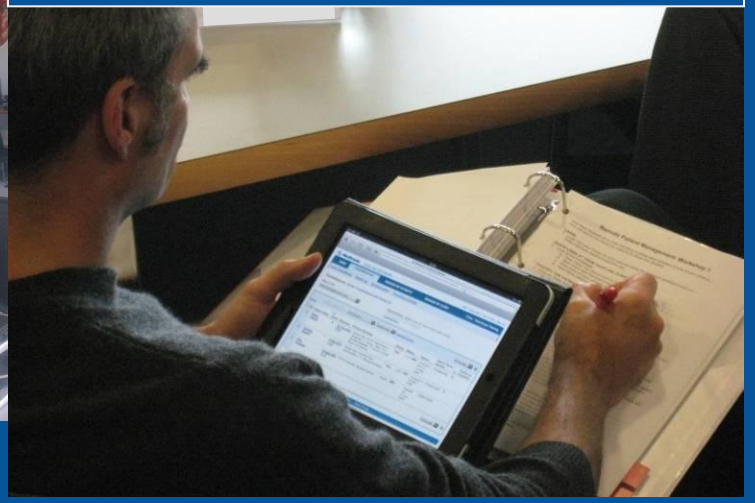
Simulations in Cardiology Training

Discussion patient cases

Device implantation

Device programming

Remote follow-up



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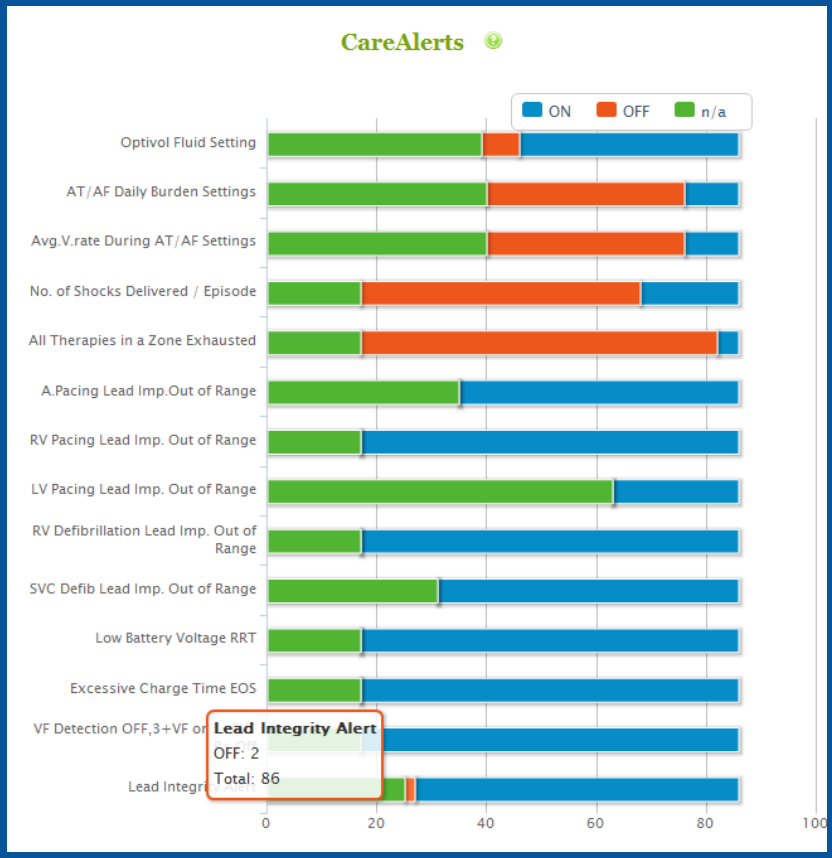
Other Challenges: Discovery Link

- New technology to analyse all CareLink patients



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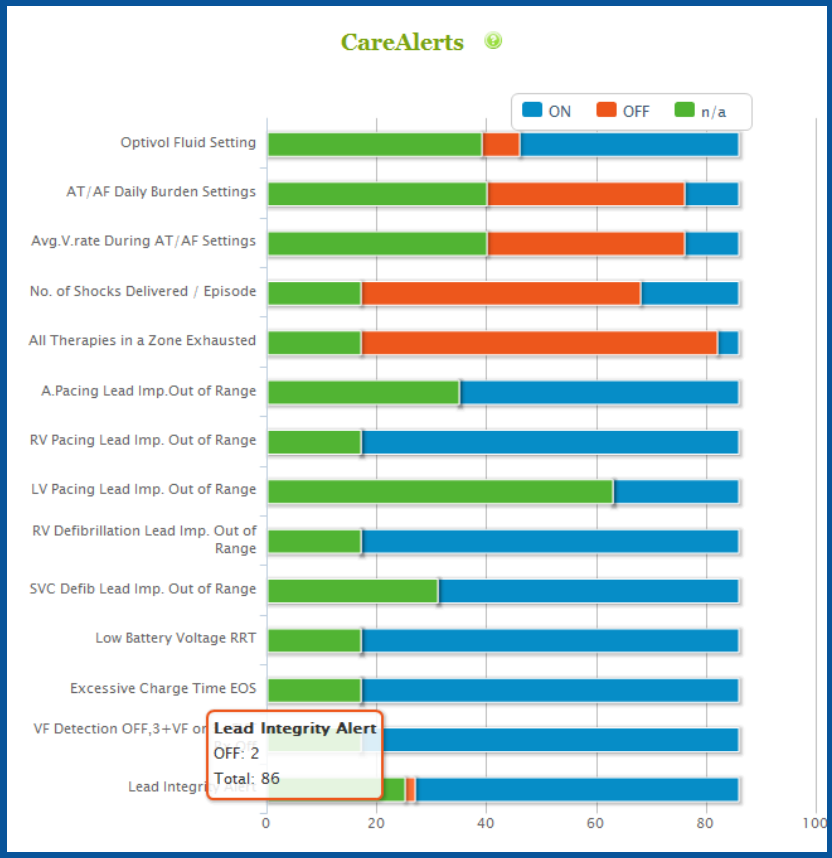
Other Challenges: Discovery Link

- **New technology to analyse all CareLink patients**

- **Implementation depends on**
  - Awareness and knowledge
  - Ability to incorporate it into the workflow in the hospital



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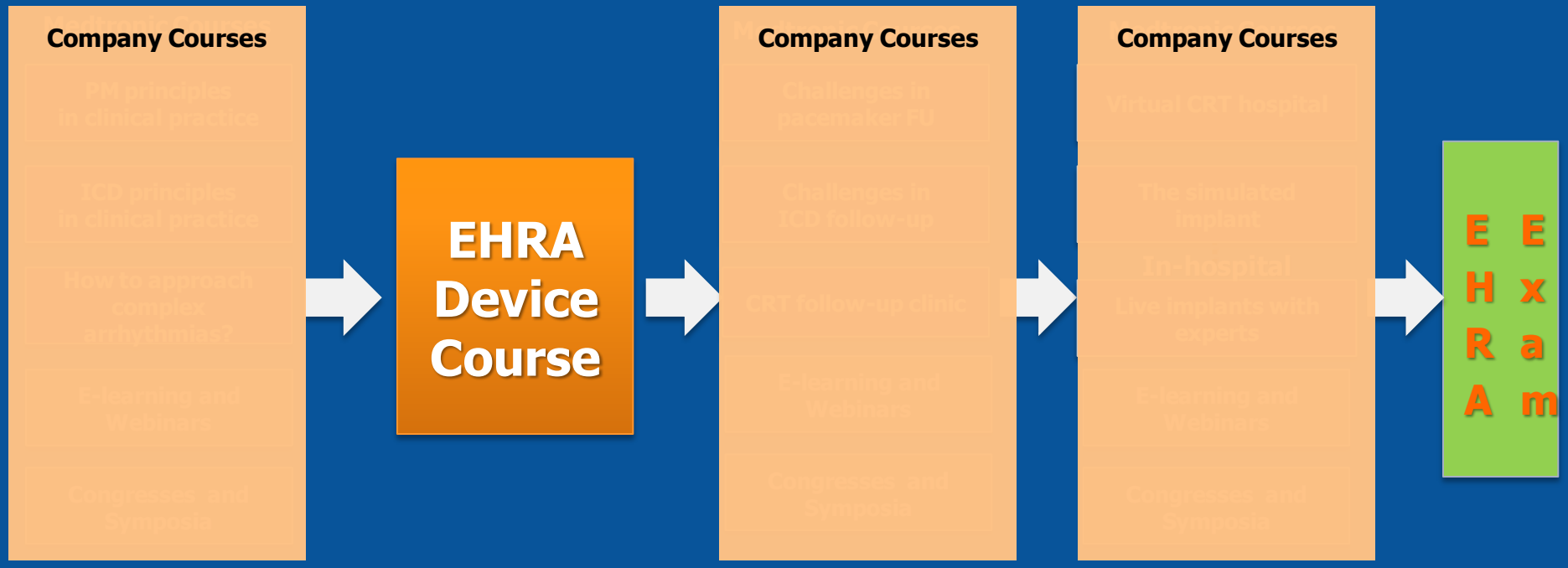
EHRA Educational Framework

Fellows Device track



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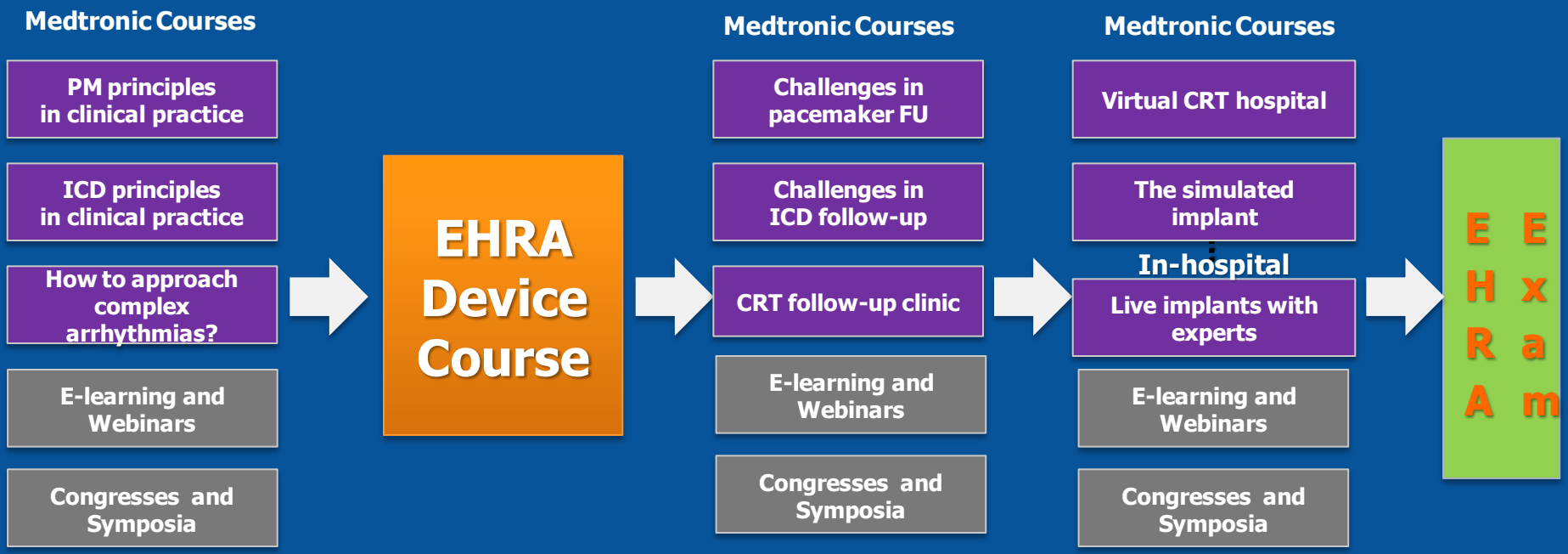
EHRA Educational Framework

Fellows Device track



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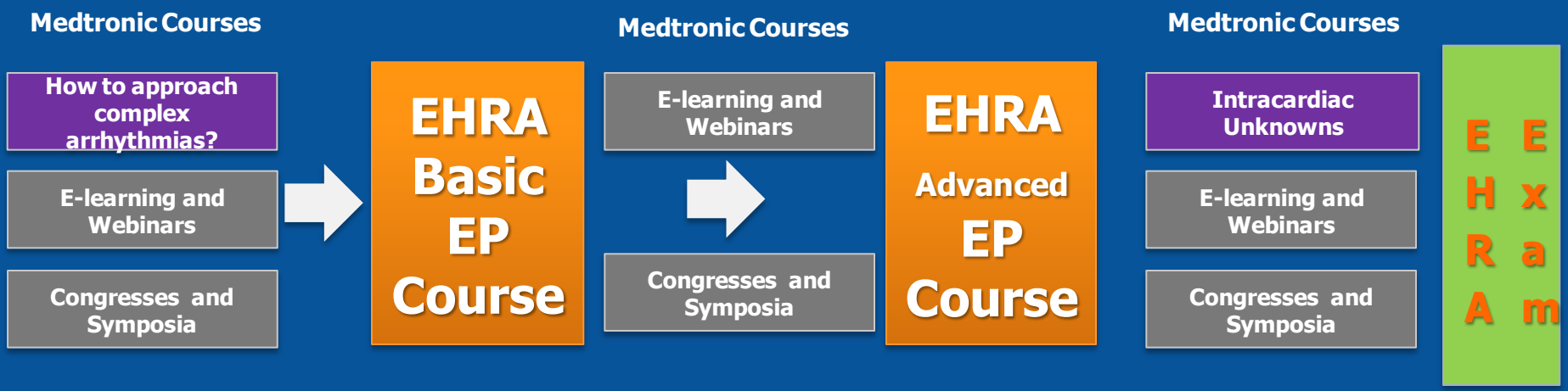
EHRA Educational Framework

Fellows EP track



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To CME or not to CME?

- **CME**
  - General independent educational activities
- **No CME**
  - Technology/product oriented courses

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Summary

- Many options for transfer of theoretical knowledge
- For innovative technologies the practical aspects may be more important
- More focus on the workflow and organizational aspects is desirable

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In theory, theory and practice are the same.
In practice they are not.

Albert Einstein

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