Electrophysiology and Pacing in Hungary: Current situation
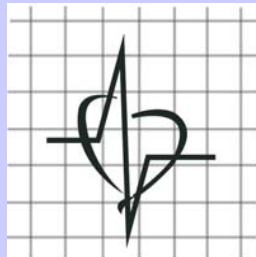
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EUROPE

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15° E 30° E **Barents** 45° E 60° E

15° W 0°

ARCTIC CIRCLE

Norwegian Sea

Iceland

Faroe Islands (Denmark)

Norway

Finland

White Sea

Russian Federation

60° N

Scotland

Atlantic Ocean

North Sea

Sweden

Estonia

Latvia

Lithuania

Russian Federation (European Russia)

400 mi

400 km

Ural Mountains

Netherlands

Baltic Sea

Ireland

UK England

Belgium

Denmark

Poland

Belarus

50° N

Wales

Germany

Czech Rep

Ukraine

Moldova

Sea of Azov 45° E

Kazakhstan

Luxembourg

Liechtenstein

Switzerland

Austria Hungary

Slovakia

Romania

Caspian Sea

France

Slovenia Croatia

Bosnia and Herzegovina

Georgia

Bay of Biscay

Monaco

Italy

Serbia

Bulgaria

Black Sea

Andorra

San Marino

Montenegro

40° N

Corsica (France)

Vatican

Sardinia (Italy)

Albania

European Turkey

Turkey

Armenia

Azerbaijan Iran

Spain

Mediterranean Sea

Macedonia

Greece

Cyprus

Syria

ASIA

Portugal

Sicily (Italy)

Crete (Greece)

Mediterranean Sea

Lebanon

Iraq

Gibraltar (UK)

Algeria

Malta

30° E

Israel Jordan

PRIME MERIDIAN

0°

15° E

30° N

Morocco

Tunisia

Libya

Egypt

Saudi Arabia

AFRICA

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Percent

> 65
2020
2008
1990

40-64
2020
2008
1990

20-39
2020
2008
1990

< 20
2020
2008
1990

30   25   20   15   10   5   0   0   5   10   15   20   25   30

Male   Female

Population by age and sex

	Male	Female	Total
2020	4.571.596	5.030.016	9.601.612
2008	4.727.205	5.203.710	9.930.915
1990	4.980.782	5.391.096	10.371.878

Economic information

Gross domestic product (U.S dollar-billions)	164.339*	2008
Gross domestic product per capita	16.343,32*	2008
Total expenditure on health as % of GDP	7,6	2006
General government expenditure on health as % of total expenditure on health	70,8	2006
Private expenditure on health as % of total expenditure on health	29,2	2006

Proportion of deaths resulting from cardiovascular disease

2007	349 per 100.000 citizens
2008	not available

Proportion cardiac mortality over total mortality of the country

2007	75%
2008	not available

Financing of EP in Hungary

- One insurrance company (state owned)
- All EP procedures are covered
- Implants
  - purchased by isurrance company through centralized tender at low prices
  - EP community is involved in tender process
  - Wide range of devices (41 types in 2010)
  - Increase in budget by 1 Billion HUF (3,7 Million Euros)
- Catheters
  - Case based reimbursement (conventional EP/ablation catheters, catheters for electroanatomical mapping, focal cryo, cryoballon, Ablation Frontiers, sheaths, transsept needles, ICE catheters etc)

Accreditation

•**Starded in 2007**
•**Initiated and technically organized by the WG**
•**Acknowledged and validated by Hungarian College of Cardiology**

2 types of certfication
„Device therapy" and "Electrophysiology / ablation"

<u>Prerequisites:</u>
•Board exam: Cardiology or anaesthesiology (Cardiac surgeons???)
•2 year training in an accredited University or high volume national/foreign EP center
•Numbers of pocedures: EHRA requirements were adopted
•Successful final exam : first exam: September, 2007.
•Preparatory courses starting in 2008 (May and September)

Guideline implementation

- National guidelines organized by Hungarian College of Cardiology

- Regular updates (based on international guidelines)

- 2007: Presidential Board decision to adopt all European guidelines

- Economical limitations to implement prophylactic ICD implantation guidelines
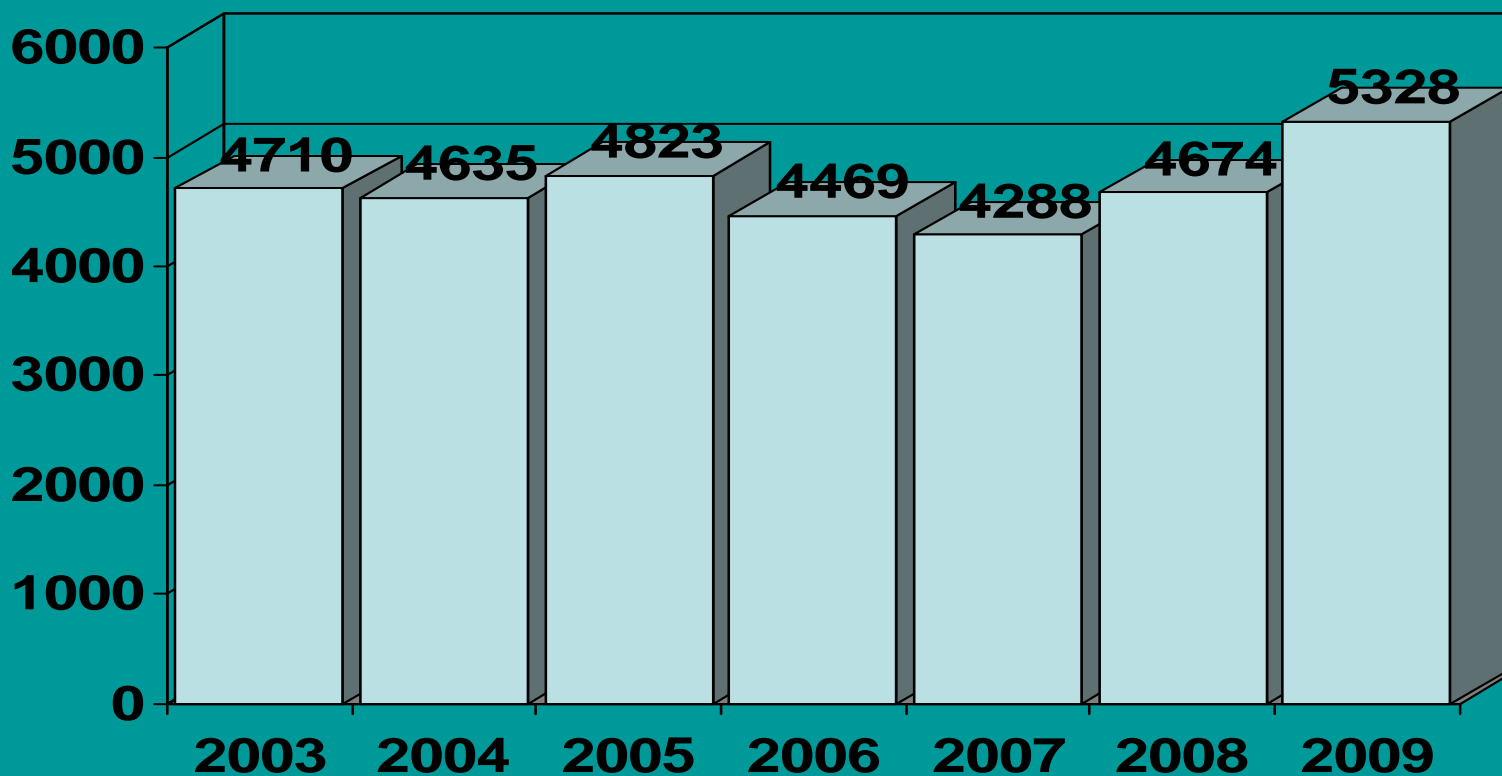
PM/ICD registry

◆ Started in january, 2008

◆ Digatal database working through internet

◆ Difficulties in having the centres enter data

◆ Difficulties in getting fonancial support from companies

Pacemaker/ICD centers in Hungary

PM 15, ICD 12, CRT 10

● New centers in 2006
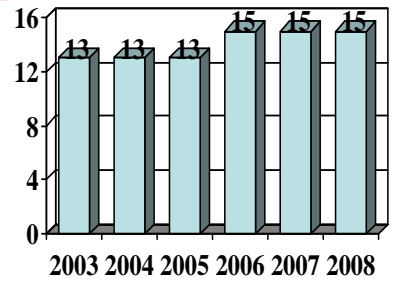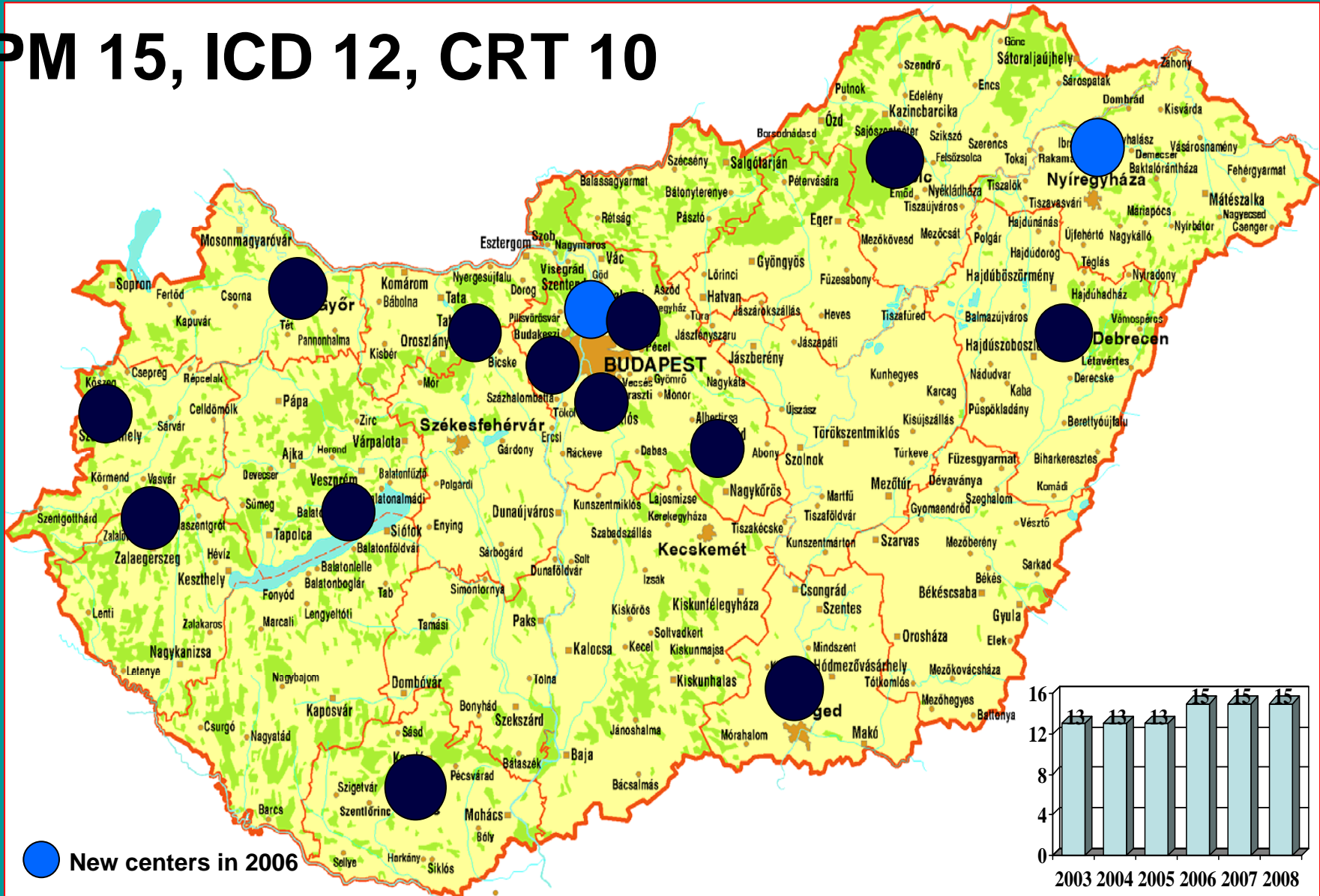
Primary pacemaker implantations for conventional bradycardia indication

Year	2003	2004	2005	2006	2007	2008	2009
Implantations	4710	4635	4823	4469	4288	4674	5328
Implant/million population	471,0	463,5	482,3	446,9	428,8	467,4	532,8

ICD implantations for secondary and primary prevention of SCD
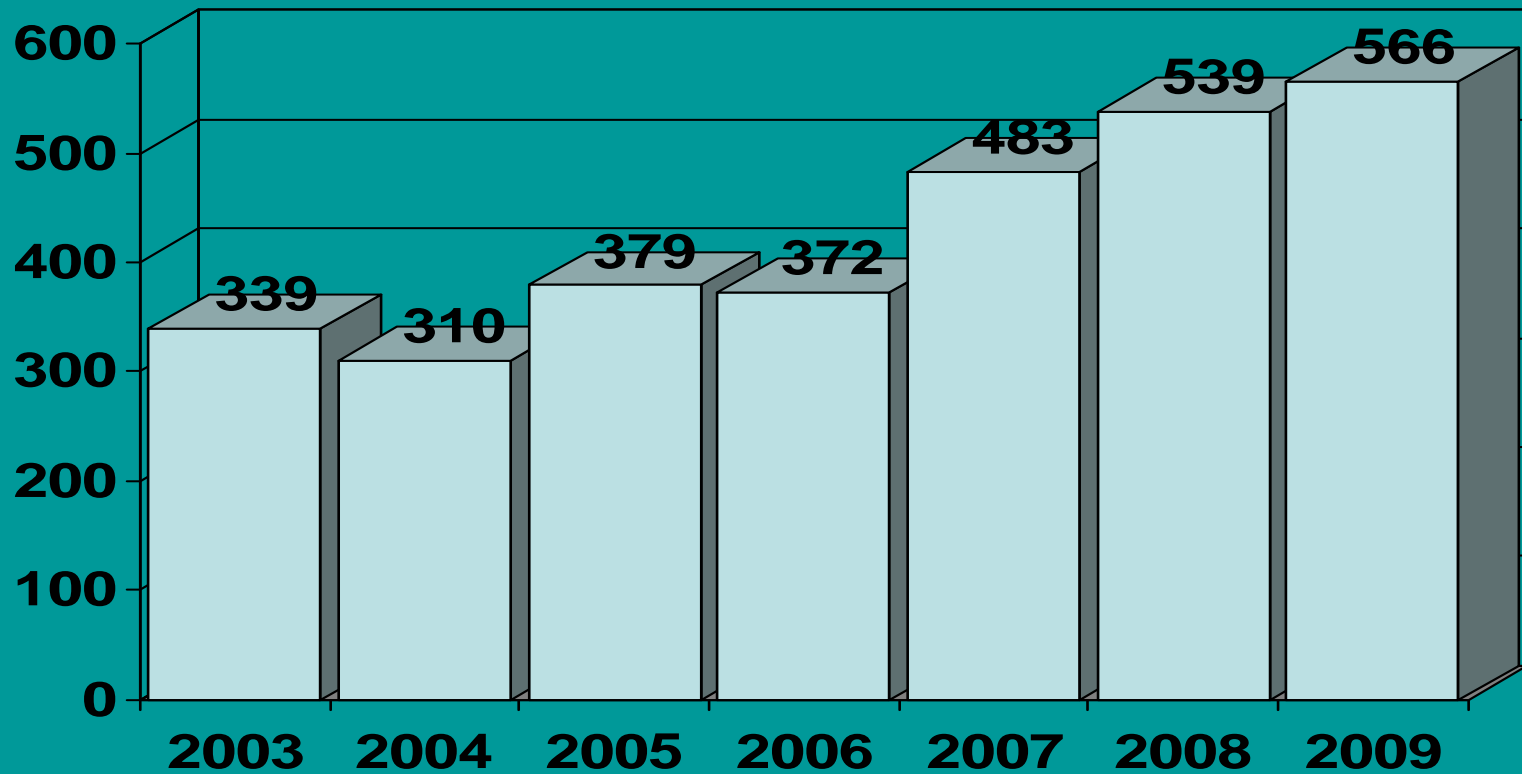
Implant/million population	33,9	31,0	37,9	37,2	48,3	53,9	56,6

2010: 750 VVICD/DDCD

Cardiac Resynchronisation Therapy in Hungary
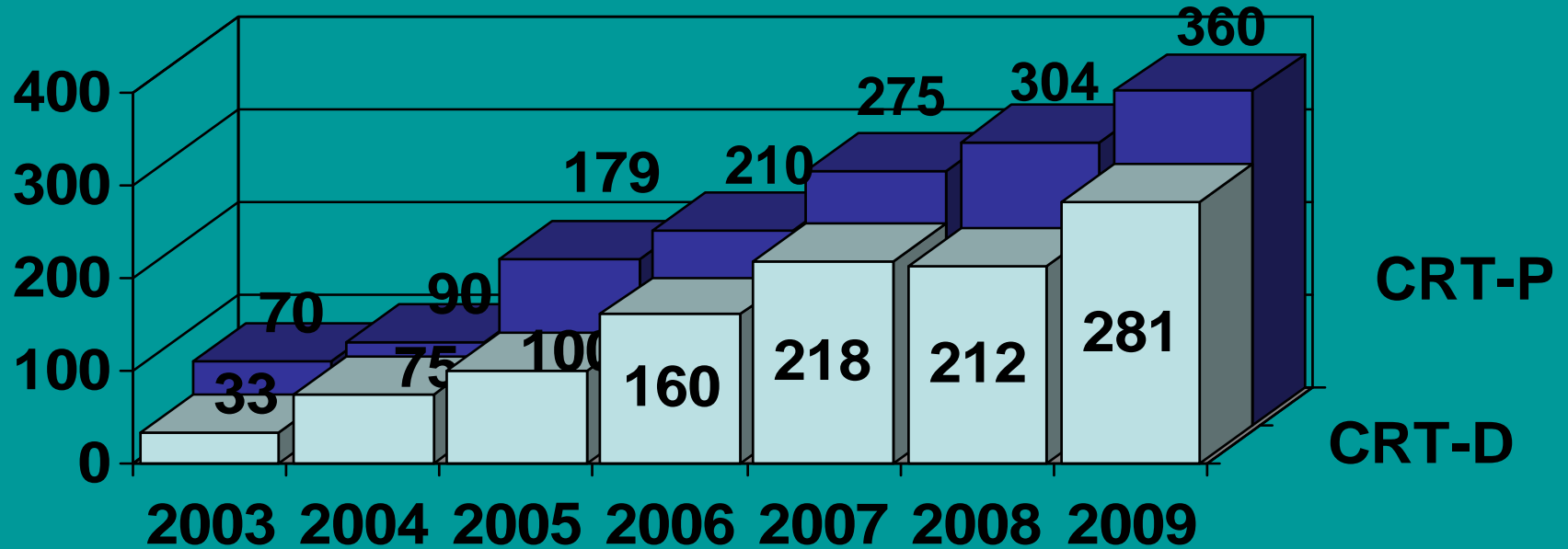
	2003	2004	2005	2006	2007	2008	2009
CRT-P/million population	7,0	9,0	18,0	21,0	27,5	30,4	36
CRT-D/million population	3,3	7,5	10,0	16,0	21,8	21,2	28,1
Total/million population	10,3	16,5	28,0	37,0	49,3	51,6	64,1

35

Hungarian CRT-P+D

	2003	2004	2005	2006	2007	2008	2009
CRT-P/D	102	161	279	370	493	516	670
EU-15 Incidence: 700	15%	23%	40%	53%	70%	73%	96%
US prevalence 16000	0,6%	1,0%	1,7%	2,3%	3,1%	3,2%	4%

EP centers in Hungary

EP/ablation center

EP/ablation center with electoanatomical mapping system
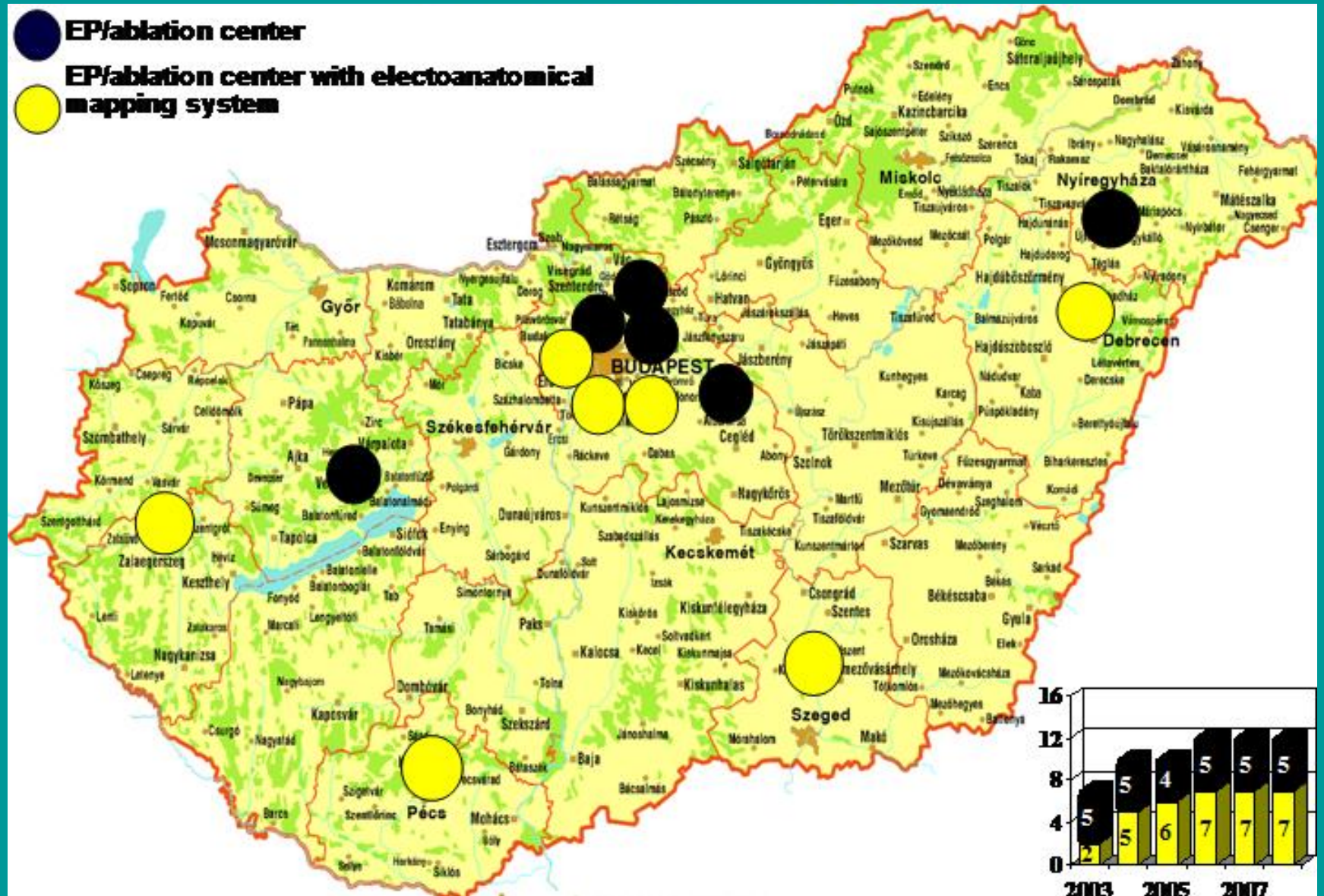
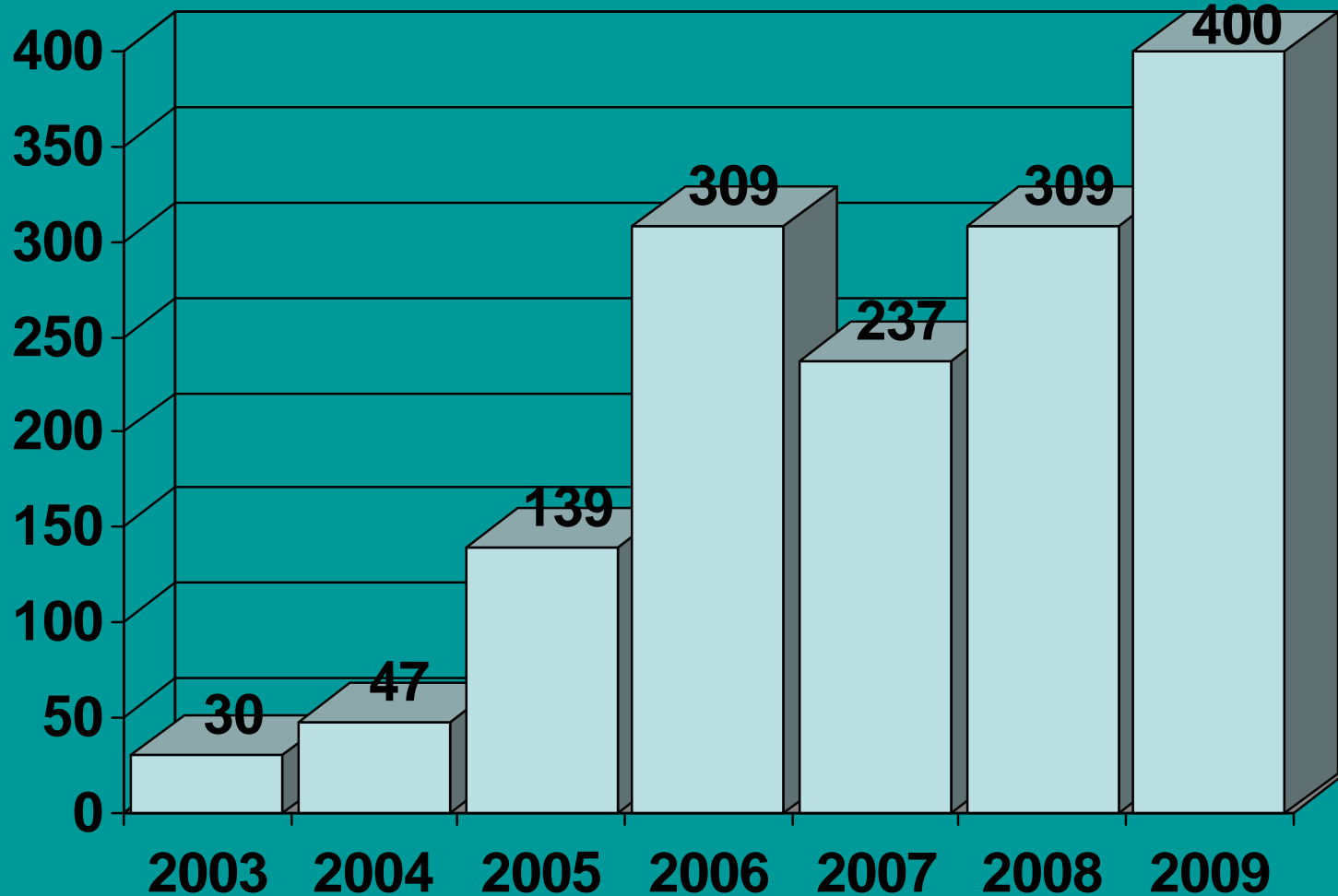**5 High volume, full scale centres**

EP Equipment in Hungary

◆ EAMS in 7 centers

(7 CARTO and 1 NAVEX)

◆ CRYOBallon in 3 centers

◆ Ablation Frontiers in 1 center

◆ ICE in 5 centers

◆ Robotic system: none

Total number of ablations in Hungary
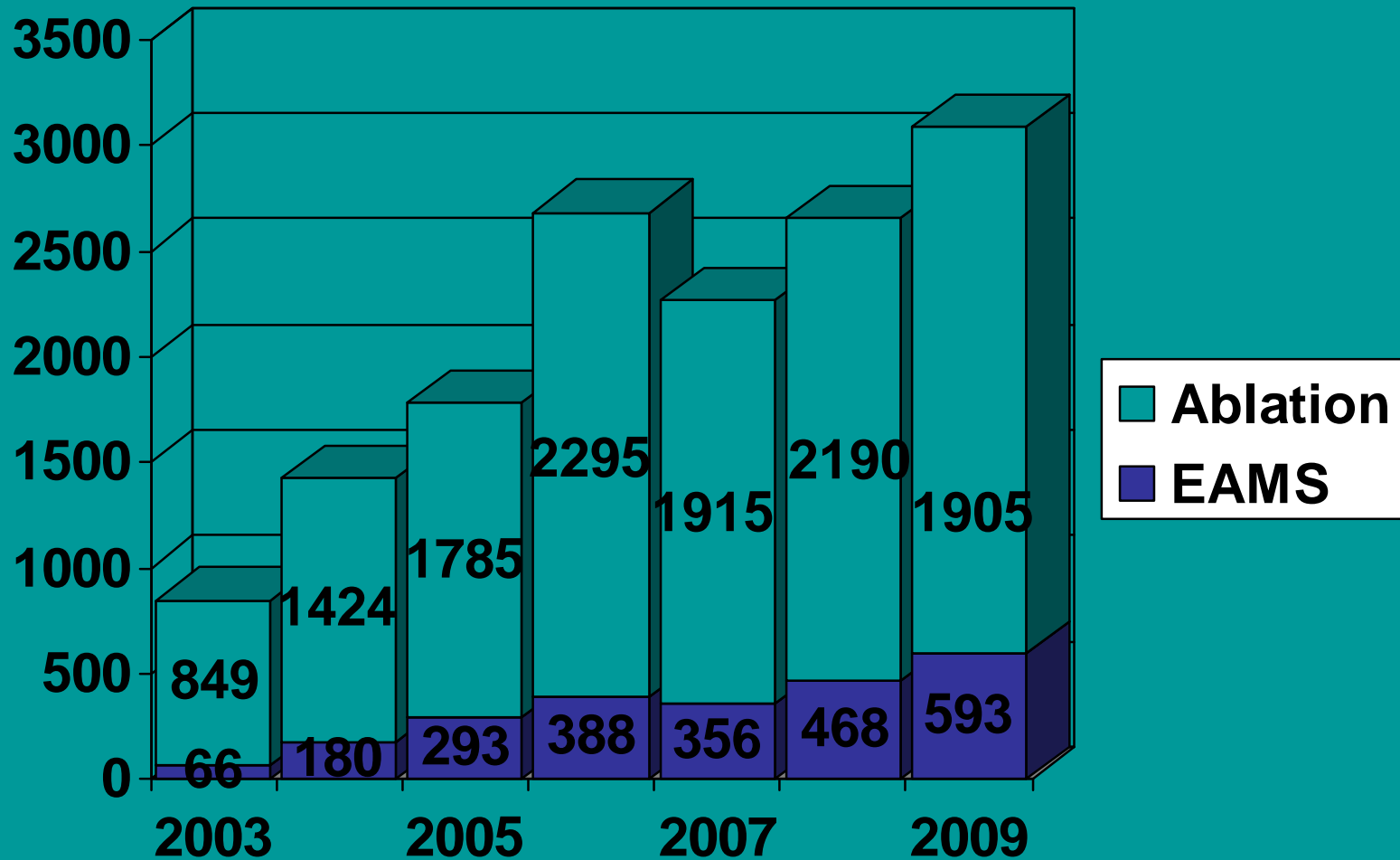
EAMS=Electroanatomical Mapping System

Atrial fibrillation ablations

100 cryoballon

Conclusions

<u>The total number of pacemaker implantations in Hungary is comparable to other EU countries</u>

- *No limitations in bradycardia therapy*
- *There should be further increase in ICD implants (with or without CRT)*
- *CRT-P implantations are mostly limited by relatively low referals rate*
- *Problems with data entry to PM/ICD registry*

Ablation activities are still limited by the budget especially those involving advanced technology (CARTO, EnSite, Cryoballon, Ablation Frontiers)