

The Geography of European Arrhythmology.



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EUROPEAN ARRHYTHMOLOGY

MAIN ISSUES

- Training in Pacing and Electrophysiology
- Facilities
- Usage
- Economics



EUROPE

TRAINING IN PACING & ELECTROPHYSIOLOGY

Training in Pacing and Electrophysiology is:

- Compulsory in **9** countries
- Non-compulsory in **27** countries

Average training duration is **14 months**

Training duration ranges from **3** to **24 months**

National Sub-specialty Exams

- 6** countries have registered exams
- 31** countries have none yet



EUROPE

TRAINING IN PACING & ELECTROPHYSIOLOGY

OBSERVATIONS

- ❑ Exceptional variation exists concerning the level of expertise between the experts who practice electrophysiology in Europe.
- ❑ The ministries of health and the regulatory bodies show a minimum of interest in proof of proper training.
- ❑ Simulation is still in its infancy. The learning curve is based on mentoring or on the opinion “dare and proceed”



European Pacing Centres per million population

Belgium	12.10
Germany	11.9
France	9.9
Switzerland	8.35
Italy	6.60
Greece	6.50
Netherlands	6.40
Spain	4.50
UK	3.17
Slovakia	2.59
Denmark	2.72
Russia	0.69

The highest

The median

The lowest



European Pacing Centres Questions

- Hyper or under usage

- Is there an unusually increased number of pacing centres or are there countries which have a lack of facilities?

- Could the Industry contribute to the development of new facilities?



Europe

Facilities in pacing and electrophysiology

Proposals

- ❑ A common European approach – Guidelines - is necessary for the creation and function of electrophysiology and pacing centres
- ❑ It is obvious that a hierarchy is necessary for the possibilities and the license of each centre. The same applies for the investment in these.
- ❑ Centre distribution per country could be organised by the national scientific bodies, since a certain logic needs to be followed.



Implanted Pacemakers

European Countries with the highest rates
of **implanted pacemakers**
per million population, **in 2005**

Belgium	1086
Germany	1045
Italy	974
France	957
Czech Republic	853
Sweden	839



Implanted Pacemakers

European Countries with the lowest rates
of **implanted pacemakers**
per million population, **in 2005**

Russia	121
Latvia	285
Slovakia	379
Slovenia	382
Croatia	391
Lithuania	434

Macroeconomic Analysis*

Market Management	United States	Canada	Europe
GDP (in billion US \$)	10.446	717	9.323
GDP Real Growth	2.4 %	3.2 %	0.9 %
Total Population (in millions)	287	32	737
Total Healthcare Spending (in billion US \$)	1.547	70	862
Health expenditure % of GDP	14.8	10	9.2
Geriatric population (60 yrs and over)	16.4	17.1	14.5

* based on 2004 statistics

Europe GDP / Health expenditure %

Countries	1995	2004
Switzerland	9.7	11.6
Greece	8.4	10.2
Germany	10.3	10.9
Italy	7.1	8.4
Netherlands	8.1	9.2
Poland	6.5	5.6
Spain	8.1	7.4
UK	8.3	7.0
France	10.5	9.4
Ireland	7.1	6.7

Pacemaker Prices

Country	VVI	DDD
France	1650	3400
Germany	1800*	3500*
Greece	2000	3700
Israel	700	1350
Lebanon	1200	2500
Norway	1800	2900
Russia	700	2300
Spain	1800	3700
Sweden	2000	3000
Switzerland	3600	5200
Turkey	1050	2050
UK	1800	3500

*Prices are average.

In certain countries
final prices differ
significantly following
negotiation.

These prices
include **neither**
VAT, nor lead
cost.

Europe Revenue Forecasts 2002-2008

Cardiac Rhythm Management Market (World), 2004

Year	Revenue \$ million	Growth
2002	1,138.9	
2003	1,479.2	29.9%
2004	1,724.2	16.6%
2005	2,072.6	20.2%
2006	2,395.4	15.6%
2007	2,735.6	14.2%
2008	3,100.1	13.3%
CAGR 2003-2008		15.9%



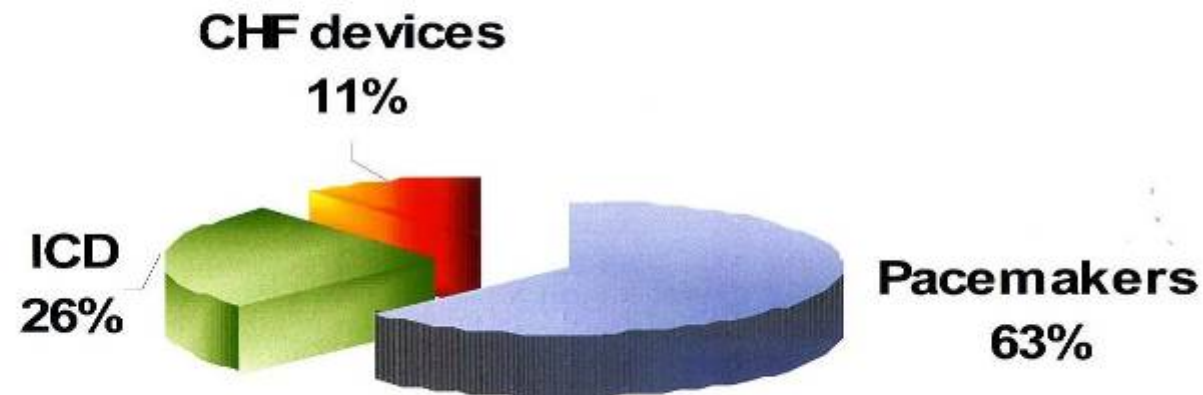
Revenue Forecasts World Cardiac Rhythm Management Market

Cumulative Average Growth Rate (2002 – 2008)

Europe	15.9 %
USA	19.3 %
Asia	23.5 %

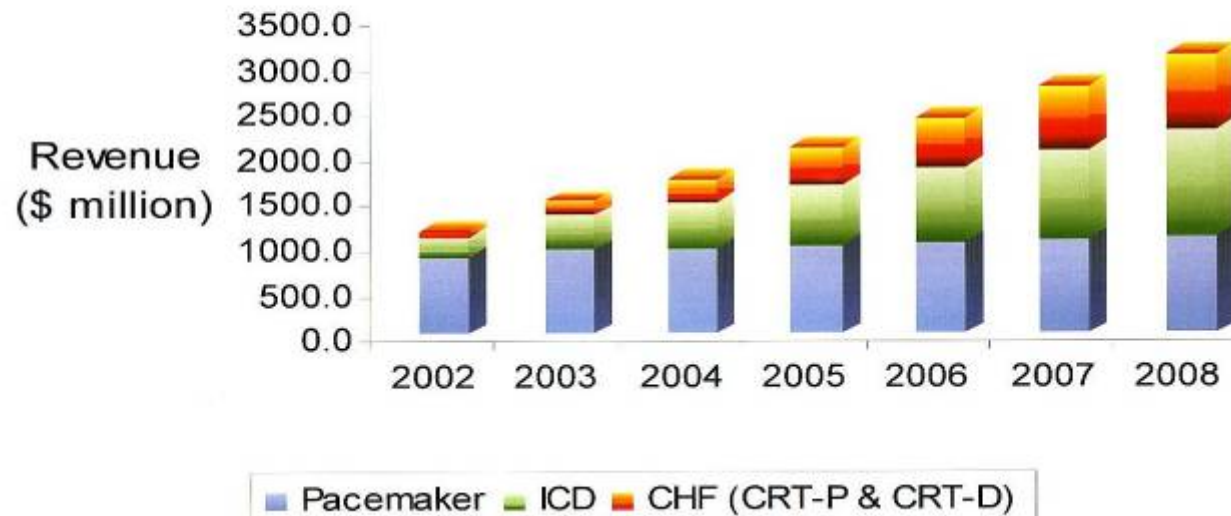
Market share

Market Share by Product Type – Europe Cardiac Rhythm Management Market (World), 2004



Product Forecast

Revenue Forecasts by Product Type— Europe 2002-2008
Cardiac Rhythm Management Market (World), 2004





Forecast analysis Europe

Cardiac Rhythm management Market (World), 2004

- ❑ The European CRM Market generated an estimated \$1479.2 million in 2003.
- ❑ The market is expected to grow at a CAGR of 15.9 % through 2008.
- ❑ It is expected to reach \$3100.1 million in 2008.
- ❑ Cardiac resynchronization therapy and MADIT II are driving ICD growth in Europe.

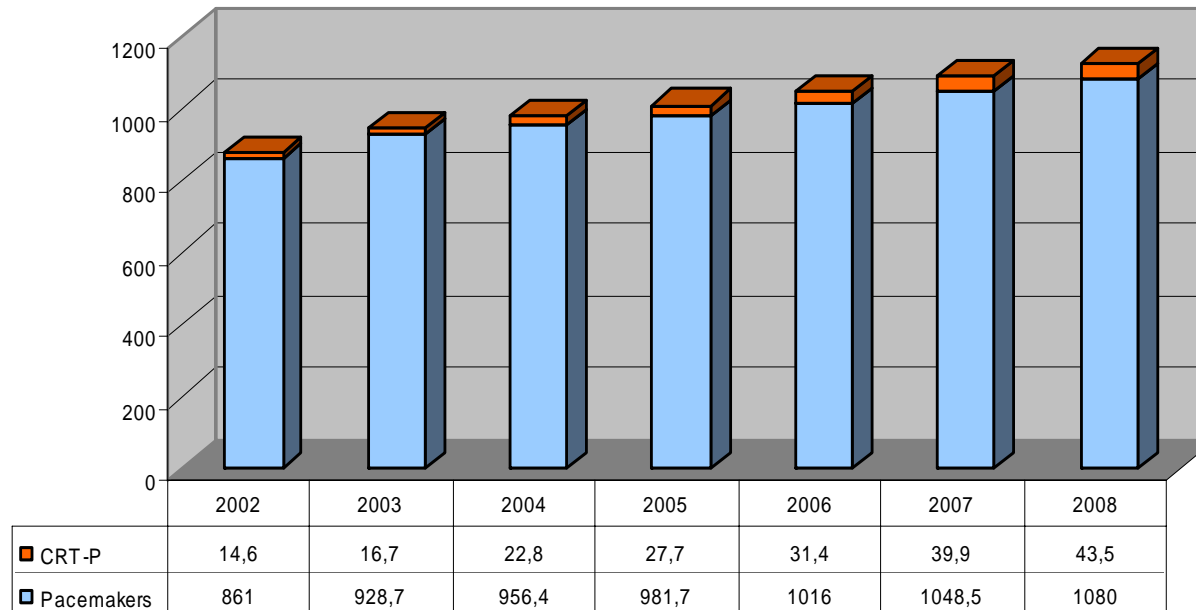


Pacemaker Market- Europe 2002-2008 Cardiac Rhythm Management Market (World), 2004

Year	Revenue (\$ million)	Growth
2002	875.7	
2003	945.4	8.0 %
2004	979.2	3.6%
2005	1,009.3	3.1%
2006	1,047.9	3.8%
2007	1,088.4	3.9%
2008	1,123.5	3.2%
CAGR 2003- 2008		3.5%



Pacemakers – Revenue (\$ million) Europe

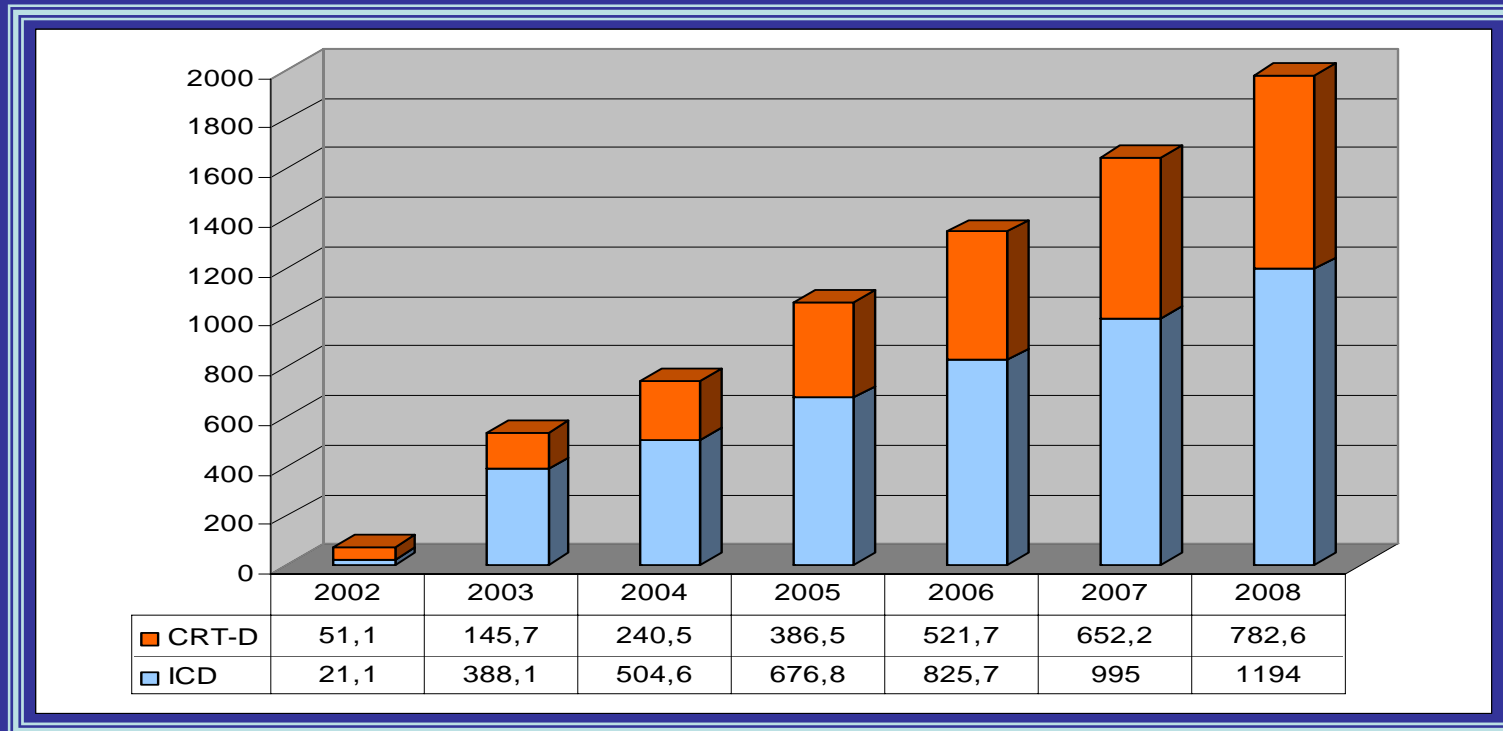




ICD Market- Europe 2002-2008 Cardiac Rhythm Management (World), 2004

Year	Revenue \$ million	Growth
2002	263.2	
2003	533.9	102.8%
2004	745.0	39.6%
2005	1,063.3	42.7%
2006	1,347.5	26.7%
2007	1,647.2	22.2%
2008	1,976.6	20.0%
CAGR 2003- 2008		29.9%

ICD – Revenue (\$ million) Europe





Pacemaker and ICD Market Trends and Forecast Analysis Europe

- ❑ The European pacemaker market generated an estimate \$945.4 million in 2003 and is expected to reach \$1123.5 million in 2008.
- ❑ The market is expected to grow at a CAGR of 3.5 % through 2008.
- ❑ The European ICD market is expected to reach \$ 1976.6 million in 2008.
- ❑ The total ICD market in Europe is rapidly developing and is expected to grow at a CAGR of 29.9 % through 2008.

Conclusions

- ❑ European arrhythmology is characterized by significant heterogeneity and is in need of orchestration.
- ❑ It is required of EHRA to play a vital role not only in creating scientific initiatives, but also to support national scientific bodies in the field.
- ❑ Industry will continue to enjoy satisfactory revenue as the use of ICD/CRT devices increases accordingly.



Ευχαριστώ πολύ

<u>Thank you</u>	<u>Tesekkór ederim</u>	<u>Kiitos</u>
	<u>Κοszονοm</u>	<u>Blagodarya</u>
<u>Tack</u>	<u>Merci</u>	Aciu / de'koju
<u>Takk</u>	<u>Grazie</u>	<u>Danke</u>
<u>Tak</u>	<u>Gracias</u>	<u>Dziakuje</u>
<u>Dank u</u>	<u>Grőcies</u>	<u>Dkkuji vam</u>
<u>Tđnan / Aitđh</u>	<u>Obrigado</u>	<u>Dβkujem vam</u>
<u>Multumesk</u>	Dziakuj	<u>Djakujo</u>
<u>Hvala</u>		<u>Dziakuje</u>