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The EHRA White Book 2010

The Current Status of Cardiac Electrophysiology
in ESC Member Countries

P. Vardas, A. Auricchio, C. Wolpert



www.escardio.org/EHRA

Acknowledgments

EHRA would like to express its appreciation to BIOTRONIK SE & Co. KG for their support of this book.

Preface – The European White Book of Electrophysiology: The third edition

In 2008, the first EHRA White Book of Cardiac Electrophysiology in ESC was published. The project had been launched in an attempt to assess the status quo of treatment of arrhythmias in all ESC member countries and in order to have a platform for a progressive harmonisation of access to arrhythmia treatment in all ESC countries. The cooperation of the national societies was so enthusiastic, that we were able to report 37 countries in the first edition. With the two most recent editions the number of contributing countries has even increased.

With information from the White Book on insurance and reimbursement systems, the number of centres performing different interventions and implantations and other data, we were able to enjoy very interesting discussions on “**Health Care Disparities in Europe: the case of arrhythmias**” during our annual EHRA Summit last year. The book serves also as a continuous reference for all our initiatives and efforts in education and training.

As stated in the previous editions, data has been collected from various sources that are cited in the White Book and most importantly, all data from third parties have been confirmed and authorised by each chairman of the national society or working group, respectively. Due to the continuous update we always present the most recent data for each year. This is why data for 2008 may differ slightly from one edition to another. In addition, the **online version** of the White Book is updated each time the country reports new data.

It is part of the task and privilege of EHRA to foster scientific discussion, create standards for education and training and offer help wherever necessary to harmonize treatment and access to the treatment of arrhythmias within its hemisphere. We are grateful to each of you who have worked so hard to accomplish this third edition and now we are very confident that with this new White Book we have set the ground for a continuous EHRA annual book.

We would like to express our appreciation to the European Heart House staff and to the representatives of each of the national arrhythmia societies or working groups who made this project possible.

It is our sincere hope that all the different parties involved in patient care in the field of arrhythmias will find this book both helpful and interesting. Should you have any recommendations or feedback concerning the White Book, please do not hesitate to contact us.

We look forward to working with you again in 2011.

Panos Vardas, EHRA President (2009-2011)
Angelo Auricchio, EHRA President Elect
Christian Wolpert, Chairman National Societies

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1. Scope and Methodology

The EHRA White Book is in its third edition and this year it presents again the status of the cardiac rhythm management sector per country separated in eleven sections.

The book contains only countries which are members of the European Society of Cardiology.

The book is divided in eleven sections as follows:

- 1. Statistics and demographic information**
- 2. Country**
- 3. Healthcare system**
- 4. Education**
- 5. Pacemakers**
- 6. Cardiac resynchronization therapy devices**
- 7. Implantable cardiac defibrillator**
- 8. Loop recorders**
- 9. Device specifics**
- 10. Interventional electrophysiology**
- 11. Guidelines**

Following similar methodology of the EHRA White Book 2008 and 2009, a primary research was conducted within national cardiology societies and working groups of cardiac pacing and electrophysiology of each country.

Each chairman of the societies and/or working groups was asked to compile information about their country based on a questionnaire. In order to gather the data, the societies and working groups used a number of national sources, but mainly national registries and national health institutions.

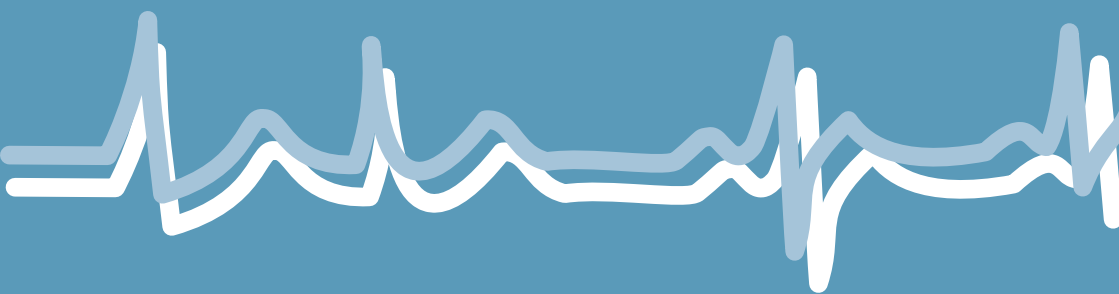
Simultaneously, a secondary research was conducted to cross verify and build the quantitative and qualitative information contained in the book.

Some countries, however, did not have available data for all of the sections of the book.

The primary and secondary research was undertaken from February 2010 until middle of May 2010.

All data is for the latest available year, at the time of the publication.

2. ESC Countries Overview

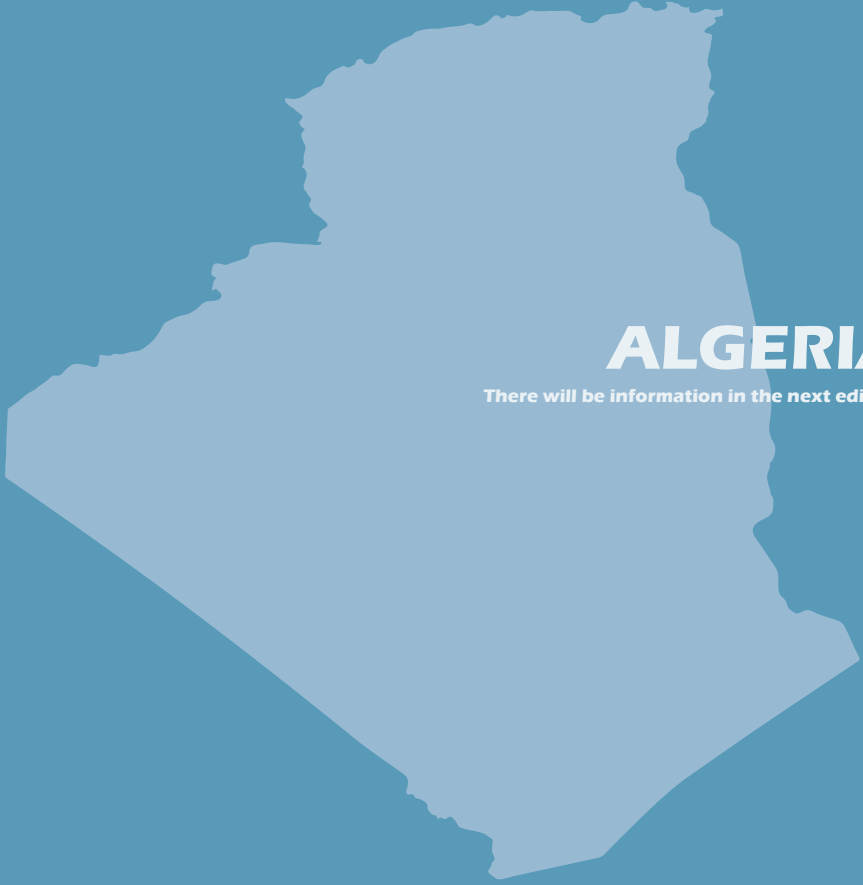




ALBANIA

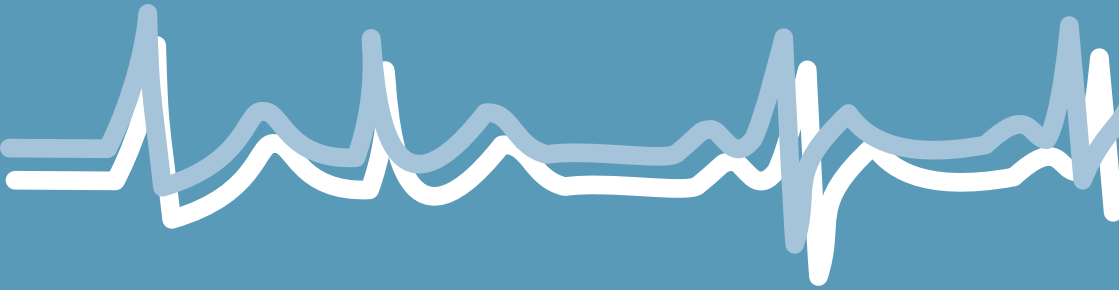
There will be information in the next edition.



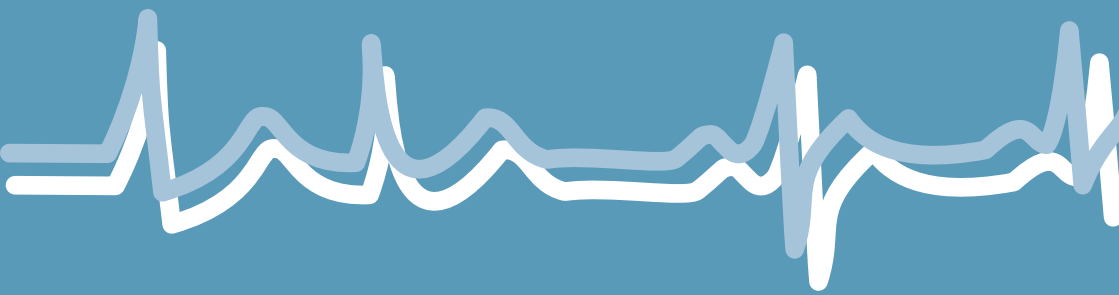


ALGERIA

There will be information in the next edition.

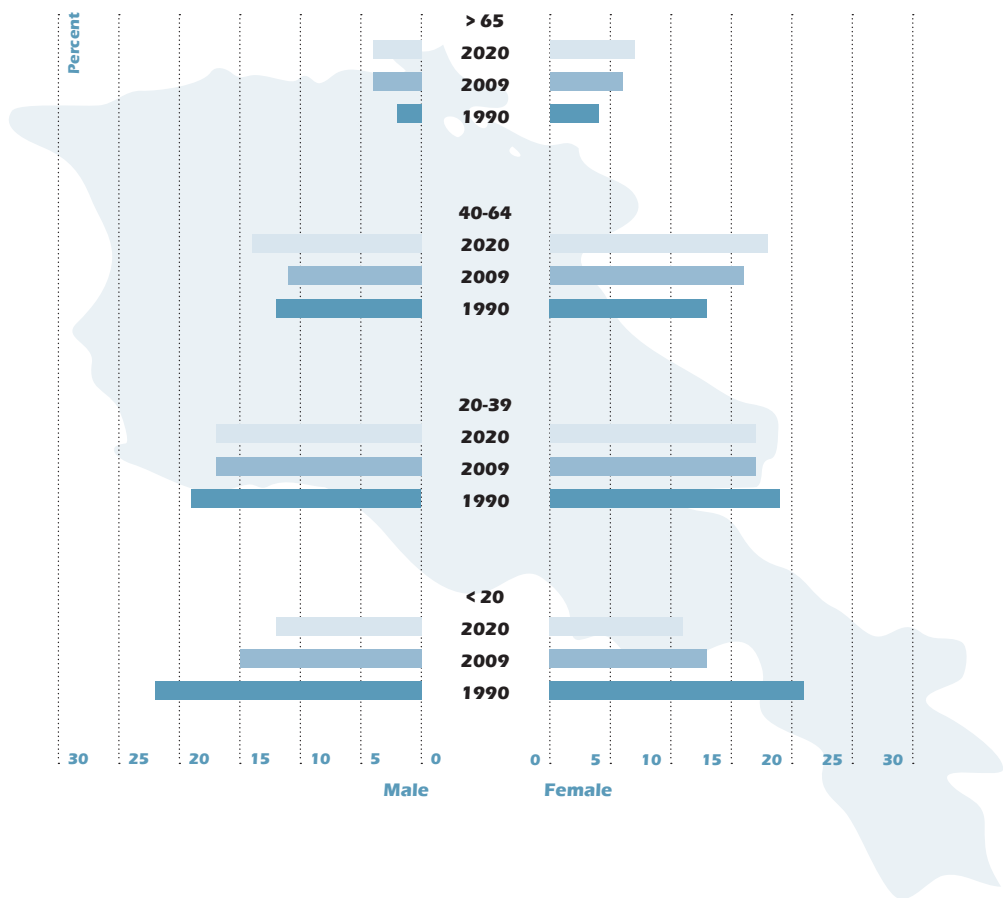


ARMENIA



1. Statistics

Age pyramid for Armenia





Healthcare data

Hospitals (per 100.000 population)	4,18	2007
Beds (per 100.000 population)	406,82	2007
Density of physicians (per 1.000 population)	3,44	2007
Density of nurses (per 1.000 population)	4,13	2007

Demographic information

Population annual growth rate (%)	0	2009
Life expectancy at birth	73,08	2003
Death rate (per 1.000 population)	8,42	2006
Live births (per 1.000 population)	12,42	2006

Economic information

Gross domestic product (U.S dollar-billions)	8,68*	2008
Gross domestic product per capita (U.S dollar-units)	2.658,05*	2008
Total expenditure on health as % of GDP	4,7	2006
General government expenditure on health as % of total expenditure on health	41,2	2006
Private expenditure on health as % of total expenditure on health	58,8	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	42.404 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country

2008	49,9%
2009	not available

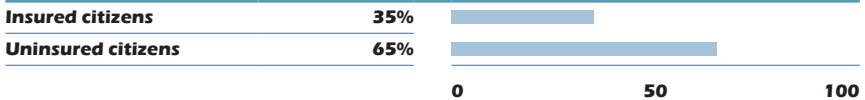
3. Healthcare System

In Armenia, the National Health System fund covers all emergencies and children under seven years old and maternity care. The fund rises every year by average 10 to 12%. Unfortunately, the NHS fund does not cover any kind of heart rhythm management for children or adults, including pacemaker implants nor ablations for life threatening arrhythmias.

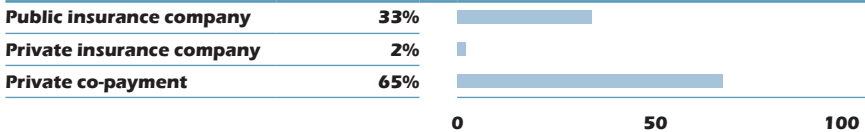
Basic insurance availability

No

Percentage of insured and uninsured citizens



Distribution of insurance modality



Possibility of subscribing to private health insurance plans

Yes



Co-payment necessary for the following therapy

ICD devices	<input checked="" type="checkbox"/>
Pacemakers	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>

Patients and families are forced to pay for all hospital costs and for the devices if they do not have a private insurance.

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

There is a course of arrhythmology in the general cardiology course.

National accreditation for physicians **No**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **No**

Specialty required for ICD or pacemaker implants **No**

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	3
ICD implantation	1
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	0

Number of medical faculties

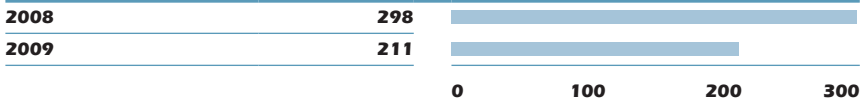
5

Percentage of academic facilities among practicing EP and implant centres

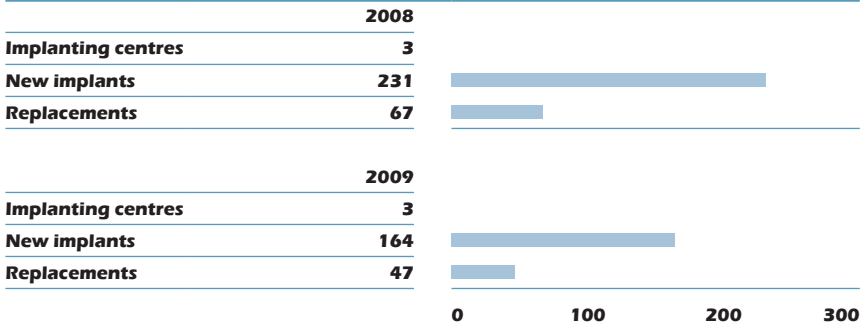
100%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



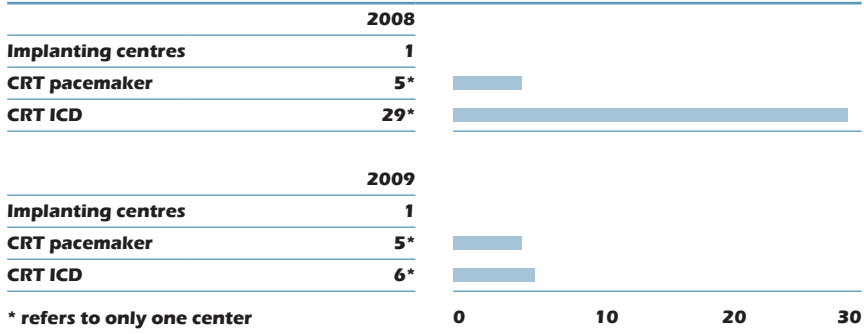


Specialty performing implants

Cardiologists	97%
Surgeons	3%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

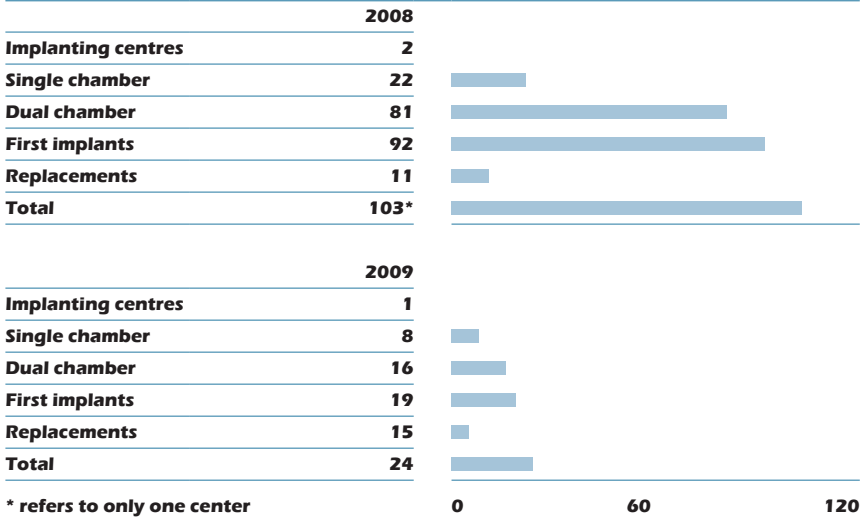


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008
Implanting centres	0
Loop recorders	0
	2009
Implanting centres	0
Loop recorders	0

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres 1

	2008	2009
Number of ablations performed	179	146
Mean number (ablations/centres)	179	146
Number of AF ablations	0	1

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language Yes

Obstacles to guideline implementation

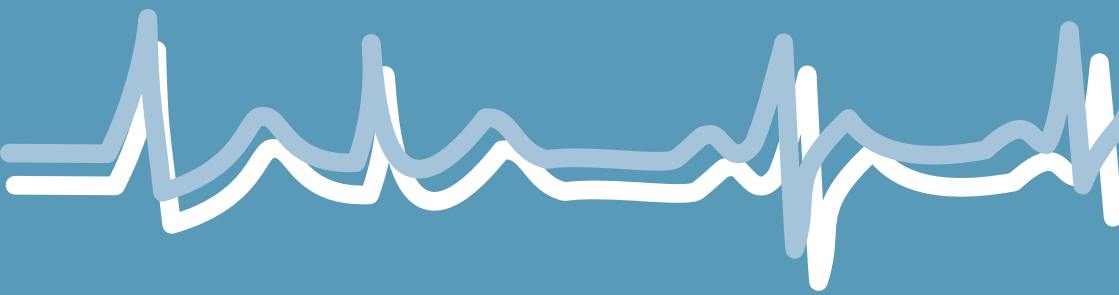
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

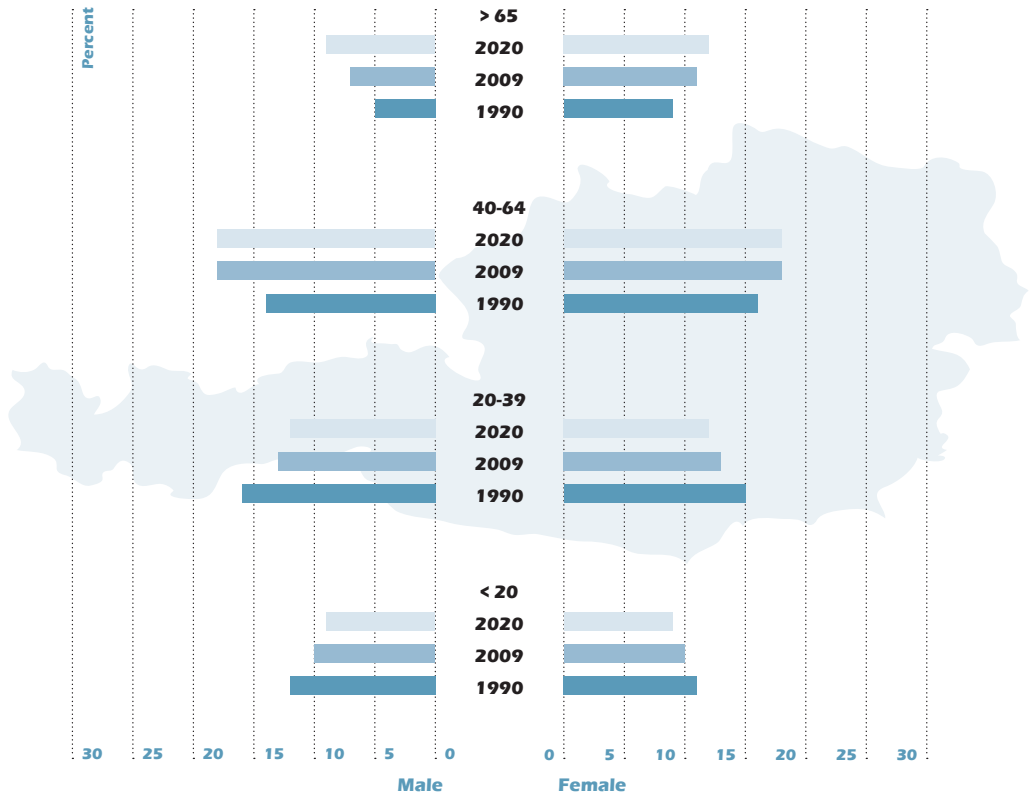
Sources: Armenian Working Group of Arrhythmology – Chairman: Prof. Svetlana Grigoryan and Armenian Working Group on Cardiac Pacing and Electrophysiology – Chairman: Dr. Smbat Jamalyan

AUSTRIA



1. Statistics

Age pyramid for Austria





Healthcare data

Hospitals (per 100.000 population)	3,25	2007
Beds (per 100.000 population)	776,34	2007
Density of physicians (per 1.000 population)	3,75	2007
Density of nurses (per 1.000 population)	6,35	2007

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	80,74	2008
Death rate (per 1.000 population)	9,01	2008
Live births (per 1.000 population)	9,33	2008

Economic information

Gross domestic product (U.S dollar-billions)	374,41*	2009
Gross domestic product per capita (U.S dollar-units)	45.090,49*	2009
Total expenditure on health as % of GDP	9,9	2006
General government expenditure on health as % of total expenditure on health	77	2006
Private expenditure on health as % of total expenditure on health	23	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	400,7 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	44%
2009	not available

3. Healthcare System




The Austrian Health System is organised by statutory health insurance. It covers about 95% of the population on a mandatory basis and about 2% on a voluntary basis. There are 26 statutory health insurance funds organised in the Federation of Austrian Social Security Institutions. These funds do not compete with each other since the membership is mandatory and based on occupation or place of residence. The Federal Ministry of Health and Women is the main policy maker in health care and is responsible of supervising the statutory health insurance funds. (Source: Highlights on Health in Austria, WHO 2004)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	97,6%	
Uninsured citizens	2,4%	
		0 50 100

Distribution of insurance modality

Public insurance company	80-85%	
Private insurance company	15-20%	
Private co-payment	0%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians

Yes

Subspecialty Diploma Cardiologist („Facharzt für Kardiologie“)

National accreditation for centres

No

National Society supporting EHRA accreditation system

Yes

Specialty required for catheter ablation

Yes

Mostly cardiologists (EP doctors), few surgeons

Specialty required for ICD or pacemaker implants

Yes

Cardiologist, surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability*

Pacemaker	not available
ICD implantation	not available
Electrophysiological studies and catheter ablation	not available
CRT implantation	not available
Atrial fibrillation ablation	not available

*** Training centres are available in the country, but the numbers are unknown.**

Number of medical faculties



4

Percentage of academic facilities among practicing EP and implant centres

not available

5. Pacemakers

Pacemaker units implanted

2008	7.570	
2009	7.930	
		0 4.000 8.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	65	
New implants	not available	
Replacements	not available	
	2009	
Implanting centres	65	
New implants	not available	
Replacements	not available	

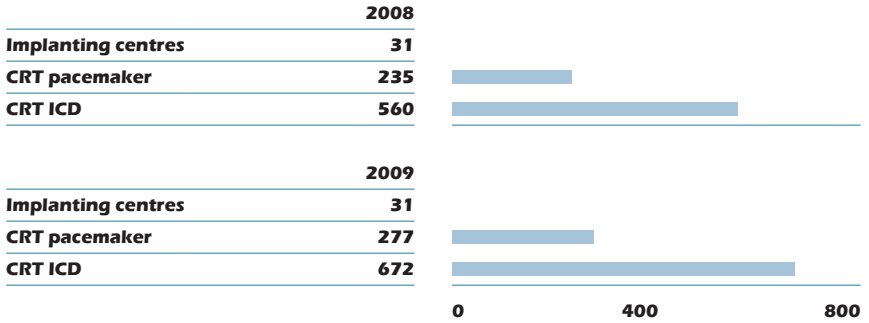


Specialty performing implants

Cardiologists	30%
Surgeons	70%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

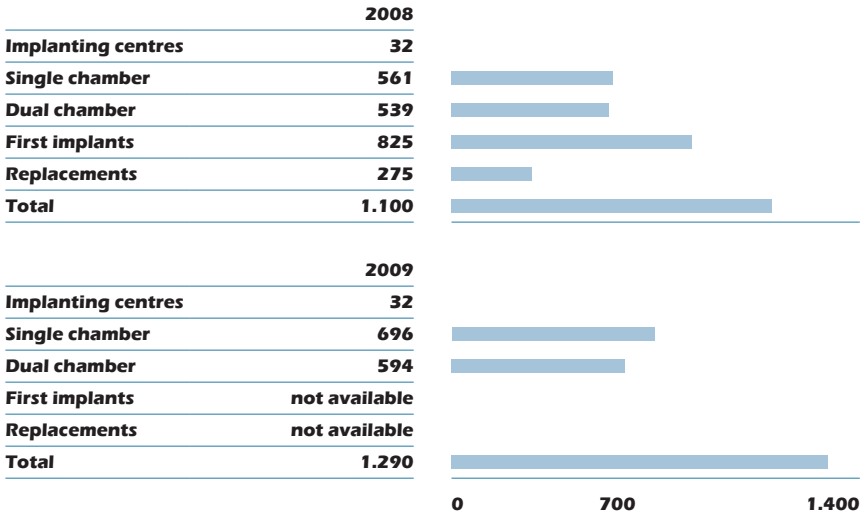


Specialty performing implants

Cardiologists	35%
Surgeons	65%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres




Specialty performing implants

Cardiologists	25%
Surgeons	75%



8. Loop recorders

Loop recorders implanted and number of implanting centres

2008				
Implanting centres	not available			
Loop recorders	320			
2009				
Implanting centres	not available			
Loop recorders	not available			
		0	200	400

Specialty performing implants

Cardiologists	90%
Surgeons	10%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology***	<input checked="" type="checkbox"/>

* In preparation (ÖBIG)

** Austrian PM Registry

*** National Ablation Registry

Availability of a national quality insurance system or complication registry

Yes

In preparation (BIQG)

Availability of a national institution coordinating and guiding device recalls

Yes

GÖG, ÖBIG, BMGFJ (Ministry of Health)

10. Interventional electrophysiology

Number of performing catheter ablation centres

15

	2008	2009
Number of ablations performed	1.362	1.400*
Mean number (ablations/centres)	97	100
Number of AF ablations	293	>300*

* approx.

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

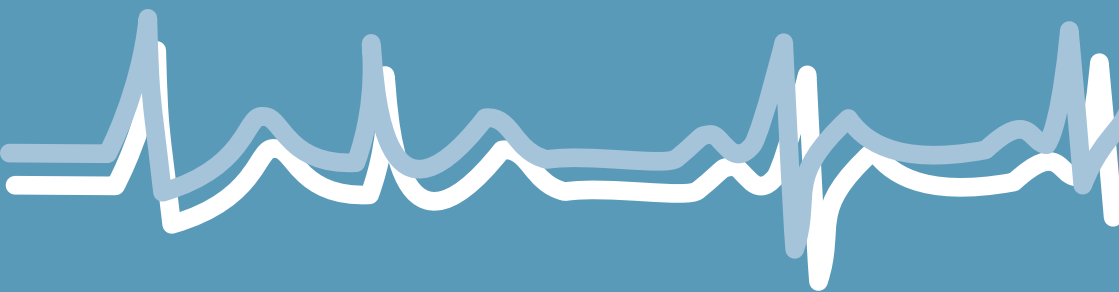
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

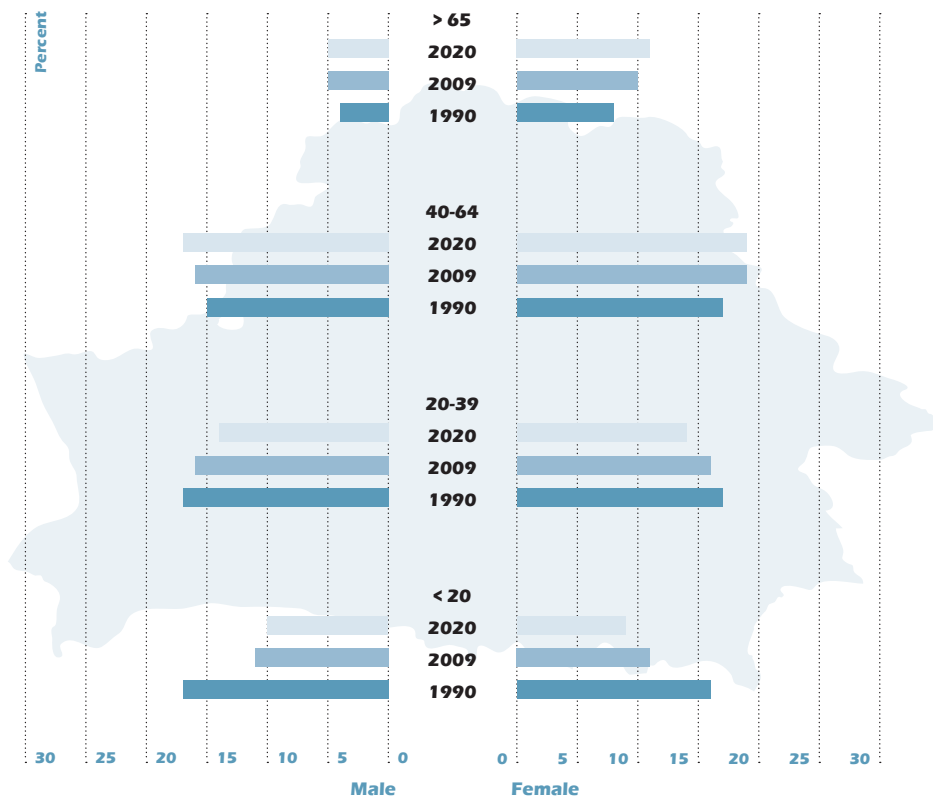
Sources: Austrian Working Group of Electrophysiology – Chairman: Dr. Bernhard Strohmer, Statistics Austria and National Ablation Registry

BELARUS



1. Statistics

Age pyramid for Belarus





Healthcare data

Hospitals (per 100.000 population)	7,24	2007
Beds (per 100.000 population)	1.122,87	2007
Density of physicians (per 1.000 population)	4,84	2007
Density of nurses (per 1.000 population)	11,98	2007

Demographic information

Population annual growth rate (%)	-0,4	2009
Life expectancy at birth	70,37	2007
Death rate (per 1,000 population)	13,71	2007
Live births (per 1,000 population)	11,14	2008

Economic information

Gross domestic product (U.S dollar-billions)	49,04*	2009
Gross domestic product per capita (U.S dollar-units)	5.121,79*	2009
Total expenditure on health as % of GDP	6,4	2006
General government expenditure on health as % of total expenditure on health	74,9	2006
Private expenditure on health as % of total expenditure on health	25,1	2006

* IMF estimative



Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>
There is a limited number of procedures per year, but everything is for free.	

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
Roentgen-endovascular surgery	

National accreditation for physicians **Yes**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **No**

Specialty required for catheter ablation **Yes**

Rentgen-endovascular surgeon

Specialty required for ICD or pacemaker implants **Yes**

Roentgen-endovascular surgeon, cardiac surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation **No**

Required period of training to perform implantations **2 years**

Training centres availability

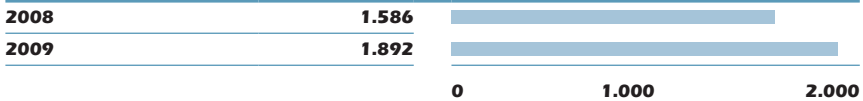
Pacemaker	1
ICD implantation	1
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	1

Number of medical faculties 4

Percentage of academic facilities among practicing EP and implant centres 75%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	8	
New implants	not available	
Replacements	not available	

	2009	
Implanting centres	8	
New implants	not available	
Replacements	not available	

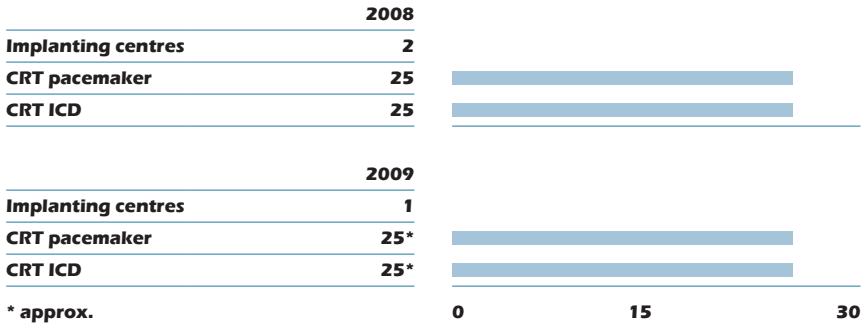
Specialty performing implants

Cardiologists	0%
Surgeons	100%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

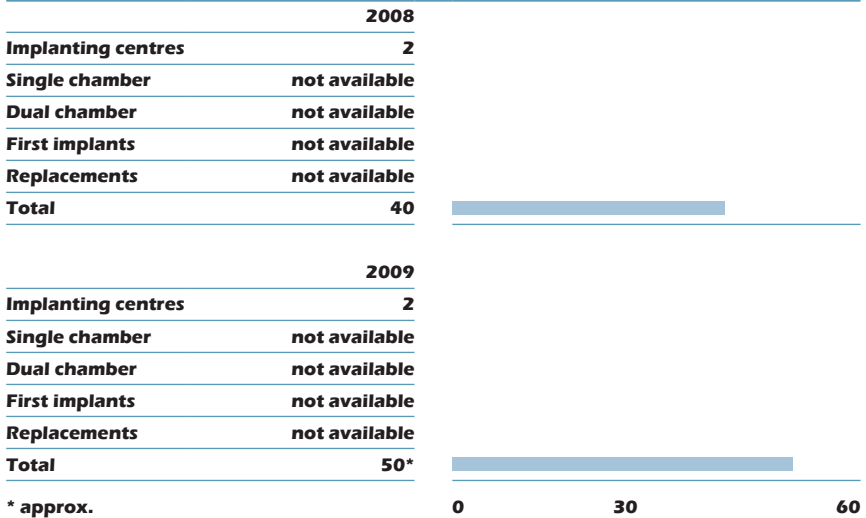


Specialty performing implants

Cardiologists	0%
Surgeons	100%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres





Specialty performing implants

Cardiologists	99%
Surgeons	1%

8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008	
Implanting centres	2	
Loop recorders	10	
	2009	
Implanting centres	2	
Loop recorders	10*	
* approx.	0	6 12

Specialty performing implants

Cardiologists	0%
Surgeons	100%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

* IPG-Registry

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**
Republican Scientific and Practical Center of Cardiology and Ministry of Health



10. Interventional electrophysiology

Number of performing catheter ablation centres **3**

	2008	2009
Number of ablations performed	170	419
Mean number (ablations/centres)	85	140
Number of AF ablations	14	33

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language **Yes**

Obstacles to guideline implementation

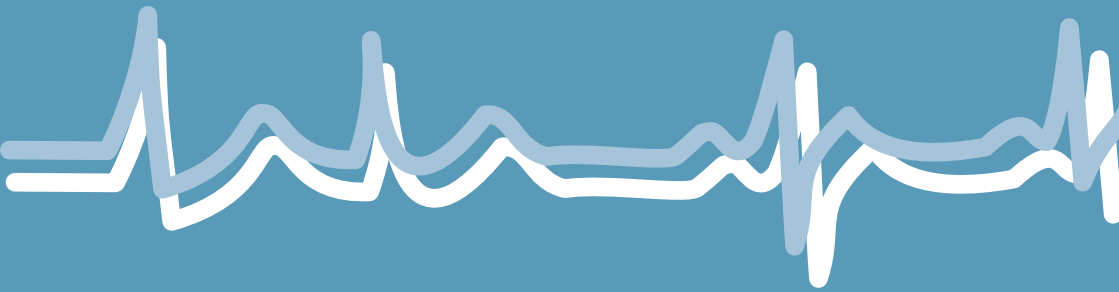
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

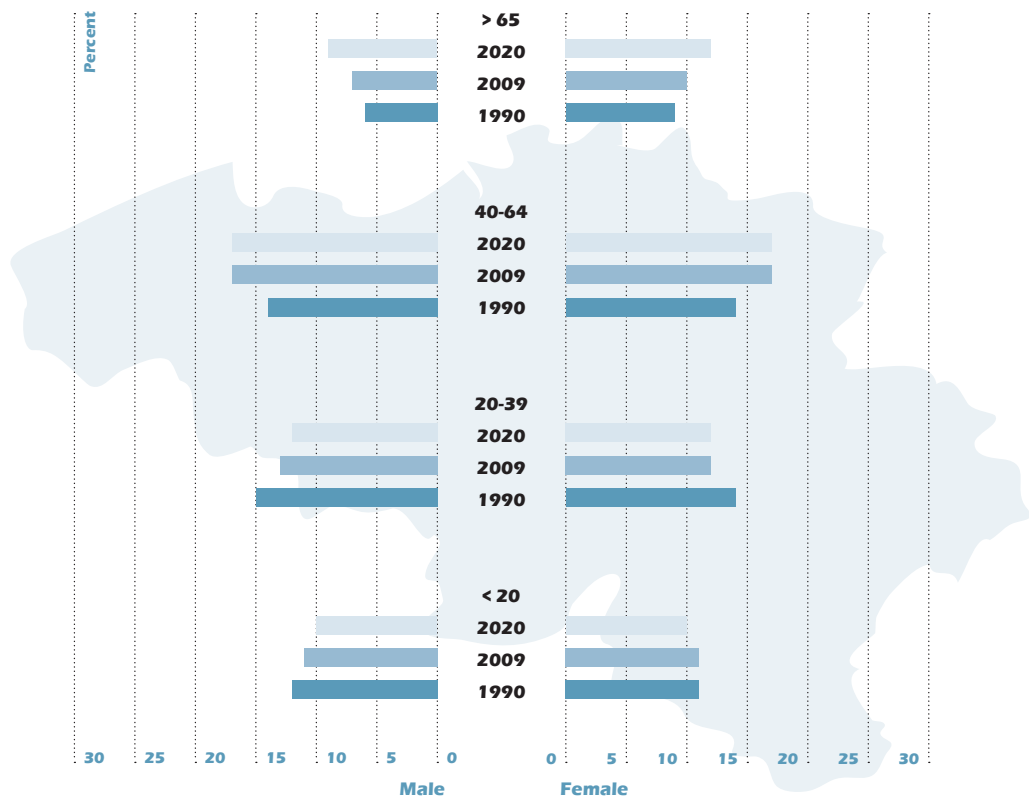
Sources: Scientific laboratory of heart arrhythmias – Chief: Prof. Alexander Mrochek

BELGIUM



1. Statistics

Age pyramid for Belgium





Healthcare data

Hospitals (per 100.000 population)	1,98	2007
Beds (per 100.000 population)	522,93	2007
Density of physicians (per 1.000 population)	4,18	2006
Density of nurses (per 1.000 population)	13,41	2004

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	79,0	2006
Death rate (per 1.000 population)	10,23	1999
Live births (per 1.000 population)	11,36	2007

Economic information

Gross domestic product (U.S dollar-billions)	461,48*	2009
Gross domestic product per capita (U.S dollar-units)	42.964,68*	2009
Total expenditure on health as % of GDP	9,5	2006
General government expenditure on health as % of total expenditure on health	71,1	2006
Private expenditure on health as % of total expenditure on health	28,9	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input checked="" type="checkbox"/>
Pacemakers	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Minimal co-payment for pharmacy costs.	

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>
Primary prevention with ICDs is limited to maximal 40% of all new ICD implants.	

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres to perform EP **No**

Accreditation is on a voluntary basis; different systems

National Society supporting EHRA accreditation system **No**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist or surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

BeHRA guidelines

Required period of training to perform implantations

No

Training centres availability

Pacemaker	50
ICD implantation	27
Electrophysiological studies and catheter ablation	42
CRT implantation	40
Atrial fibrillation ablation	25

* approx.

Number of medical faculties



7

Percentage of academic facilities among practicing EP and implant centres

20%

5. Pacemakers

Pacemaker units implanted

2008	9.000*	
2009	9.249	
* approx.		0 5.000 10.000

Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		110
New implants		not available
Replacements		not available
		2009
Implanting centres		106
New implants		not available
Replacements		not available

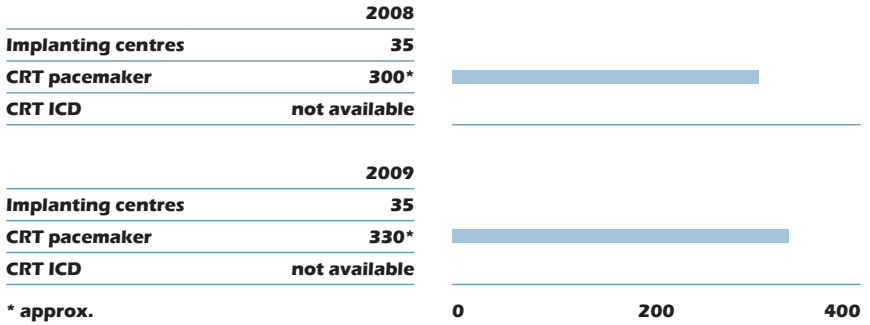


Specialty performing implants

Cardiologists	65%
Surgeons	35%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

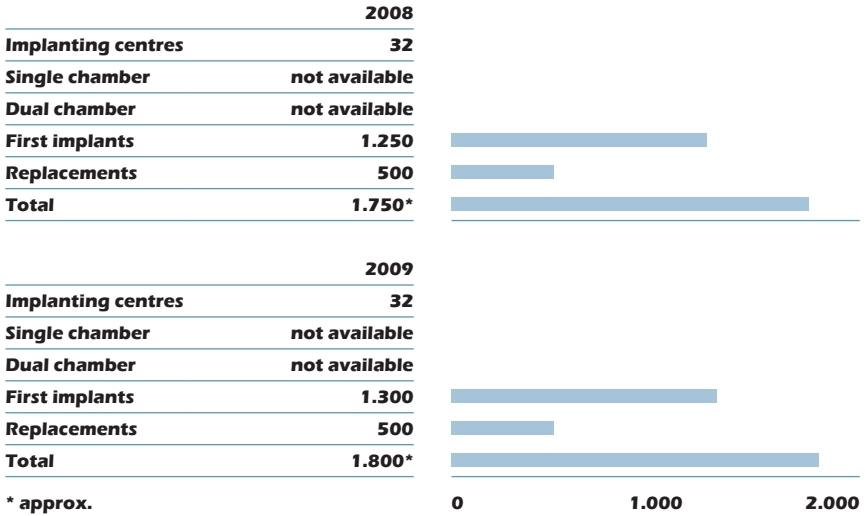


Specialty performing implants

Cardiologists	85%
Surgeons	15%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

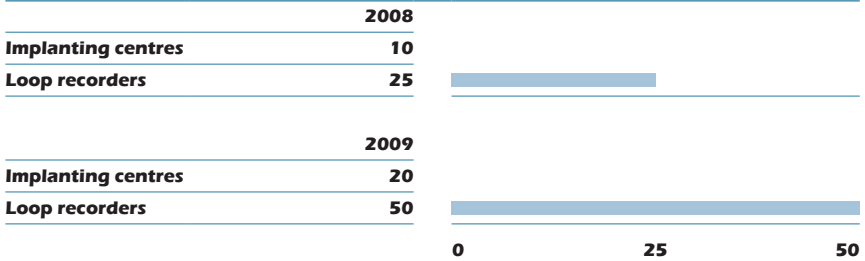


Specialty performing implants

Cardiologists	70%
Surgeons	30%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	95%
Surgeons	5%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology**	<input checked="" type="checkbox"/>

* Riziv database

** BeHRA database

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

FAGG

10. Interventional electrophysiology

Number of performing catheter ablation centres

42

	2008	2009
Number of ablations performed	4.283	4.932
Mean number (ablations/centres)	101	117
Number of AF ablations	912	1.322

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

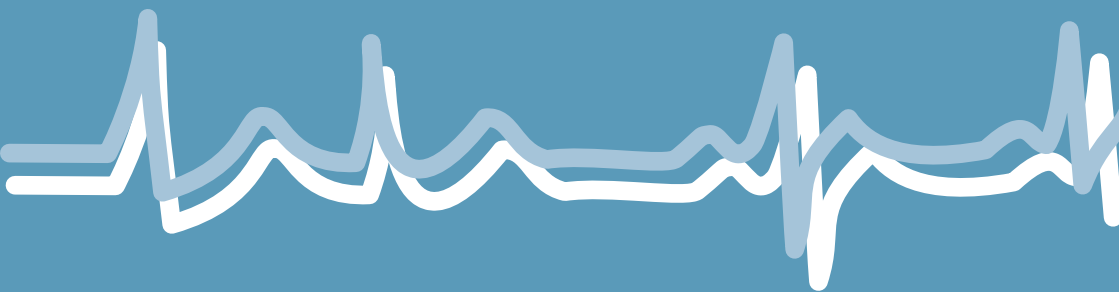
5 = great obstacle

Sources: Belgian Heart Rhythm Association (BeHRA)

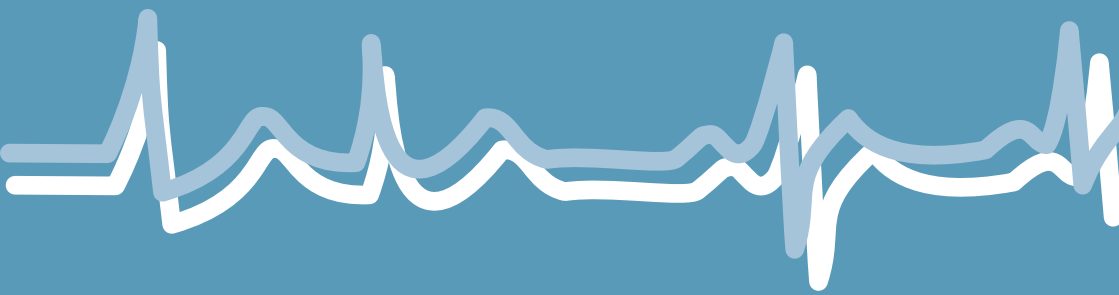


BOSNIA & HERZEGOVINA

There will be information in the next edition.

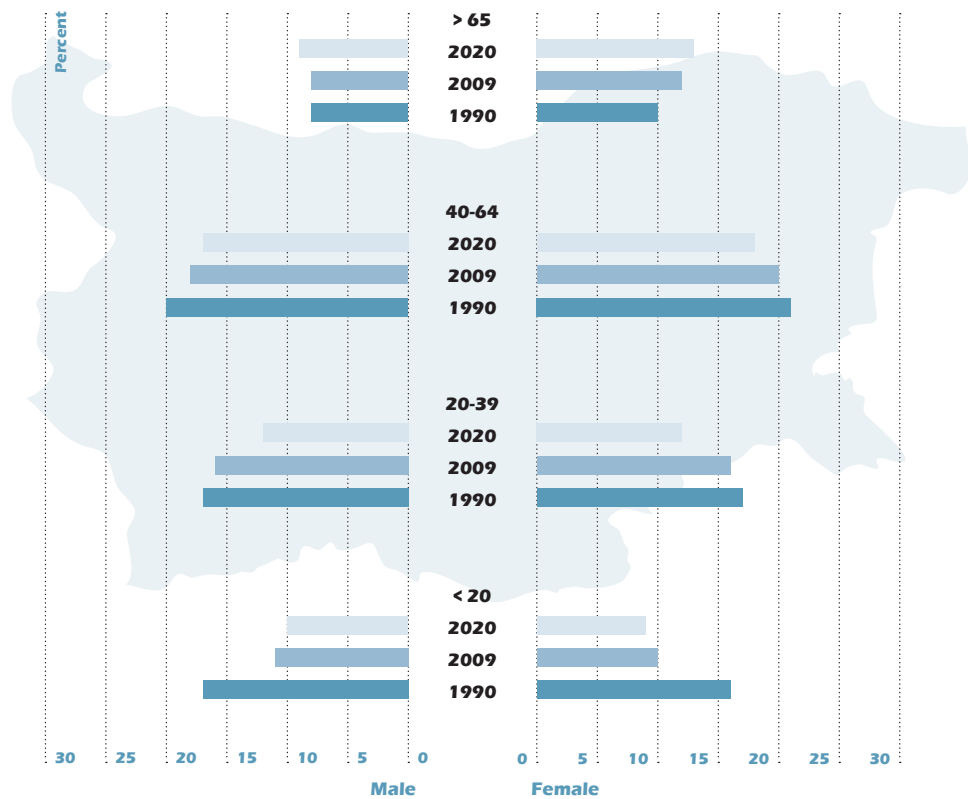


BULGARIA



1. Statistics

Age pyramid for Bulgaria





Healthcare data

Hospitals (per 100.000 population)	4,44	2007
Beds (per 100.000 population)	636,43	2007
Density of physicians (per 1.000 population)	3,64	2007
Density of nurses (per 1.000 population)	4,21	2007

Demographic information

Population annual growth rate (%)	-0,8	2009
Life expectancy at birth	72,77	2006
Death rate (per 1.000 population)	14,73	2006
Live births (per 1.000 population)	9,61	2006

Economic information

Gross domestic product (U.S dollar-billions)	44,77*	2009
Gross domestic product per capita (U.S dollar-units)	5.916,22*	2009
Total expenditure on health as % of GDP	6,9	2006
General government expenditure on health as % of total expenditure on health	59,8	2006
Private expenditure on health as % of total expenditure on health	40,2	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	988 per 100.000 citizens
2009	945 per 100.000 citizens

Proportion cardiac mortality over total mortality of the country

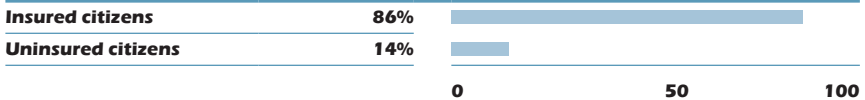
2008	68%
2009	66%

3. Healthcare System

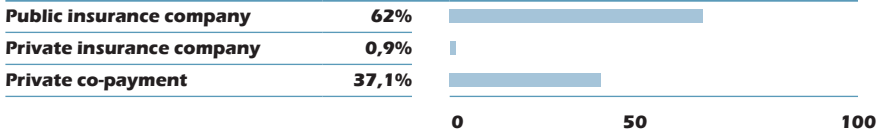
The National Health system includes National Health System Fund and fourteen private insurance funds.

Basic insurance availability Yes

Percentage of insured and uninsured citizens



Distribution of insurance modality



Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input checked="" type="checkbox"/>
Pacemakers	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>

Co-payment is necessary for all pacemakers except VVI type which is covered by the NHS Fund.

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

The NHS Fund does not cover ablation of atrial fibrillation.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

The National standards for device therapy and invasive electrophysiology are in process of regulation

National accreditation for physicians

No

The National accreditation for physicians is in process of regulation.

National accreditation for centres

No

The National accreditation for physicians is in process of regulation.

National Society supporting EHRA accreditation system

Yes

Specialty required for catheter ablation

Yes

Cardiology

Specialty required for ICD or pacemaker implants

Yes

Cardiology, surgery

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	1

Number of medical faculties

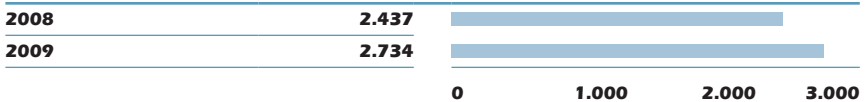
5

Percentage of academic facilities among practicing EP and implant centres

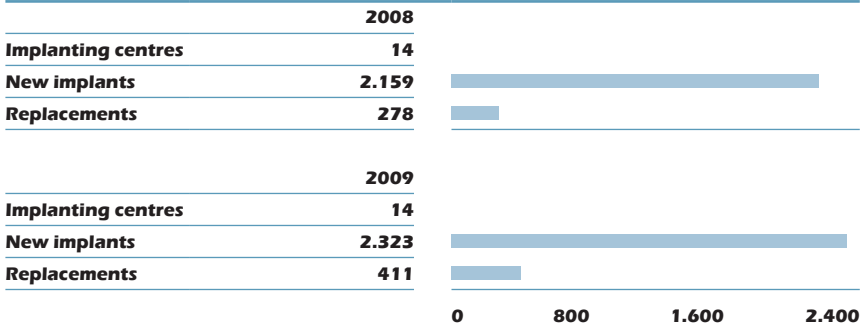
71,4%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



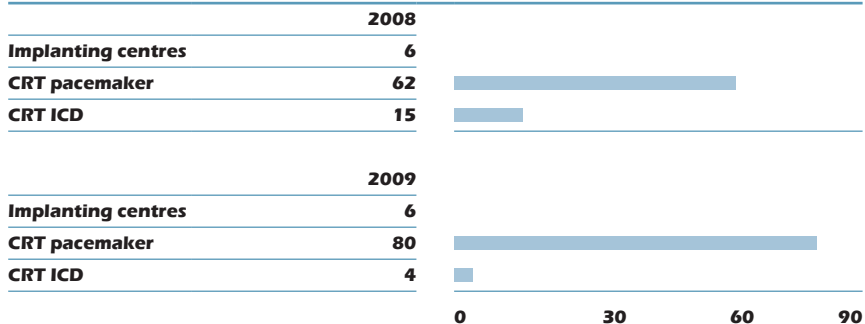


Specialty performing implants

Cardiologists	82,4%
Surgeons	17,6%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres



Specialty performing implants

Cardiologists	99%
Surgeons	1%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



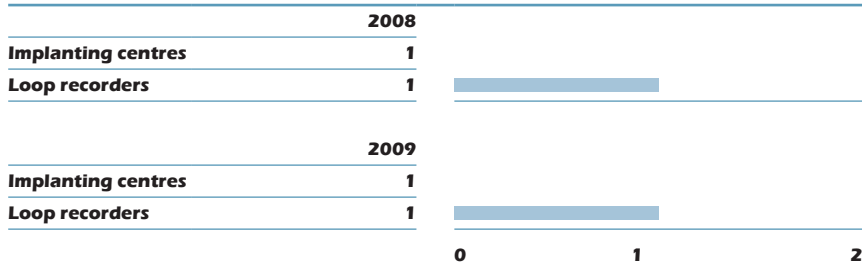
Specialty performing implants

Cardiologists	99%
Surgeons	1%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology*	<input checked="" type="checkbox"/>

* Ablation Registry National Heart Hospital

Availability of a national quality insurance system or complication registry

No

Availability of a national institution coordinating and guiding device recalls

No

10. Interventional electrophysiology

Number of performing catheter ablation centres 1

	2008	2009
Number of ablations performed	290	309
Mean number (ablations/centres)	290	309
Number of AF ablations	15	28

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language Yes

Obstacles to guideline implementation

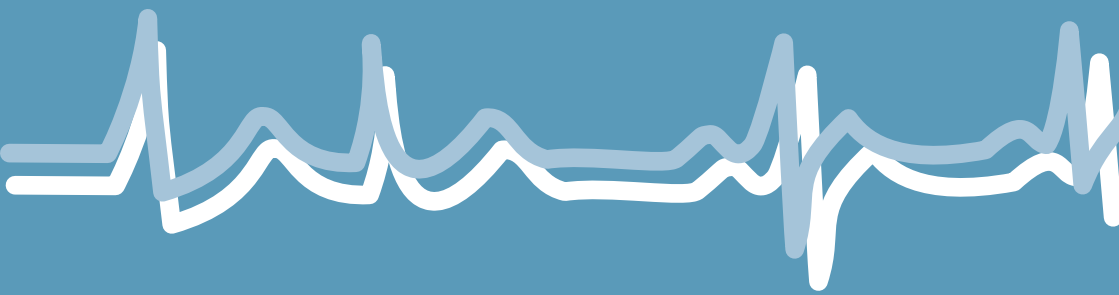
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

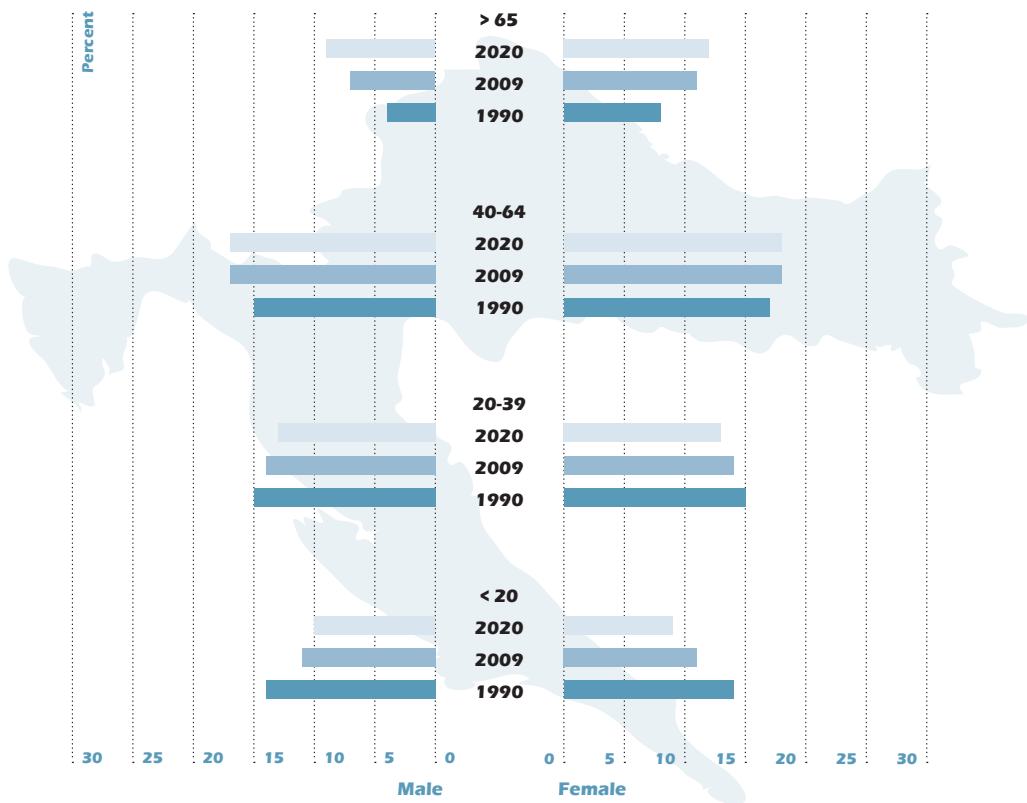
Sources: Bulgarian Working Group on Arrhythmias – Chairman: Dr. Svetoslav Iovchev and National Statistical Institute

CROATIA



1. Statistics

Age pyramid for Croatia





Healthcare data

Hospitals (per 100.000 population)	1,73	2007
Beds (per 100.000 population)	534,6	2007
Density of physicians (per 1.000 population)	2,59	2007
Density of nurses (per 1.000 population)	5,24	2007

Demographic information

Population annual growth rate (%)	-0,1	2009
Life expectancy at birth	76,14	2008
Death rate (per 1.000 population)	11,76	2008
Live births (per 1.000 population)	9,87	2008

Economic information

Gross domestic product (U.S dollar-billions)	61,72*	2009
Gross domestic product per capita (U.S dollar-units)	13.913,10*	2009
Total expenditure on health as % of GDP	7,5	2006
General government expenditure on health as % of total expenditure on health	80,1	2006
Private expenditure on health as % of total expenditure on health	19,9	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country

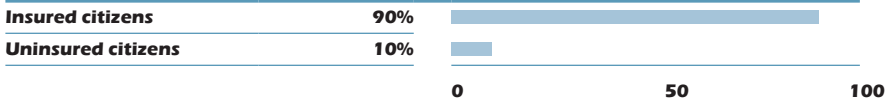
2008	50%
2009	50%

3. Healthcare System

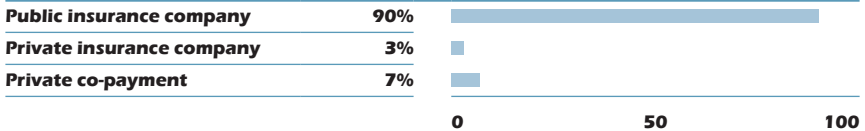
The Croatian healthcare system is based on the Health Insurance Institute in addition to private insurances.

Basic insurance availability Yes

Percentage of insured and uninsured citizens



Distribution of insurance modality



Possibility of subscribing to private health insurance plans Yes

Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>



Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>
Number of implantations and of ablations is limited by budget.	

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist, surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation No

Required period of training to perform implantations No

Training centres availability



Pacemaker	4
ICD implantation	4
Electrophysiological studies and catheter ablation	2
CRT implantation	4
Atrial fibrillation ablation	0

Number of medical faculties **4**



Percentage of academic facilities among practicing EP and implant centres **60%**

5. Pacemakers

Pacemaker units implanted

2008	2.166	
2009	2.274	
		0 800 1.600 2.400

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	11	
New implants	1.794	
Replacements	372	
		0 1.000 2.000
	2009	
Implanting centres	11	
New implants	not available	
Replacements	not available	

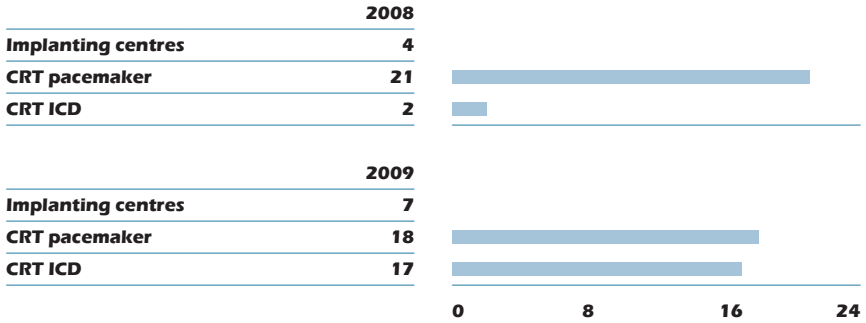
Specialty performing implants

Cardiologists	70%
Surgeons	30%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

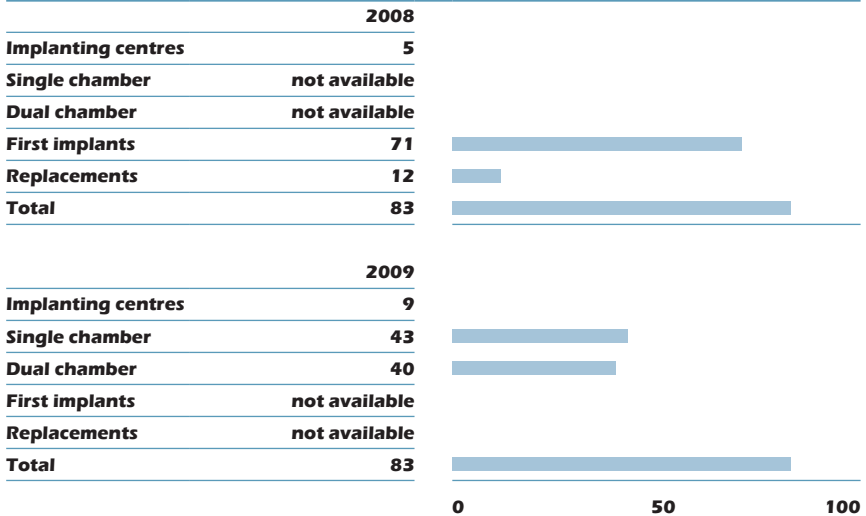


Specialty performing implants

Cardiologists	30%
Surgeons	70%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	70%
Surgeons	30%

8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008
Implanting centres	0
Loop recorders	0
	2009
Implanting centres	0
Loop recorders	0

Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>

Croatian Registry on Cardiac Pacing, ICD and Electrophysiology

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

Croatian Ministry of Health

10. Interventional electrophysiology

Number of performing catheter ablation centres

4

	2008	2009
Number of ablations performed	264	not available
Mean number (ablations/centres)	68	not available
Number of AF ablations	0	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

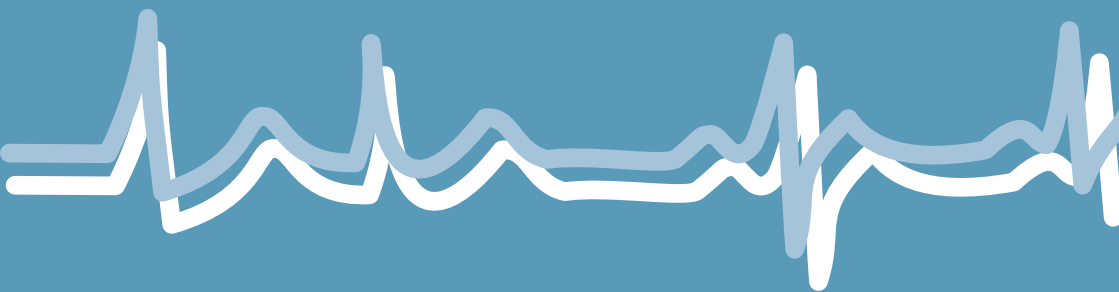
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

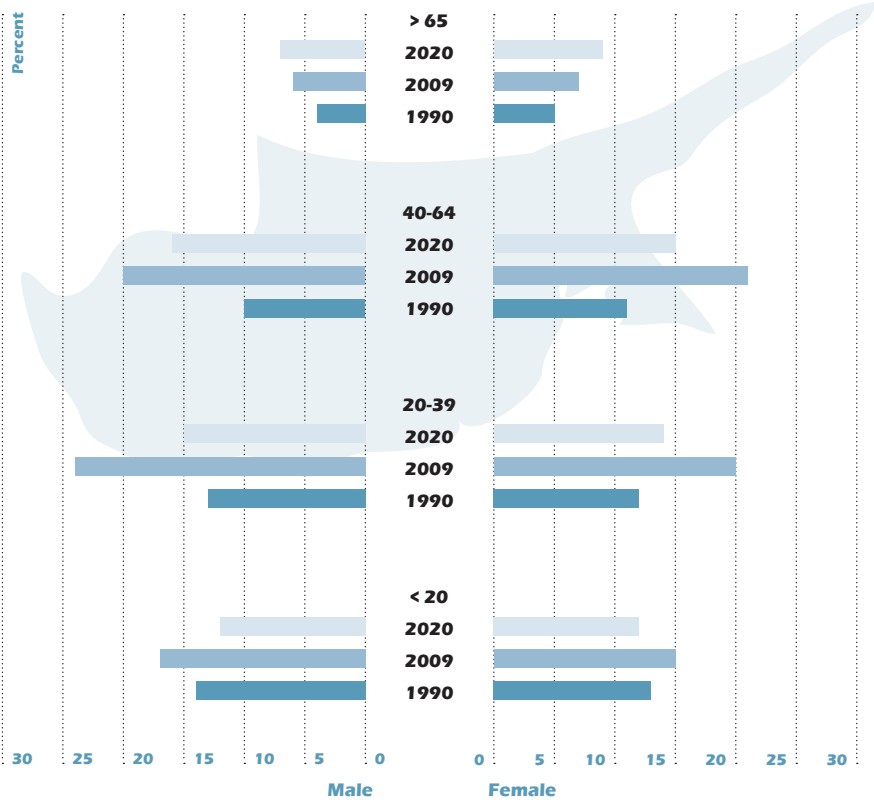
Sources: Working Group on Arrhythmias and Cardiac Pacing of the Croatian Cardiac Society – Chairman: Prof. Dubravko Petrac, Croatian Registry on Cardiac Pacing, ICD and Electrophysiology

CYPRUS



1. Statistics

Age pyramid for Cyprus





Healthcare data

Hospitals (per 100.000 population)	1,3	2006
Beds (per 100.000 population)	300	2006
Density of physicians (per 1.000 population)	2,53	2006
Density of nurses (per 1.000 population)	4,36	2006

Demographic information

Population annual growth rate (%)	1,7	2009
Life expectancy at birth	80,44	2007
Death rate (per 1.000 population)	6,39	2007
Live births (per 1.000 population)	10,19	2007

Economic information

Gross domestic product (U.S dollar-billions)	23,22*	2009
Gross domestic product per capita (U.S dollar-units)	30.238,56*	2009
Total expenditure on health as % of GDP	6,3	2006
General government expenditure on health as % of total expenditure on health	44,8	2006
Private expenditure on health as % of total expenditure on health	55,2	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	720 per 100.000 citizens
2009	720 per 100.000 citizens

Proportion cardiac mortality over total mortality of the country

2008	29%
2009	29%

3. Healthcare System

In Cyprus, free medical care is provided based on income criteria to above 85% of the population.



Private care is also available in the country.

Basic insurance availability No

Percentage of insured and uninsured citizens

Insured citizens	not available
Uninsured citizens	not available

Distribution of insurance modality

Public insurance company	70%		
Private insurance company	30%		
Private co-payment	not available		
	0	50	100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Income criteria apply	

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>
Income criteria apply	

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	2
ICD implantation	1
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	0

Number of medical faculties*

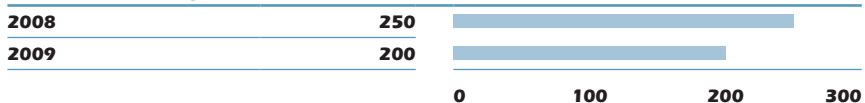
* Medical school to be established in 2012

Percentage of academic facilities among practicing EP and implant centres

0%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		4
New implants		not available
Replacements		not available
		2009
Implanting centres		5
New implants		not available
Replacements		not available

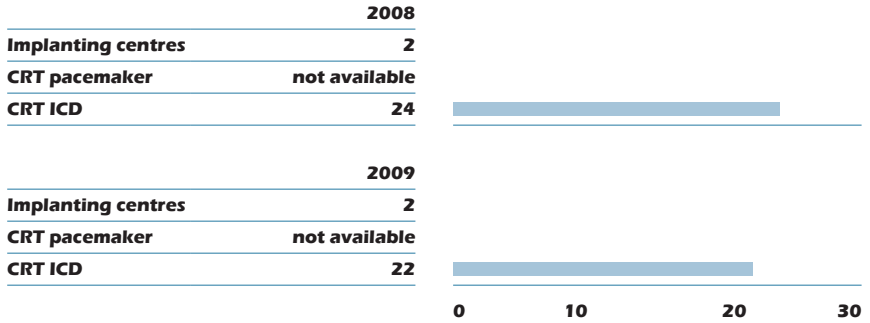


Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

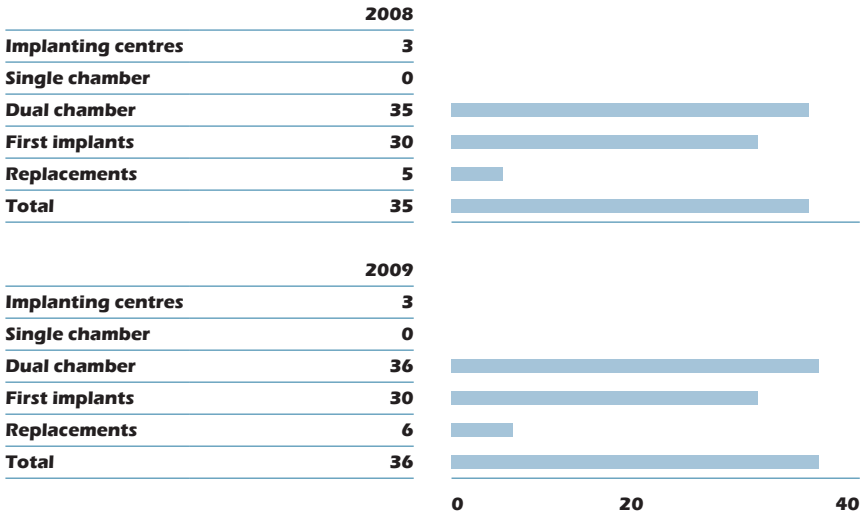


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



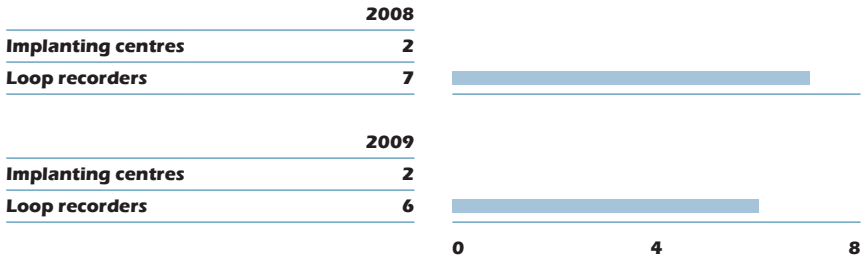
Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres

2

	2008	2009
Number of ablations performed	12	20
Mean number (ablations/centres)	6	10
Number of AF ablations	0	0

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

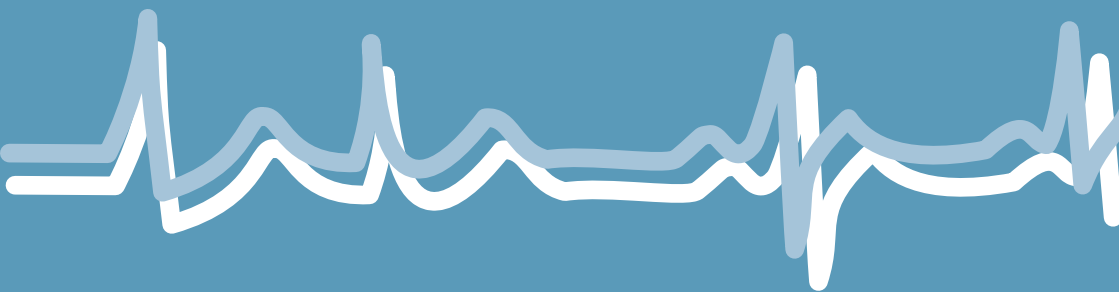
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

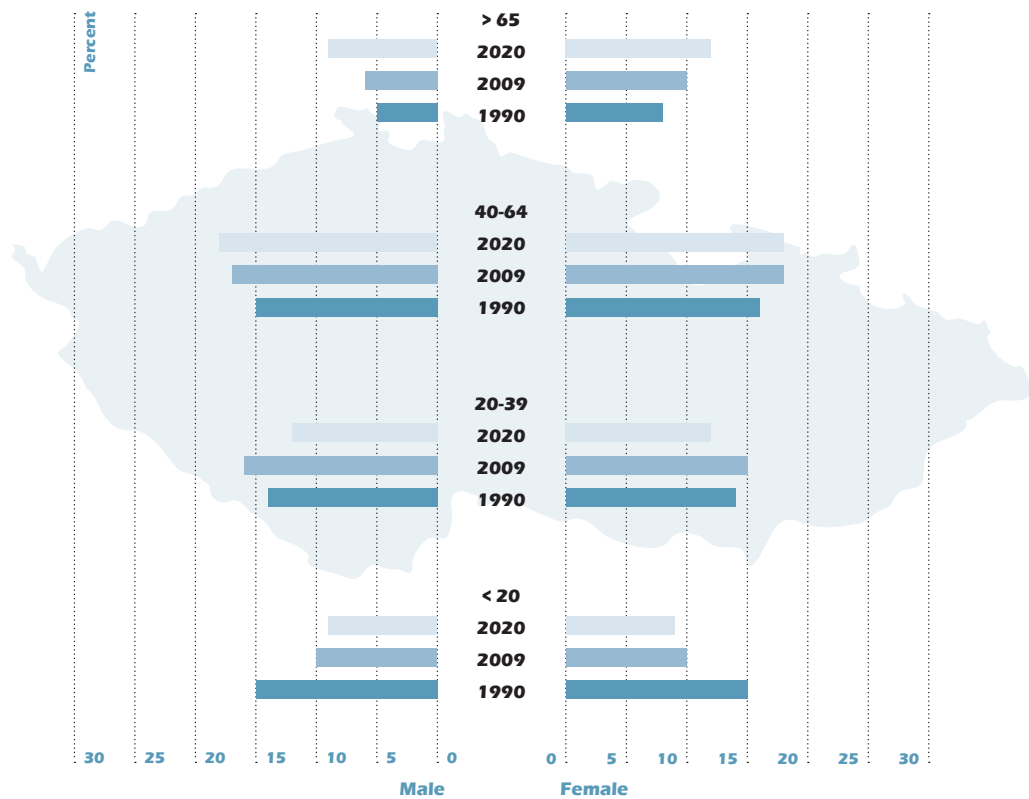
Sources: Cyprus Working Group in Arrhythmia and Cyprus Society of Cardiology –
President: Loizos Antoniadis MD PhD FESC FACC

CZECH REPUBLIC



1. Statistics

Age pyramid for Czech Republic





Healthcare data

Hospitals (per 100.000 population)	3,34	2007
Beds (per 100.000 population)	810,52	2007
Density of physicians (per 1.000 population)	3,57	2007
Density of nurses (per 1.000 population)	8,43	2007

Demographic information

Population annual growth rate (%)	-0,1	2009
Life expectancy at birth	77,42	2008
Death rate (per 1.000 population)	10,06	2008
Live births (per 1.000 population)	11,46	2008

Economic information

Gross domestic product (U.S dollar-billions)	189,66*	2009
Gross domestic product per capita (U.S dollar-units)	18.193,65*	2009
Total expenditure on health as % of GDP	6,8	2006
General government expenditure on health as % of total expenditure on health	87,9	2006
Private expenditure on health as % of total expenditure on health	12,1	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	511,1 per 100.000 citizens
2009	515,7 per 100.000 citizens*

* approx.

Proportion cardiac mortality over total mortality of the country

2008	49,8%
2009	50,3%*



* approx.

3. Healthcare System



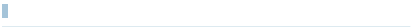
In Czech Republic the healthcare is provided primarily on the basis of a national statutory health insurance. There is almost no demand for supplementary private healthcare insurance, reimbursement is available through twelve State insurance companies. A limited number of services are not covered through the statutory healthcare system and require co-payment. (Source: Health Care System in Transition: Czech Republic. European Observatory on Health Systems and Policies, 2005)

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	99,9%			
Uninsured citizens	0,1%			
		0	50	100

Distribution of insurance modality

Public insurance company	99,8%			
Private insurance company	0,1%			
Private co-payment	0,1%			
		0	50	100

Possibility of subscribing to private health insurance plans No



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy*	<input checked="" type="checkbox"/>
Invasive electrophysiology**	<input checked="" type="checkbox"/>

* ICD and PM Accreditation

** EP Accreditation

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system not available

Specialty required for catheter ablation Yes

Cardiologist, licence for EP diagnostics, licence for ablations

Specialty required for ICD or pacemaker implants Yes

Cardiologist, surgeon, licence for implantation, follow-up

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Czech Society of Cardiology – Working Group on Arrhythmias and Cardiac Pacing

Required period of training to perform implantations

No*

* Requires certain number of implantations

Training centres availability

Pacemaker	15
ICD implantation	15
Electrophysiological studies and catheter ablation	15
CRT implantation	15
Atrial fibrillation ablation	7

Number of medical faculties



7

Percentage of academic facilities among practicing EP and implant centres





57%

5. Pacemakers

Pacemaker units implanted

2008	8.401	
2009	9.012	
		0 5.000 10.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	39	
New implants	6.440	
Replacements	1.961	
	2009	
Implanting centres	39	
New implants	6.774	
Replacements	2.238	
		0 4.000 8.000

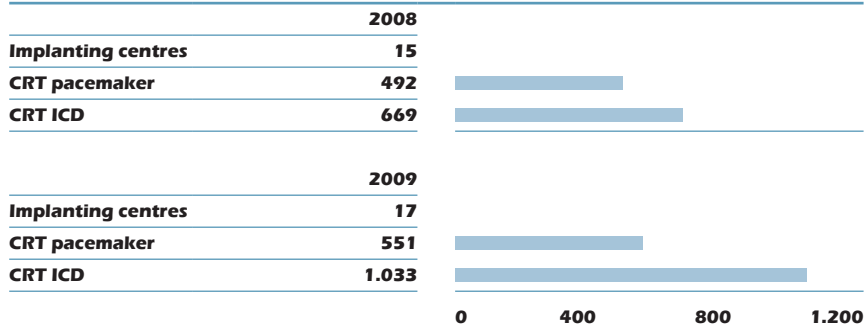


Specialty performing implants

Cardiologists	90%
Surgeons	10%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres



Specialty performing implants

Cardiologists	98%
Surgeons	2%



8. Loop recorders

Loop recorders implanted and number of implanting centres

2008		
Implanting centres	15	
Loop recorders	310	
2009		
Implanting centres	not available	
Loop recorders	170*	
* approx.		0 180 360

Specialty performing implants

Cardiologists	90%
Surgeons	10%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology***	<input checked="" type="checkbox"/>

* ICD registry

** PM registry

*** Ablation registry

Availability of a national quality insurance system or complication registry

Yes

State institute for drug control

Availability of a national institution coordinating and guiding device recalls

Yes

State institute for drug control

10. Interventional electrophysiology

Number of performing catheter ablation centres

18

	2008	2009
Number of ablations performed	3.470	3.980
Mean number (ablations/centres)	204	221
Number of AF ablations	902	1.215

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

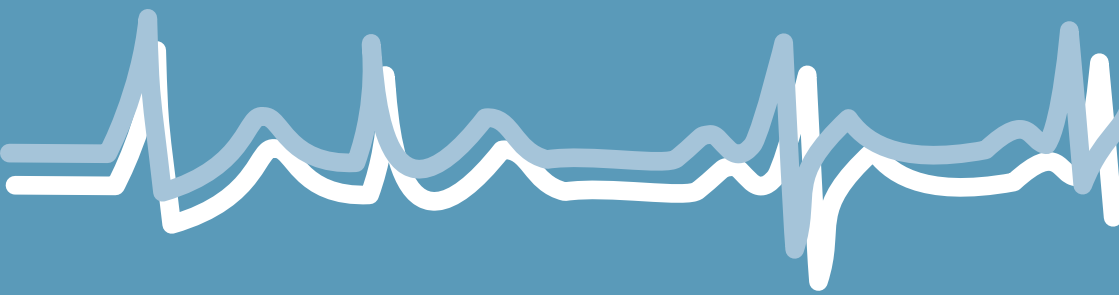
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

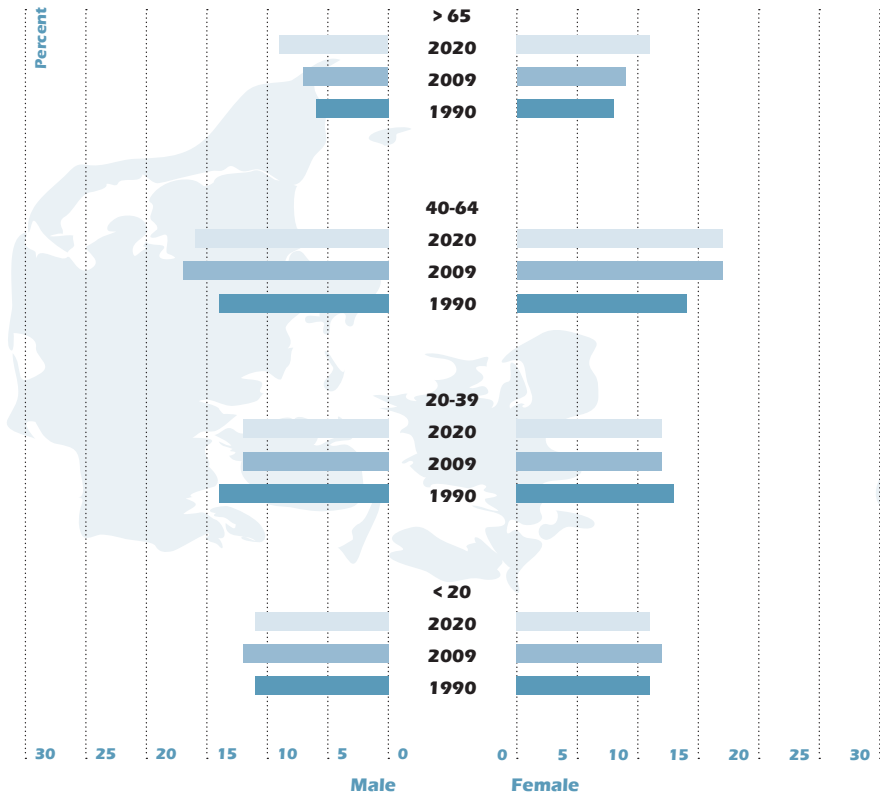
Sources: National Working Group on Arrhythmias and Cardiac Pacing, Czech Republic –
Chairman: Cihák Robert, MD, PhD

DENMARK



1. Statistics

Age pyramid for Denmark





Healthcare data

Hospitals (per 100.000 population)	1,09	2005
Beds (per 100.000 population)	349,48	2007
Density of physicians (per 1.000 population)	3,2	2006
Density of nurses (per 1.000 population)	9,61	2006

Demographic information

Population annual growth rate (%)	0,3	2009
Life expectancy at birth	78,51	2006
Death rate (per 1.000 population)	10,25	2006
Live births (per 1.000 population)	11,96	2006

Economic information

Gross domestic product (U.S dollar-billions)	308,32*	2009
Gross domestic product per capita (U.S dollar-units)	55.942,17*	2009
Total expenditure on health as % of GDP	9,5	2006
General government expenditure on health as % of total expenditure on health	84	2006
Private expenditure on health as % of total expenditure on health	16	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




Denmark has a National healthcare system which provides universal coverage for all residents. Hospital care, general practitioner services and healthcare services are free at the point of use. The private healthcare section is also a growing section in the country. (Highlights on health in Denmark, WHO, 2004)

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	100%			
Uninsured citizens	0%			
		0	50	100

Distribution of insurance modality

Public insurance company	100%			
Private insurance company	not available			
Private co-payment	not available			
		0	50	100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
The Danish National Board of Health	

National accreditation for physicians **Yes**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **No**

Specialty required for catheter ablation **Yes**

Cardiologist with special electrophysiology training

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist with special electrophysiology training

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Danish Society of Cardiology

Required period of training to perform implantations

5 years

Training centres availability

Pacemaker	5
ICD implantation	5
Electrophysiological studies and catheter ablation	6
CRT implantation	5
Atrial fibrillation ablation	6

Number of medical faculties

3



Percentage of academic facilities among practicing EP and implant centres

83%/40%*





*** 83% for EP and 40% for implantations**

5. Pacemakers

Pacemaker units implanted

2008	4.047	
2009	4.016	
		0 1.400 2.800 4.200

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	14	
New implants	2.984	
Replacements	1.063	
	2009	
Implanting centres	14	
New implants	2.955	
Replacements	982	
		0 1.500 3.000

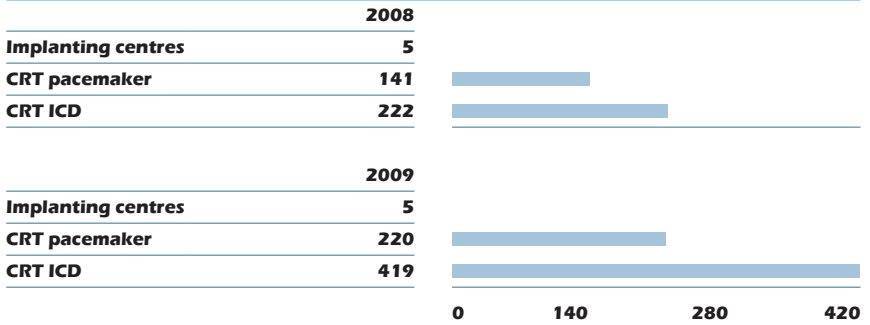


Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

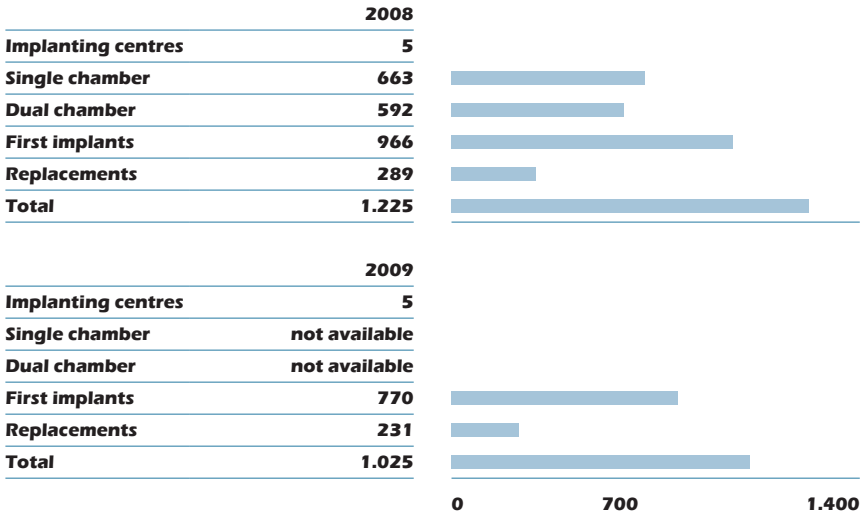


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

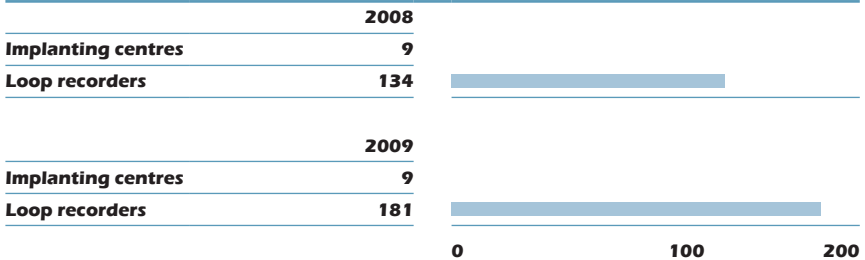


Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology***	<input checked="" type="checkbox"/>

* Danish ICD register

** Danish Pacemaker register

*** Ablation.dk since 2010

Availability of a national quality insurance system or complication registry **Yes**

Danish ICD and pacemaker register
Infection, lead displacement, reoperation

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres

6

	2008	2009
Number of ablations performed	2.315	2.684
Mean number (ablations/centres)	385	447
Number of AF ablations	1.100	1.237

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

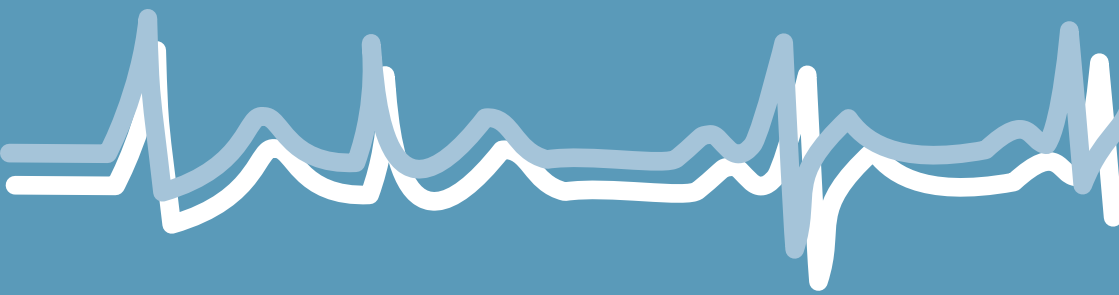
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

Sources: Danish Working group for Electrophysiology – President: Prof. Sam Riahi, Department of Cardiology, Aalborg Hospital, Århus University Hospital

EGYPT



1. Statistics

Age pyramid for Egypt



Healthcare data

Hospitals (per 100.000 population)	not available	2005
Beds (per 100.000 population)	220	2005
Density of physicians (per 1.000 population)	2,4	2005
Density of nurses (per 1.000 population)	3,4	2005

Demographic information

Population annual growth rate (%)	2	2009
Life expectancy at birth	68	2006
Death rate (per 1.000 population)	5,6	2006
Live births (per 1.000 population)	24	2007

Economic information

Gross domestic product (U.S dollar-billions)	187,95*	2009
Gross domestic product per capita (U.S dollar-units)	2.450,41*	2009
Total expenditure on health as % of GDP	6,3	2006
General government expenditure on health as % of total expenditure on health	40,7	2006
Private expenditure on health as % of total expenditure on health	59,3	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	1.100 per 1.000.000 citizens
2009	1.100 per 1.000.000 citizens

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




Egypt has a segmented health system. There are different public and private providers and financing agents. The main agents are: the government sector, the public sector which is known as Health Insurance Organisation (HIO), the Curative Care Organisations (CCO) and private organisations. Healthcare providers in the government sector are the Ministry of Health (MOH), teaching and university hospitals and Military and Police Hospitals.

Basic insurance availability **No**

Percentage of insured and uninsured citizens

Insured citizens	54%	
Uninsured citizens	46%	
		0 50 100

Distribution of insurance modality

Public insurance company	54%	
Private insurance company	1%	
Private co-payment	60-65%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input checked="" type="checkbox"/>
Ablation	<input type="checkbox"/>
Co-payments for DDI and others	

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist, subspecialty electrophysiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist, subspecialty electrophysiologist

Required period of training to perform implantations

4 years

Training centres availability

Pacemaker	12
ICD implantation	8
Electrophysiological studies and catheter ablation	6
CRT implantation	8
Atrial fibrillation ablation	4

Number of medical faculties

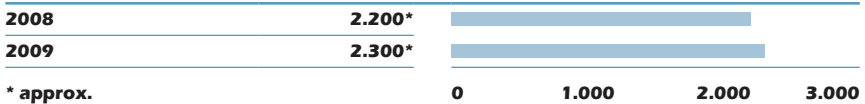
22

Percentage of academic facilities among practicing EP and implant centres

60%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



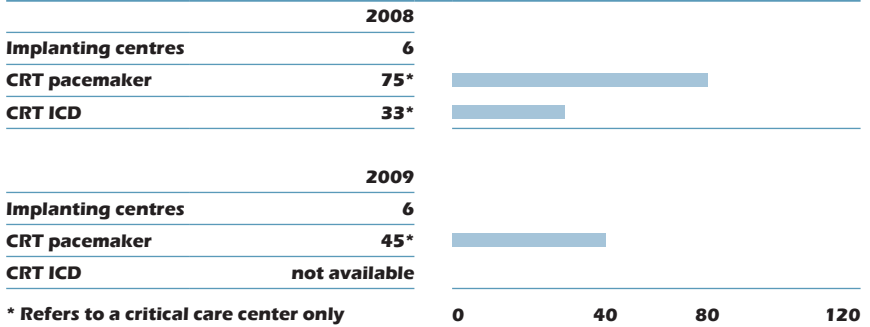


Specialty performing implants

Cardiologists	80%
Surgeons	0%
Other: Critical care physicians	20%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

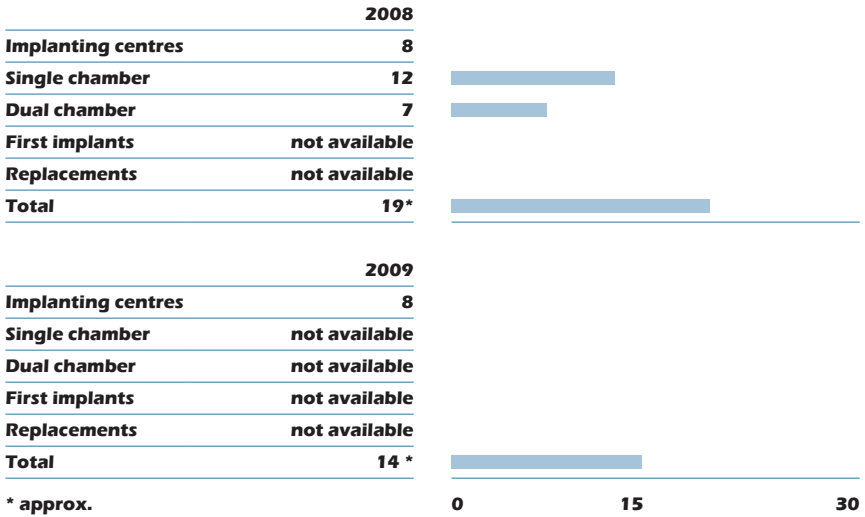


Specialty performing implants

Cardiologists	80%
Surgeons	0%
Other: Critical care physicians	20%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres




Specialty performing implants

Cardiologists	80%
Surgeons	0%
Other: Critical care physicians	20%



8. Loop recorders

Loop recorders implanted and number of implanting centres

		2008		
Implanting centres	2			
Loop recorders	2			
		2009		
Implanting centres	2			
Loop recorders	not available			
		0	2	4

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices No

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry No

Availability of a national institution coordinating and guiding device recalls No

10. Interventional electrophysiology

Number of performing catheter ablation centres

6

	2008	2009
Number of ablations performed	850*	859*
Mean number (ablations/centres)	141	143
Number of AF ablations	not available	not available

* approx.

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

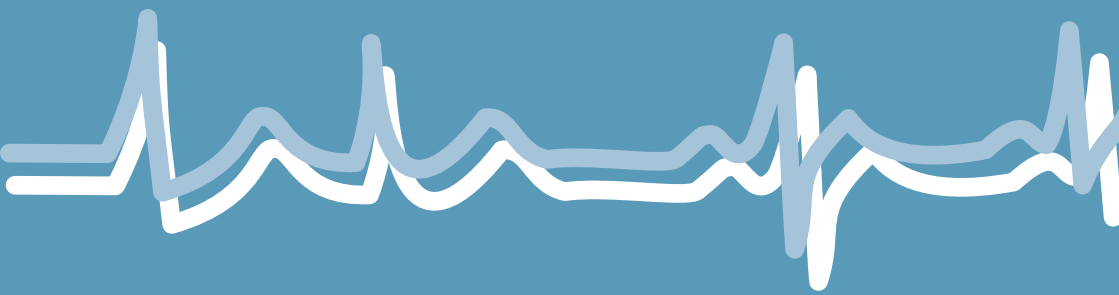
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

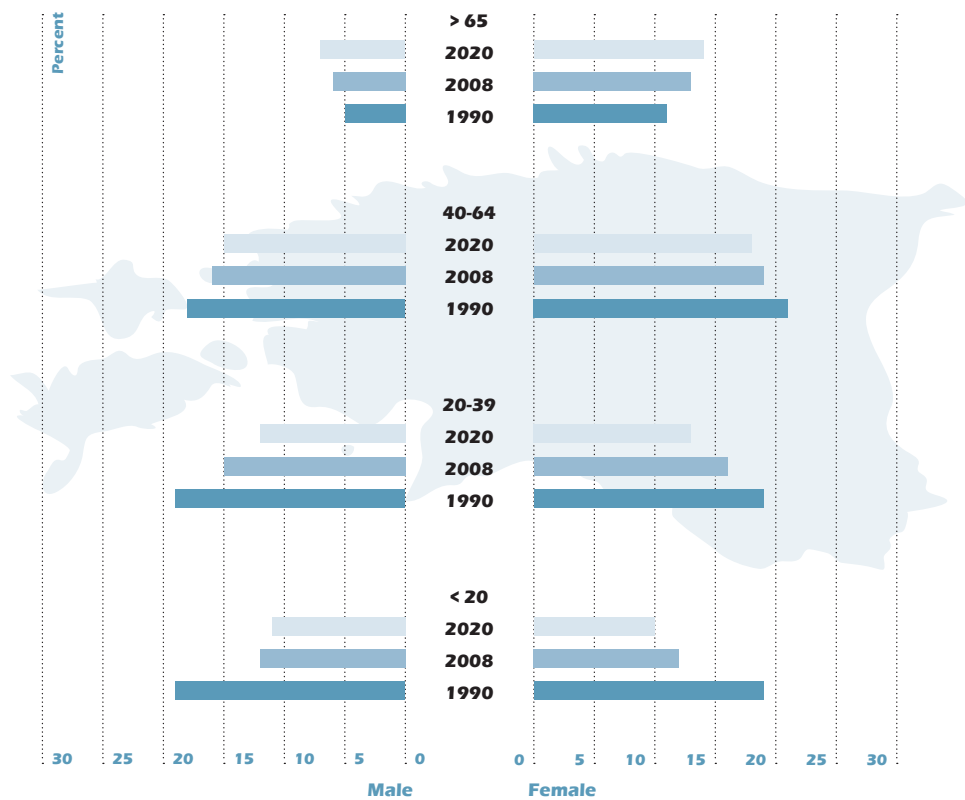
Sources: Egyptian Cardiac Rhythm Association (ECRA) – Chairman: Prof. Sherif M. Mokhtar and Egyptian Society of Cardiology – Vice President: Dr. Khairy Abdel Dayem, FRCP, PhD, FACC

ESTONIA



1. Statistics

Age pyramid for Estonia





Healthcare data

Hospitals (per 100.000 population)	4,25	2007
Beds (per 100.000 population)	556,99	2007
Density of physicians (per 1.000 population)	3,29	2006
Density of nurses (per 1.000 population)	6,55	2006

Demographic information

Population annual growth rate (%)	-0,6	2009
Life expectancy at birth	74,34	2008
Death rate (per 1.000 population)	12,44	2008
Live births (per 1.000 population)	11,96	2008

Economic information

Gross domestic product (U.S dollar-billions)	18,05*	2009
Gross domestic product per capita (U.S dollar-units)	13.509,10*	2009
Total expenditure on health as % of GDP	5,0	2006
General government expenditure on health as % of total expenditure on health	74,2	2006
Private expenditure on health as % of total expenditure on health	25,8	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist or cardiac surgeon

Required period of training to perform implantations

1 year

Training centres availability

Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	1

Number of medical faculties

1



Percentage of academic facilities among practicing EP and implant centres

50%/20%*





* 50% from EP centers, 20% from implanting centers

5. Pacemakers

Pacemaker units implanted

2008	1.113	
2009	1.032	
		0 600 1.200

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	5	
New implants	964	
Replacements	149	
	2009	
Implanting centres	5	
New implants	933	
Replacements	99	
		0 500 1.000

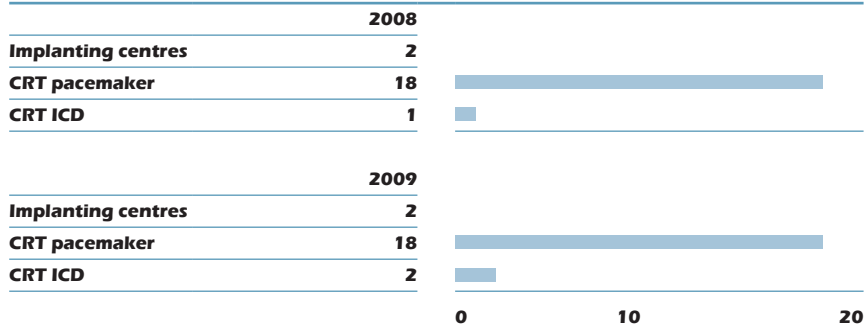


Specialty performing implants

Cardiologists	53,4%
Surgeons	36,6%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

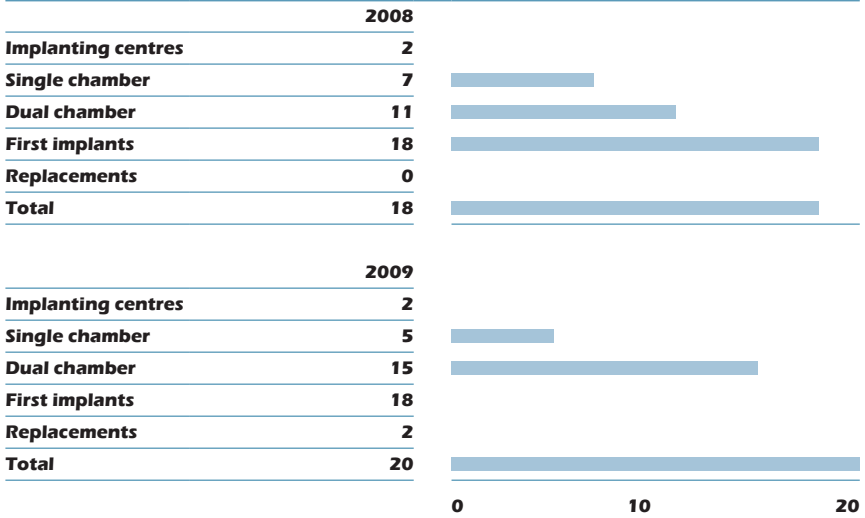


Specialty performing implants

Cardiologists	83,3%
Surgeons	16,7%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



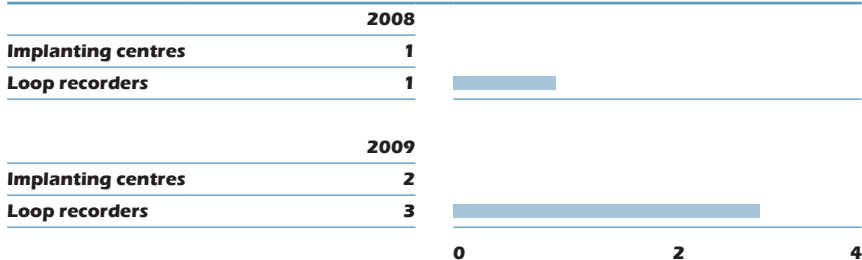
Specialty performing implants

Cardiologists	75%
Surgeons	25%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	67%
Surgeons	33%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

* Estonian Pacemaker and ICD implantation registry

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

„Ravimiamet“, function of the State Agency of Medicines

10. Interventional electrophysiology

Number of performing catheter ablation centres

2

	2008	2009
Number of ablations performed	497	420
Mean number (ablations/centres)	248	210
Number of AF ablations	93	97

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

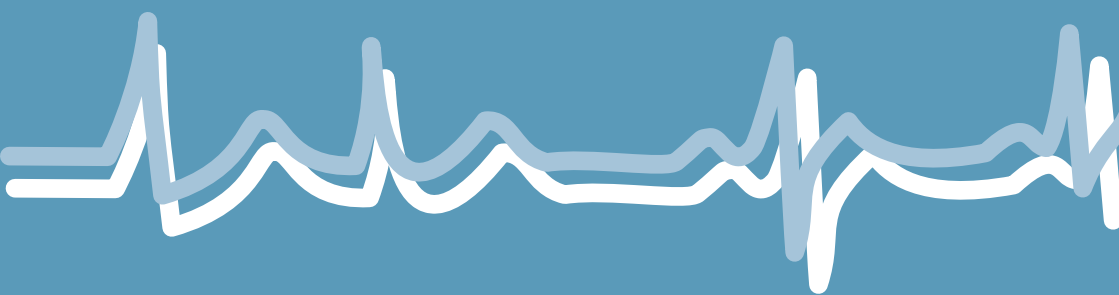
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

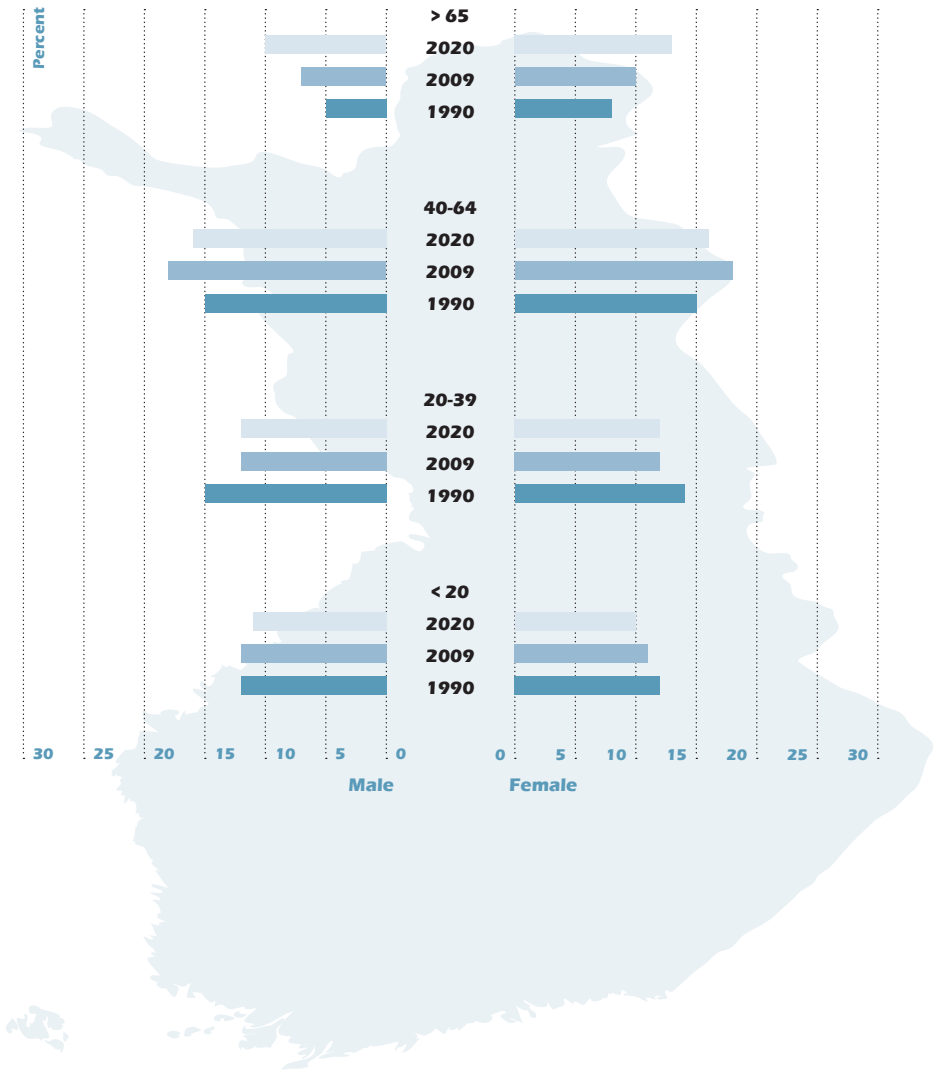
Sources: Estonian National Working Group of Arrhythmias – Chairman: Dr. Hasso Uetoa and Estonian Pacemaker and ICD implantation registry

FINLAND



1. Statistics

Age pyramid for Finland



Healthcare data

Hospitals (per 100.000 population)	6,45	2007
Beds (per 100.000 population)	682,49	2007
Density of physicians (per 1.000 population)	3,31	2007
Density of nurses (per 1.000 population)	8,55	2006

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	80,04	2008
Death rate (per 1,000 population)	9,24	2008
Live births (per 1,000 population)	11,2	2008

Economic information

Gross domestic product (U.S dollar-billions)	242,32*	2009
Gross domestic product per capita (U.S dollar-units)	45.876,38*	2009
Total expenditure on health as % of GDP	7,6	2006
General government expenditure on health as % of total expenditure on health	78,5	2006
Private expenditure on health as % of total expenditure on health	21,5	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	20,7%
2009	not available

3. Healthcare System




Finland has a compulsory health care system which is tax based. It provides comprehensive coverage for the entire population. The Ministry of Social Affairs and Health issues the legislation on health and social care policies and monitors the implementation. At local level, the municipal health committee and council make decisions on the planning and organization of healthcare. (Highlights on health in Finland, WHO, 2004)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		0 50 100

Distribution of insurance modality

Public insurance company	76%	
Private insurance company	5,3%	
Private co-payment	18,7%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **No**

There is no official specialty requirement, but in practice it is performed only by cardiologists or pediatric cardiologist.

Specialty required for ICD or pacemaker implants **No**

There is no official specialty requirement, but in practice it is performed by cardiologists, pediatric cardiologist and occasionally also by surgeons or specialists of internal medicine.

Required period of training to perform implantations

No

Training centres availability

Pacemaker	25
ICD implantation	16
Electrophysiological studies and catheter ablation	7
CRT implantation	8
Atrial fibrillation ablation	5

Number of medical faculties

5



Percentage of academic facilities among practicing EP and implant centres

71%/20%*





* 71% of the EP and 20% of the implanting centers

5. Pacemakers

Pacemaker units implanted

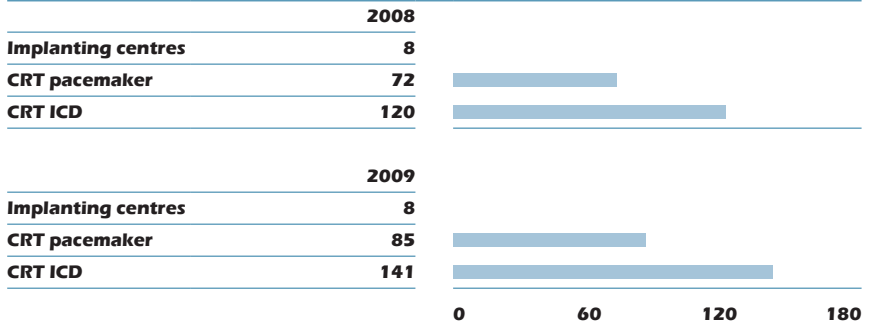
2008	4.214	
2009	4.248	
		0 1.500 3.000 4.500

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	25	
New implants	3.161	
Replacements	1.053	
	2009	
Implanting centres	25	
New implants	3.133	
Replacements	1.115	
		0 1.600 3.200

Specialty performing implants

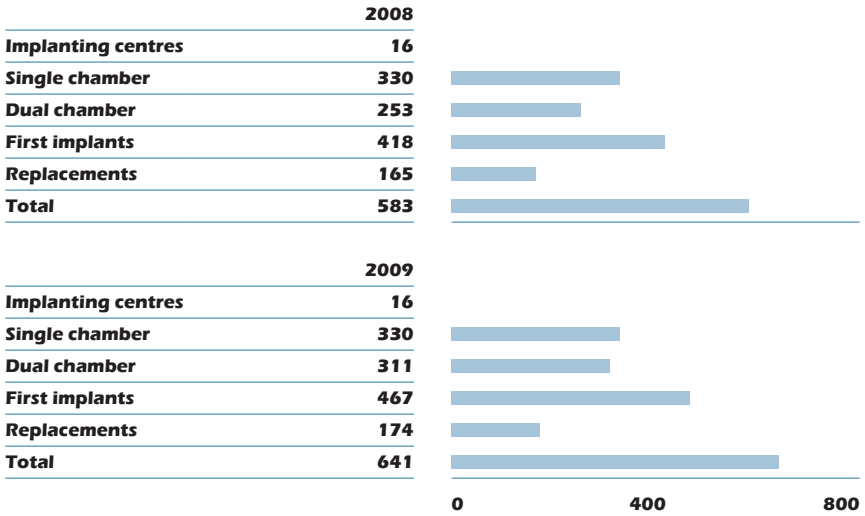
Cardiologists	95%
Surgeons	5%
Other: Internal medicine	5%

6. Cardiac resynchronization therapy devices**CRT units implanted and number of implanting centres****Specialty performing implants**

Cardiologists	95%
Surgeons	5%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

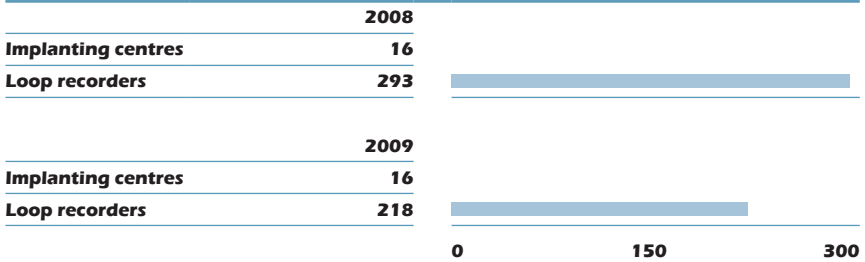


Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	95%
Surgeons	5%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **Yes**

National Agency for Medicines and Medical Devices Department

Availability of a national institution coordinating and guiding device recalls **Yes**

National Agency for Medicines and Medical Devices Department

10. Interventional electrophysiology

Number of performing catheter ablation centres

7

	2008	2009
Number of ablations performed	1.205	1.307
Mean number (ablations/centres)	172	186
Number of AF ablations	252	345

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

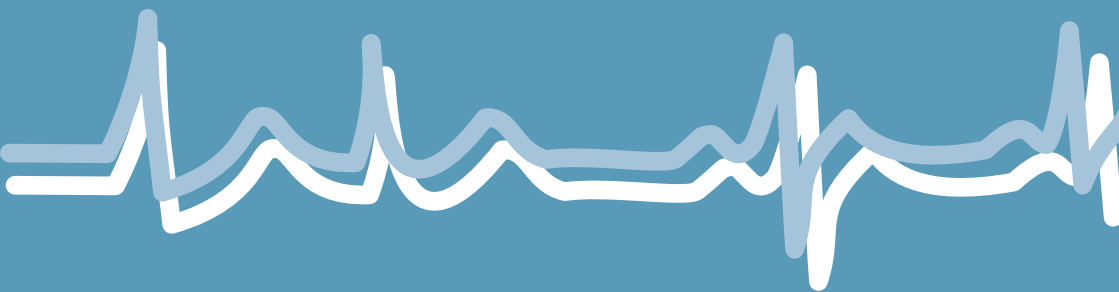
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

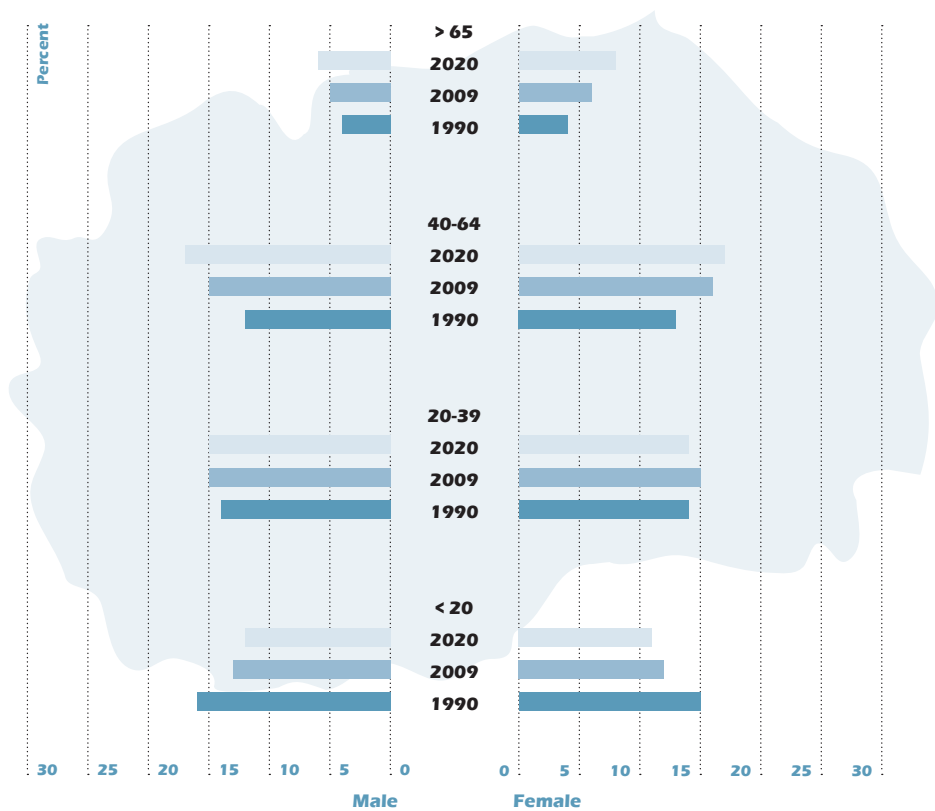
Sources: Finnish Working Group on Arrhythmias and Cardiac Pacing – Dr. Antti Hedman and Dr. Pekka Raatikainen

MACEDONIA FYR



1. Statistics

Age pyramid for Macedonia FYR





Healthcare data

Hospitals (per 100.000 population)	2,69	2007
Beds (per 100.000 population)	462,69	2006
Density of physicians (per 1.000 population)	2,54	2006
Density of nurses (per 1.000 population)	2,54	2006

Demographic information

Population annual growth rate (%)	0,3	2009
Life expectancy at birth	73	2006
Death rate (per 1,000 population)	8,88	2003
Live births (per 1,000 population)	11,04	2005

Economic information

Gross domestic product (U,S dollar-billions)	8,82*	2009
Gross domestic product per capita (U.S dollar-units)	4.281,46*	2009
Total expenditure on health as % of GDP	8,2	2006
General government expenditure on health as % of total expenditure on health	71,6	2006
Private expenditure on health as % of total expenditure on health	28,4	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




The healthcare system in the former Yugoslav Republic of Macedonia is based on a National Health system which is administrated by the Ministry of Health. A system of compulsory health insurance was established to coordinate health insurance for the population and to oversee health services. Private healthcare system is also available. (Healthcare systems in transition, 2000)

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	90%	
Uninsured citizens	10%	
		0 50 100

Distribution of insurance modality

Public insurance company	90%	
Private insurance company	10%	
Private co-payment	0%	
		0 50 100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Private medical sector requires payment which in major part is refunded by the Healthcare System.	

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	0

Number of medical faculties



2

Percentage of academic facilities among practicing EP and implant centres

50%




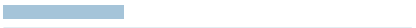
5. Pacemakers

Pacemaker units implanted

2008	224	
2009	245	

0 90 180 270

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	1	
New implants	181	
Replacements	43	
2009		
Implanting centres	1	
New implants	185	
Replacements	59	

0 100 200

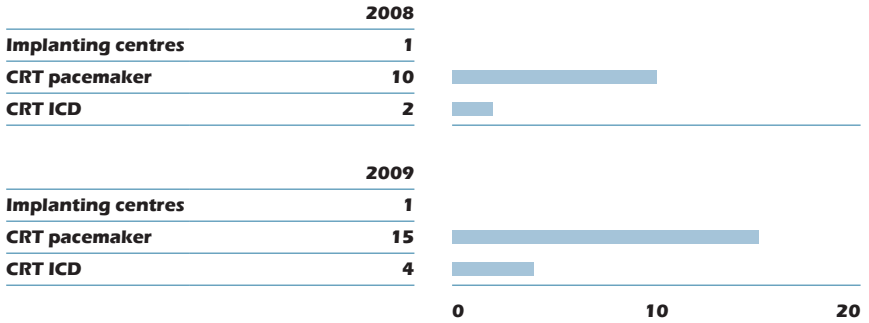


Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

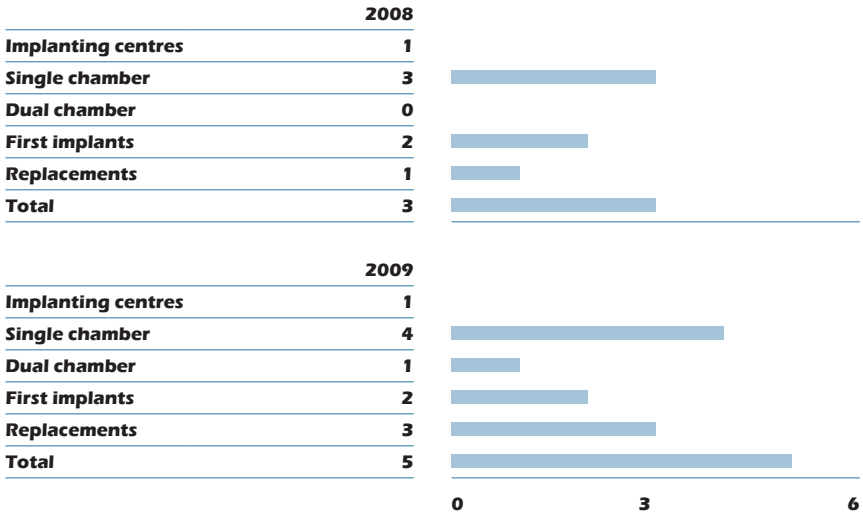


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008	
Implanting centres	1
Loop recorders	0

2009	
Implanting centres	1
Loop recorders	0



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

In very few centers

National registry for

ICD

Pacing

Electrophysiology

APAPE National Registry

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres 1

	2008	2009
Number of ablations performed	51	69
Mean number (ablations/centres)	51	69
Number of AF ablations	0	0

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language No

Obstacles to guideline implementation

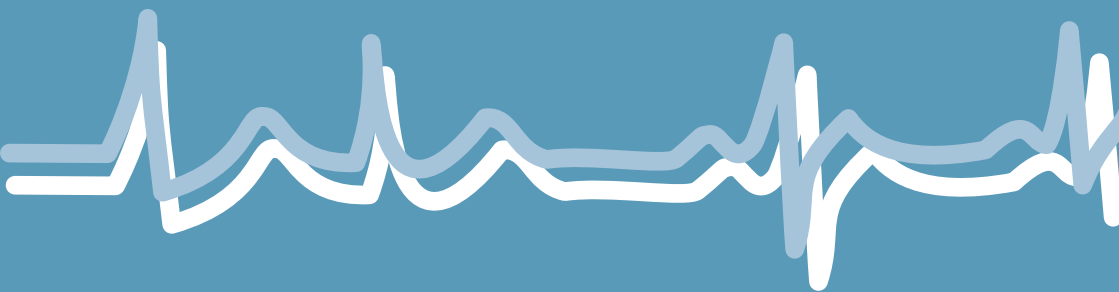
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

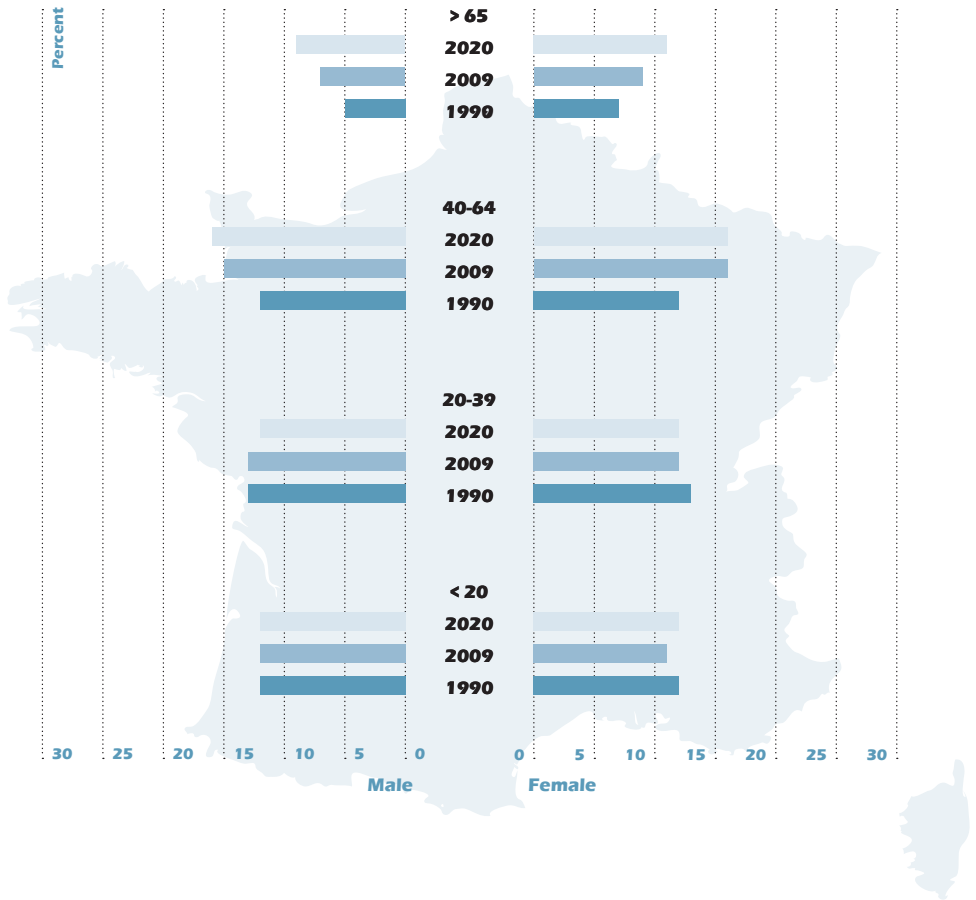
Working Group on Electrophysiology and Cardiac Pacing – Former Yugoslav Republic of Macedonia – President: Assist. Prof. Nikola Gjorgov

FRANCE



1. Statistics

Age pyramid for France





Healthcare data

Hospitals (per 100.000 population)	4,68	2005
Beds (per 100.000 population)	716,78	2006
Density of physicians (per 1.000 population)	3,42	2007
Density of nurses (per 1.000 population)	7,8	2007

Demographic information

Population annual growth rate (%)	0,5	2009
Life expectancy at birth	81,48	2007
Death rate (per 1.000 population)	8,4	2007
Live births (per 1.000 population)	12,69	2007

Economic information

Gross domestic product (U.S dollar-billions)	2.634,81*	2009
Gross domestic product per capita (U.S dollar-units)	42.091,32*	2009
Total expenditure on health as % of GDP	11,1	2006
General government expenditure on health as % of total expenditure on health	79,7	2006
Private expenditure on health as % of total expenditure on health	20,3	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




France's healthcare system is public based and completed by private healthcare insurances.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		0 50 100

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	0%	
Private co-payment	40%	
		0 50 100

Possibility of subscribing to private health insurance plans **No**

Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>



Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **No**

**National accreditation for centres to perform EP
For CRT and ICD** **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**
Cardiologist

Specialty required for ICD or pacemaker implants **Yes**
Cardiologist

**Official national competency guidelines for
electrophysiological studies or catheter ablation** **Yes**
Recommandations de la Société Française de Cardiologie

Required period of training to perform implantations

2 years

National DIU

Training centres availability

Pacemaker	120
ICD implantation	50
Electrophysiological studies and catheter ablation	50
CRT implantation	50
Atrial fibrillation ablation	20

Number of medical faculties



not available

Percentage of academic facilities among practicing EP and implant centres



50%

5. Pacemakers

Pacemaker units implanted

2008	63.000*	
2009	63.400	
* approx.		0 35.000 70.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	520	
New implants	54.400	
Replacements	12.600	
	2009	
Implanting centres	520	
New implants	not available	
Replacements	not available	
		0 30.000 60.000

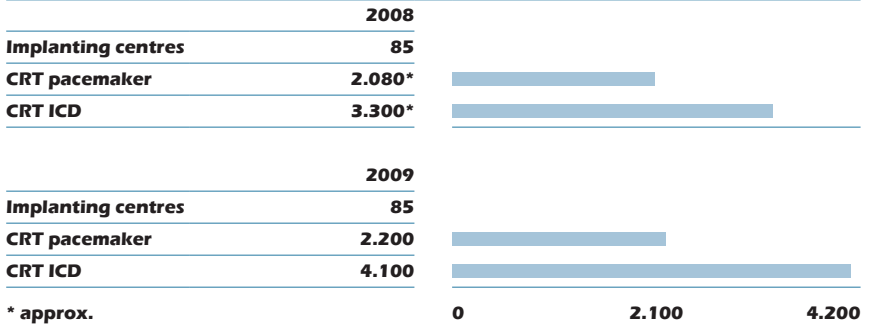


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres



Specialty performing implants





Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

Number of implanting centres

80

ICD units implanted and number of implanting centres


		2008	
Implanting centres		80	
Single chamber		2.500*	
Dual chamber		2.300*	
First implants		not available	
Replacements		not available	
Total		4.800*	
* approx.			
		2009	
Implanting centres		80	
Single chamber		not available	
Dual chamber		not available	
First implants		not available	
Replacements		not available	
Total		5.470	
* approx.			0 3.000 6.000

Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres

		2008	
Implanting centres		not available	
Loop recorders		not available	
		2009	
Implanting centres		not available	
Loop recorders		1.350	
			0 700 1.400

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
Stidefix	

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**
AFSSAPS

10. Interventional electrophysiology

Number of performing catheter ablation centres not available

	2008	2009
Number of ablations performed	not available	not available
Mean number (ablations/centres)	not available	not available
Number of AF ablations	not available	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language Yes

Obstacles to guideline implementation

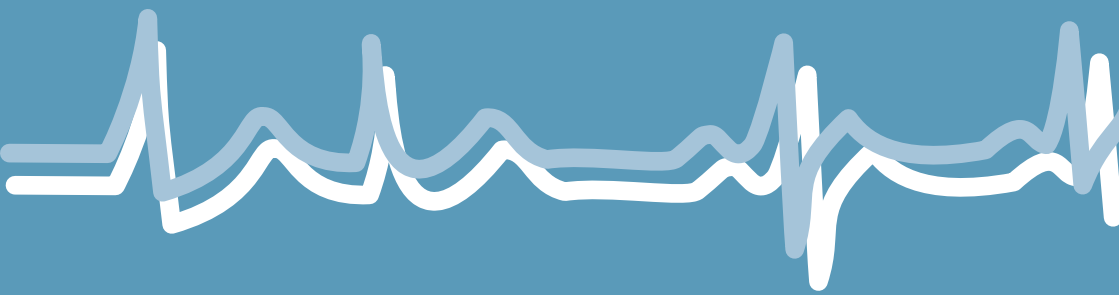
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

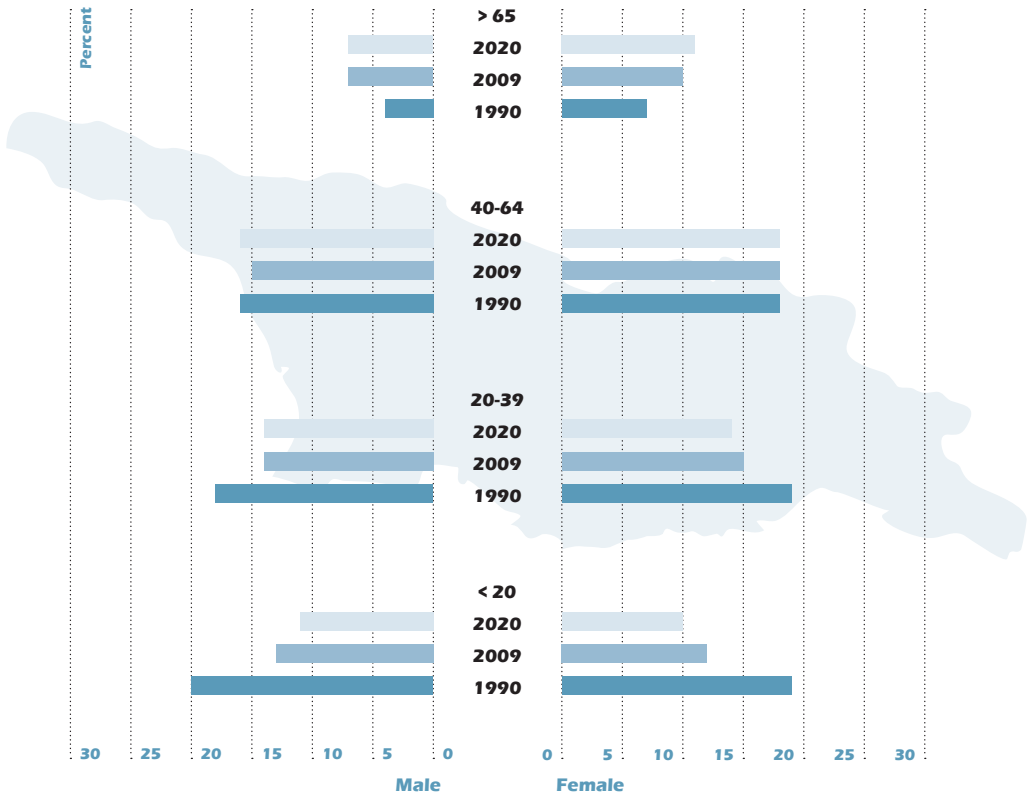
Source: Groupe de travail de Rythmologie et stimulation cardiaque – Chairman: Dr. Philippe Mabo

GEORGIA



1. Statistics

Age pyramid of Georgia





Healthcare data

Hospitals (per 100.000 population)	6,04	2007
Beds (per 100.000 population)	331,9	2007
Density of physicians (per 1.000 population)	4,55	2007
Density of nurses (per 1.000 population)	3,63	2007

Demographic information

Population annual growth rate (%)	-0,3	2009
Life expectancy at birth	73,1	2005
Death rate (per 1.000 population)	11,8	2006
Live births (per 1.000 population)	10,66	2005

Economic information

Gross domestic product (U.S dollar-billions)	10,98*	2009
Gross domestic product per capita (U.S dollar-units)	2.495,62*	2009
Total expenditure on health as % of GDP	8,4	2006
General government expenditure on health as % of total expenditure on health	21,5	2006
Private expenditure on health as % of total expenditure on health	78,5	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	332 per 100.000 citizens
2009	367 per 100.000 citizens

Proportion cardiac mortality over total mortality of the country



2008	35%
2009	38%

3. Healthcare System




In Georgia, the healthcare system is organised through the NHS Fund, private insurance companies and private payments.

Basic insurance availability No

Percentage of insured and uninsured citizens

Insured citizens	40%	
Uninsured citizens	60%	
		0 50 100

Distribution of insurance modality

Public insurance company	15%	
Private insurance company	35%	
Private co-payment	50%	
		0 50 100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input checked="" type="checkbox"/>
Pacemakers	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist, surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation **No**

Required period of training to perform implantations **No**

Training centres availability

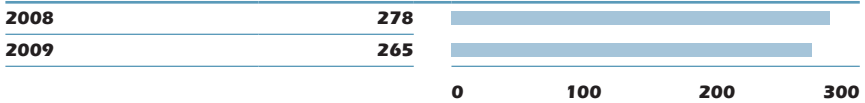
Pacemaker	0
ICD implantation	0
Electrophysiological studies and catheter ablation	0
CRT implantation	0
Atrial fibrillation ablation	0

Number of medical faculties **6**

Percentage of academic facilities among practicing EP and implant centres **40%**

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		5
New implants		not available
Replacements		not available
		2009
Implanting centres		5
New implants		not available
Replacements		not available

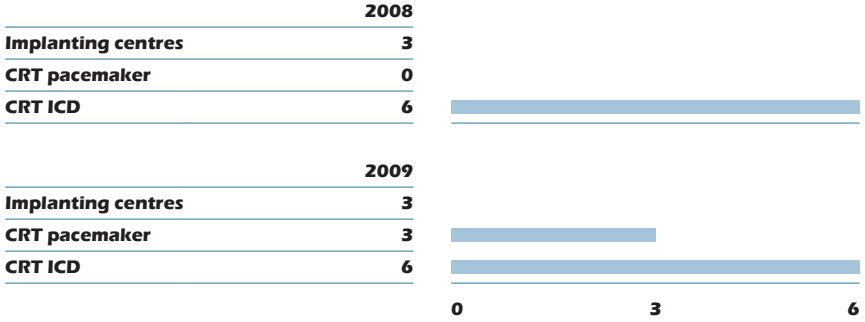
Specialty performing implants

Cardiologists	90%
Surgeons	10%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

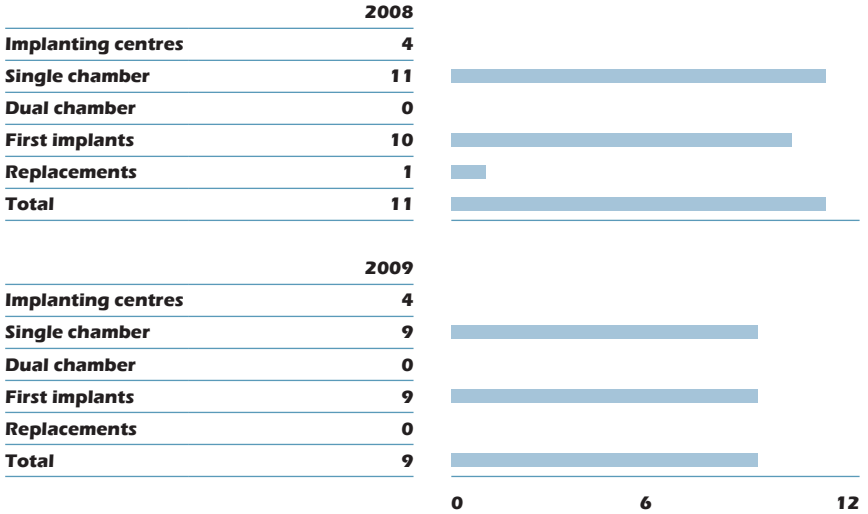


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008
Implanting centres	0
Loop recorders	0

	2009
Implanting centres	0
Loop recorders	0

Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres **4**

	2008	2009
Number of ablations performed	108	150
Mean number (ablations/centres)	35	37
Number of AF ablations	0	4

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language **Yes**

Obstacles to guideline implementation

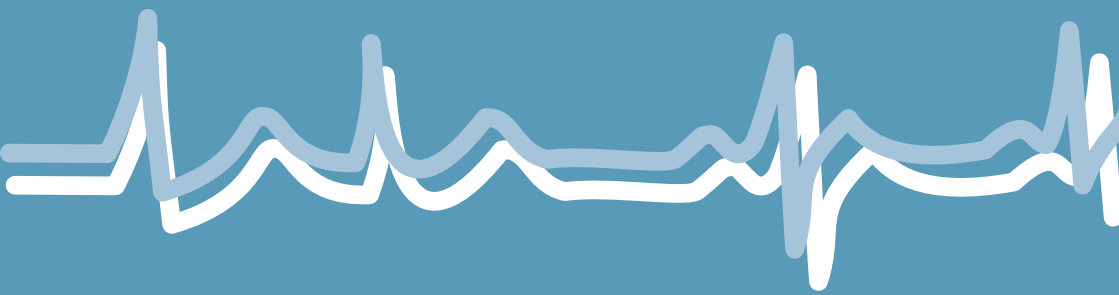
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

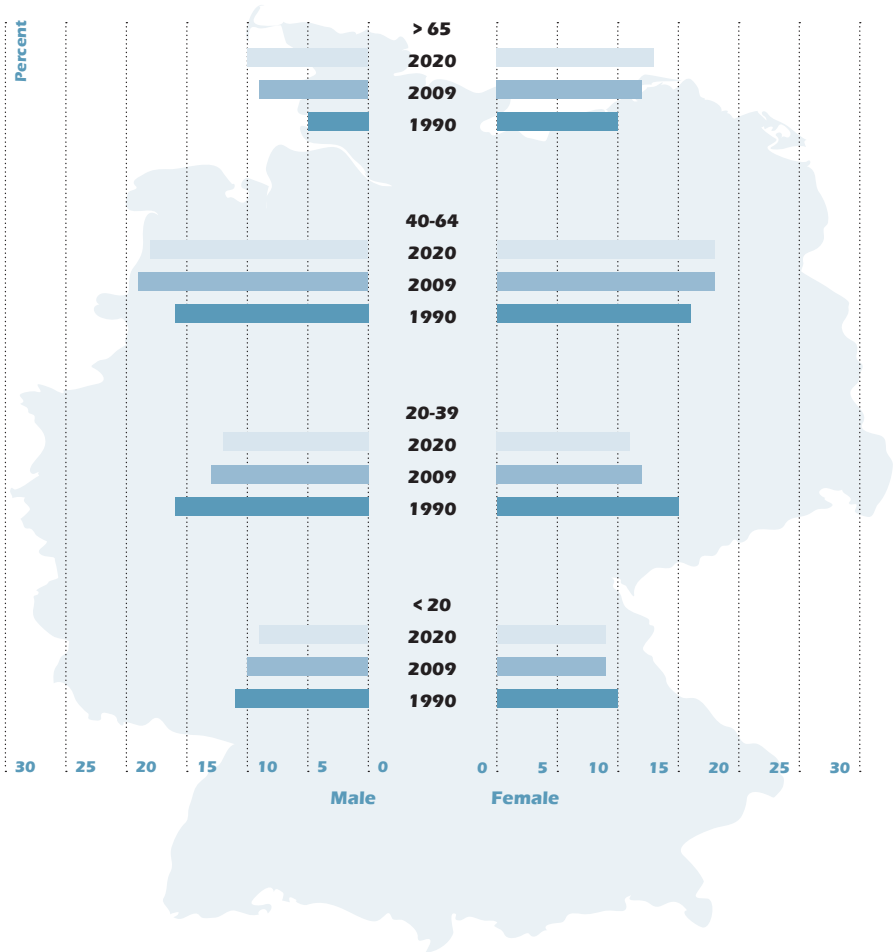
**Sources: Working Group on Arrhythmias of the Georgian College of Cardiology –
Chairman: Giorgi Papiashvili, EP practicing centers and the Ministry of Labour, Health and
Social Affairs of Georgia**

GERMANY



1. Statistics

Age pyramid for Germany





Healthcare data

Hospitals (per 100.000 population)	4,07	2006
Beds (per 100.000 population)	829,09	2006
Density of physicians (per 1.000 population)	3,48	2007
Density of nurses (per 1.000 population)	7,81	2006

Demographic information

Population annual growth rate (%)	-0,1	2009
Life expectancy at birth	79,86	2006
Death rate (per 1,000 population)	9,97	2006
Live births (per 1,000 population)	8,16	2006

Economic information

Gross domestic product (U.S dollar-billions)	3.235,46*	2009
Gross domestic product per capita (U.S dollar-units)	39.442,44*	2009
Total expenditure on health as % of GDP	10,4	2006
General government expenditure on health as % of total expenditure on health	76,6	2006
Private expenditure on health as % of total expenditure on health	23,4	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	434 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	43,4%
2009	not available

3. Healthcare System



Germany has a universal multi-payer system with two main types of health insurance. Currently, 85% of the population is covered by a basic health insurance plan provided by statute, which provides a standard level of coverage. The remaining opt for private health insurance, which frequently offers additional benefits.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	99,88%	
Uninsured citizens	0,12%	
		0 50 100

Distribution of insurance modality

Public insurance company	89,5%	
Private insurance company	10,5%	
Private co-payment	not available	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Patients with public insurance do not have to pay co-payments. Deductibles in private insured patients depends on the contract.

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres No

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist, Surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

German Cardiac Society (Deutsche Gesellschaft für Kardiologie- Herz- und Kreislaufforschung e.V.), Leitlinien zur elektrophysiologischen Untersuchung, Leitlinien zur Katheterablation

Required period of training to perform implantations

5-7 years*

*** 5-6 years as a surgeon, 5 years as a cardiologist or 7 years through global internal medicine. A prespecified number of implants is needed to receive the level of competency.**

Training centres availability

Pacemaker	1.048
ICD implantation	561
Electrophysiological studies and catheter ablation	300*
CRT implantation	371
Atrial fibrillation ablation	30*

*** approx.**

Number of medical faculties

36

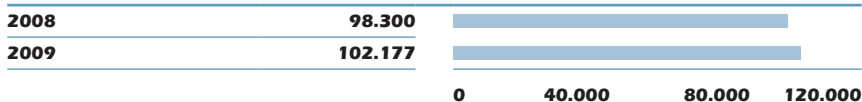
Percentage of academic facilities among practicing EP and implant centres

20%*

*** approx.**

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

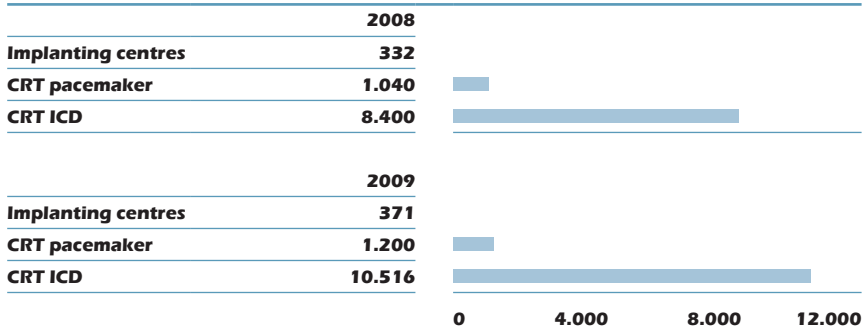
2008	
Implanting centres	1.035
New implants	not available
Replacements	not available
2009	
Implanting centres	1.048
New implants	not available
Replacements	not available

Specialty performing implants

Cardiologists	58%
Surgeons	30%
Other: Cardiac surgeons, pediatric surgeons, pediatric cardiologists	12%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

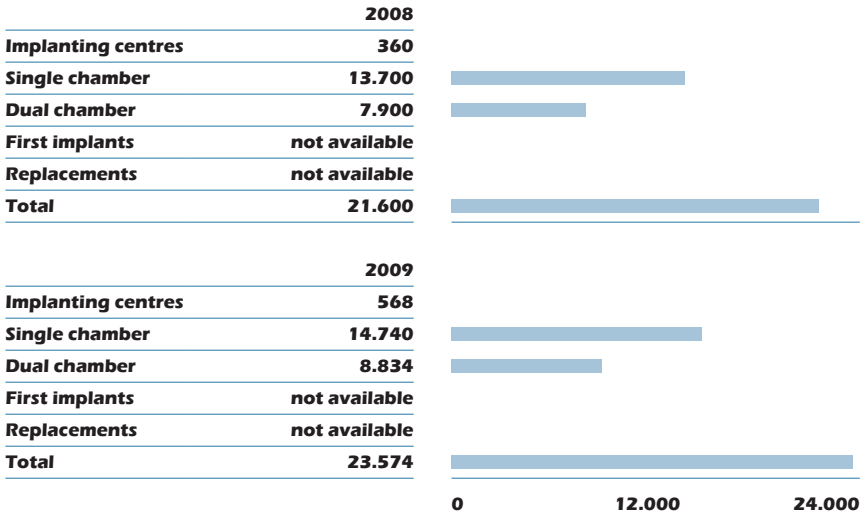


Specialty performing implants

Cardiologists	45%
Surgeons	5%
Other: Both together	50%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	30%
Surgeons	50%
Other: Both speciality together	20%



8. Loop recorders

Loop recorders implanted and number of implanting centres

2008	
Implanting centres	not available
Loop recorders	not available
2009	
Implanting centres	not available
Loop recorders	not available

Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology*	<input checked="" type="checkbox"/>

* Pacemaker and Ablation Registry

Availability of a national quality insurance system or complication registry **Yes**

BQS Registry

It is compulsory for pacemaker implantation and currently introduced for ICD-Implantation

Availability of a national institution coordinating and guiding device recalls **Yes**

Federal Institute for Drugs and Medical Devices, Bonn

The Federal Institute for Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte – BfArM) is a medical regulatory body in Germany that operates under the Federal Ministry of Health.

10. Interventional electrophysiology

Number of performing catheter ablation centres

191

	2008	2009
Number of ablations performed	39.500	not available
Mean number (ablations/centres)	207	not available
Number of AF ablations	10.000	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

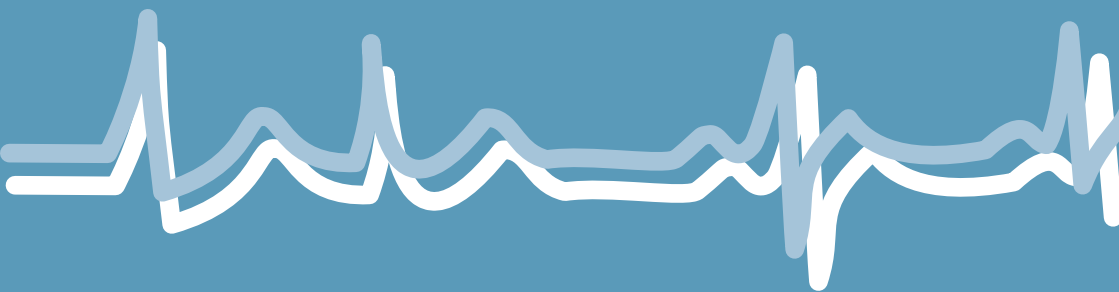
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

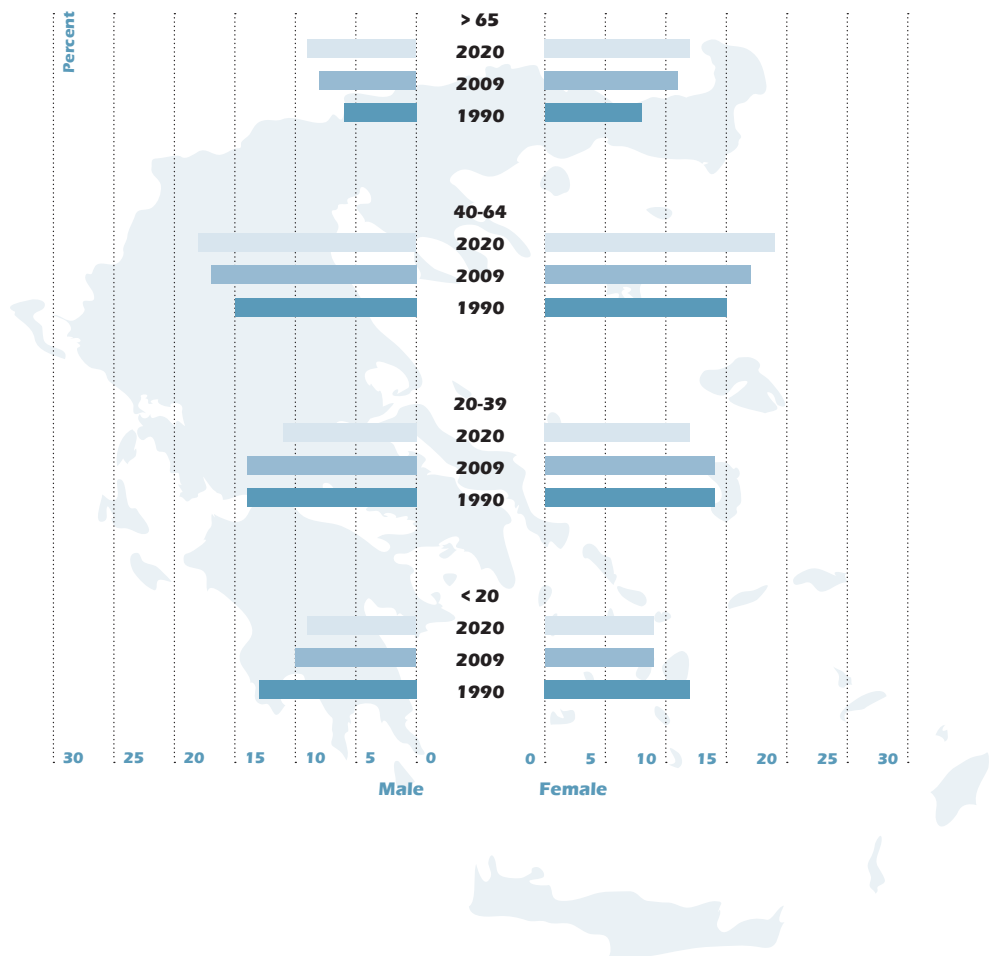
Sources: German Working Group on Cardiac Pacing and Arrhythmia – Chairman:
Prof. Dr. Stephan Willems and MMF (Interventional Electrophysiology)

GREECE



1. Statistics

Age pyramid for Greece





Healthcare data

Hospitals (per 100.000 population)	2,84	2006
Beds (per 100.000 population)	481,69	2006
Density of physicians (per 1.000 population)	5,35	2006
Density of nurses (per 1.000 population)	3,27	2006

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	80,13	2008
Death rate (per 1.000 population)	9,61	2008
Live births (per 1.000 population)	10,53	2008

Economic information

Gross domestic product (U.S dollar-billions)	338,25*	2009
Gross domestic product per capita (U.S dollar-units)	30.304,74*	2009
Total expenditure on health as % of GDP	9,9	2006
General government expenditure on health as % of total expenditure on health	42,5	2006
Private expenditure on health as % of total expenditure on health	57,5	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




The Greek healthcare system is characterized by the coexistence of the National Health Service (NHS), a compulsory social insurance and a voluntary private health insurance system. The NHS provides universal coverage to the population and offers equal access to health services for all and social cohesion. (Source: Highlights in health. WHO, 2004)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	95%	
Uninsured citizens	5%	
		0 50 100

Distribution of insurance modality

Public insurance company	89%	
Private insurance company	10%	
Private co-payment	1%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Devices and ablation catheters are covered by insurance.

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

Most of the private insurances cover 100% of the devices and catheters. There is no reimbursement for medical services through the public system. There are some private insurances that include a fee for the participating physician.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

Only for pacemakers, there is the requirement of minimum one year of training at an implanting center.

National accreditation for physicians

Yes

Board for Cardiology, but not for subspecialties

National accreditation for centres

Yes

For pacing and ICD implanting centers

National Society supporting EHRA accreditation system

Yes

In principle yes, although most centers do not qualify as training centers according to EHRA's requirements, especially for AF ablation.

Specialty required for catheter ablation **Yes**

Cardiology

Specialty required for ICD or pacemaker implants **Yes**

Cardiology

Official national competency guidelines for electrophysiological studies or catheter ablation **No**

Required period of training to perform implantations **1 year**

Training centres availability

Pacemaker **15**

ICD implantation **6**

Electrophysiological studies and catheter ablation **8**

CRT implantation **8**

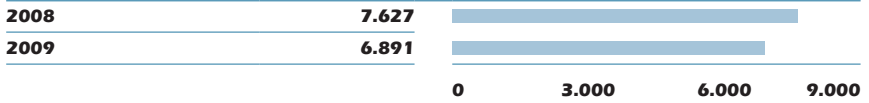
Atrial fibrillation ablation **6**

Number of medical faculties **7**

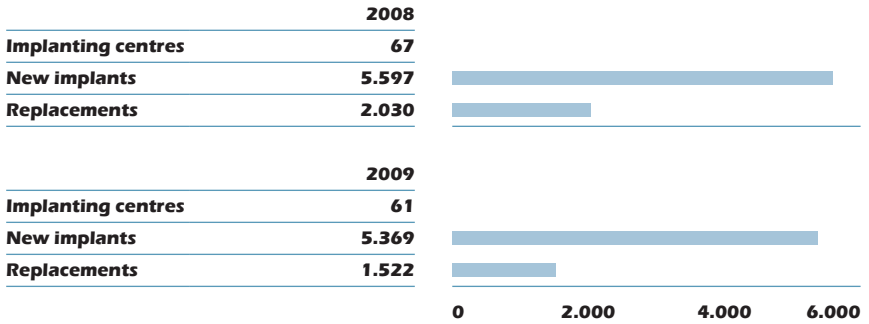
Percentage of academic facilities among practicing EP and implant centres **35%**

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

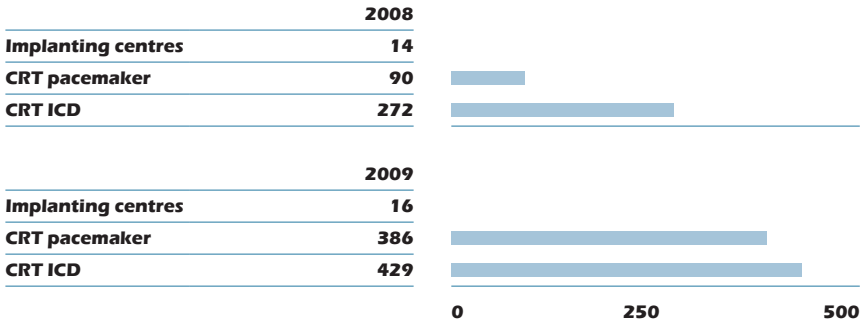


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

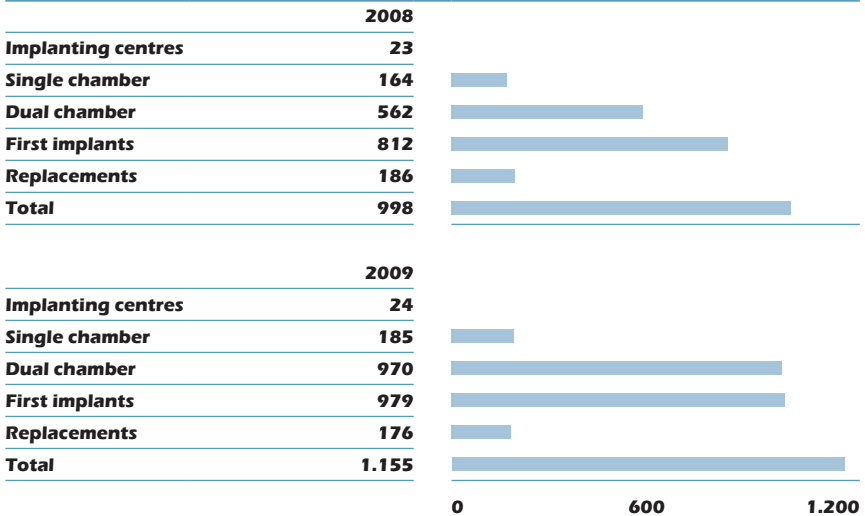


Specialty performing implants

Cardiologists	98%
Surgeons	2%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



10. Interventional electrophysiology

Number of performing catheter ablation centres

23

	2008	2009
Number of ablations performed	1.213	1.192
Mean number (ablations/centres)	53	52
Number of AF ablations	164	204

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

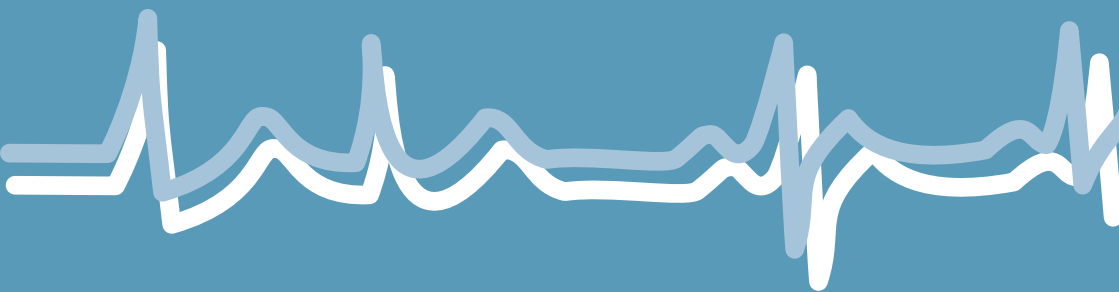
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

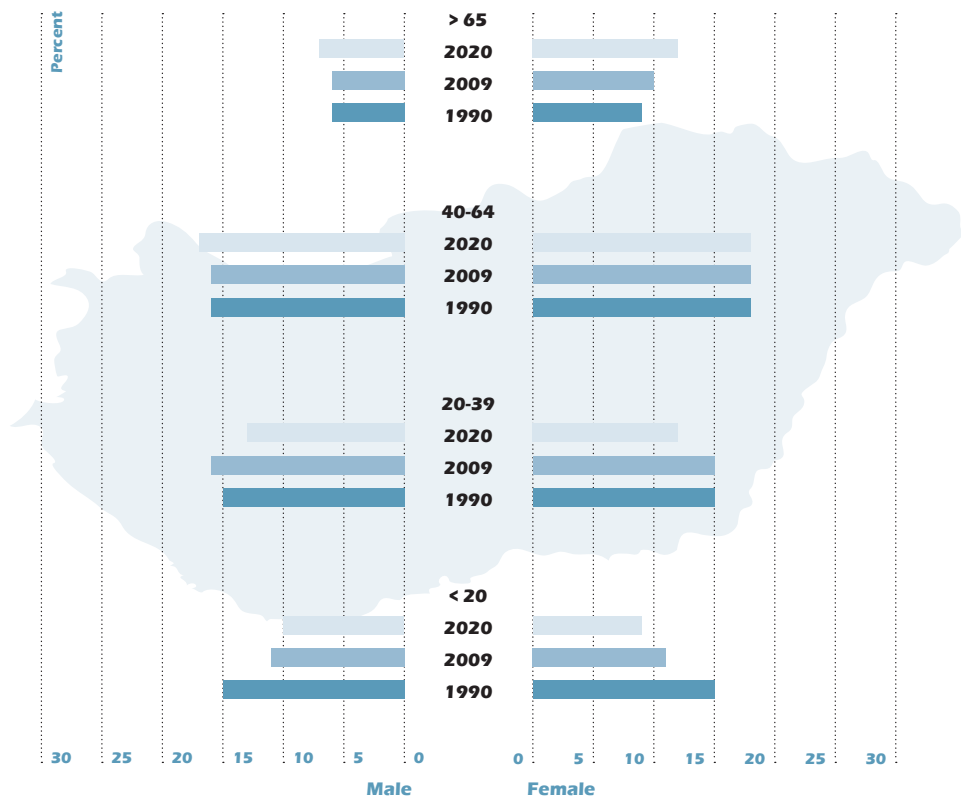
Sources: Hellenic Working Group on Electrophysiology and Pacing – Chairman: Dr. M. Manios and Former Chairman: Dr. V. Vassilikos

HUNGARY



1. Statistics

Age pyramid for Hungary





Healthcare data

Hospitals (per 100.000 population)	1,76	2007
Beds (per 100.000 population)	712,55	2007
Density of physicians (per 1.000 population)	2,78	2007
Density of nurses (per 1.000 population)	9,04	2007

Demographic information

Population annual growth rate (%)	-0,3	2009
Life expectancy at birth	74,23	2008
Death rate (per 1.000 population)	12,95	2008
Live births (per 1.000 population)	9,88	2008

Economic information

Gross domestic product (U.S dollar-billions)	124,24*	2009
Gross domestic product per capita (U.S dollar-units)	12.385,73*	2009
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

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	350 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	49,8%
2009	not available

3. Healthcare System




The Hungarian healthcare system is organised through a National Health Insurance Fund which is available for all citizens registered at the Fund.

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	98%	
Uninsured citizens	2%	
		0 50 100

Distribution of insurance modality

Public insurance company	99%	
Private insurance company	0%	
Private co-payment	1%	
		0 50 100

Possibility of subscribing to private health insurance plans Yes

Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>



Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

There is a total volume limit for each tender-year of National Health Insurance Fund

4. Education

National accreditation availability

Device therapy*	<input checked="" type="checkbox"/>
Invasive electrophysiology**	<input checked="" type="checkbox"/>

* Arrhythmologist Licence for Pacemaker/ICD/CRT (Device Therapy)

** Arrhythmologist Licence for Electrophysiology and Ablation

EHRA accreditation is welcome, endorsed

National accreditation for physicians

Yes

In internal medicine, cardiology, an amount of 250 credit points are to be collected during 5 years period by CME; EHRA accreditation is endorsed

National accreditation for centres

No

It is planned and is under establishment by the Hungarian Ministry of Healthcare and WG of Arrhythmias and Cardiac Pacing, Hungarian Society of Cardiology

National Society supporting EHRA accreditation system

Yes

Specialty required for catheter ablation

Yes

Cardiologist / cardiologist fellow

Specialty required for ICD or pacemaker implants

Yes

Cardiologist / cardiologist fellow, heart surgeon, anesthesiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Hungarian Society of Cardiology

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	8
ICD implantation	6
Electrophysiological studies and catheter ablation	6
CRT implantation	6
Atrial fibrillation ablation	6

Number of medical faculties

4



Percentage of academic facilities among practicing EP and implant centres*

25%/26%*

* 25% of the EP and 26% of the implanting centers

5. Pacemakers

Pacemaker units implanted*

2008	4.674	
2009	5.328	

* Pacemakers for bradycardia indication, excluding CRT. 0 3.000 6.000

Pacemaker units implanted and number of implanting centres

2008	
Implanting centres	15
New implants	not available
Replacements	not available
2009	
Implanting centres	15
New implants	not available
Replacements	not available

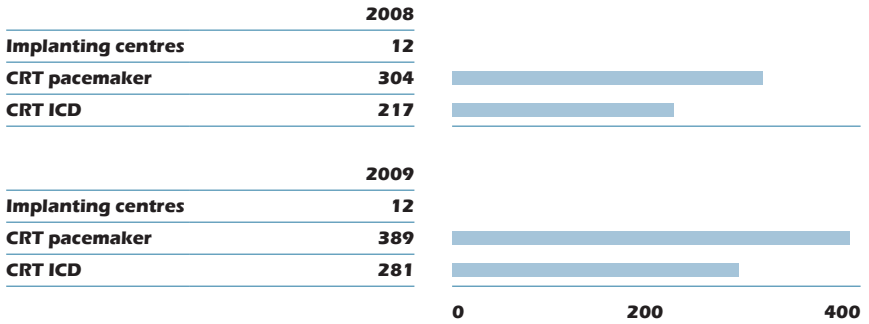


Specialty performing implants

Cardiologists	90%
Surgeons	5%
Other: Anesthesiologist	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

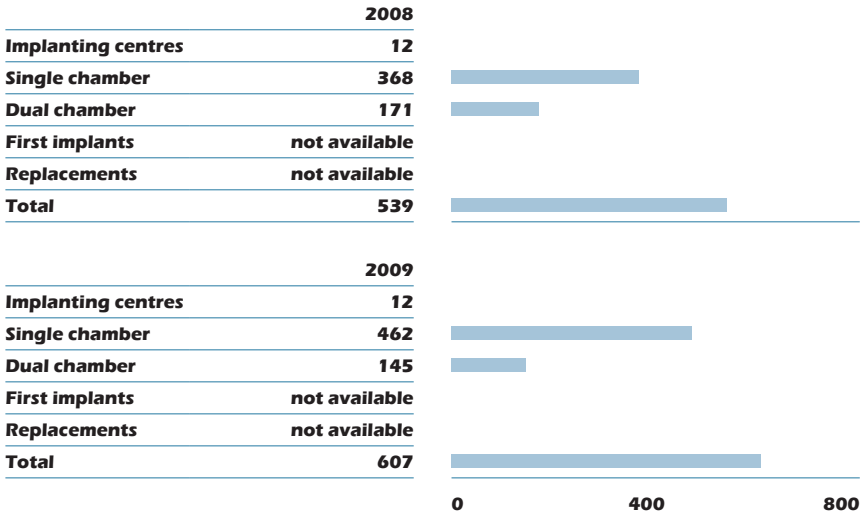


Specialty performing implants

Cardiologists	93%
Surgeons	2%
Other: Anesthesiologist	3%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	90%
Surgeons	5%
Other: Anesthesiologist	5%



8. Loop recorders

Loop recorders implanted and number of implanting centres*

	2008			
Implanting centres	2			
Loop recorders	1			
	2009			
Implanting centres	4			
Loop recorders	2			
* Loop recorders are not covered by insurance in Hungary.		0	1	2

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

* Hungarian Online Pacemaker Registry

Availability of a national quality insurance system or complication registry

Yes

Hungarian Online Pacemaker Registry and individual paper based data collection from centers

Availability of a national institution coordinating and guiding device recalls

Yes

National Health Insurance Fund

10. Interventional electrophysiology

Number of performing catheter ablation centres 10

	2008	2009
Number of ablations performed	2.190	2.498
Mean number (ablations/centres)	219	249
Number of AF ablations	309	502*

* RFA + CRYO

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

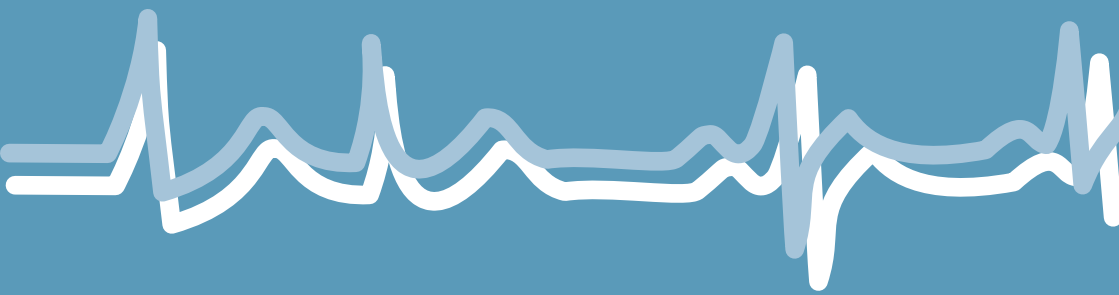
5 = great obstacle

Sources: Hungarian Working Group of Arrhythmia and Cardiac Pacing, Hungarian Society of Cardiology – President: Zoltan Csanadi MD, PhD, FESC and National Health Insurance Fund

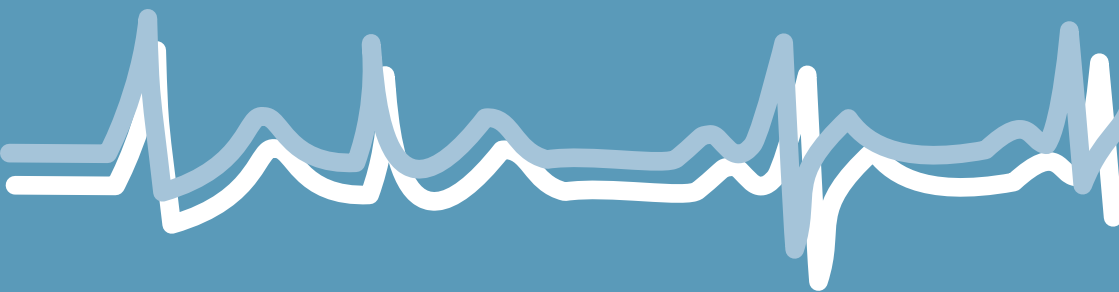


ICELAND

There will be information in the next edition.



IRELAND



1. Statistics

Age pyramid for Ireland





Healthcare data

Hospitals (per 100.000 population)	4,06	2007
Beds (per 100.000 population)	533,91	2006
Density of physicians (per 1.000 population)	3,03	2007
Density of nurses (per 1.000 population)	15,5	2007

Demographic information

Population annual growth rate (%)	1,1	2009
Life expectancy at birth	80,4	2008
Death rate (per 1,000 population)	6,14	2008
Live births (per 1,000 population)	16,98	2008

Economic information

Gross domestic product (U.S dollar-billions)	226,77*	2009
Gross domestic product per capita (U.S dollar-units)	51.128,49*	2009
Total expenditure on health as % of GDP	7,5	2006
General government expenditure on health as % of total expenditure on health	78,3	2006
Private expenditure on health as % of total expenditure on health	21,7	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	233.36 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country

2008	18.2%
2009	not available

3. Healthcare System



A person living in Ireland for at least one year is considered by the HSE to be 'ordinarily resident' and is entitled to either full eligibility (Category 1) or limited eligibility (Category 2), for health services. People who have not been resident in Ireland for at least one year must satisfy the HSE that it is their intention to remain for a minimum of one year in order to be eligible for health services. Dependants of such individuals must also contact the HSE to confirm their eligibility.

Category 1 – People with Medical Cards: Over 30% of people in Ireland have medical cards. Medical Cards allow people to get a wide range of health services and medicines free of charge.



Category 2 – People without Medical Cards: People without medical cards can access a certain community and hospital health services, either free of charge or at reduced cost. Over 50 % of the population have private health insurance

Basic insurance availability No

Percentage of insured and uninsured citizens

Insured citizens	>30%	
Uninsured citizens	<70%	
		0 50 100

Distribution of insurance modality

Public insurance company	32%	
Private insurance company	47.2%	
Private co-payment	not available	
		0 50 100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians

Yes

CST – RCPI

National accreditation for centres

Yes

RCPI and JCI

National Society supporting EHRA accreditation system

No

All Irish EP doctors are trained in the United States

Specialty required for catheter ablation

Yes

Cardiac electrophysiologist

All EP doctors in Ireland have completed EP fellowship programs in the United States.

Specialty required for ICD or pacemaker implants

No

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

But all cardiologists have completed more than 6 years training.

Training centres availability

Pacemaker	10
ICD implantation	10
Electrophysiological studies and catheter ablation	6
CRT implantation	10
Atrial fibrillation ablation	6

Number of medical faculties



5

Percentage of academic facilities among practicing EP and implant centres

62,5%

5. Pacemakers

Pacemaker units implanted

2008	1.751	
2009	2.040	
		0 800 1.600 2.400

Pacemaker units implanted and number of implanting centres

	2008
Implanting centres	16
New implants	not available
Replacements	not available
	2009
Implanting centres	16
New implants	not available
Replacements	not available

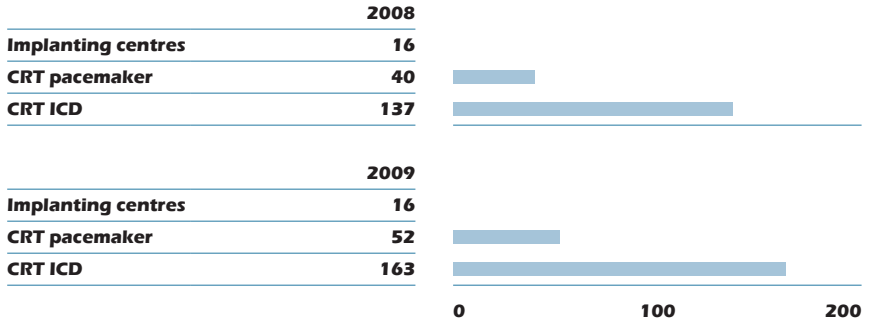


Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres





Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

2008		
Implanting centres	13	
Single chamber	not available	
Dual chamber	not available	
First implants	not available	
Replacements	not available	
Total	772	
2009		
Implanting centres	16	
Single chamber	not available	
Dual chamber	not available	
First implants	not available	
Replacements	not available	
Total	644	

0 400 800

Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008		
Implanting centres	12	
Loop recorders	not available	
2009		
Implanting centres	16	
Loop recorders	not available	

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

EP Ireland is being rolled out.

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

Irish Medicines Board

10. Interventional electrophysiology

Number of performing catheter ablation centres

11

	2008	2009
Number of ablations performed	700	800
Mean number (ablations/centres)	63,6	72,7
Number of AF ablations	300	350

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

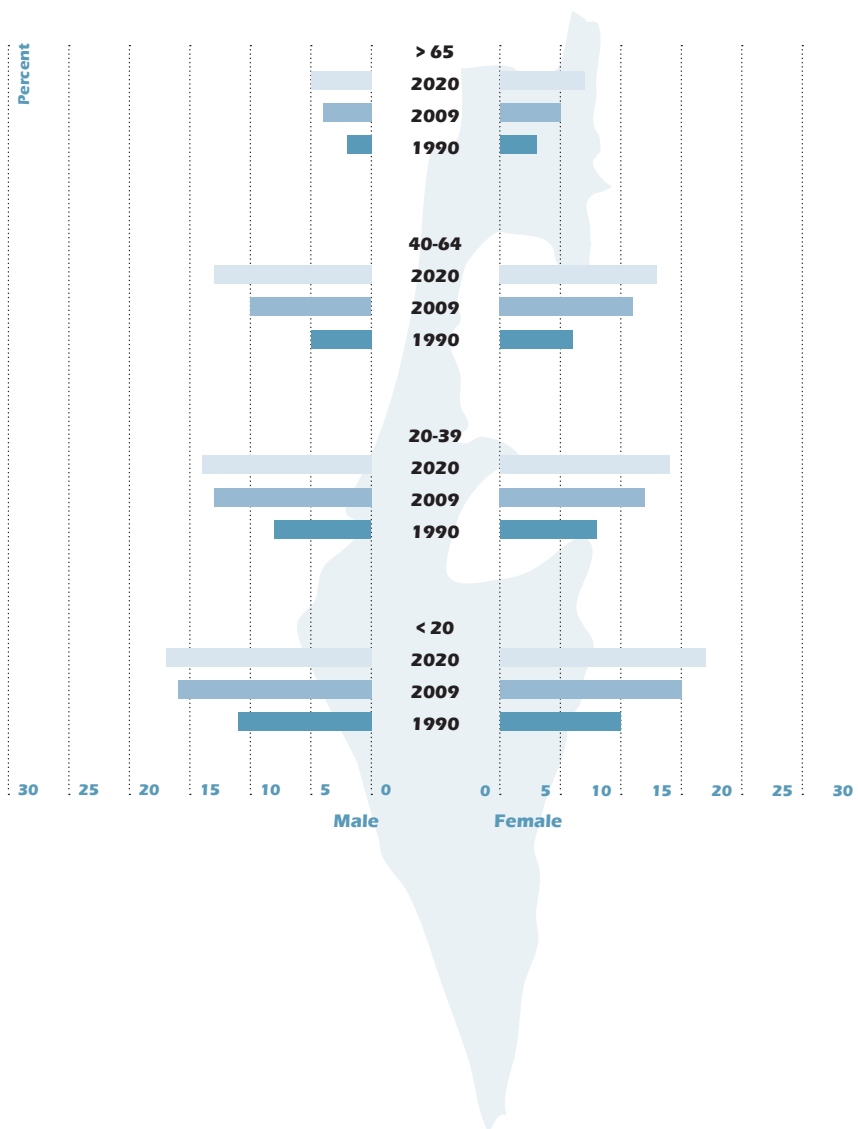
Sources: Electrophysiology Subgroup of ICS – Chairman: David Keane

ISRAEL



1. Statistics

Age pyramid for Israel





Healthcare data

Hospitals (per 100.000 population)	5,25	2007
Beds (per 100.000 population)	583,15	2007
Density of physicians (per 1.000 population)	3,53	2007
Density of nurses (per 1.000 population)	5,79	2007

Demographic information

Population annual growth rate (%)	1,7	2009
Life expectancy at birth	80,7	2007
Death rate (per 1,000 population)	5,56	2007
Live births (per 1,000 population)	21,12	2007

Economic information

Gross domestic product (U,S dollar-billions)	215,20*	2009
Gross domestic product per capita (U.S dollar-units)	2.967,58*	2009
Total expenditure on health as % of GDP	7,8	2006
General government expenditure on health as % of total expenditure on health	65,3	2006
Private expenditure on health as % of total expenditure on health	34,8	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




Israel's health system is financed through social insurance and taxation. It is based on regulated competition among health plans. A National Health Insurance (NHI) was introduced in Israel in 1995 and achieved universal coverage. The Ministry of Health has overall responsibility for the health of the population as well as for the functioning of the health system. (Source: Highlights on health, WHO 2004) A private medical insurance may be purchased in addition.

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	99%	
Uninsured citizens	1%	
		0 50 100

Distribution of insurance modality

Public insurance company	94%	
Private insurance company	1%	
Private co-payment	5%	
		0 50 100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

All the public Health Insurance Companies will authorize payment for ICD used for primary prevention but, some will require to meet the MADIT-I criteria and will not cover ICD implantations based on MADIT-II/SCD-HeFT criteria.

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

The largest Public Health Fund Insurance will cover ICD for patients fulfilling MADIT I criteria but not for patients fulfilling MADIT-II criteria (i.e., positive EPS is required for ICD coverage for primary prevention indications). Similarly, in order to implant a CRT-D instead of CRT-P, a positive EPS may be required.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres No

National Society supporting EHRA accreditation system Yes

EHRA Accreditation is encouraged but not mandatory.

Specialty required for catheter ablation No

Specialty required for ICD or pacemaker implants No

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	17
ICD implantation	17
Electrophysiological studies and catheter ablation	12
CRT implantation	12
Atrial fibrillation ablation	7

Number of medical faculties

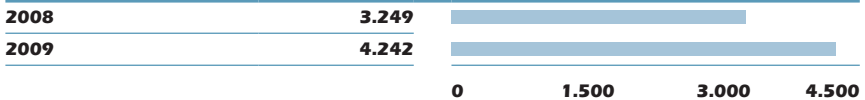
4

Percentage of academic facilities among practicing EP and implant centres

90%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		17
New implants	not available	
Replacements	not available	
		2009
Implanting centres		17
New implants	not available	
Replacements	not available	

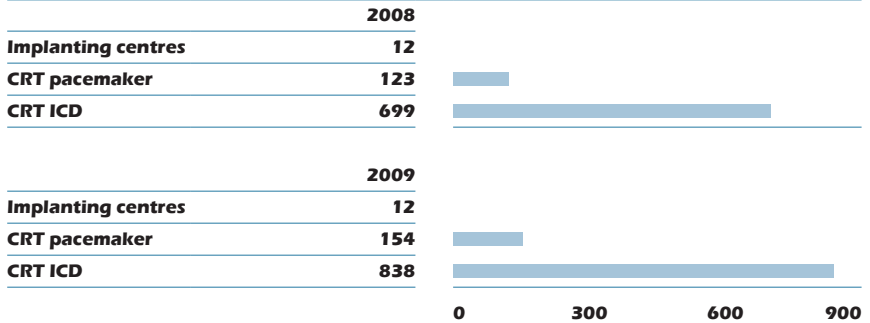


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

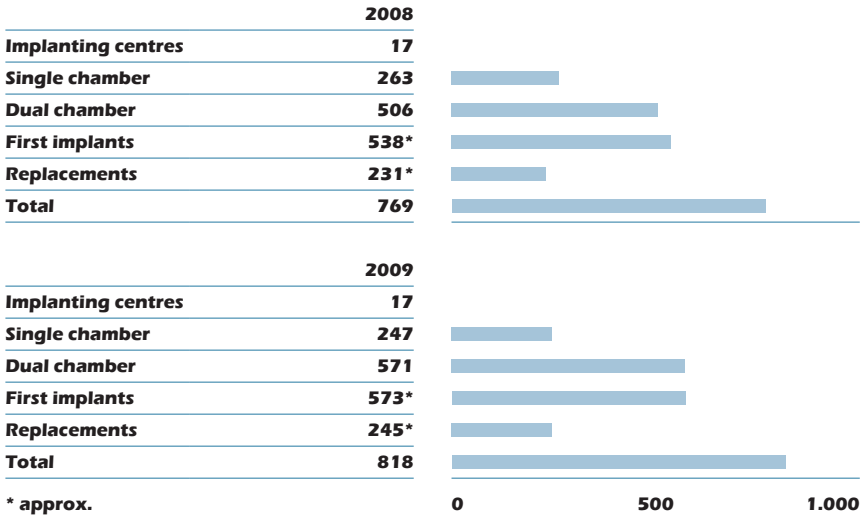


Specialty performing implants

Cardiologists	90%
Surgeons	10%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

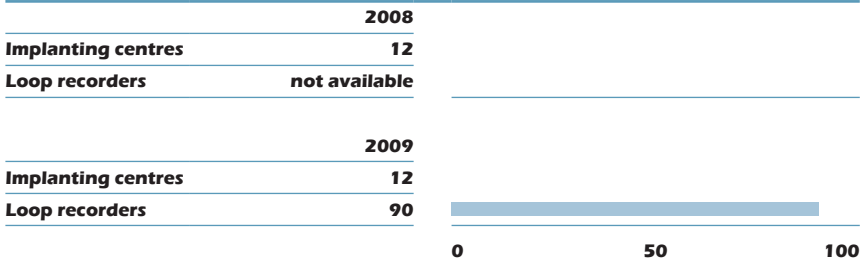


Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

* Israel National ICD Registry

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres

12

	2008	2009
Number of ablations performed	1.900	not available
Mean number (ablations/centres)	158	not available
Number of AF ablations	200	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

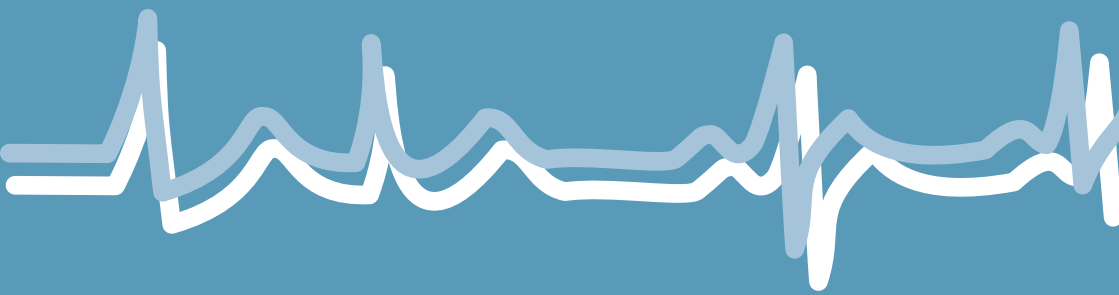
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

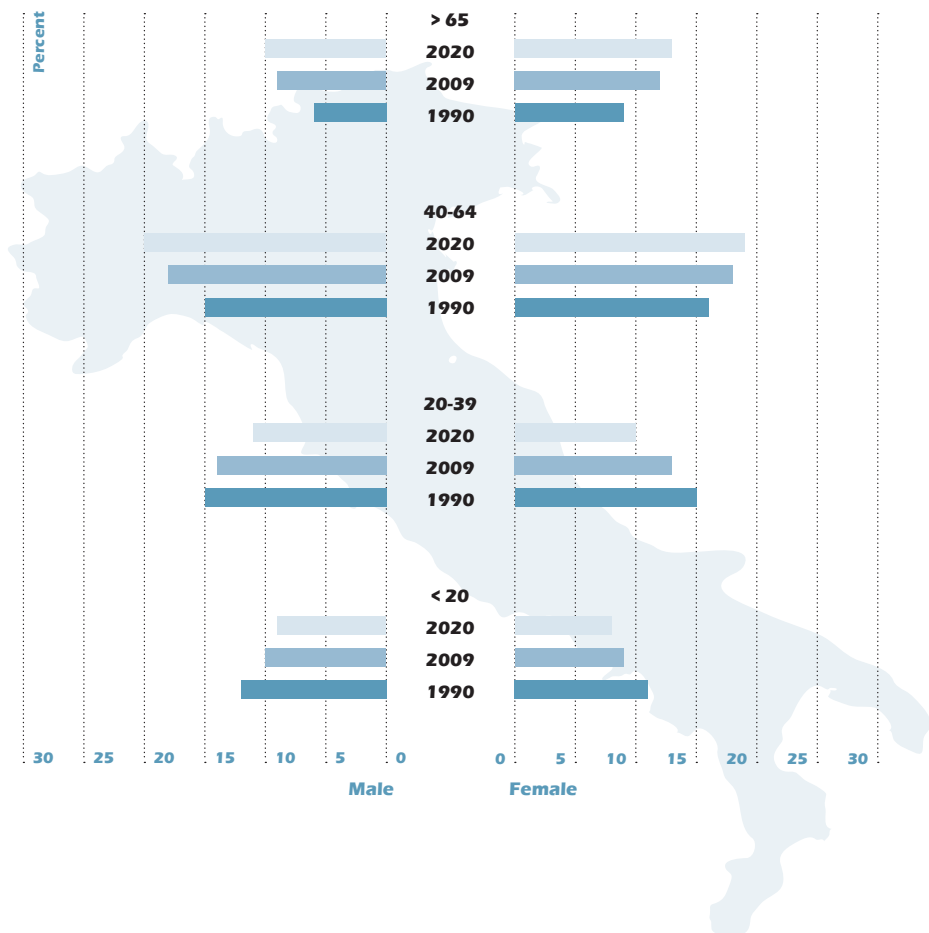
Sources: Israel Working Group of Cardiac Pacing and Electrophysiology – Secretary:
Prof. Sami Viskin

ITALY



1. Statistics

Age pyramid for Italy





Healthcare data

Hospitals (per 100.000 population)	2,18	2006
Beds (per 100.000 population)	393,9	2006
Density of physicians (per 1.000 population)	3,65	2006
Density of nurses (per 1.000 population)	7,01	2006

Demographic information

Population annual growth rate (%)	0	2009
Life expectancy at birth	81,7	2007
Death rate (per 1.000 population)	9,65	2008
Live births (per 1.000 population)	9,51	2007

Economic information

Gross domestic product (U.S dollar-billions)	2.089,55*	2009
Gross domestic product per capita (U.S dollar-units)	34.954,89*	2009
Total expenditure on health as % of GDP	9	2006
General government expenditure on health as % of total expenditure on health	77,1	2006
Private expenditure on health as % of total expenditure on health	22,9	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




National Health System

Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	100%			
Uninsured citizens	0%			
		0	50	100

Distribution of insurance modality

Public insurance company	100%			
Private insurance company	0%			
Private co-payment	0%			
		0	50	100

Possibility of subscribing to private health insurance plans Yes

Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>



Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

Reimbursement is possible at private hospitals and at private insurances.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **No**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **No**

Specialty required for ICD or pacemaker implants **No**

Official national competency guidelines for electrophysiological studies or catheter ablation **Yes**

AIAC – FIC (National Association Arrhythmology & Pacing – Italian Federation Cardiology)

Required period of training to perform implantations **No**

Training centres availability



Pacemaker	not available
ICD implantation	not available
Electrophysiological studies and catheter ablation	not available
CRT implantation	not available
Atrial fibrillation ablation	not available

Number of medical faculties **24**

Percentage of academic facilities among practicing EP and implant centres **5%**

5. Pacemakers

Pacemaker units implanted

2008	61.300	
2009	66.000*	
* approx.		0 40.000 80.000

Pacemaker units implanted and number of implanting centres

	2008
Implanting centres	470
New implants	not available
Replacements	not available
	2009
Implanting centres	470
New implants	not available
Replacements	not available

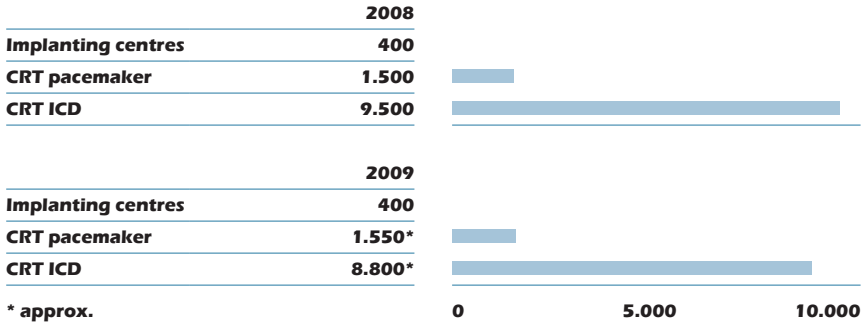
Specialty performing implants

Cardiologists	99%
Surgeons	1%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

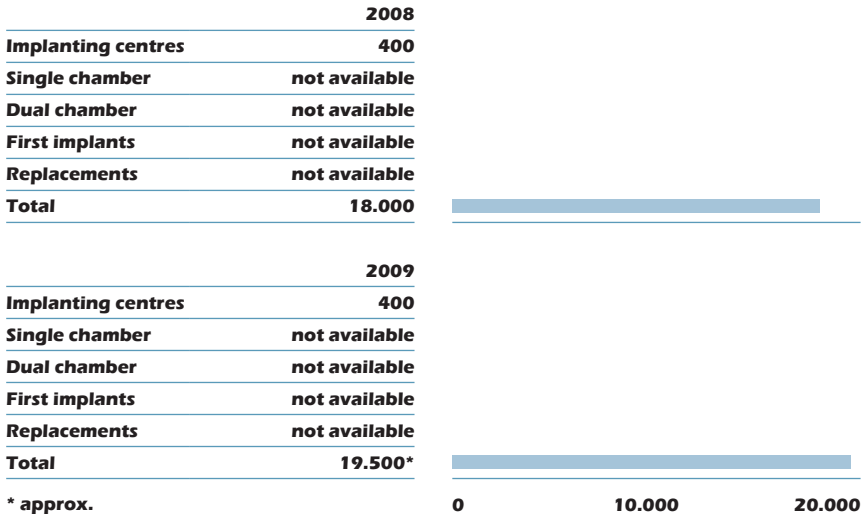


Specialty performing implants

Cardiologists	99%
Surgeons	1%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

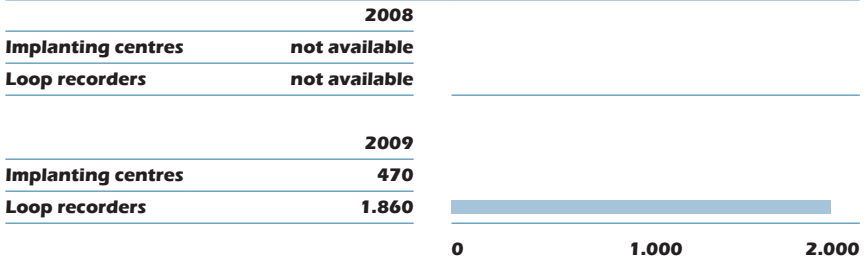


Specialty performing implants

Cardiologists	99%
Surgeons	1%

8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>
AIAC Registry	

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

The AIAC organizes the coordination of device recalls since 2004.

10. Interventional electrophysiology

Number of performing catheter ablation centres

95

	2008	2009
Number of ablations performed	not available	not available
Mean number (ablations/centres)	not available	not available
Number of AF ablations	not available	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

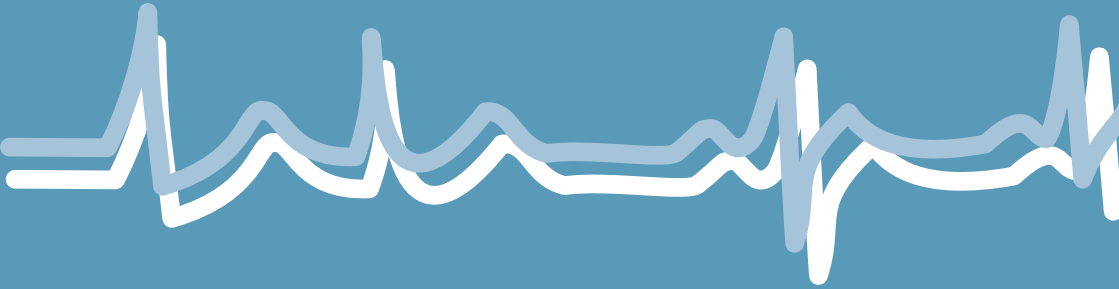
5 = great obstacle

Sources: Italian association of Arrhythmias and Cardiac Pacing (AIAC) – President: Dr Michele Gulizia

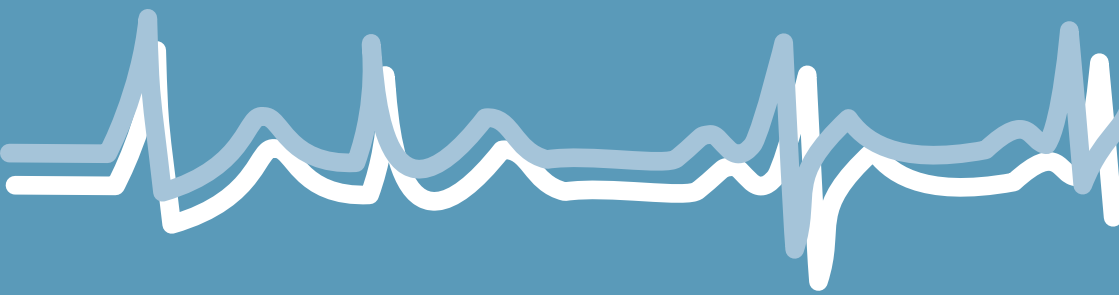


KOSOVO

There will be information in the next edition.

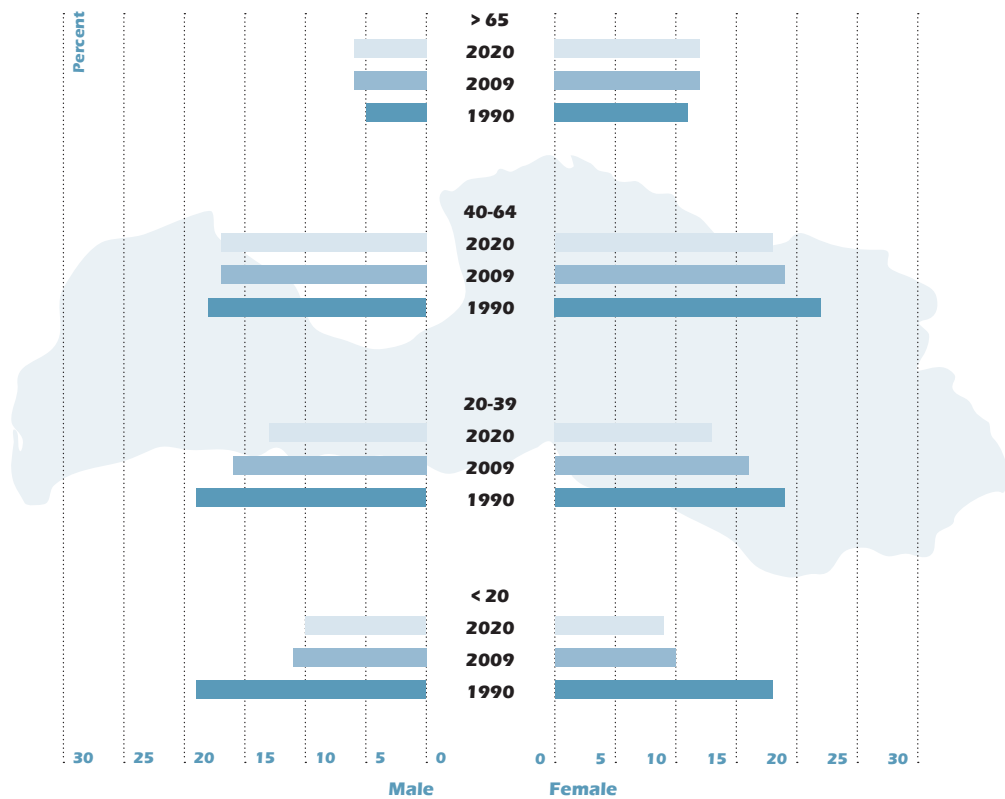


LATVIA



1. Statistics

Age pyramid for Latvia





Healthcare data

Hospitals (per 100.000 population)	4,13	2007
Beds (per 100.000 population)	757,13	2007
Density of physicians (per 1.000 population)	3,05	2007
Density of nurses (per 1.000 population)	5,48	2007

Demographic information

Population annual growth rate (%)	-0,6	2009
Life expectancy at birth	71,2	2007
Death rate (per 1.000 population)	14,52	2007
Live births (per 1.000 population)	10,23	2007

Economic information

Gross domestic product (U.S dollar-billions)	24,20*	2009
Gross domestic product per capita (U.S dollar-units)	10,700,91*	2009
Total expenditure on health as % of GDP	6	2006
General government expenditure on health as % of total expenditure on health	63,2	2006
Private expenditure on health as % of total expenditure on health	36,8	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country




2008	53,4%
2009	53,2%

3. Healthcare System





In Latvia, the National Healthcare system is divided between the Ministry of Welfare and municipalities. It is a decentralized and mainly based on local administrative structures. (Source: Health Care Systems in Transition: Latvia, European Observatory on Healthcare Systems, 2001)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		

Distribution of insurance modality

Public insurance company	98%	
Private insurance company	2%	
Private co-payment	0%	
		

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
Method certificates	

National accreditation for physicians **Yes**

National accreditation for centres **Yes**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist, cardiac surgeon

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist, cardiac surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

National Society of Cardiology, Guidelines of Competency

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	1
ICD implantation	1
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	1

Number of medical faculties



2

Percentage of academic facilities among practicing EP and implant centres





100%

5. Pacemakers

Pacemaker units implanted

2008	1.094	
2009	1.015	
		0 600 1.200

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	3	
New implants	829	
Replacements	265	
	2009	
Implanting centres	3	
New implants	795	
Replacements	220	
		0 500 1.000

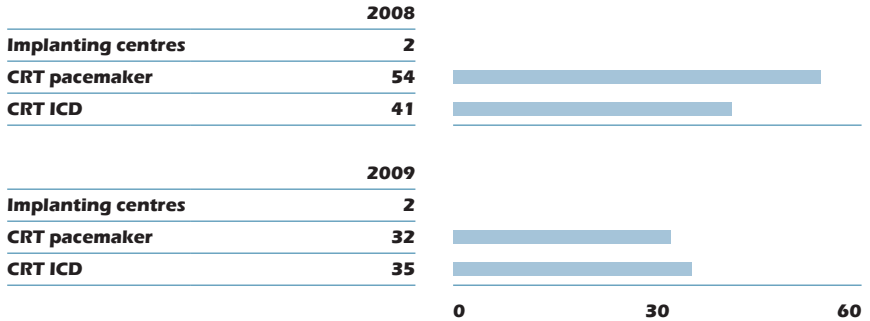


Specialty performing implants

Cardiologists	70%
Surgeons	30%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

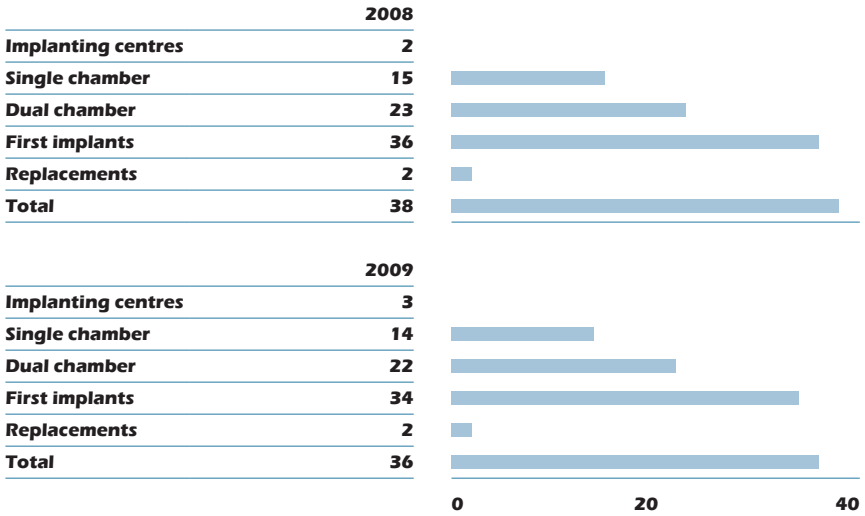


Specialty performing implants

Cardiologists	60%
Surgeons	40%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	60%
Surgeons	40%



8. Loop recorders

Loop recorders implanted and number of implanting centres

2008		
Implanting centres	2	
Loop recorders	28	
2009		
Implanting centres	2	
Loop recorders	28	
		0 15 30

Specialty performing implants

Cardiologists	70%
Surgeons	30%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology***	<input checked="" type="checkbox"/>

* National Register of ICD

** National Register of Pacing

*** National Register of Electrophysiology

Availability of a national quality insurance system or complication registry

Yes

Health Statistics and Medical Technologies State Agency in collaboration with National Working Group of Arrhythmology and Board of National Society of Cardiology

Availability of a national institution coordinating and guiding device recalls

Yes

Health Statistics and Medical Technologies State Agency

10. Interventional electrophysiology

Number of performing catheter ablation centres

2

	2008	2009
Number of ablations performed	304	315
Mean number (ablations/centres)	152	157,5
Number of AF ablations	42	28

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

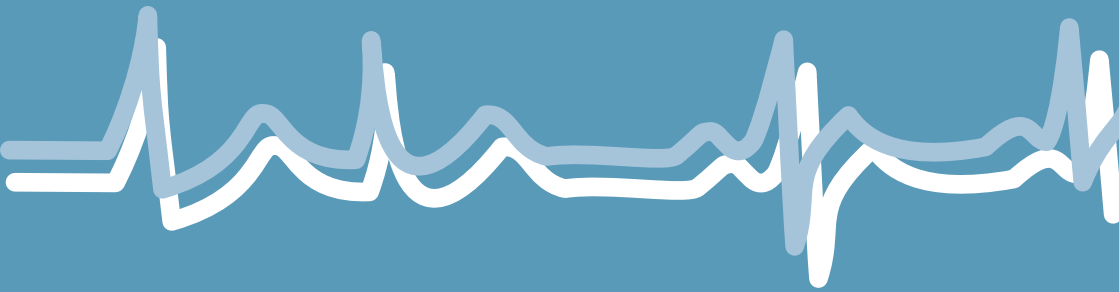
5 = great obstacle

Sources: Latvia Working Group on Arrhythmology and Cardiac Pacing – Chairman: Ass. Prof. Oskars Kalejs



LEBANON

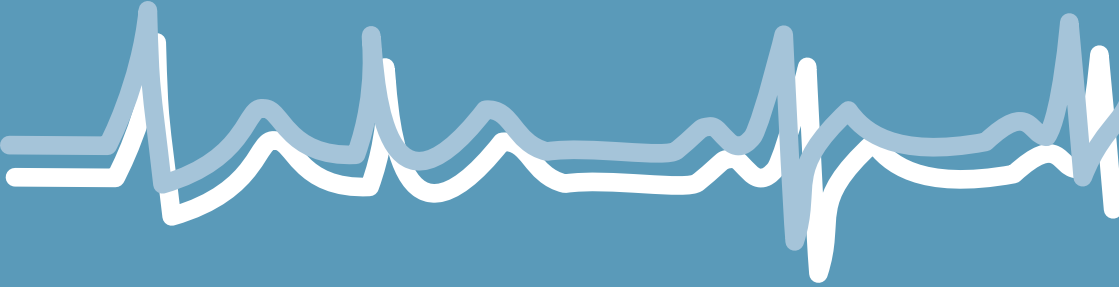
There will be information in the next edition.



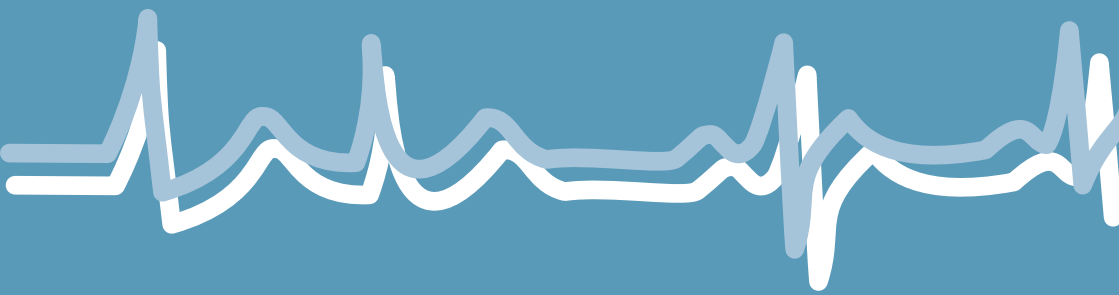


LIBYA

There will be information in the next edition.

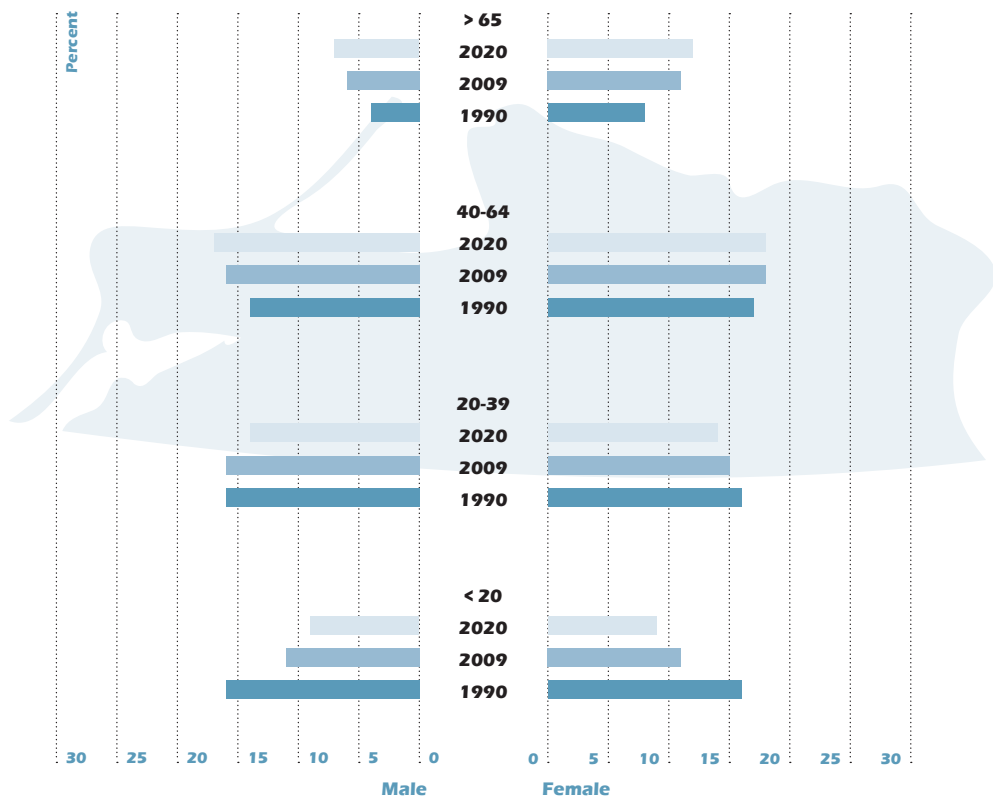


LITHUANIA



1. Statistics

Age pyramid for Lithuania





Healthcare data

Hospitals (per 100,000 population)	4,89	2007
Beds (per 100.000 population)	813,95	2007
Density of physicians (per 1.000 population)	4,07	2007
Density of nurses (per 1.000 population)	7,35	2007

Demographic information

Population annual growth rate (%)	-0,3	2009
Life expectancy at birth	72,05	2008
Death rate (per 1,000 population)	13,05	2008
Live births (per 1,000 population)	10,44	2008

Economic information

Gross domestic product (U,S dollar-billions)	35,96*	2009
Gross domestic product per capita (U.S dollar-units)	10.774,61*	2009
Total expenditure on health as % of GDP	6,2	2006
General government expenditure on health as % of total expenditure on health	70	2006
Private expenditure on health as % of total expenditure on health	30	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

Some indications for ICD primary prevention are reimbursed.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist, cardiac surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	2

Number of medical faculties

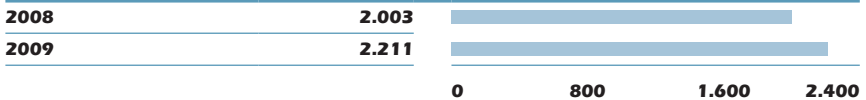
2

Percentage of academic facilities among practicing EP and implant centres

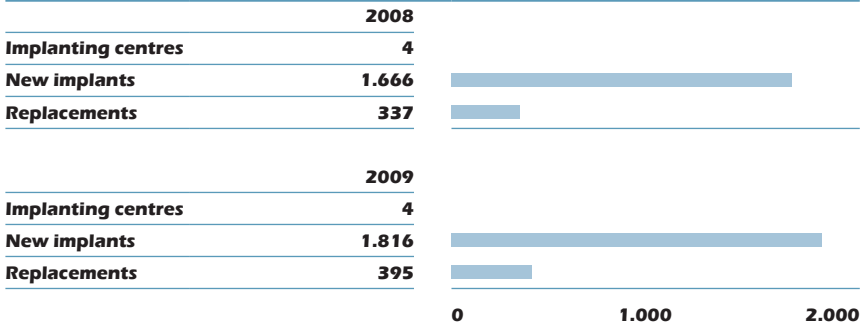
50%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



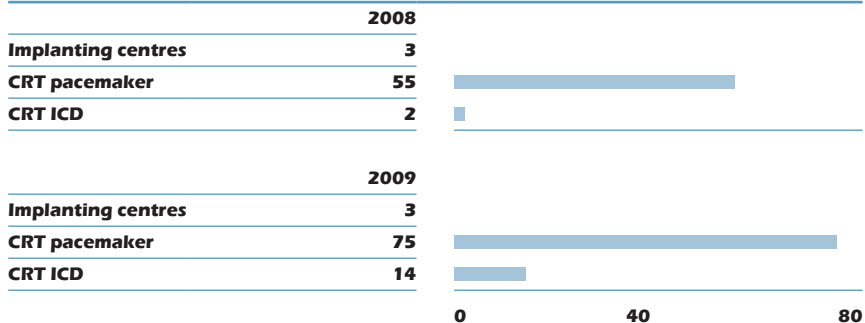


Specialty performing implants

Cardiologists	97%
Surgeons	3%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

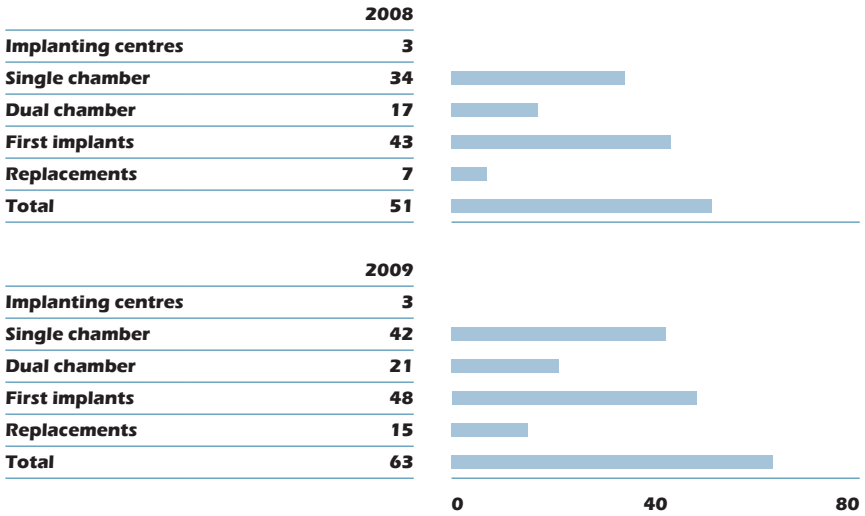


Specialty performing implants

Cardiologists	98%
Surgeons	2%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

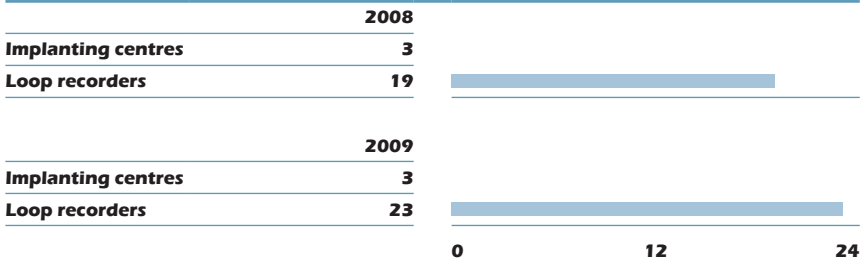


Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **Yes**
State Health Care Accreditation Agency

Availability of a national institution coordinating and guiding device recalls **Yes**
State Health Care Accreditation Agency

10. Interventional electrophysiology

Number of performing catheter ablation centres

3

	2008	2009
Number of ablations performed	797	785
Mean number (ablations/centres)	266	262
Number of AF ablations	38	65

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

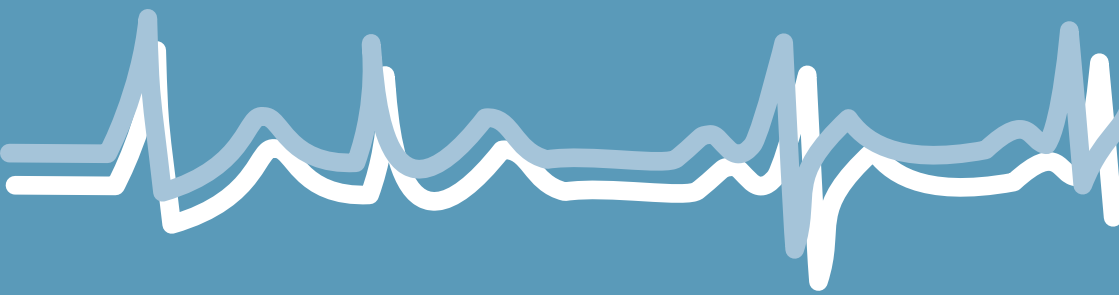
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

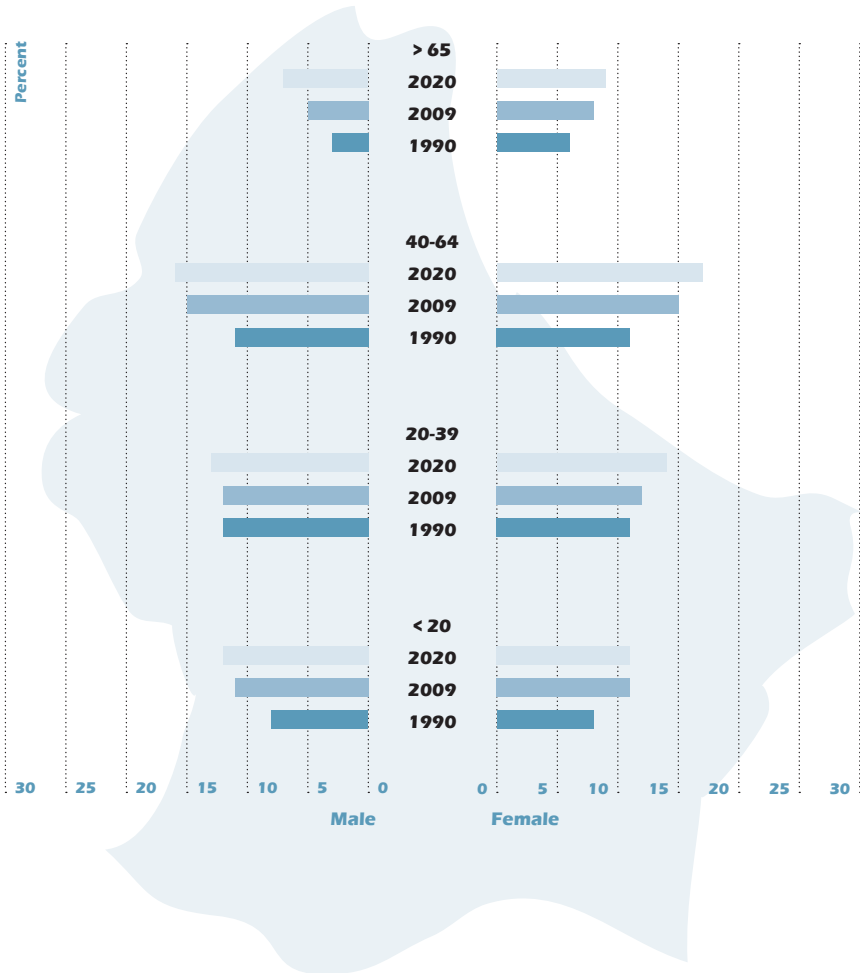
Sources: Working Group on Arrhythmias Pacing and Electrophysiology – Lithuania –
Chairman: Prof. Audrius Aidiētis.

LUXEMBOURG



1. Statistics

Age pyramid for Luxembourg





Healthcare data

Hospitals (per 100.000 population)	3,96	2004
Beds (per 100.000 population)	633,36	2004
Density of physicians (per 1.000 population)	2,9	2005
Density of nurses (per 1.000 population)	10,23	2005

Demographic information

Population annual growth rate (%)	1,2	2009
Life expectancy at birth	79,69	2006
Death rate (per 1.000 population)	7,86	2005
Live births (per 1.000 population)	11,41	2007

Economic information

Gross domestic product (U.S dollar-billions)	46,51*	2009
Gross domestic product per capita (U.S dollar-units)	94.417,72*	2009
Total expenditure on health as % of GDP	7,2	2006
General government expenditure on health as % of total expenditure on health	90,6	2006
Private expenditure on health as % of total expenditure on health	9,4	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country

2008	not available
2009	not available



3. Healthcare System

Luxembourg's healthcare system is based on three principles: compulsory health insurance, free choice of provider for patients and compulsory provider compliance with the fixed set of fees for services.




(Highlights on health, WHO, 2004)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		0 50 100

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	58%	
Private co-payment	not available	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **No**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist, surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	0
ICD implantation	0
Electrophysiological studies and catheter ablation	0
CRT implantation	0
Atrial fibrillation ablation	0

Number of medical faculties



0

Percentage of academic facilities among practicing EP and implant centres





0%

5. Pacemakers

Pacemaker units implanted

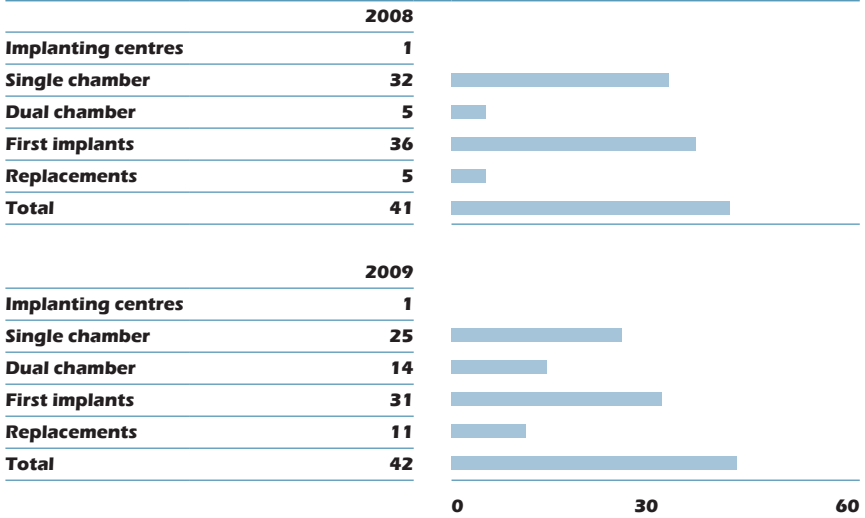
2008	93*	
2009	97*	
* It refers to only one center		0 50 100

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	6	
New implants	54	
Replacements	39	
	2009	
Implanting centres	6	
New implants	61	
Replacements	36	
		0 40 80

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



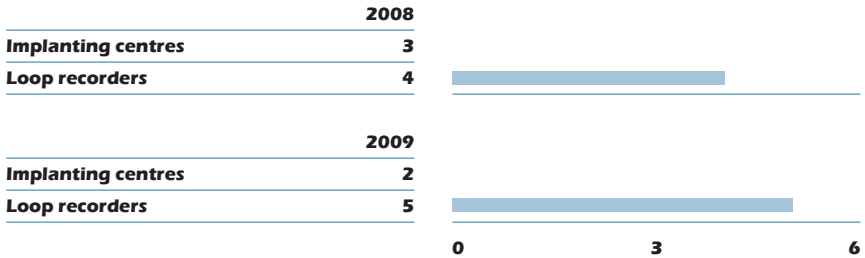
Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology*	<input checked="" type="checkbox"/>

* INCCI

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

Ministry of health: Direction de la santé

10. Interventional electrophysiology

Number of performing catheter ablation centres 1

	2008	2009
Number of ablations performed	99	107
Mean number (ablations/centres)	99	107
Number of AF ablations	9	20

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

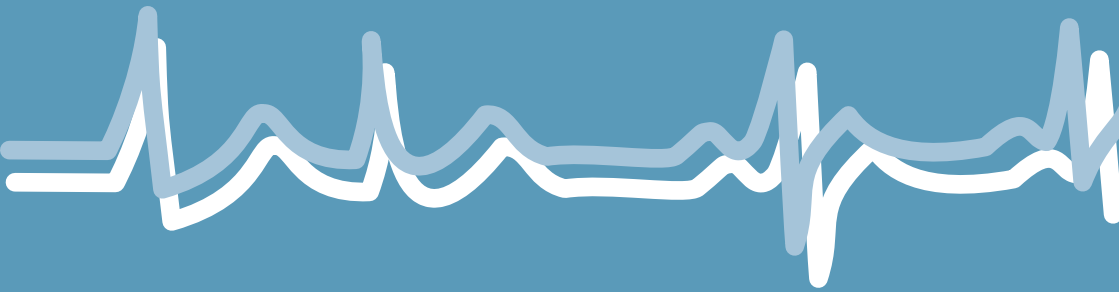
5 = great obstacle

Sources: National Working Group on Arrhythmias – Chairmain: Dr. Camille Pesch

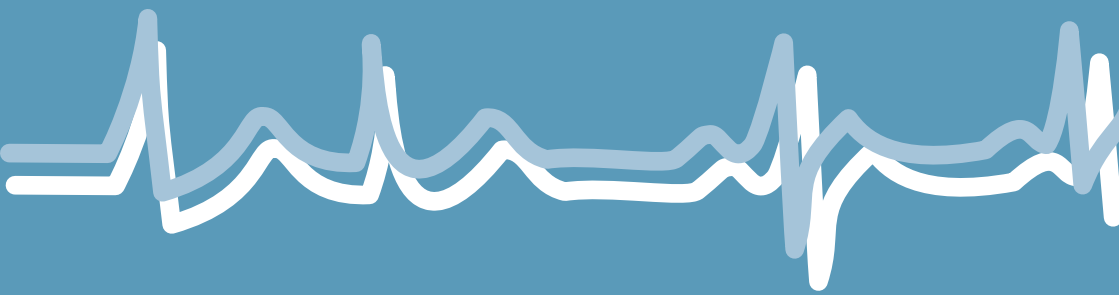


MALTA

There will be information in the next edition.

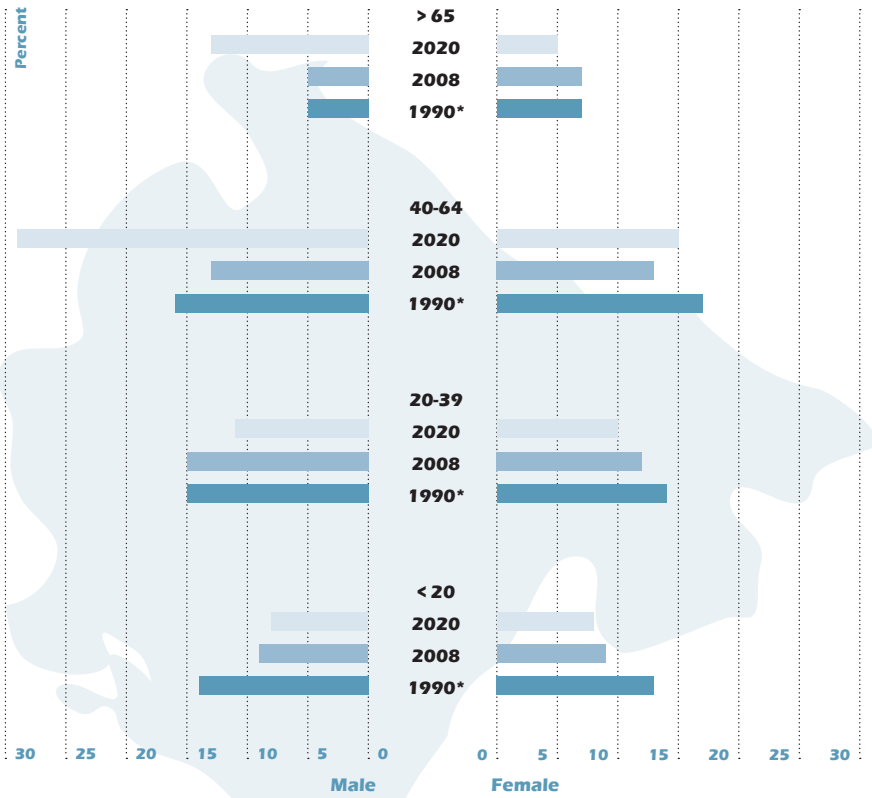


MONTENEGRO



1. Statistics

Age pyramid for Montenegro



* Refers to Serbia and Montenegro



Healthcare data

Hospitals (per 100.000 population)	41	2006
Beds (per 100.000 population)	0,04	2008
Density of physicians (per 1.000 population)	2	2006
Density of nurses (per 1.000 population)	not available	not available

Demographic information

Population annual growth rate (%)	-1,1	2006
Life expectancy at birth	74	2008
Death rate (per 1.000 population)	9,1	2008
Live births (per 1.000 population)	13,1	2008

Economic information

Gross domestic product (U.S dollar-billions)	4,5	2008
Gross domestic product per capita (U.S dollar-units)	2.648	2009
Total expenditure on health as % of GDP	6,8	2006
General government expenditure on health as % of total expenditure on health	79,5	2006
Private expenditure on health as % of total expenditure on health	20,5	2006

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	490,6 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	54%
2009	not available

3. Healthcare System




The healthcare system in Montenegro is organised through the House of Health. There is a primary healthcare system and family doctors and a total of 6 general hospitals, 3 specialised clinics and 1 clinical center of Montenegro.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	90%	
Uninsured citizens	10%	
		0 50 100

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	0%	
Private co-payment	0%	
		0 50 100

Possibility of subscribing to private health insurance plans **No**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

At the moment, Montenegro is going through a health reform which will give the population the possibility of private and public health insurance.

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

All these procedures and devices are paid by public health insurance.

4. Education

National accreditation availability

Device therapy*	<input checked="" type="checkbox"/>
Invasive electrophysiology**	<input checked="" type="checkbox"/>

* Center for pacemakers and electrophysiology Clinical center of Montenegro

** In 2010 we plan to start with invasive electrophysiology

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist or vascular surgeon

Required period of training to perform implantations

6 months-1 year

Training centres availability

Pacemaker	1
ICD implantation	1
Electrophysiological studies and catheter ablation	1*
CRT implantation	1
Atrial fibrillation ablation	1

* Not in use yet, equipment being purchased.

Number of medical faculties

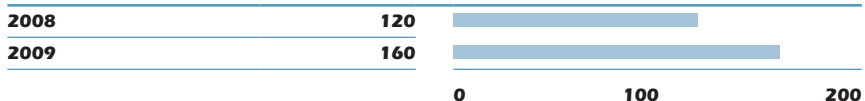
1

Percentage of academic facilities among practicing EP and implant centres

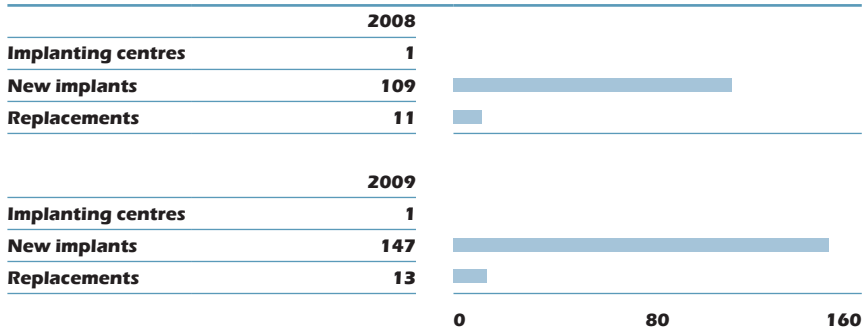
100%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



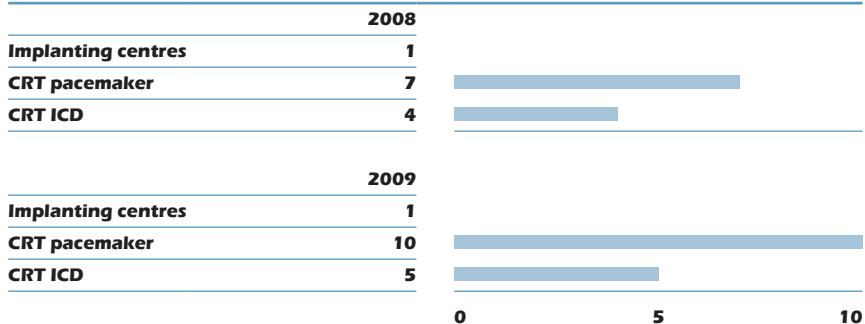


Specialty performing implants

Cardiologists	1%
Surgeons	99%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%
Other*	

There is technical support from cardiologists from Serbia for CRT implanations.



8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008
Implanting centres	0
Loop recorders	0
	2009
Implanting centres	0
Loop recorders	0

Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

The EHRA invitation will be a great inspiration to start developing a quality insurance system.

Availability of a national institution coordinating and guiding device recalls **Yes**

National Agency for controlling drugs and devices

10. Interventional electrophysiology

Number of performing catheter ablation centres 0

	2008	2009
Number of ablations performed	0	0
Mean number (ablations/centres)	0	0
Number of AF ablations	0	0

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language Yes

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

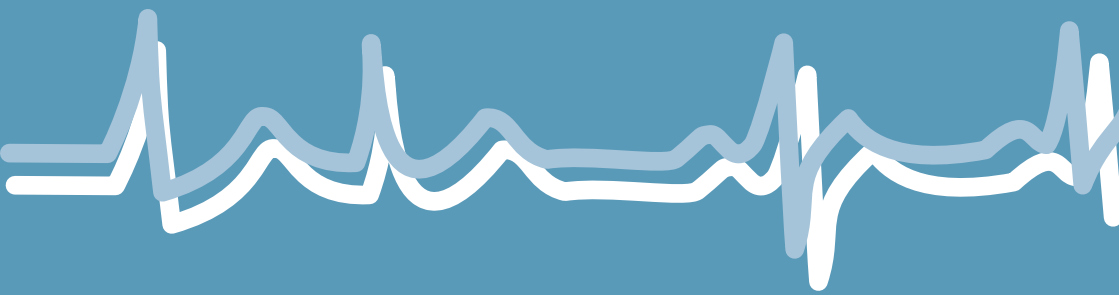
5 = great obstacle

Pacemaker Center Montenegro – Chief: Ljilja Music, MD, PhD,, Institute for Public Health and Protocols from Clinical Center Montenegro

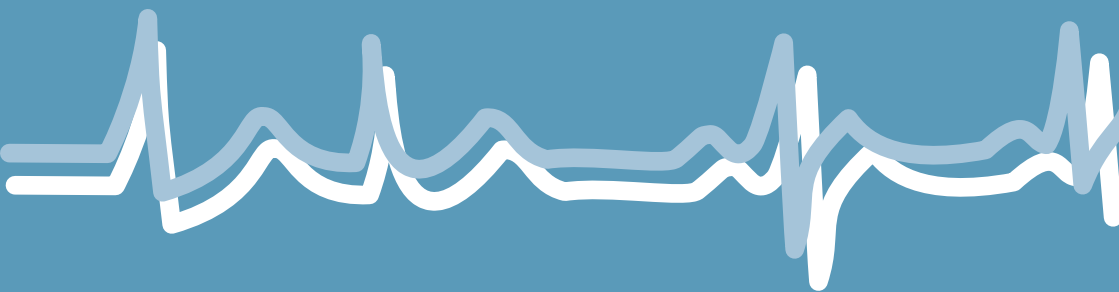


MOROCCO

There will be information in the next edition.



NETHERLANDS



1. Statistics

Age pyramid for Netherlands





Healthcare data

Hospitals (per 100.000 population)	1,16	2007
Beds (per 100.000 population)	480,8	2007
Density of physicians (per 1.000 population)	3,93	2007
Density of nurses (per 1.000 population)	15,05	2007

Demographic information

Population annual growth rate (%)	0,4	2009
Life expectancy at birth	81,53	2008
Death rate (per 1.000 population)	8,18	2008
Live births (per 1.000 population)	11,17	2008

Economic information

Gross domestic product (U.S dollar-billions)	789,67*	2009
Gross domestic product per capita (U.S dollar-units)	47.041,60*	2009
Total expenditure on health as % of GDP	9,3	2006
General government expenditure on health as % of total expenditure on health	81,8	2006
Private expenditure on health as % of total expenditure on health	18,2	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	30%
2009	not available

3. Healthcare System




In the Netherlands, as of 2006, there is a new health insurance act. The system offers basic health insurance for all citizens.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	90%	
Uninsured citizens	10%	
		0 50 100

Distribution of insurance modality

Public insurance company	90%	
Private insurance company	10%	
Private co-payment	0%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology*	<input checked="" type="checkbox"/>

* Netherlands Heart Rhythm Association

National accreditation for physicians **Yes**

National accreditation for centres to perform EP **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Electrophysiologist

Specialty required for ICD or pacemaker implants **Yes**

ICD Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

NVVC Praktijkrichtlijnen voor ICD centra

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	17
ICD implantation	19
Electrophysiological studies and catheter ablation	15
CRT implantation	19
Atrial fibrillation ablation	9

Number of medical faculties



7

Percentage of academic facilities among practicing EP and implant centres

50%

5. Pacemakers

Pacemaker units implanted

2008	10.400*			
2009	not available			
* approx.		0	6.000	12.000

Pacemaker units implanted and number of implanting centres

	2008
Implanting centres	100
New implants	not available
Replacements	not available
	2009
Implanting centres	100
New implants	not available
Replacements	not available



Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

	2008	
Implanting centres	17	
CRT pacemaker	156	
CRT ICD	1.319	
	2009	
Implanting centres	19	
CRT pacemaker	not available	
CRT ICD	not available	




0 700 1.400

Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

2008			
Implanting centres	17		
Single chamber	not available		
Dual chamber	not available		
First implants	2.644		
Replacements	639		
Total	3.238		
2009			
Implanting centres	19		
Single chamber	not available		
Dual chamber	not available		
First implants	not available		
Replacements	not available		
Total	not available		
		0	1.700
			3.400

Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008			
Implanting centres	not available		
Loop recorders	not available		
2009			
Implanting centres	not available		
Loop recorders	not available		



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
* Dutch ICD/Pacemaker Registration (DIPR)	

Availability of a national quality insurance system or complication registry **No**

**Availability of a national institution coordinating and guiding device recalls
Device Committee NHRA** **Yes**

10. Interventional electrophysiology

Number of performing catheter ablation centres

14

	2008	2009
Number of ablations performed	4.368	not available
Mean number (ablations/centres)	336	not available
Number of AF ablations	1.536	not available

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

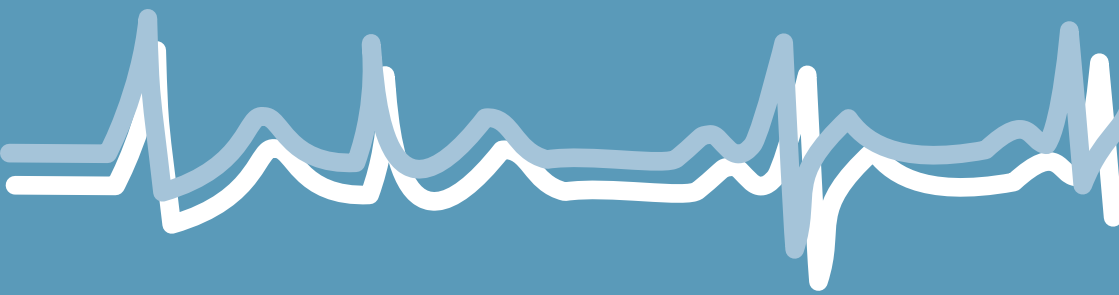
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

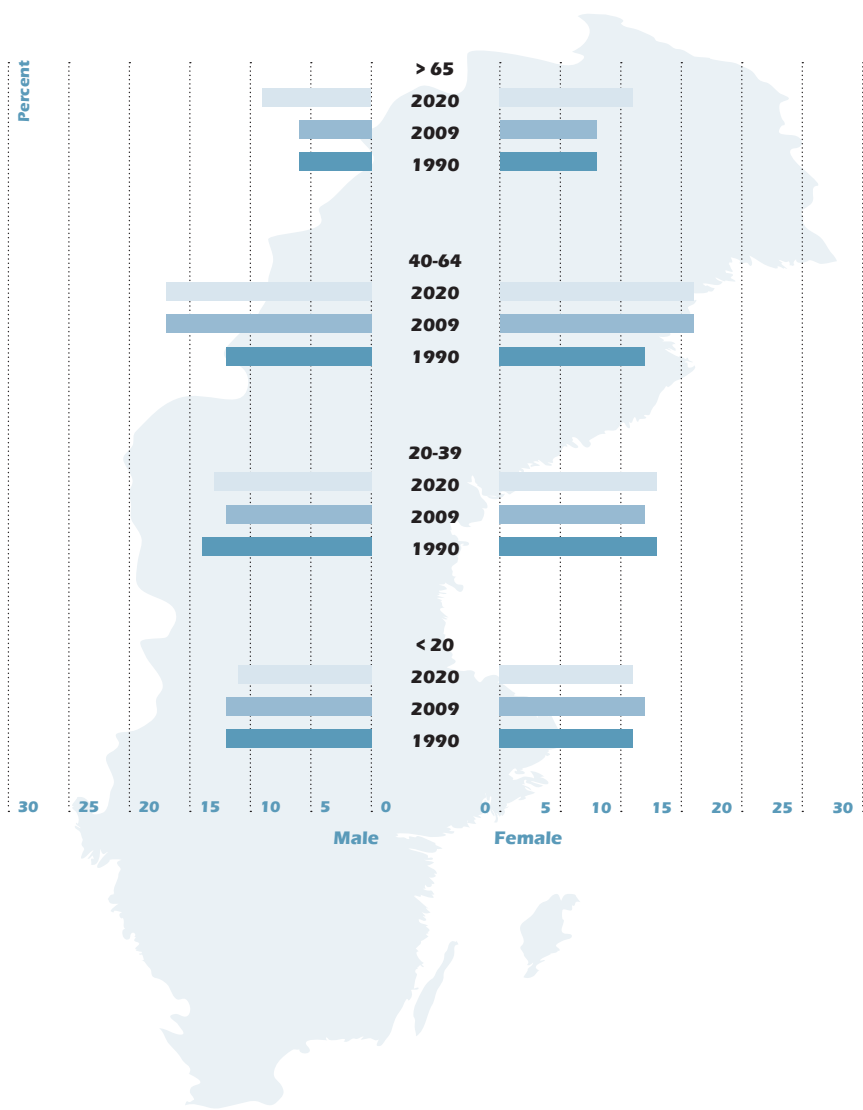
Sources: Netherlands Heart Rhythm Association (NHRA) – Chairman: Associate Professor. C. C. de Cock

NORWAY



1. Statistics

Age pyramid for Norway





Healthcare data

Hospitals (per 100.000 population)	1,5	2006
Beds (per 100.000 population)	396,16	2007
Density of physicians (per 1.000 population)	3,8	2007
Density of nurses (per 1.000 population)	15,47	2007

Demographic information

Population annual growth rate (%)	0,4	2009
Life expectancy at birth	80,7	2007
Death rate (per 1.000 population)	8,91	2007
Live births (per 1.000 population)	12,41	2007

Economic information

Gross domestic product (U.S dollar-billions)	368,96*	2009
Gross domestic product per capita (U.S dollar-units)	76.692,08*	2009
Total expenditure on health as % of GDP	8,7	2006
General government expenditure on health as % of total expenditure on health	83,6	2006
Private expenditure on health as % of total expenditure on health	16,4	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	290 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country


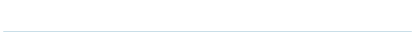

2008	39%
2009	not available

3. Healthcare System





In Norway, the healthcare system is nationally organised. The hospitals have free admission.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	0%	
Private co-payment	3%	
		

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres No

National Society supporting EHRA accreditation system No

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	5
ICD implantation	5
Electrophysiological studies and catheter ablation	4
CRT implantation	5
Atrial fibrillation ablation	4

Number of medical faculties

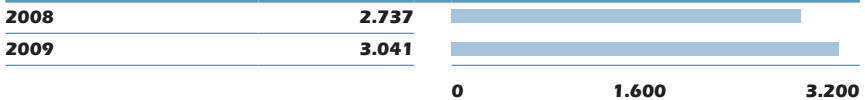
5

Percentage of academic facilities among practicing EP and implant centres

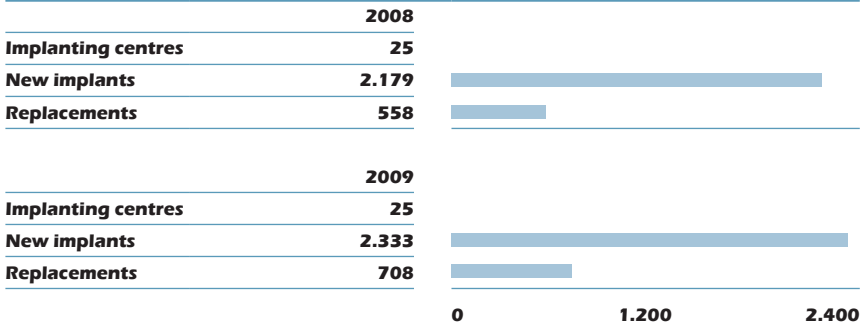
80%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



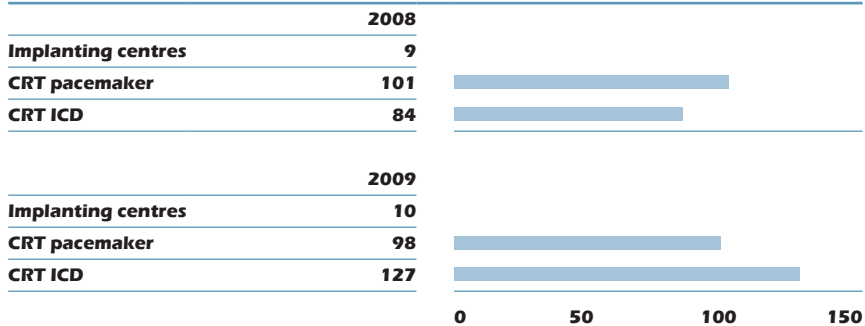


Specialty performing implants

Cardiologists	98,4%
Surgeons	1,6%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

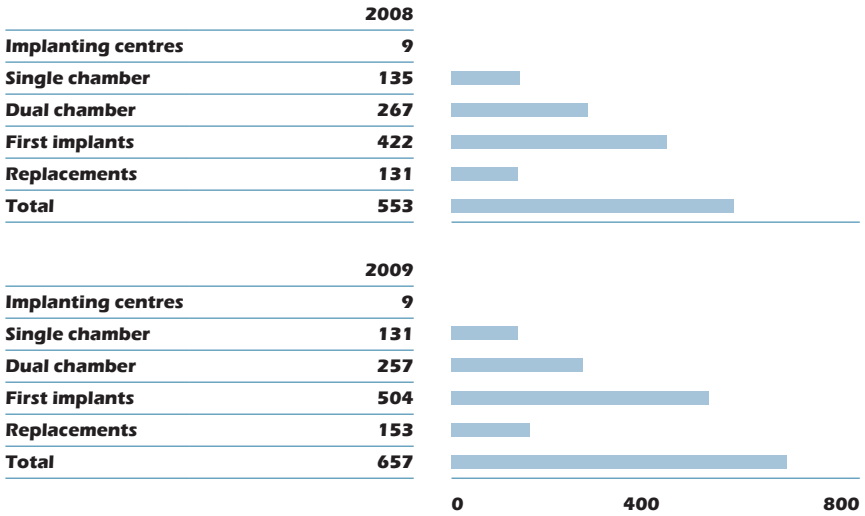


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



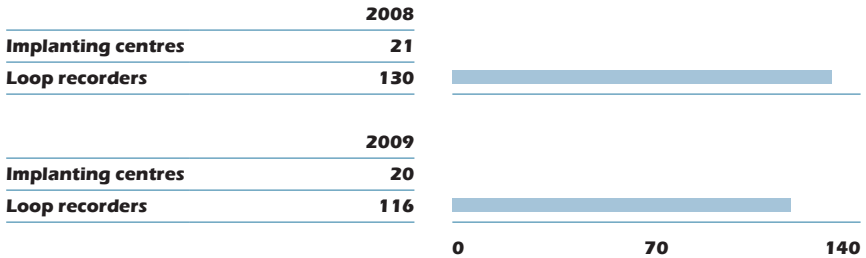
Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices



National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
Norwegian Pacemaker Registry	

Availability of a national quality insurance system or complication registry

Yes

Norwegian Pacemaker Registry
Incomplete complication registry

Availability of a national institution coordinating and guiding device recalls

No

10. Interventional electrophysiology

Number of performing catheter ablation centres

5

	2008	2009
Number of ablations performed	1.201	1.167
Mean number (ablations/centres)	240	233
Number of AF ablations	359	337

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

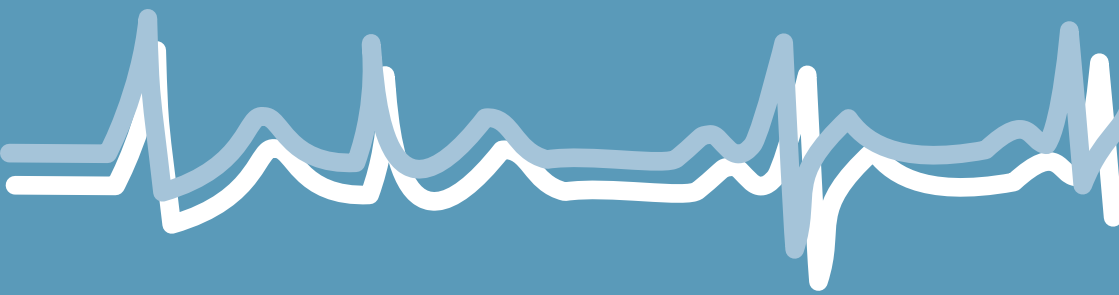
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

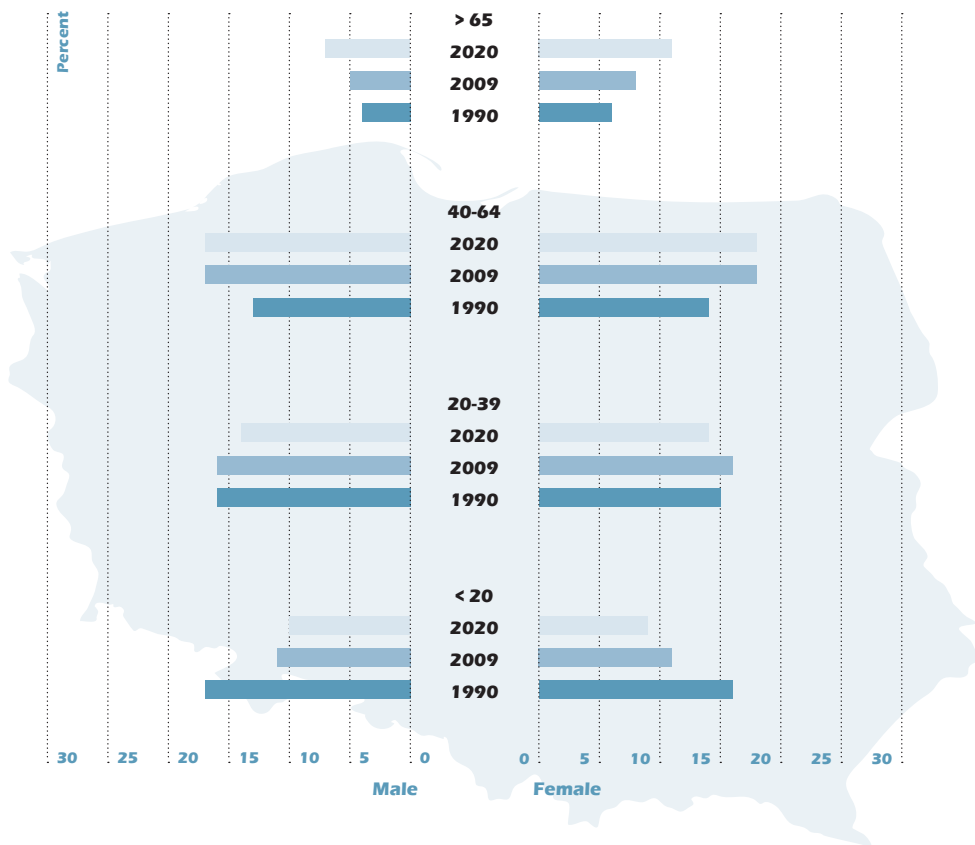
Sources: Norwegian Working Group of Arrhythmias – Chairman: Erik Kongsgaard and Norwegian Statistics

POLAND



1. Statistics

Age pyramid for Poland





Healthcare data

Hospitals (per 100.000 population)	2,08	2006
Beds (per 100.000 population)	516,17	2006
Density of physicians (per 1.000 population)	2,03	2006
Density of nurses (per 1.000 population)	4,69	2006

Demographic information

Population annual growth rate (%)	0	2009
Life expectancy at birth	75,45	2007
Death rate (per 1.000 population)	9,9	2008
Live births (per 1.000 population)	10,87	2008

Economic information

Gross domestic product (U.S dollar-billions)	422,96*	2009
Gross domestic product per capita (U.S dollar-units)	11.098,16*	2009
Total expenditure on health as % of GDP	6,2	2006
General government expenditure on health as % of total expenditure on health	69,9	2006
Private expenditure on health as % of total expenditure on health	30,1	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country

2008	40%*
2009	not available



* approx.

3. Healthcare System

Poland has the health care system (NHS Found) based on general health insurance (on compulsory basis).




Basic insurance availability Yes

Percentage of insured and uninsured citizens

Insured citizens	98%*	
Uninsured citizens	2%*	

* approx. 0 50 100

Distribution of insurance modality

Public insurance company	98%*	
Private insurance company	1%*	
Private co-payment	5%*	

* approx. 0 50 100

Possibility of subscribing to private health insurance plans Yes

Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>



Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
Polish Cardiac Society and Heart Rhythm Division Heart Rhythm Division's accreditation in process of acceptance of the Board of Polish Cardiac Society	

National accreditation for physicians

Yes

Licence from the Polish Medical Association

National accreditation for centres to perform EP

Yes

**Accreditation (three levels A,B and C) from the Heart Rhythm Divisions' which needs
acceptance from the Board of Polish Cardiac Society**

National Society supporting EHRA accreditation system

Yes

Specialty required for catheter ablation

No

Specialty required for ICD or pacemaker implants

No

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	60
ICD implantation	35
Electrophysiological studies and catheter ablation	11
CRT implantation	12
Atrial fibrillation ablation	5



Number of medical faculties **15**

Percentage of academic facilities among practicing EP and implant centres **30%***





* approx.

5. Pacemakers

Pacemaker units implanted

2008	27.251	
2009	27.194	
		0 15.000 30.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	99	
New implants	16.626	
Replacements	10.625	
		0 12.000 24.000
	2009	
Implanting centres	99	
New implants	22.573	
Replacements	4.621	

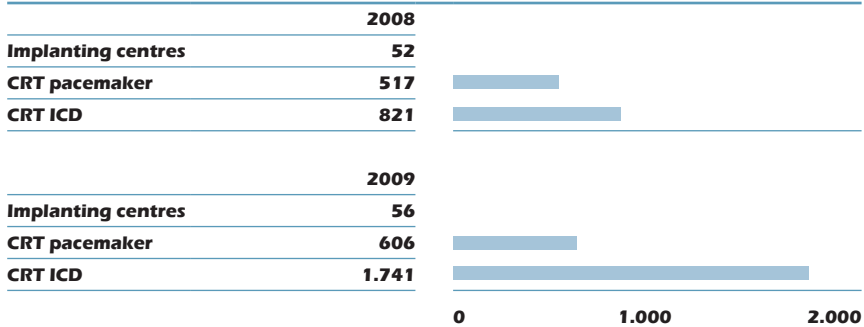
Specialty performing implants

Cardiologists	98%
Surgeons	1%
Other (Pediatrics)	1%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

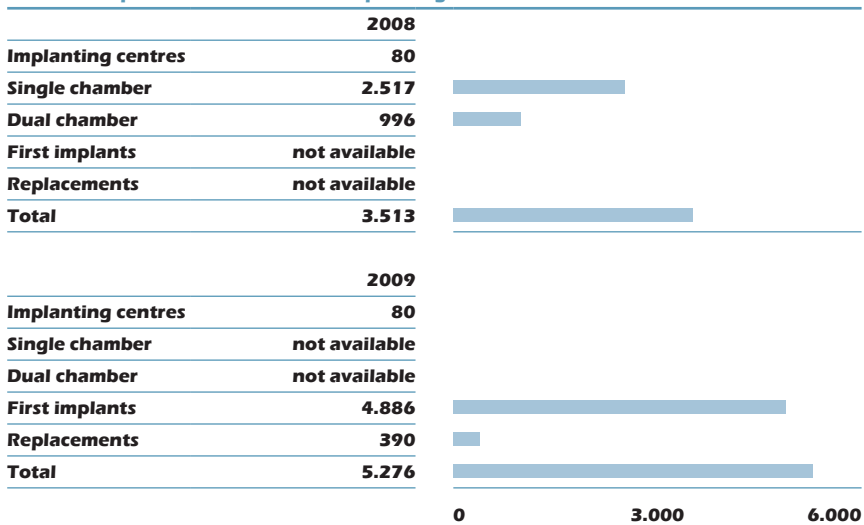


Specialty performing implants

Cardiologists	95%
Surgeons	0%
Other (Pediatrics)	5%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres




Specialty performing implants

Cardiologists	99%
Surgeons	0%
Other	1%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008			
Implanting centres	5		
Loop recorders	30		
2009			
Implanting centres	5		
Loop recorders	not available		
		0	30
			60

Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices



National Consultant for Cardiology

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>
Polish ICD Register; Elektroterapia; Polish Multicenter AF Ablation Register	

Availability of a national quality insurance system or complication registry **Yes**

Urząd Rejestracji Produktów Medycznych – Warsaw; National Consultant for Cardiology

Availability of a national institution coordinating and guiding device recalls **Yes**

Urząd Rejestracji Produktów Medycznych – Warsaw; National Consultant for Cardiology Cooperation – Heart Rhythm Division of Polish Cardiac Society

10. Interventional electrophysiology

Number of performing catheter ablation centres **42**

	2008	2009
Number of ablations performed	4.716	6.390
Mean number (ablations/centres)	124	152
Number of AF ablations	436	734

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language **Yes**

Obstacles to guideline implementation

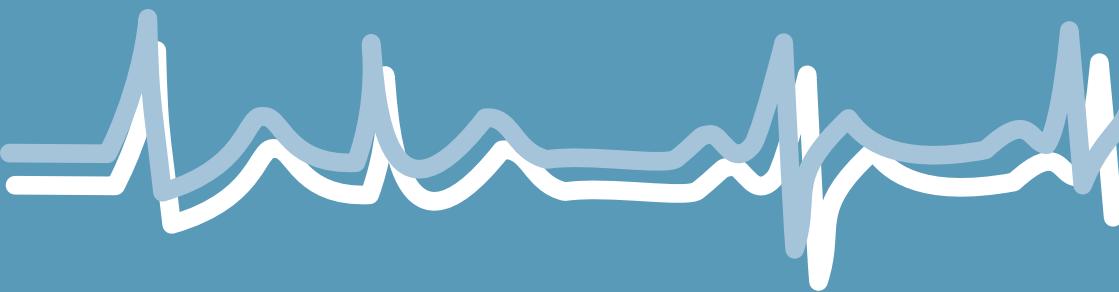
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

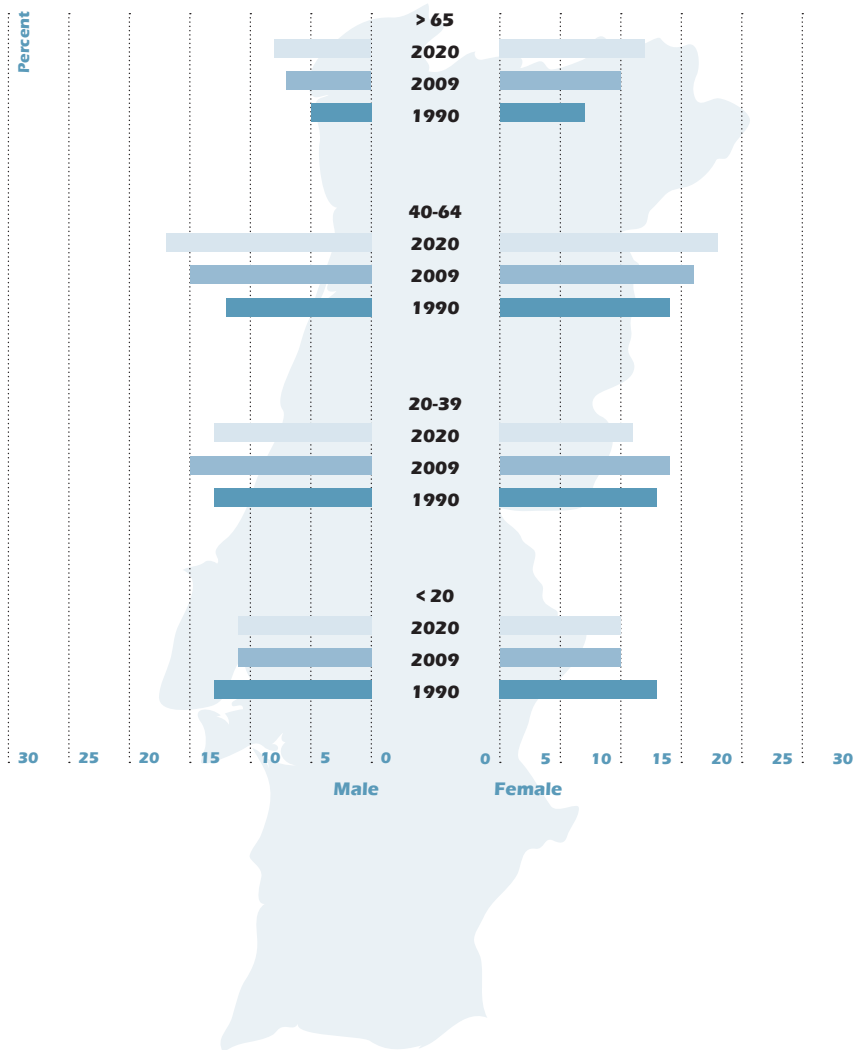
Sources: Heart Rhythm Division Polish Cardiac Society – Prof. Andrzej Kutarski

PORTUGAL



1. Statistics

Age pyramid for Portugal





Healthcare data

Hospitals (per 100.000 population)	1,93	2005
Beds (per 100.000 population)	345,44	2006
Density of physicians (per 1.000 population)	3,43	2005
Density of nurses (per 1.000 population)	4,81	2006

Demographic information

Population annual growth rate (%)	0,3	2009
Life expectancy at birth	78,31	2004
Death rate (per 1,000 population)	9,75	2004
Live births (per 1,000 population)	10,38	2005

Economic information

Gross domestic product (U.S dollar-billions)	219,84*	2009
Gross domestic product per capita (U.S dollar-units)	20.654,94*	2009
Total expenditure on health as % of GDP	10	2006
General government expenditure on health as % of total expenditure on health	71,8	2006
Private expenditure on health as % of total expenditure on health	28,2	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	340 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country


2008	32,3%
2009	not available

3. Healthcare System




The Portuguese healthcare system is composed by the National Health Service (NHS), the special social health schemes for certain professionals and the voluntary private health insurance. The NHS provides universal coverage. There are also private hospitals and clinics, which are paid privately or through the insurance. (Highlights on health, WHO, 2004)

Basic insurance availability No

Percentage of insured and uninsured citizens

Insured citizens	15,2%	
Uninsured citizens	not available	
		0 50 100

Distribution of insurance modality

Public insurance company	85%	
Private insurance company	15%	
Private co-payment	30%	
		0 50 100

Possibility of subscribing to private health insurance plans Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Those treatments are available in public hospitals.

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input type="checkbox"/>
CRT devices	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

These treatments are free in public services and they are not reimbursed for private payments.

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology*	<input checked="" type="checkbox"/>

* College of cardiology, subspecialty in Cardiac Electrophysiology

National accreditation for physicians

Yes

The Medical Nacional Board

National accreditation for centres

No

National Society supporting EHRA accreditation system

No

Our meetings are accredited by EBAC

Specialty required for catheter ablation

Yes

Cardiologist with the sub-specialty in Cardiac Electrophysiology

Specialty required for ICD or pacemaker implants

Yes

Cardiologist with the sub-specialty in Cardiac Electrophysiology

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	12
ICD implantation	5
Electrophysiological studies and catheter ablation	5
CRT implantation	5
Atrial fibrillation ablation	3

Number of medical faculties

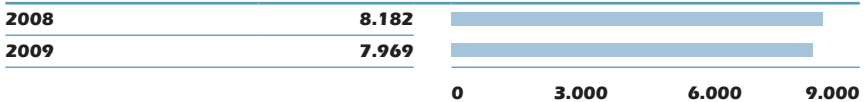
7

Percentage of academic facilities among practicing EP and implant centres

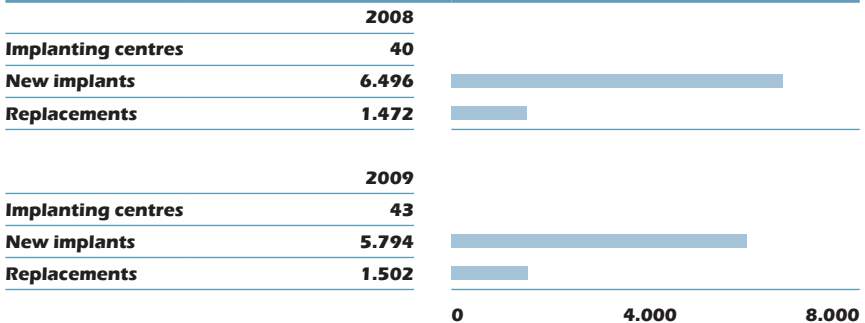
37,5%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



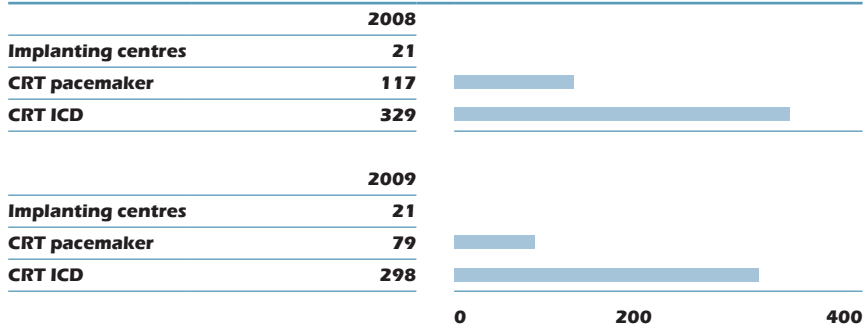


Specialty performing implants

Cardiologists	99%
Surgeons	1%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

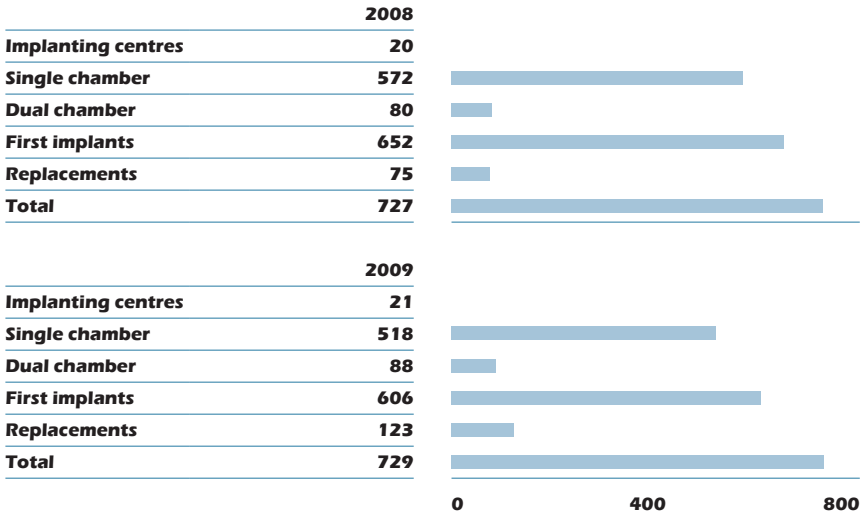


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	90%
Surgeons	10%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008	
Implanting centres	not available
Loop recorders	not available

2009	
Implanting centres	not available
Loop recorders	not available



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

In very few centers

National registry for

ICD

Pacing

Electrophysiology

APAPE National Registry

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

INFARMED

10. Interventional electrophysiology

Number of performing catheter ablation centres

16

	2008	2009
Number of ablations performed	1.594	1.391
Mean number (ablations/centres)	100	87
Number of AF ablations	233	318

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

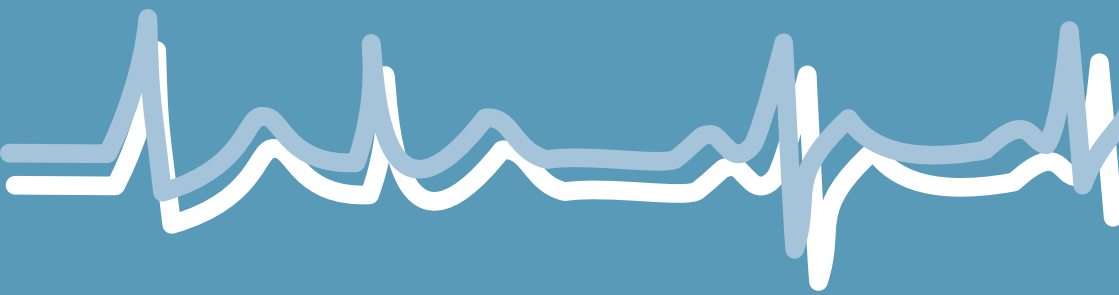
5 = great obstacle

Sources: Portuguese Association of Arrhythmology, Pacing and Electrophysiology (APAPE) – Chairman Dr. João Jose Primo, APAPE registry, National Institute of Statistics, Pordata and National Institute of Insurances

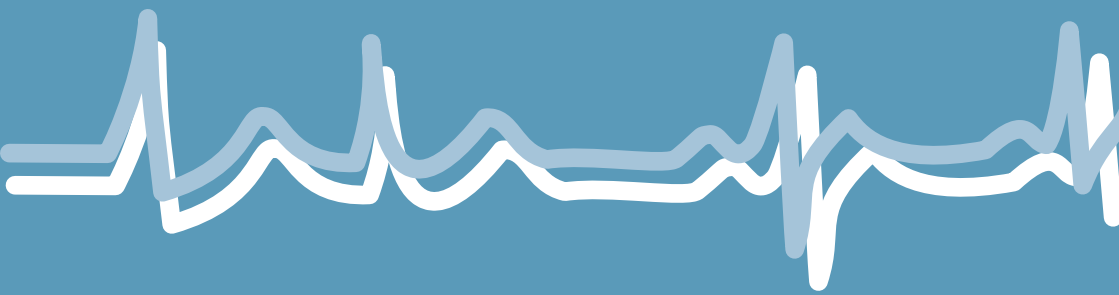


REPUBLIC OF MOLDOVA

There will be information in the next edition.

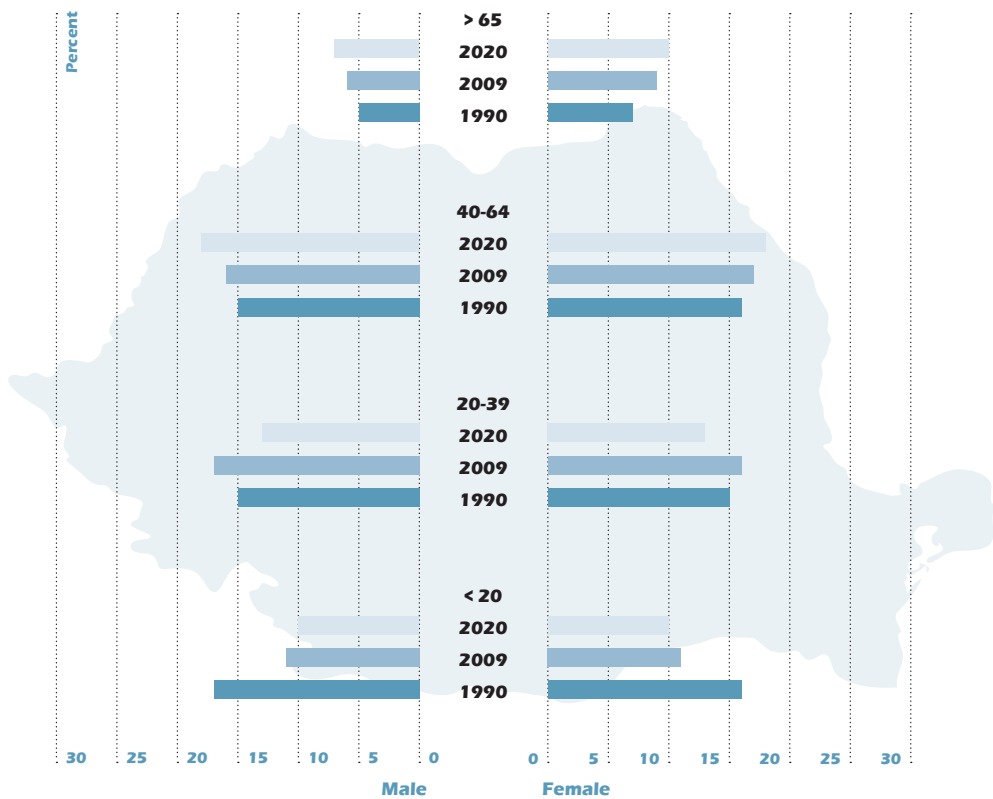


ROMANIA



1. Statistics

Age pyramid for Romania





Healthcare data

Hospitals (per 100.000 population)	1,94	2006
Beds (per 100.000 population)	654,29	2006
Density of physicians (per 1.000 population)	1,92	2006
Density of nurses (per 1.000 population)	3,97	2006

Demographic information

Population annual growth rate (%)	-0,1	2009
Life expectancy at birth	73,47	2008
Death rate (per 1.000 population)	11,77	2008
Live births (per 1.000 population)	10,32	2008

Economic information

Gross domestic product (U.S dollar-billions)	160,67*	2009
Gross domestic product per capita (U.S dollar-units)	7.502,90*	2009
Total expenditure on health as % of GDP	5,7	2006
General government expenditure on health as % of total expenditure on health	71	2006
Private expenditure on health as % of total expenditure on health	29	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System




The adoption of the Law on Social Health Insurance in 1997 initiated the transformation of the Romanian health-care system from a Semashko state-financed model to an insurance-based system. Since the law came into force in 1998, earmarked payroll contributions have become the main source of health sector revenue. The National Health system has been funded by the National Health Care Insurance Fund, to which employers and employees make mandatory contributions. Health insurance covers ambulatory, inpatient, and dental care, including clinical preventive services and drugs. A framework contract, agreed upon annually by the National Health Insurance Fund (NHIF) and the College of Physicians and approved by the Cabinet, defines the benefits package, conditions for service delivery, and payment mechanisms.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	98%	
Uninsured citizens	2%	
		0 50 100

Distribution of insurance modality

Public insurance company	57%	
Private insurance company	14%	
Private co-payment	29%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
In very limited numbers of ICDs	

Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>
In very limited number of complex devices.	

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	12
ICD implantation	7
Electrophysiological studies and catheter ablation	7
CRT implantation	5
Atrial fibrillation ablation	0

Number of medical faculties



11

Percentage of academic facilities among practicing EP and implant centres

100%

5. Pacemakers

Pacemaker units implanted

2008	2.348	
2009	3.000	
* It refers to only one center	0	1.500 3.000

Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		18
New implants		not available
Replacements		not available
		2009
Implanting centres		18
New implants		not available
Replacements		not available

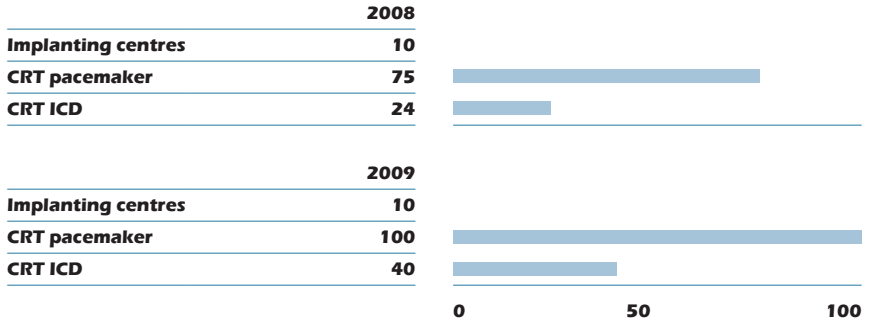


Specialty performing implants

Cardiologists	100%
Surgeons	0%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres





Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

2008		
Implanting centres	12	
Single chamber	not available	
Dual chamber	not available	
First implants	not available	
Replacements	not available	
Total	106	
2009		
Implanting centres	12	
Single chamber	not available	
Dual chamber	not available	
First implants	not available	
Replacements	not available	
Total	125	
		0 70 140

Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres

2008	
Implanting centres	not available
Loop recorders	not available
2009	
Implanting centres	not available
Loop recorders	not available

Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres

11

	2008	2009
Number of ablations performed	780	904
Mean number (ablations/centres)	70	82
Number of AF ablations	0	4

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

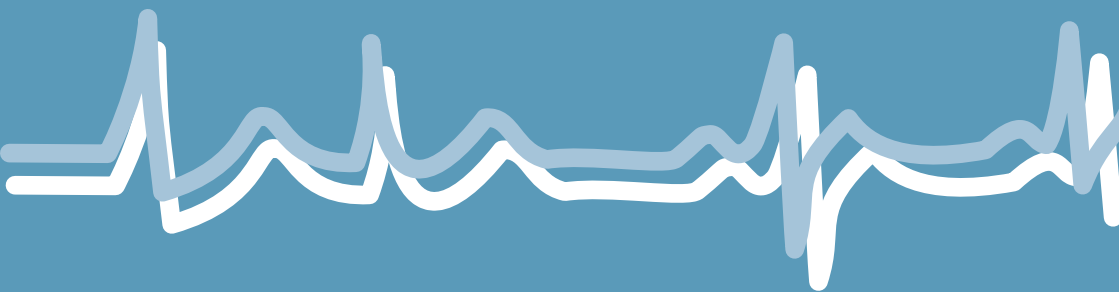
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

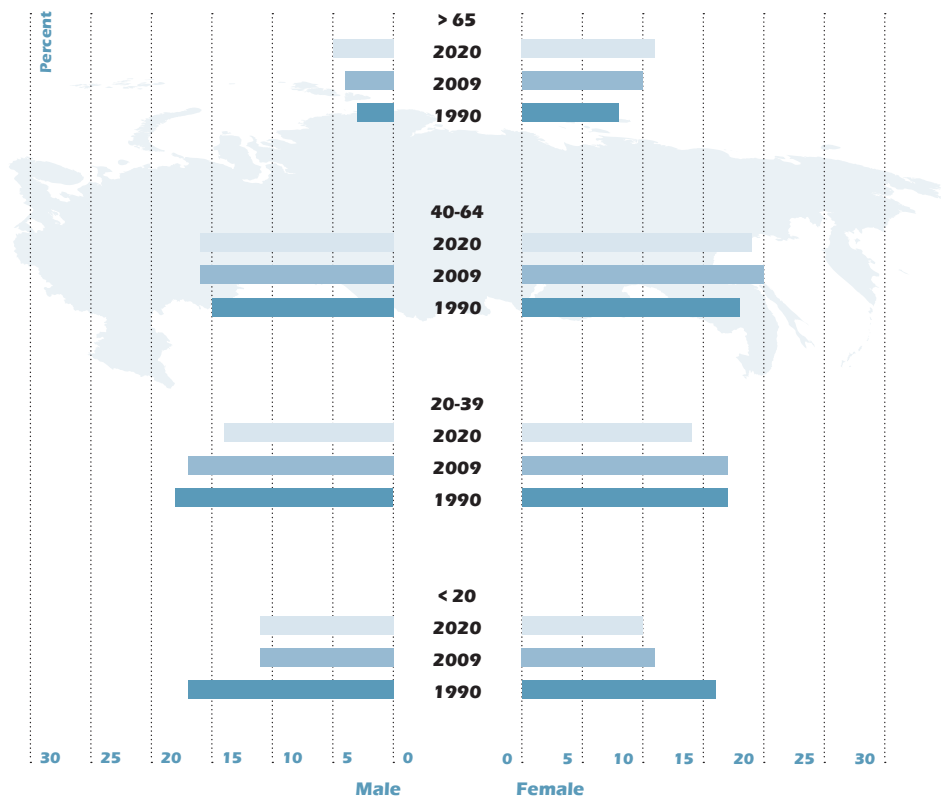
Sources: Romanian Society of Cardiology, Arrhythmias Working Group – President: Assoc. Prof. Dan Dobreanu

RUSSIAN FEDERATION



1. Statistics

Age pyramid for Russian Federation





Healthcare data

Hospitals (per 100.000 population)	4,5	2006
Beds (per 100.000 population)	965,85	2006
Density of physicians (per 1.000 population)	4,31	2006
Density of nurses (per 1.000 population)	8,06	2006

Demographic information

Population annual growth rate (%)	-0,5	2009
Life expectancy at birth	66,67	2006
Death rate (per 1.000 population)	15,21	2006
Live births (per 1.000 population)	10,38	2006

Economic information

Gross domestic product (U.S dollar-billions)	1.254,65*	2009
Gross domestic product per capita (U.S dollar-units)	8.873,61*	2009
Total expenditure on health as % of GDP	5,3	2006
General government expenditure on health as % of total expenditure on health	63,2	2006
Private expenditure on health as % of total expenditure on health	36,8	2006

* IMF estimative



Reimbursement availability

Internal loop recorders	<input type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation No

Specialty required for ICD or pacemaker implants No

Official national competency guidelines for electrophysiological studies or catheter ablation Yes

Russian Society of Arrhythmology

Required period of training to perform implantations 3 years

Training centres availability



Pacemaker	7
ICD implantation	7
Electrophysiological studies and catheter ablation	7
CRT implantation	5
Atrial fibrillation ablation	5

Number of medical faculties **not available**





Percentage of academic facilities among practicing EP and implant centres **not available**

5. Pacemakers

Pacemaker units implanted

2008	23.751	
2009	26.375	
* approx.		0 10.000 20.000 30.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	110	
New implants	20.163	
Replacements	3.588	
	2009	
Implanting centres	115	
New implants	22.516	
Replacements	3.859	
		0 12.000 24.000

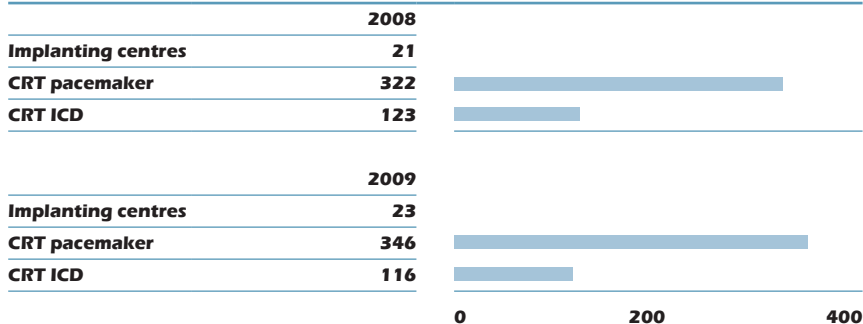
Specialty performing implants

Cardiologists	70%
Surgeons	30%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

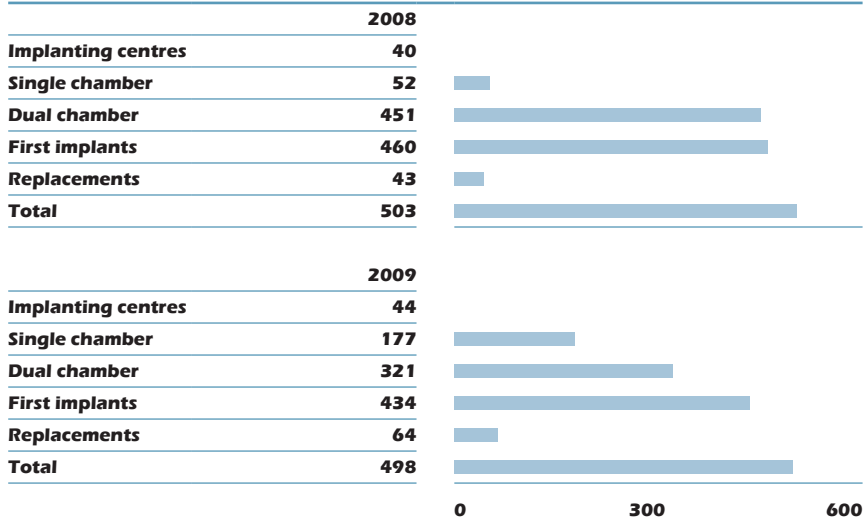


Specialty performing implants

Cardiologists	70%
Surgeons	30%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres




Specialty performing implants

Cardiologists	70%
Surgeons	30%

8. Loop recorders

Loop recorders implanted and number of implanting centres

		2008		
Implanting centres		17		
Loop recorders		85		
		2009		
Implanting centres		not available		
Loop recorders		not available		
		0	50	100

Specialty performing implants

Cardiologists	30%
Surgeons	70%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>
Russian Centre of Arrhythmology	

Availability of a national quality insurance system or complication registry **Yes**

Russian Customer Control

Availability of a national institution coordinating and guiding device recalls **Yes**

Bakoulev Scientific Centre for Cardio-Vascular Surgery



10. Interventional electrophysiology

Number of performing catheter ablation centres

57

	2008	2009
Number of ablations performed	11.200	13.384
Mean number (ablations/centres)	196	194
Number of AF ablations	1.500	2.514

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

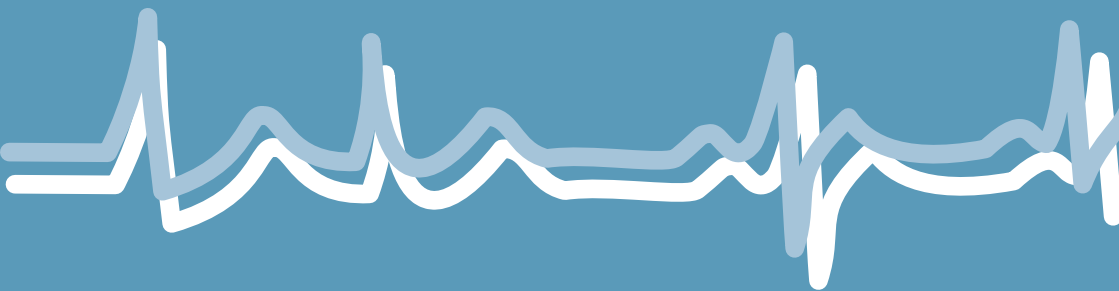
5 = great obstacle

Sources: Clinical Electrophysiology, Arrhythmology and Cardiac Pacing – Russian Federation, Chairman: Prof. A. Sh. Revishvili

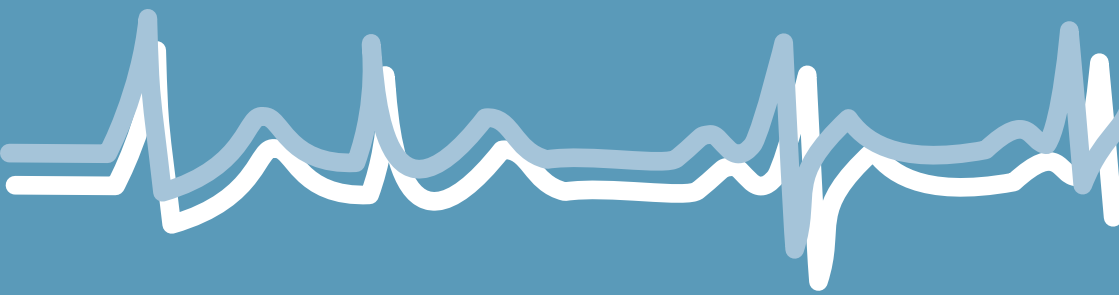


SAN MARINO

There will be information in the next edition.

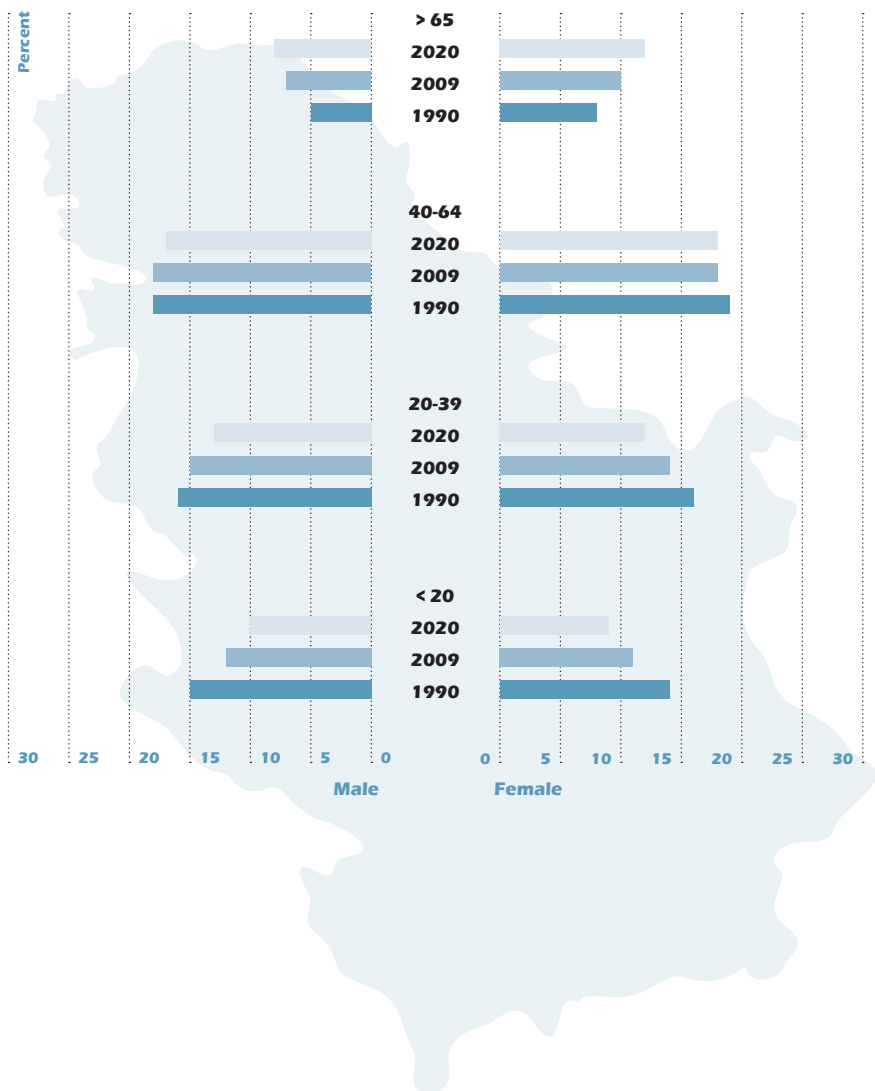


SERBIA



1. Statistics

Age pyramid for Serbia





Healthcare data

Hospitals (per 100.000 population)	1,4	2007
Beds (per 100.000 population)	540,26	2007
Density of physicians (per 1.000 population)	2,71	2007
Density of nurses (per 1.000 population)	5,57	2007

Demographic information

Population annual growth rate (%)	-0,5	2009
Life expectancy at birth	73,69	2007
Death rate (per 1.000 population)	13,97	2008
Live births (per 1.000 population)	9,4	2008

Economic information

Gross domestic product (U.S dollar-billions)	42,39*	2009
Gross domestic product per capita (U.S dollar-units)	5.742,04*	2009
Total expenditure on health as % of GDP	7,6	2006
General government expenditure on health as % of total expenditure on health	71	2006
Private expenditure on health as % of total expenditure on health	29	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	304 per 100.000 citizens
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	55,8%
2009	not available

3. Healthcare System


The National healthcare system in Serbia is provided through an established network of health centers and health stations (primary care). As a secondary and tertiary care, general hospitals, university clinical centers and specialised institutions are providing services. The private healthcare is not incorporated to the national healthcare system.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	95%	
Uninsured citizens	5%	
		0 50 100

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	not available	
Private co-payment	not available	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

It is mandatory the payment of 5% of the implant cost, however to a maximum amount of 200 Euros.

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

The Working Group on cardiac pacing provides the Statement for Pacing and Device therapy for participants who passed on the 6 month training in the referral center.

National accreditation for physicians Yes

National accreditation for centres No

The Ministry of Health accredited the Pacemaker Center in Clinical center of Serbia as referral for the country.

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist

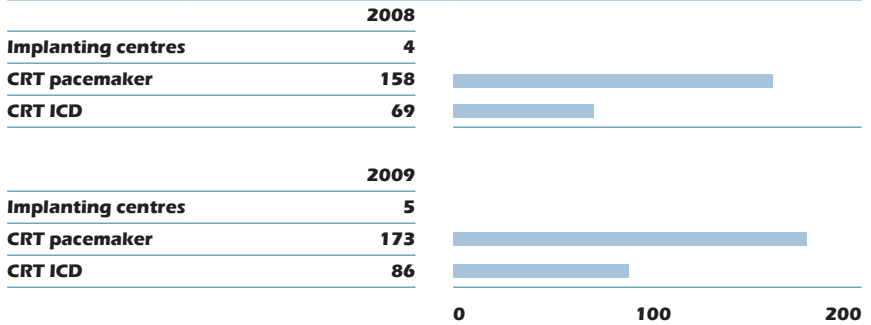


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

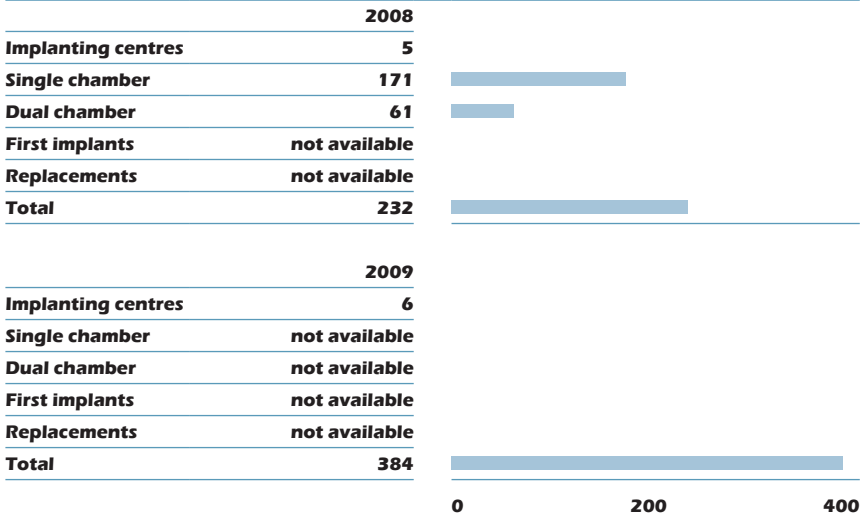


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



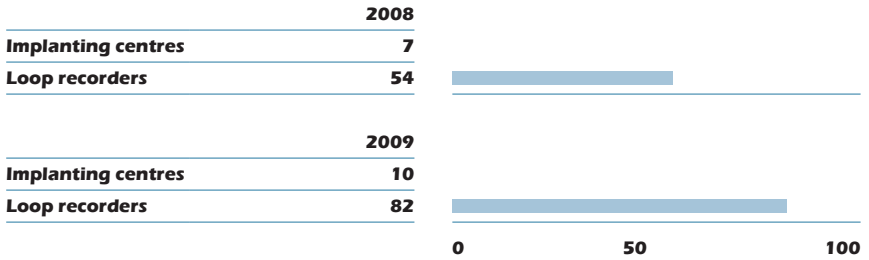
Specialty performing implants

Cardiologists	100%
Surgeons	0%



8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>

Referral Pacemaker center, Clinical center of Serbia

Availability of a national quality insurance system or complication registry **Yes**

Ministry of Health of Serbia

Availability of a national institution coordinating and guiding device recalls **Yes**

Ministry of Health of Serbia

10. Interventional electrophysiology

Number of performing catheter ablation centres

3

	2008	2009
Number of ablations performed	610	840
Mean number (ablations/centres)	203	280
Number of AF ablations	55	75

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

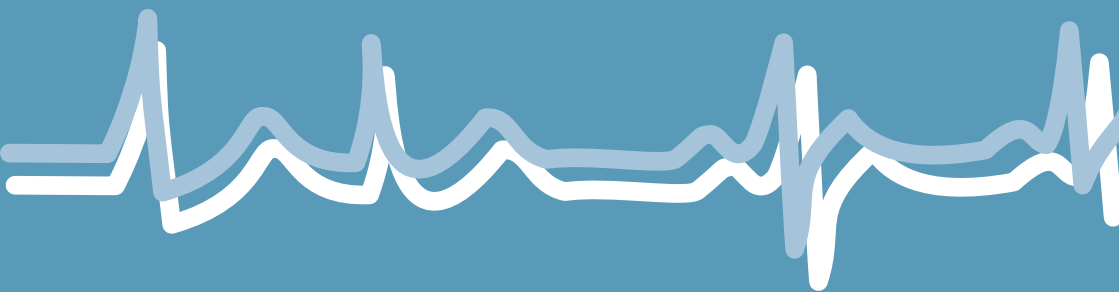
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: Limited finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

1 = no obstacle

5 = great obstacle

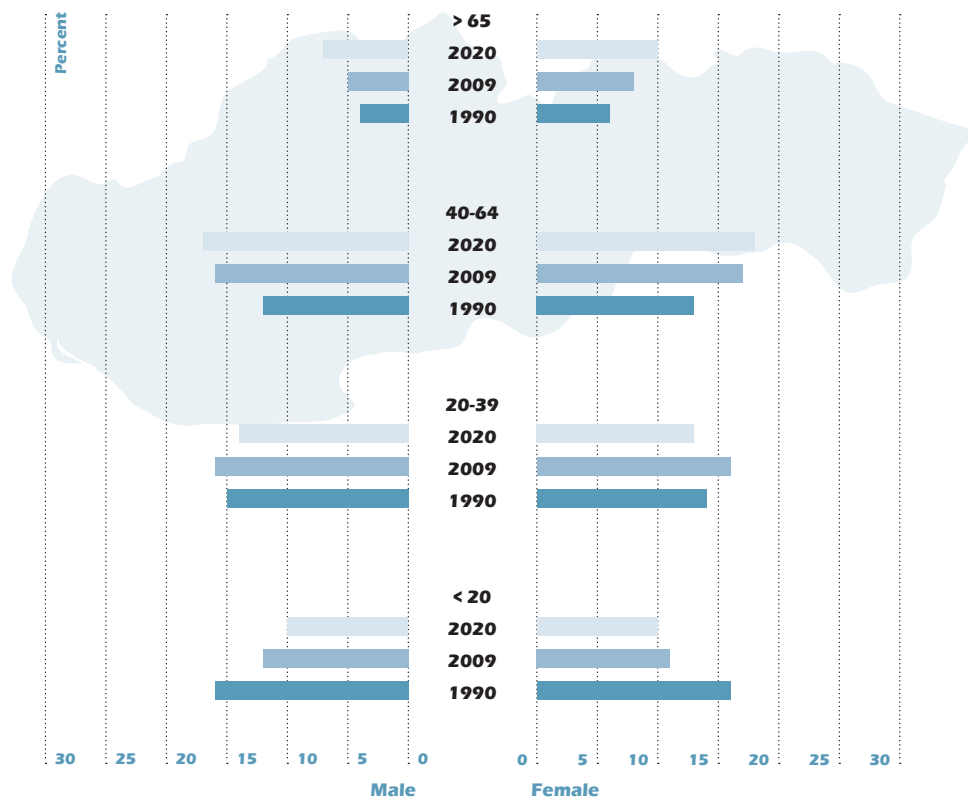
Sources: Serbian Working Group on Cardiac Pacing – Chairman: Prof. Goran Milasinovic

SLOVAKIA



1. Statistics

Age pyramid for Slovakia





Healthcare data

Hospitals (per 100.000 population)	2,65	2007
Beds (per 100.000 population)	678,84	2007
Density of physicians (per 1.000 population)	3,13	2004
Density of nurses (per 1.000 population)	6,32	2005

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	74,3	2005
Death rate (per 1.000 population)	9,92	2005
Live births (per 1.000 population)	10,1	2005

Economic information

Gross domestic product (U.S dollar-billions)	88,30*	2009
Gross domestic product per capita (U.S dollar-units)	16.315,41*	2009
Total expenditure on health as % of GDP	7	2006
General government expenditure on health as % of total expenditure on health	73,9	2006
Private expenditure on health as % of total expenditure on health	26,1	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
Certified clinical activity in implantation and management of pacemakers (starting in 2010)	
Certified clinical activity in diagnostic and interventional electrophysiology (starting in 2010)	

National accreditation for physicians **No**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist, surgeon

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Ministry of Health of the Slovak republic

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	3
ICD implantation	3
Electrophysiological studies and catheter ablation	3
CRT implantation	3
Atrial fibrillation ablation	1

Number of medical faculties

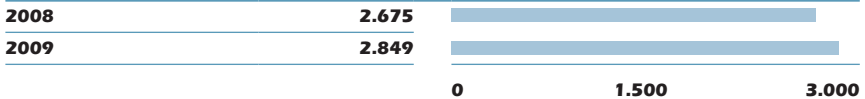
4

Percentage of academic facilities among practicing EP and implant centres

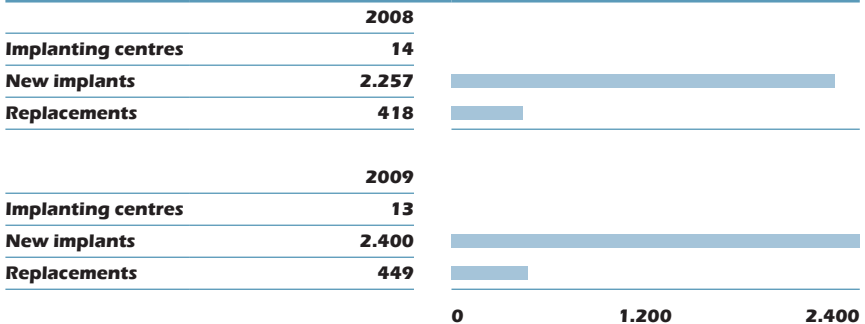
38%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



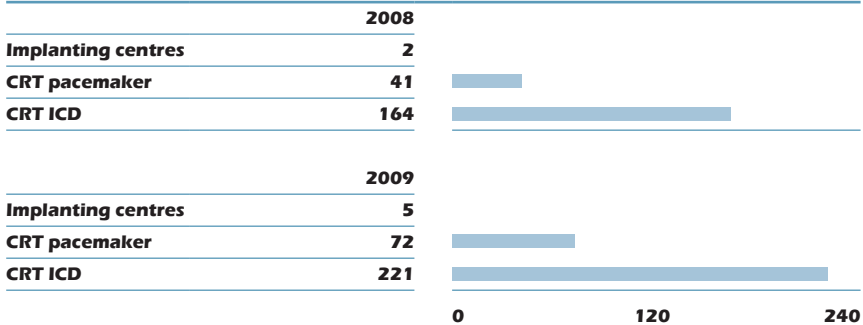


Specialty performing implants

Cardiologists	75%
Surgeons	25%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

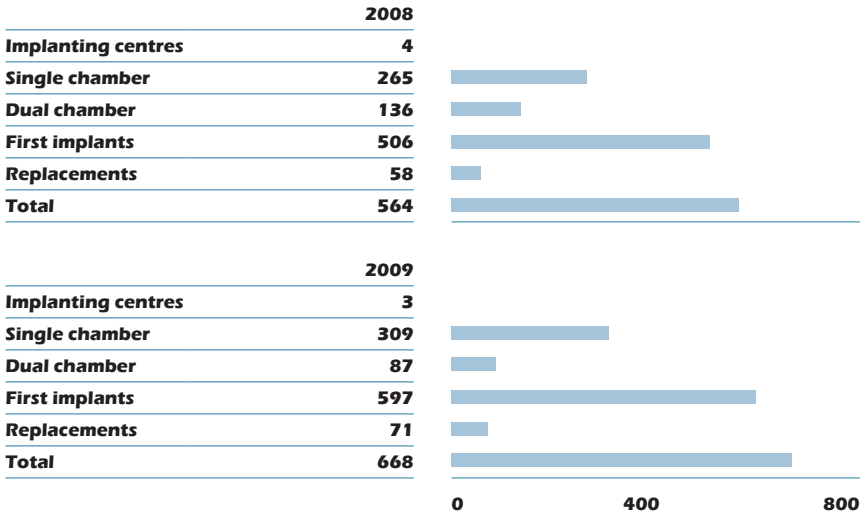


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	75%
Surgeons	25%

8. Loop recorders

Loop recorders implanted and number of implanting centres

2008	
Implanting centres	3
Loop recorders	not available

2009	
Implanting centres	3
Loop recorders	not available



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
Slovimpulz	

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**
SUKL (State Institute for Drug Control)

10. Interventional electrophysiology

Number of performing catheter ablation centres

4

	2008	2009
Number of ablations performed	878	889
Mean number (ablations/centres)	220	222
Number of AF ablations	118	129

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

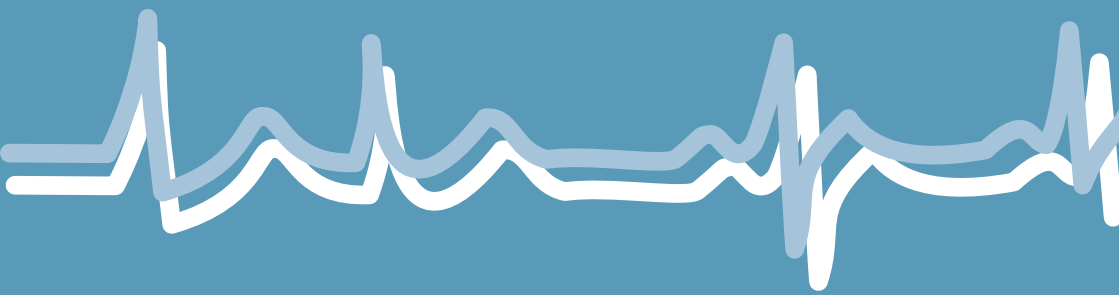
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

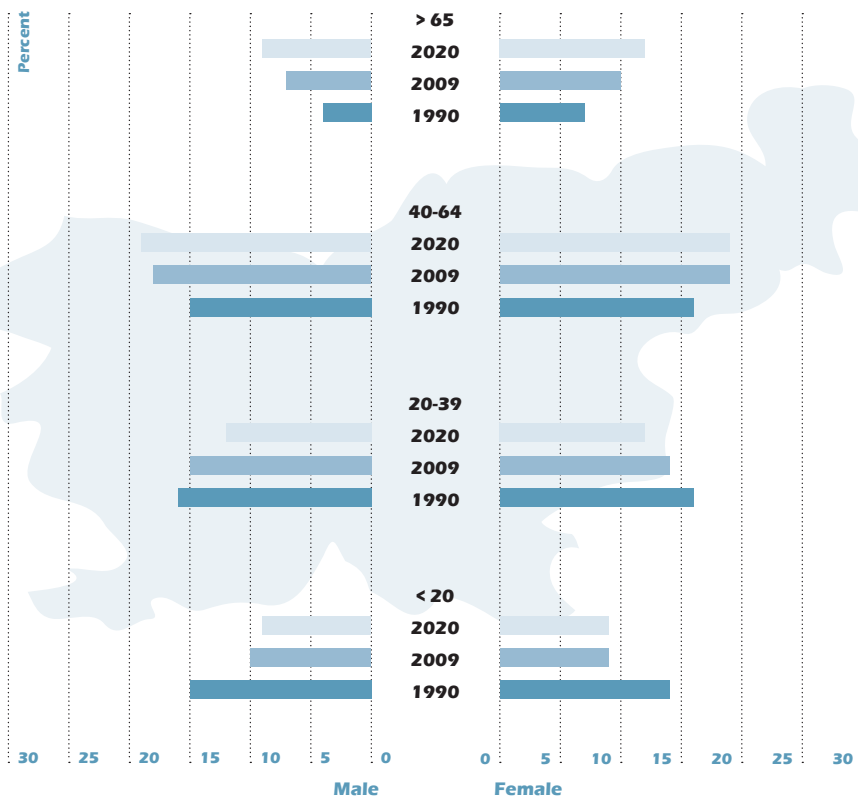
Source: Slovak Heart Rhythm Association – Chairman: Prof. Dr. Robert Hatala

SLOVENIA



1. Statistics

Age pyramid for Slovenia





Healthcare data

Hospitals (per 100.000 population)	1,44	2007
Beds (per 100.000 population)	466,18	2007
Density of physicians (per 1.000 population)	2,37	2006
Density of nurses (per 1.000 population)	7,65	2006

Demographic information

Population annual growth rate (%)	-0,1	2009
Life expectancy at birth	78,53	2007
Death rate (per 1.000 population)	9,2	2007
Live births (per 1.000 population)	9,81	2007

Economic information

Gross domestic product (U.S dollar-billions)	49,55*	2009
Gross domestic product per capita (U.S dollar-units)	24.583,31*	2009
Total expenditure on health as % of GDP	8,4	2006
General government expenditure on health as % of total expenditure on health	73	2006
Private expenditure on health as % of total expenditure on health	27	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country

2008	not available
2009	not available



3. Healthcare System

The healthcare system in Slovenia is based on the public system. The National health insurance institute is an autonomous fund.




Basic insurance availability

No

Percentage of insured and uninsured citizens

Insured citizens	99%	
Uninsured citizens	1%	
		0 50 100

Distribution of insurance modality

Public insurance company	85%	
Private insurance company	13%	
Private co-payment	2%	
		0 50 100

Possibility of subscribing to private health insurance plans

Yes



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Internist

Specialty required for ICD or pacemaker implants **Yes**

Surgeon or internist

Official national competency guidelines for electrophysiological studies or catheter ablation **No**

Required period of training to perform implantations **No**

Training centres availability

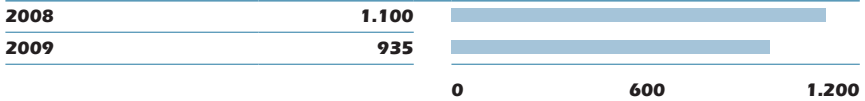
Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	2

Number of medical faculties **2**

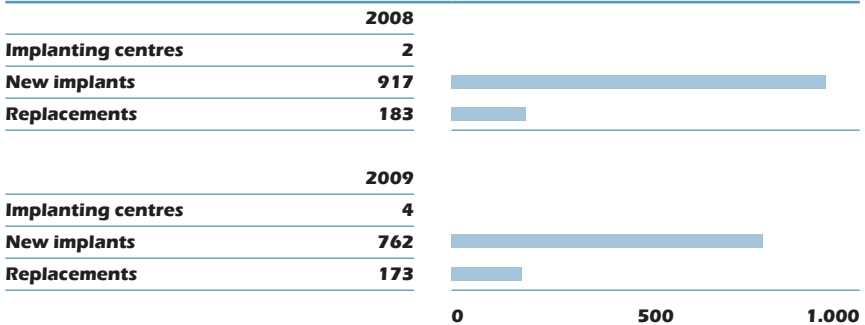
Percentage of academic facilities among practicing EP and implant centres **50%**

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



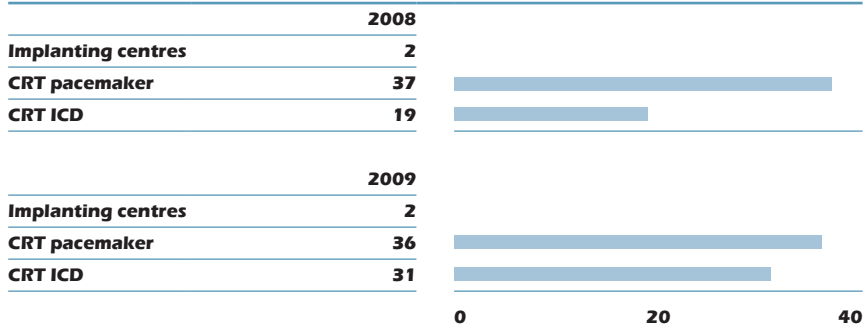
Specialty performing implants

Cardiologists	0%
Surgeons	100%



6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

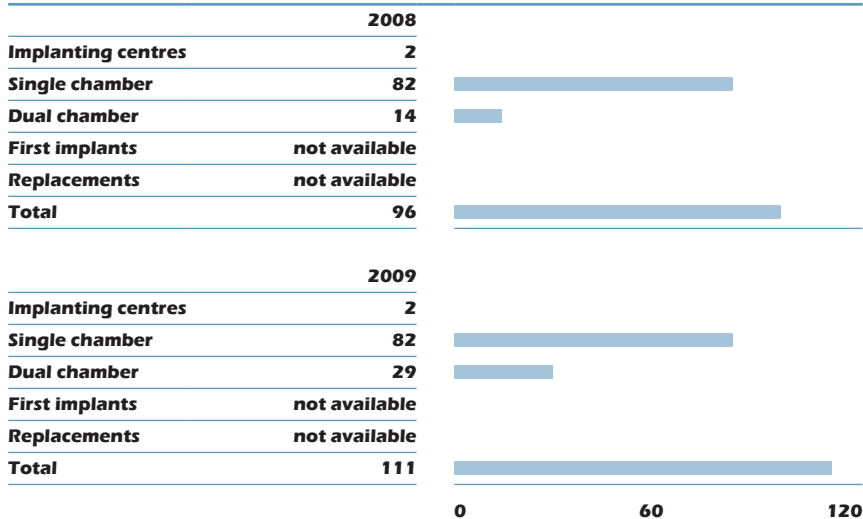


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres





Specialty performing implants

Cardiologists	23%
Surgeons	77%

8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008	
Implanting centres	2	
Loop recorders	10*	
	2009	
Implanting centres	1	
Loop recorders	26	
* approx.	0	15 30

Specialty performing implants

Cardiologists	50%
Surgeons	50%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>
Working Group on EP and Electrostimulation	

Availability of a national quality insurance system or complication registry **Yes**

Agency for Medical Products and Medical Devices of the Republic of Slovenia

Availability of a national institution coordinating and guiding device recalls **Yes**

Public Agency for Medicinal Products and Medical Devices of the Republic of Slovenia

10. Interventional electrophysiology

Number of performing catheter ablation centres **2**

	2008	2009
Number of ablations performed	296	246
Mean number (ablations/centres)	148	123
Number of AF ablations	50	94

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language **No**

Obstacles to guideline implementation

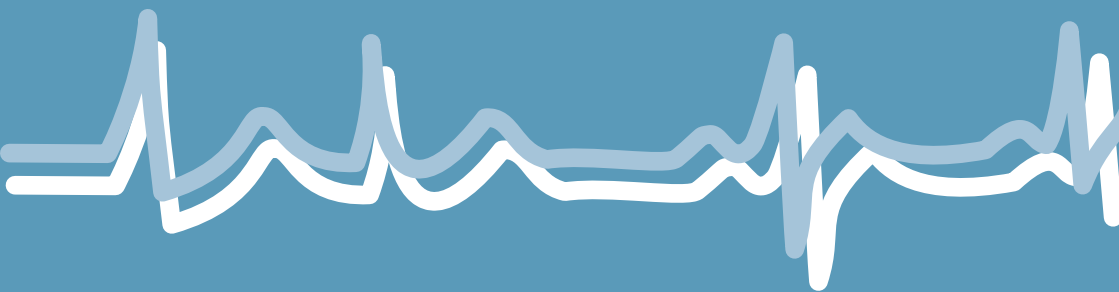
	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

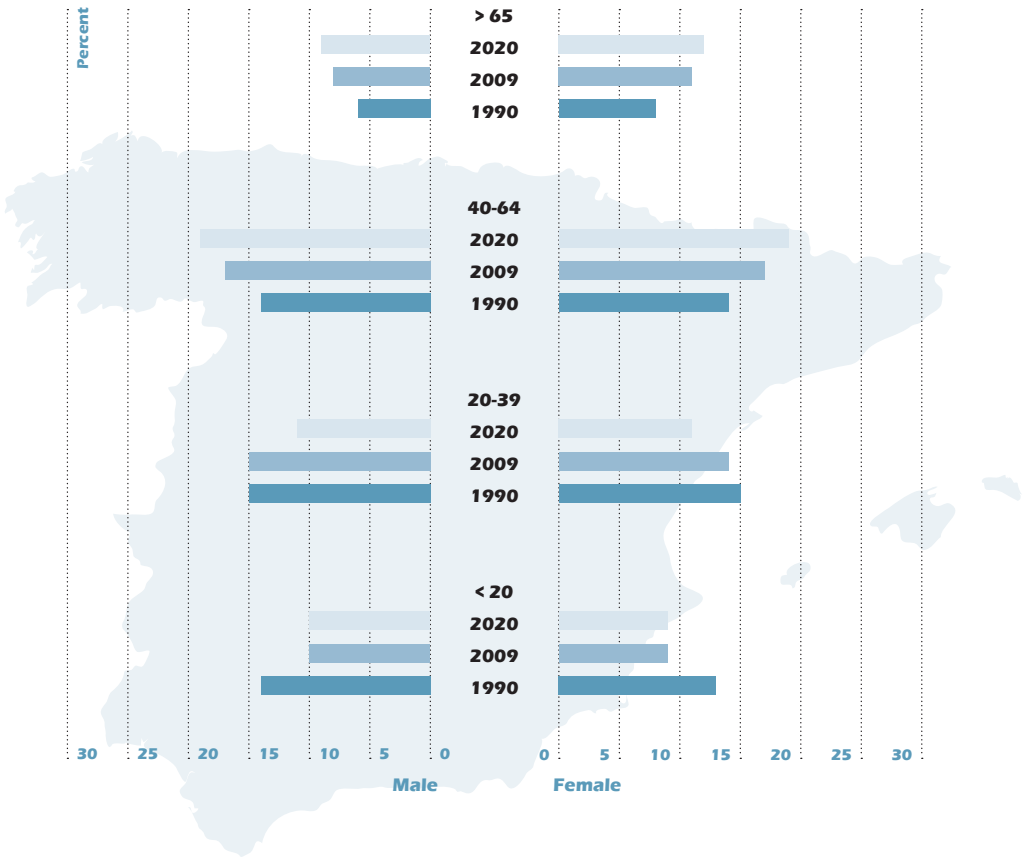
**Sources: Slovenia National Working Group on Arrhythmias and Pacing – Chairman:
Prof. P. Rakovec**

SPAIN



1. Statistics

Age pyramid for Spain





Healthcare data

Hospitals (per 100.000 population)	1,72	2006
Beds (per 100.000 population)	337,03	2006
Density of physicians (per 1.000 population)	3,76	2007
Density of nurses (per 1.000 population)	7,44	2006

Demographic information

Population annual growth rate (%)	0,1	2009
Life expectancy at birth	80,44	2005
Death rate (per 1.000 population)	8,93	2005
Live births (per 1.000 population)	10,75	2005

Economic information

Gross domestic product (U.S dollar-billions)	1.438,35*	2009
Gross domestic product per capita (U.S dollar-units)	31.141,50*	2009
Total expenditure on health as % of GDP	8,1	2006
General government expenditure on health as % of total expenditure on health	72,5	2006
Private expenditure on health as % of total expenditure on health	27,5	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy*	<input checked="" type="checkbox"/>
Invasive electrophysiology**	<input checked="" type="checkbox"/>

* Acreditación en estimulación cardiaca

** Acreditación de formación específica y excelencia para la práctica de Electrofisiología Cardiaca Intervencionista

National accreditation for physicians Yes

National accreditation for centres Yes

National Society supporting EHRA accreditation system Yes

Specialty required for catheter ablation Yes

Cardiologist

Specialty required for ICD or pacemaker implants Yes

Cardiologist, cardiac surgeon, intensive care physician

Official national competency guidelines for electrophysiological studies or catheter ablation **Yes**

Sociedad Española de Cardiología

Required period of training to perform implantations **No**

Training centres availability



Pacemaker	43
ICD implantation	36
Electrophysiological studies and catheter ablation	37
CRT implantation	31
Atrial fibrillation ablation	14

Number of medical faculties **26**

Percentage of academic facilities among practicing EP and implant centres **50%**

5. Pacemakers

Pacemaker units implanted

2008	32.696	
2009	34.330	
		0 18.000 36.000

Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		114
New implants	not available	
Replacements	not available	
		2009
Implanting centres		120
New implants	not available	
Replacements	not available	

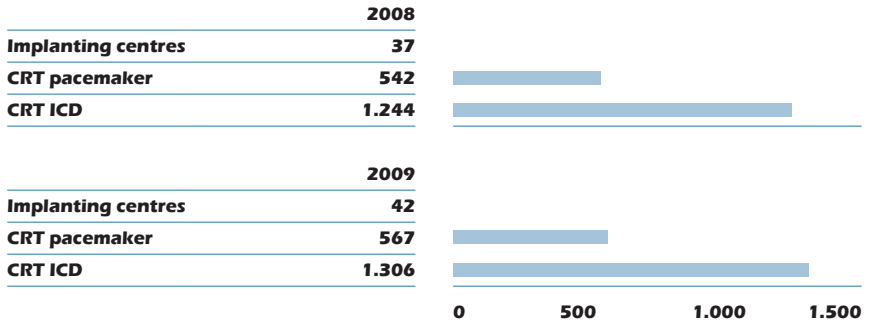


Specialty performing implants

Cardiologists	70%
Surgeons	25%
Other: Intensive care physician	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

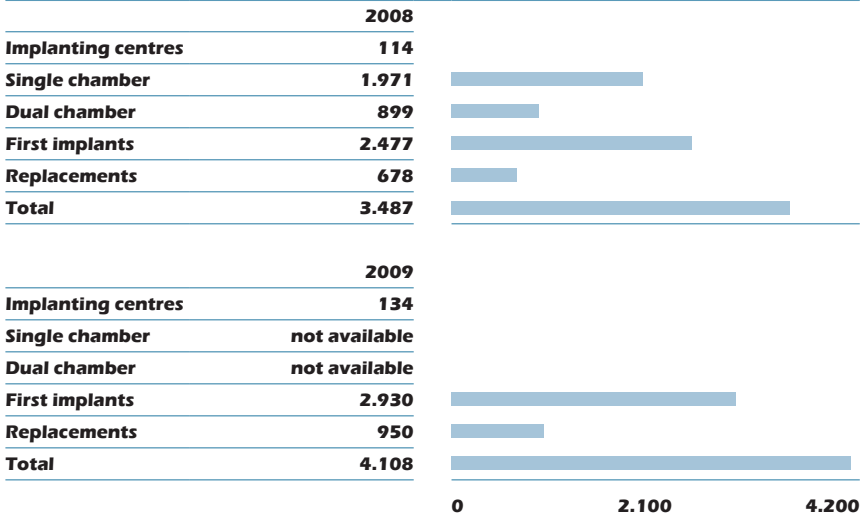


Specialty performing implants

Cardiologists	90%
Surgeons	5%
Other	5%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	73%
Surgeons	19%
Other	8%



8. Loop recorders

Loop recorders implanted and number of implanting centres

	2008	
Implanting centres	130	
Loop recorders	1.085	
	2009	
Implanting centres	134	
Loop recorders	1.139	
		0 600 1.200

Specialty performing implants

Cardiologists	98%
Surgeons	1%
Other	1%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing**	<input checked="" type="checkbox"/>
Electrophysiology***	<input checked="" type="checkbox"/>

* Registro Español de Desfibrilador Automático implantable

** Registro Español de marcapasos

*** Registro español de ablación con cateter

Availability of a national quality insurance system or complication registry

Yes

Registro Español de ablación con cateter

Availability of a national institution coordinating and guiding device recalls

Yes

Sección de Electrofisiología y Arritmias (SEA)
Management recommendations documents

10. Interventional electrophysiology

Number of performing catheter ablation centres

54

	2008	2009
Number of ablations performed	7.063	7.798
Mean number (ablations/centres)	146	144
Number of AF ablations	622	1.025

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

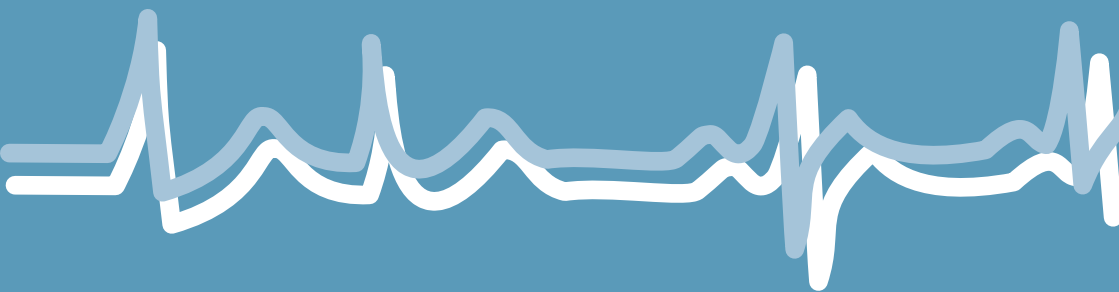
1 = no obstacle

5 = great obstacle

Sources: Section of Electrophysiology and Arrhythmias of the Spanish Society of Cardiology –

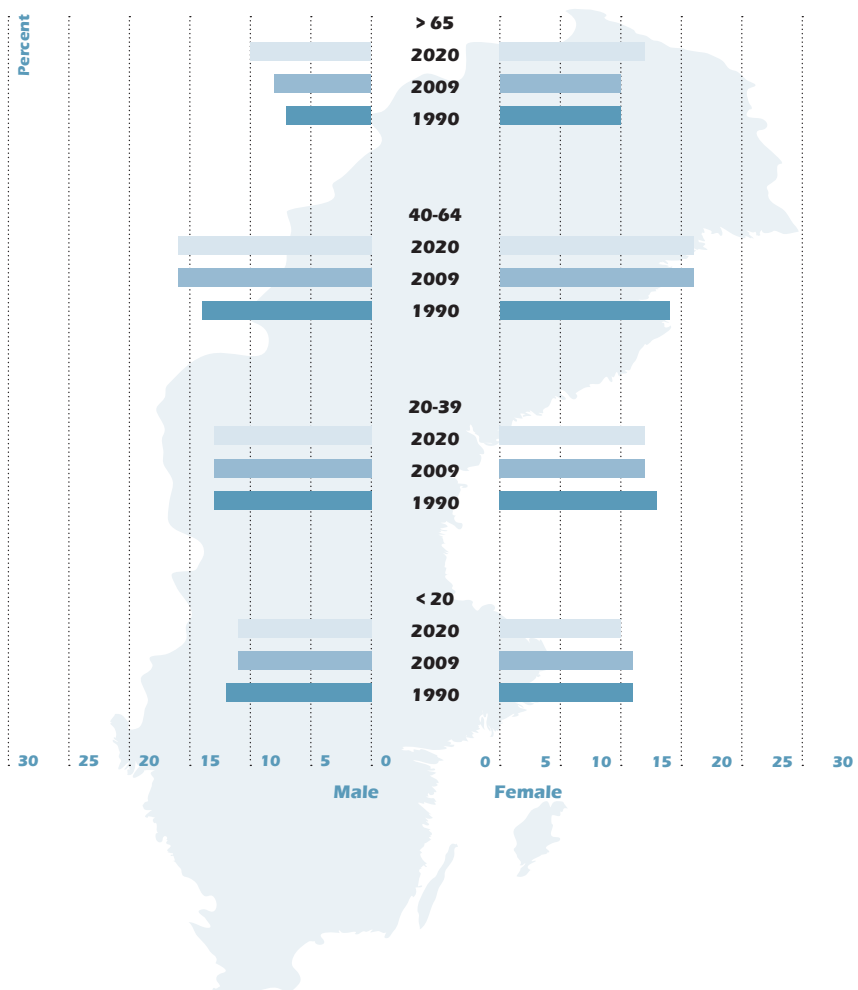
Chairman: Dr Ignacio Fernandez-Lozano

SWEDEN



1. Statistics

Age pyramid for Sweden



Healthcare data

Hospitals (per 100,000 population)	0,9	2004
Beds (per 100.000 population)	370	2004
Density of physicians (per 1.000 population)	3,58	2006
Density of nurses (per 1.000 population)	10,83	2006

Demographic information

Population annual growth rate (%)	0,2	2009
Life expectancy at birth	81,19	2007
Death rate (per 1,000 population)	10,04	2007
Live births (per 1,000 population)	11,74	2007

Economic information

Gross domestic product (U,S dollar-billions)	397,70*	2009
Gross domestic product per capita (U.S dollar-units)	43.146,74*	2009
Total expenditure on health as % of GDP	8,9	2006
General government expenditure on health as % of total expenditure on health	81,2	2006
Private expenditure on health as % of total expenditure on health	18,8	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	417 per 100.000 citizens*
2009	not available
* 2007	

Proportion cardiac mortality over total mortality of the country



2008	27%*
2009	not available
* 2007	

3. Healthcare System




Sweden's health system is compulsory and tax based. It covers all Sweden's residents. Voluntary health insurance is very limited and normally provides only supplementary coverage. The healthcare system is region based, but publicly operated. There are three levels of organisation: national, regional and local. The National sets the fundamental objectives and assures it runs efficiently, the regional level provides and finances the health services and the local level (290 municipalities) is responsible for delivering and financing social welfare services. (Highlights on health. WHO 2004)

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%	
Uninsured citizens	0%	
		0 50 100

Distribution of insurance modality

Public insurance company	100%	
Private insurance company	3%	
Private co-payment	<1%	
		0 50 100

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **No**

Not formally, but all catheter ablation operators are cardiologists.

Specialty required for ICD or pacemaker implants **No**

Official national competency guidelines for electrophysiological studies or catheter ablation

No

Required period of training to perform implantations

No

Training centres availability

Pacemaker	10
ICD implantation	9
Electrophysiological studies and catheter ablation	7
CRT implantation	9
Atrial fibrillation ablation	7

Number of medical faculties

7

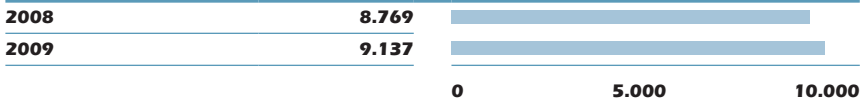
Percentage of academic facilities among practicing EP and implant centres

88%/16%*

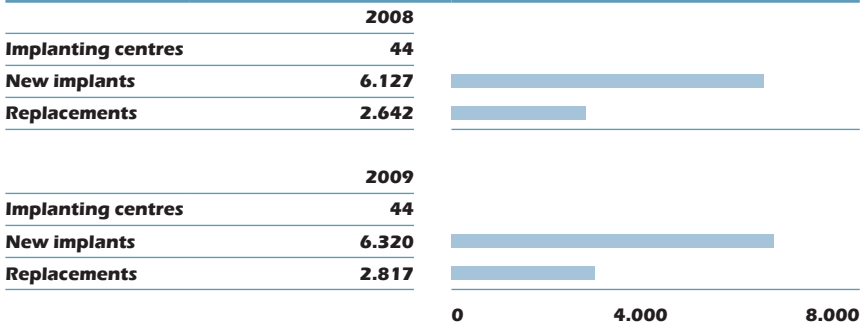
* EP: 88%. Implant: 16%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



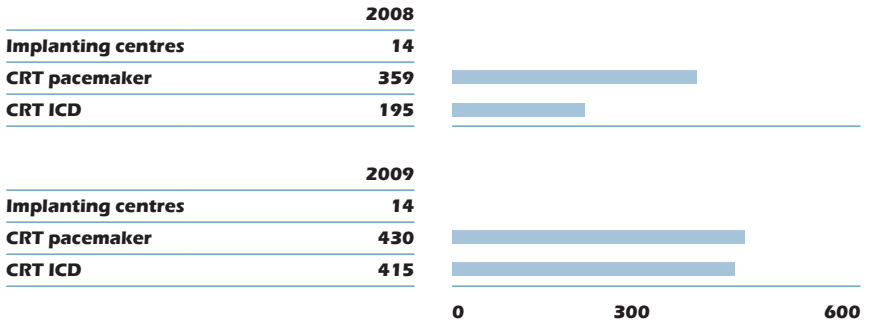


Specialty performing implants

Cardiologists	90%
Surgeons	5%
Other: Anaesthesiologists, specialists in internal medicine	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

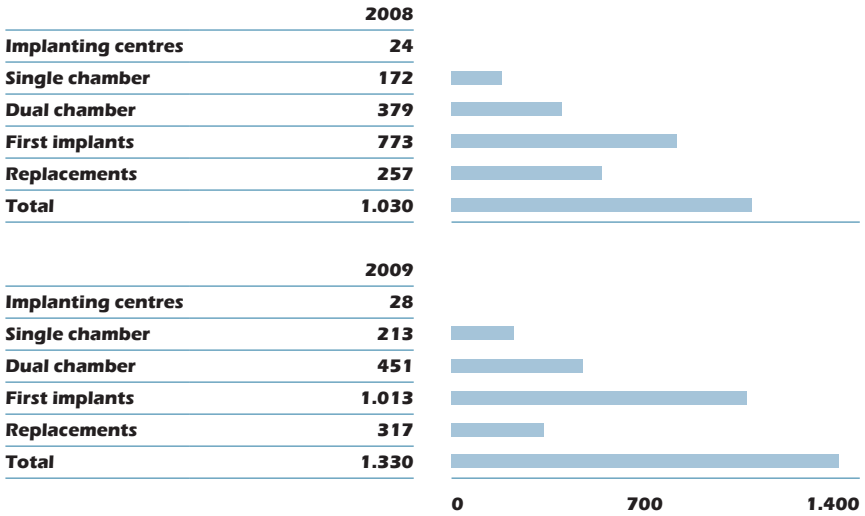


Specialty performing implants

Cardiologists	98%
Surgeons	2%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

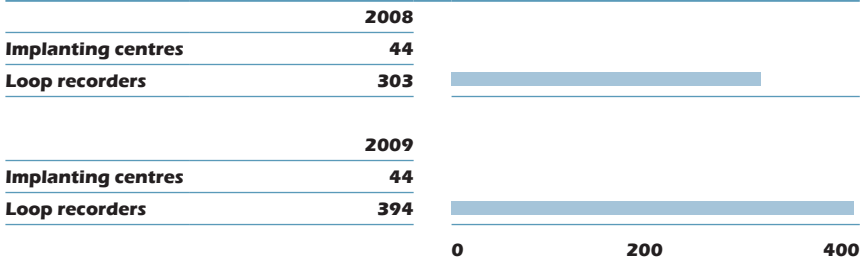


Specialty performing implants

Cardiologists	98%
Surgeons	2%

8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	98%
Surgeons	2%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD*	<input checked="" type="checkbox"/>
Pacing*	<input checked="" type="checkbox"/>
Electrophysiology**	<input checked="" type="checkbox"/>

* Swedish ICD and Pacemaker register

** Svenska Kateterablationsregistret

Availability of a national quality insurance system or complication registry **Yes**

ICD and Pacemaker registries and Svenska Ablationsregistret track complication rates.

Availability of a national institution coordinating and guiding device recalls **Yes**

Läkemedelsverket
Equivalent to FDA

10. Interventional electrophysiology

Number of performing catheter ablation centres

9

	2008	2009
Number of ablations performed	2.530	2.839
Mean number (ablations/centres)	316	315
Number of AF ablations	543	906

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

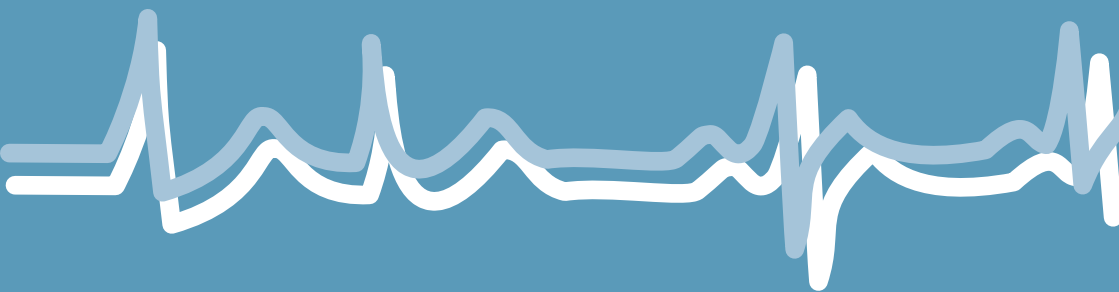
	1	2	3	4	5
Lack of centres	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

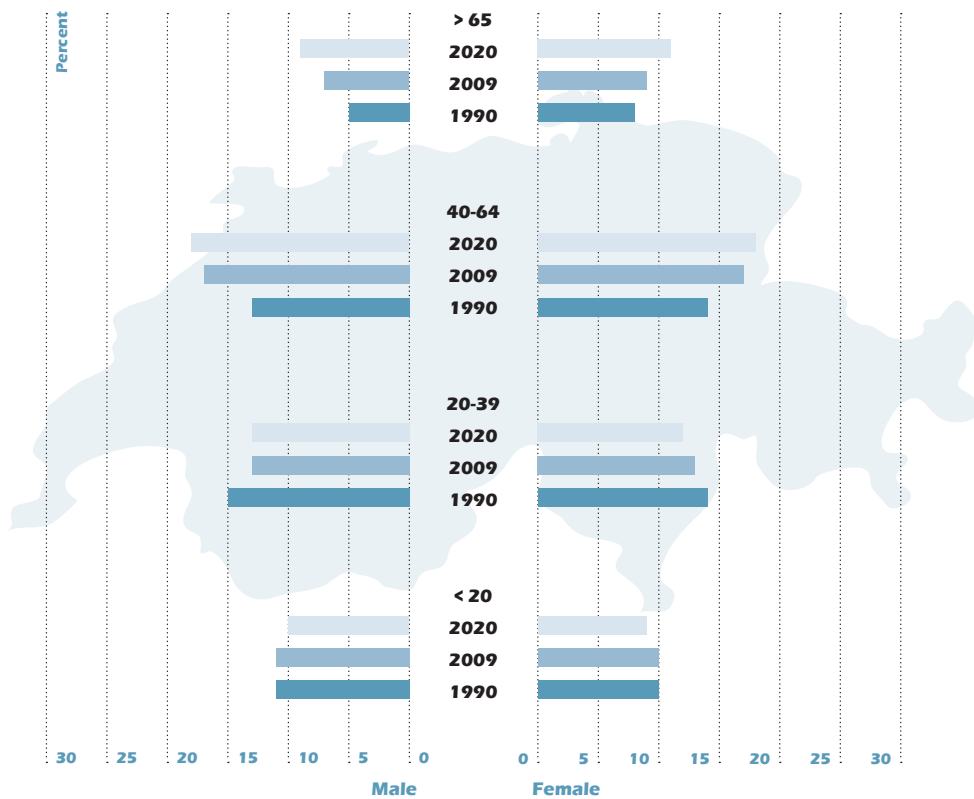
Sources: Working Group on Arrhythmias, The Swedish Society of Cardiology –
Chairman: Johan Brandt, M.D., Ph.D and National Registries

SWITZERLAND



1. Statistics

Age pyramid for Switzerland



Healthcare data

Hospitals (per 100.000 population)	4,53	2005
Beds (per 100.000 population)	553,92	2005
Density of physicians (per 1.000 population)	3,85	2006
Density of nurses (per 1.000 population)	10,75	2002

Demographic information

Population annual growth rate (%)	0,3	2009
Life expectancy at birth	82,17	2007
Death rate (per 1,000 population)	8,09	2007
Live births (per 1,000 population)	9,87	2007

Economic information

Gross domestic product (U.S dollar-billions)	484,13*	2009
Gross domestic product per capita (U.S dollar-units)	66.126,79*	2009
Total expenditure on health as % of GDP	11,3	2006
General government expenditure on health as % of total expenditure on health	60,3	2006
Private expenditure on health as % of total expenditure on health	39,7	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	not available
2009	not available

Proportion cardiac mortality over total mortality of the country



2008	not available
2009	not available

3. Healthcare System

The healthcare system in Switzerland is based on a compulsory general insurance for all citizens. There are complementary private insurances which the citizens are free to choose.

Basic insurance availability **Yes**

Percentage of insured and uninsured citizens

Insured citizens	100%			
Uninsured citizens	0%			
		0	50	100

Distribution of insurance modality

Public insurance company	not available
Private insurance company	not available
Private co-payment	not available

Possibility of subscribing to private health insurance plans **Yes**



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist
Guidelines edicted by the Working group for Pacing and Electrophysiology of the Swiss Society of Cardiology.

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist; surgeon
Guidelines edicted by the Working group for Pacing and Electrophysiology of the Swiss Society of Cardiology.

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Working group for Pacing and Electrophysiology of the Swiss Society of Cardiology

Required period of training to perform implantations

No

Training centres availability

Pacemaker	5
ICD implantation	5
Electrophysiological studies and catheter ablation	5
CRT implantation	5
Atrial fibrillation ablation	5

Number of medical faculties



5

Percentage of academic facilities among practicing EP and implant centres

7-30%




5. Pacemakers

Pacemaker units implanted

2008	5.388	
2009	5.399	

0 2.000 4.000 6.000

Pacemaker units implanted and number of implanting centres

	2008	
Implanting centres	71	
New implants	3.949	
Replacements	1.439	
	2009	
Implanting centres	70	
New implants	3.991	
Replacements	1.408	

0 2.000 4.000

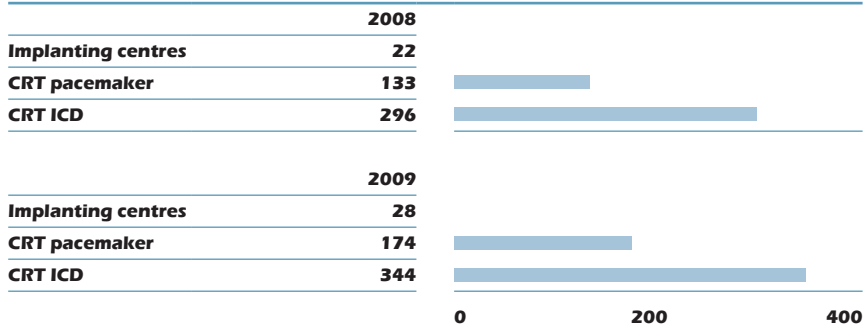


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

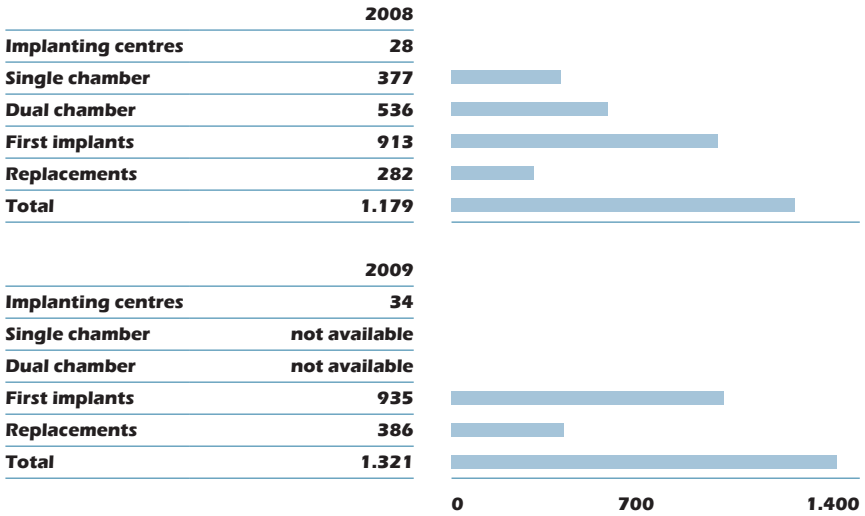


Specialty performing implants

Cardiologists	99%
Surgeons	1%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres



Specialty performing implants

Cardiologists	99%
Surgeons	1%

8. Loop recorders

Loop recorders implanted and number of implanting centres

		2008	
Implanting centres		not available	
Loop recorders		not available	

		2009	
Implanting centres		not available	
Loop recorders		not available	



Specialty performing implants

Cardiologists	not available
Surgeons	not available

9. Device speci-

fic

Availability of remote monitoring of devices

National registry for

ICD

Pacing

Electrophysiology

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**

Swissmedic (National Institution)

10. Interventional electrophysiology

Number of performing catheter ablation centres

19

	2008	2009
Number of ablations performed	3.497	3.830
Mean number (ablations/centres)	184	201
Number of AF ablations	999	1.178

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

No

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

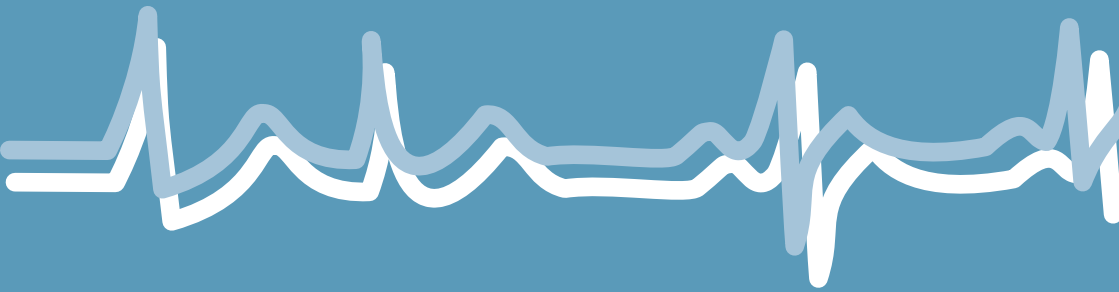
5 = great obstacle

Sources: Swiss Working Group on Cardiac Pacing and Electrophysiology – Chairman: Dr. J. Schläpfer

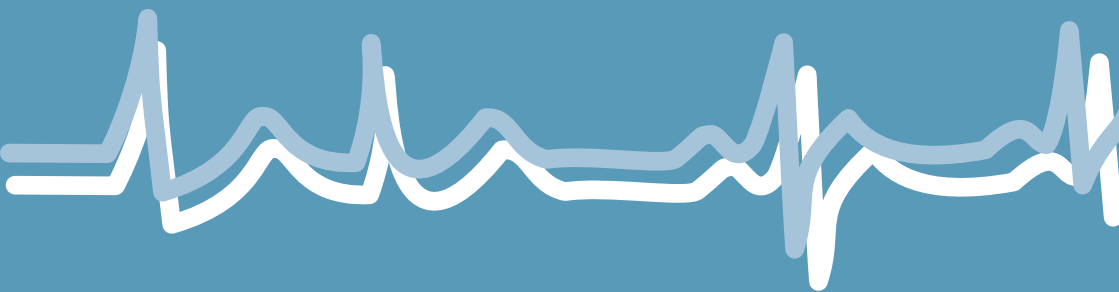


SYRIA

There will be information in the next edition.

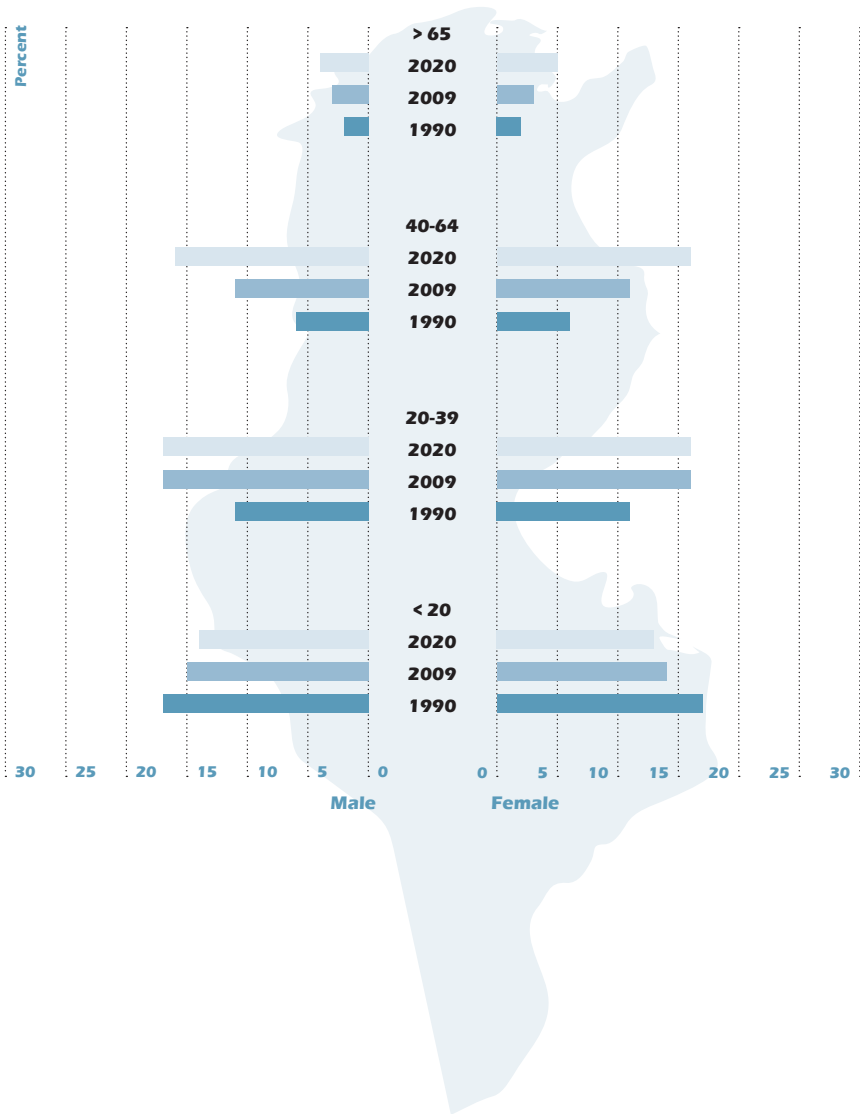


TUNISIA



1. Statistics

Age pyramid for Tunisia





Healthcare data

Hospitals (per 100.000 population)	1,76	2004
Beds (per 100.000 population)	190	2006
Density of physicians (per 1.000 population)	1,3	2004
Density of nurses (per 1.000 population)	2,9	2004

Demographic information

Population annual growth rate (%)	1,0	2009
Life expectancy at birth	72	2006
Death rate (per 1,000 population)	5,6	2006
Live births (per 1,000 population)	17	2007

Economic information

Gross domestic product (U.S dollar-billions)	39,57*	2009
Gross domestic product per capita (U.S dollar-units)	3.794,43*	2009
Total expenditure on health as % of GDP	5,3	2006
General government expenditure on health as % of total expenditure on health	43,7	2006
Private expenditure on health as % of total expenditure on health	56,3	2006

* IMF estimative

2. Country

Proportion of deaths resulting from cardiovascular disease

2008	163 per 100.000 citizens
2009	168 per 100.000 citizens*

* approx.

Proportion cardiac mortality over total mortality of the country

2008	29%
2009	30%



3. Healthcare System

Both basic preventive and curative services are available to almost the entire population, regardless of their socioeconomic status. Almost 90 percent of the population has access to health care through either a health insurance scheme or a medical assistance program. The coverage of the illness risk is ensured through many mechanisms and funding sources. These mechanisms include: a social protection scheme managed by a National Fund for Illness Insurance (Caisse Nationale d'Assurance Maladie), a free medical access and reduced tariffs for poor and mutual and private health insurance schemes. Preventive care and public health programs are freely provided for the whole population. Despite the wide coverage of the Tunisian population by social security and the implementation of mechanisms insuring the coverage of illness risk for the poor, the Tunisian health system is still mainly funded through direct households' contribution which is dramatically increasing and it is estimated at 43% during the last five years.




Basic insurance availability

No

Percentage of insured and uninsured citizens

Insured citizens	90%	
Uninsured citizens	10%	
		0 50 100

Distribution of insurance modality

Public insurance company	80%	
Private insurance company	15%	
Private co-payment	5%	
		0 50 100



Possibility of subscribing to private health insurance plans **No**

Co-payment necessary for the following therapy

ICD devices

Pacemakers

Ablation

Reimbursement availability

Internal loop recorders

ICD primary prevention

ICD secondary prevention

CRT devices

Ablation

Unlimited availability of treatment

4. Education

National accreditation availability

Device therapy

Invasive electrophysiology

CEC de Rythmologie

National accreditation for physicians **Yes**

National accreditation for centres **No**

National Society supporting EHRA accreditation system **Yes**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist and cardiovascular surgeon

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	15
ICD implantation	10
Electrophysiological studies and catheter ablation	9
CRT implantation	10
Atrial fibrillation ablation	2

Number of medical faculties

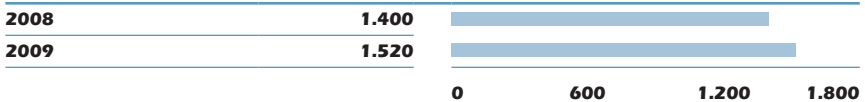
4

Percentage of academic facilities among practicing EP and implant centres

70%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

		2008
Implanting centres		8
New implants		not available
Replacements		not available
		2009
Implanting centres		10
New implants		not available
Replacements		not available

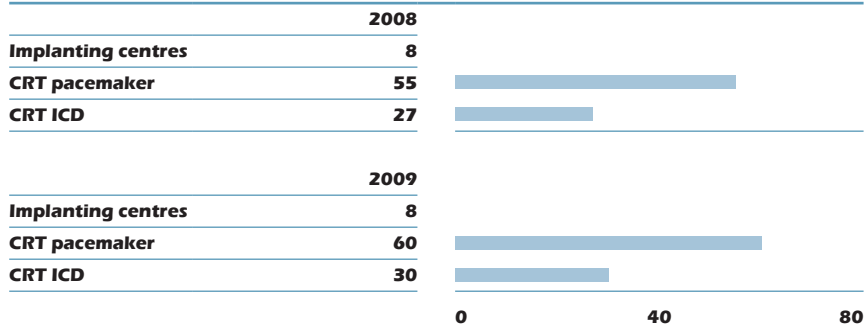


Specialty performing implants

Cardiologists	95%
Surgeons	5%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

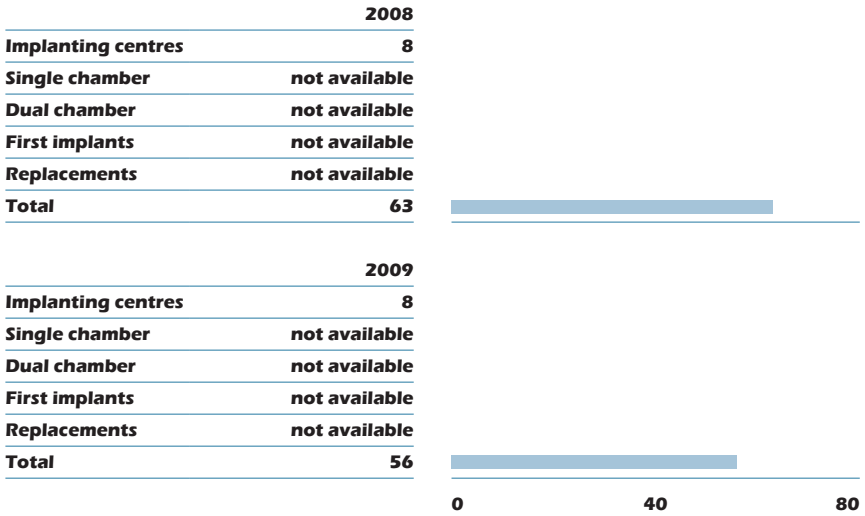


Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

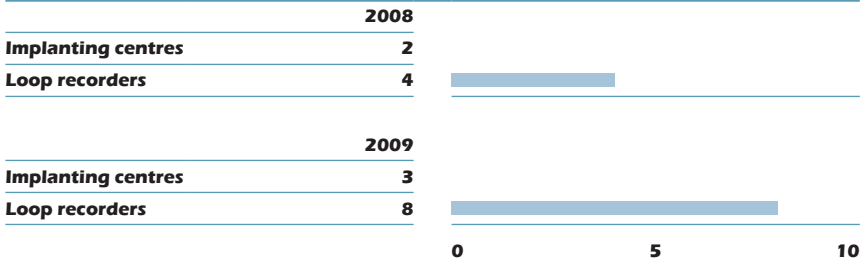


Specialty performing implants

Cardiologists	95%
Surgeons	5%

8. Loop recorders

Loop recorders implanted and number of implanting centres





Specialty performing implants

Cardiologists	95%
Surgeons	5%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input type="checkbox"/>
Pacing	<input type="checkbox"/>
Electrophysiology	<input type="checkbox"/>

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **No**

10. Interventional electrophysiology

Number of performing catheter ablation centres

9

	2008	2009
Number of ablations performed	450	510
Mean number (ablations/centres)	60	60
Number of AF ablations	17	20

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input type="checkbox"/>
U.S.	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language

Yes

Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

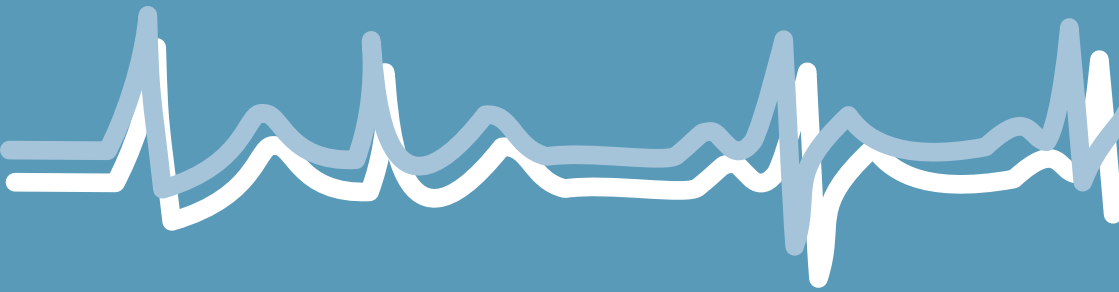
5 = great obstacle

Sources: Working Group on Arrhythmias – President: Dr. Habib Haouala



TURKEY

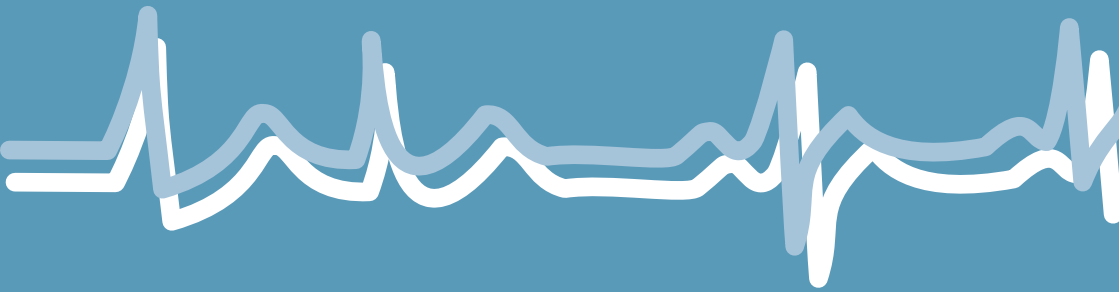
There will be information in the next edition.



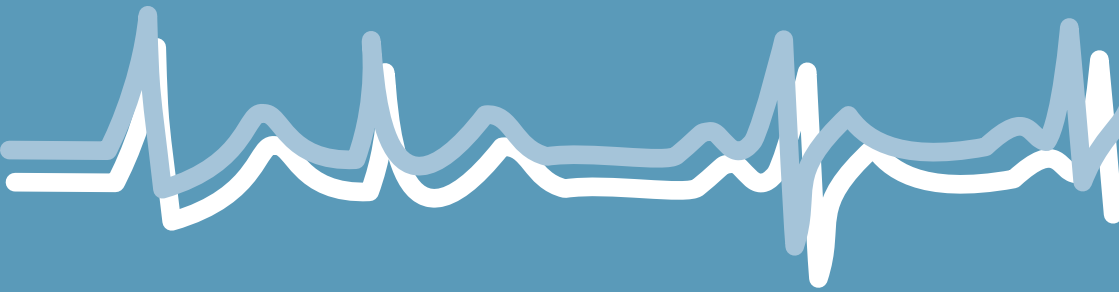


UKRAINE

There will be information in the next edition.

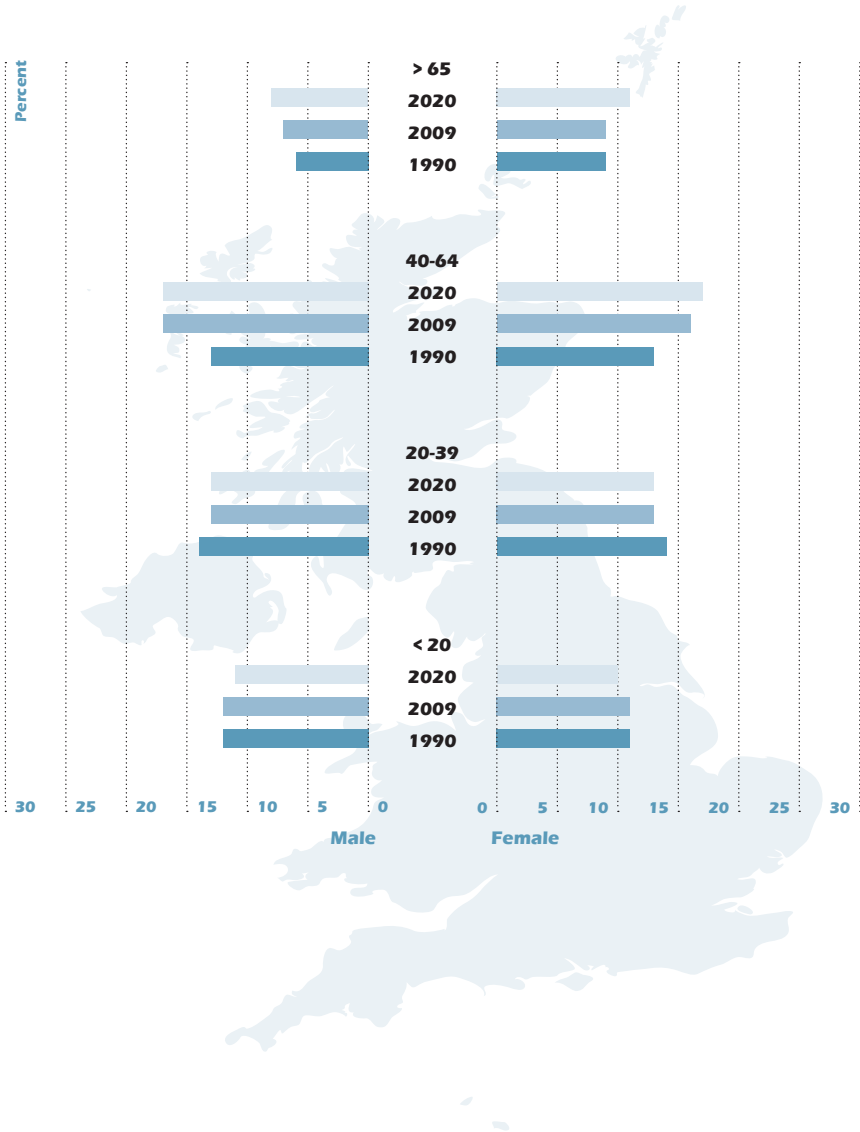


UNITED KINGDOM



1. Statistics

Age pyramid for United Kingdom





Healthcare data

Hospitals (per 100,000 population)	1,400	2009
Beds (per 100,000 population)	389,72	2007
Density of physicians (per 1.000 population)	2,13	2007
Density of nurses (per 1.000 population)	9,3	2007

Demographic information

Population annual growth rate (%)	0,3	2004
Life expectancy at birth	79,86	2004
Death rate (per 1.000 population)	9,42	2002
Live births (per 1.000 population)	12,66	2004

Economic information

Gross domestic product (U.S dollar-billions)	2.198,16*	2009
Gross domestic product per capita (U.S dollar-units)	35.727,96*	2009
Total expenditure on health as % of GDP	8,4	2006
General government expenditure on health as % of total expenditure on health	87,4	2006
Private expenditure on health as % of total expenditure on health	12,6	2006

* IMF estimative



Co-payment necessary for the following therapy

ICD devices	<input type="checkbox"/>
Pacemakers	<input type="checkbox"/>
Ablation	<input type="checkbox"/>
National guidelines	

Reimbursement availability

Internal loop recorders	<input checked="" type="checkbox"/>
ICD primary prevention	<input checked="" type="checkbox"/>
ICD secondary prevention	<input checked="" type="checkbox"/>
CRT devices	<input checked="" type="checkbox"/>
Ablation	<input checked="" type="checkbox"/>
Unlimited availability of treatment	<input checked="" type="checkbox"/>

4. Education

National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

National accreditation for physicians **Yes**

National accreditation for centres to perform EP **No**

National Society supporting EHRA accreditation system **No**

Specialty required for catheter ablation **Yes**

Cardiologist

Specialty required for ICD or pacemaker implants **Yes**

Cardiologist

Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

Heart Rhythm UK

Required period of training to perform implantations

2 years

Training centres availability

Pacemaker	70
ICD implantation	35
Electrophysiological studies and catheter ablation	30
CRT implantation	35
Atrial fibrillation ablation	30

Number of medical faculties

35

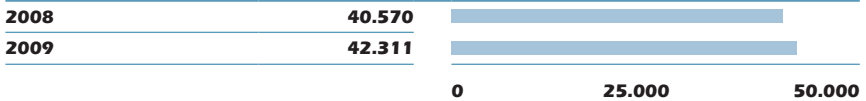
Percentage of academic facilities among practicing EP and implant centres

20%*

*** approx.**

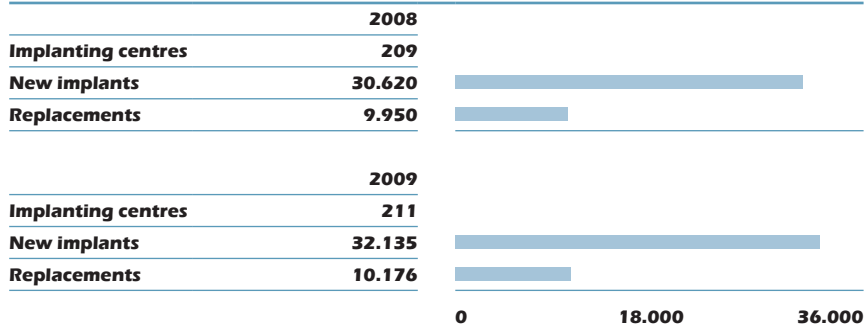
5. Pacemakers

Pacemaker units implanted





Pacemaker units implanted and number of implanting centres

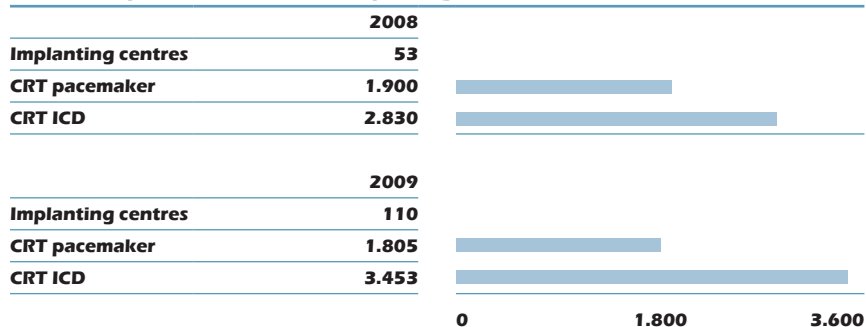


Specialty performing implants

Cardiologists	99,49%
Surgeons	0,51%

6. Cardiac resynchronization therapy devices

CRT units implanted and number of implanting centres

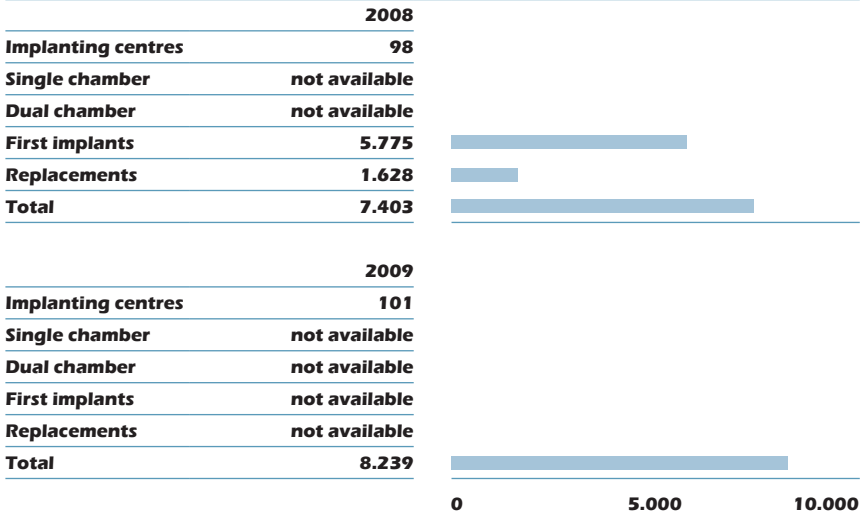


Specialty performing implants

Cardiologists	99,7%
Surgeons	0,3%

7. Implantable Cardiac Defibrillator

ICD units implanted and number of implanting centres

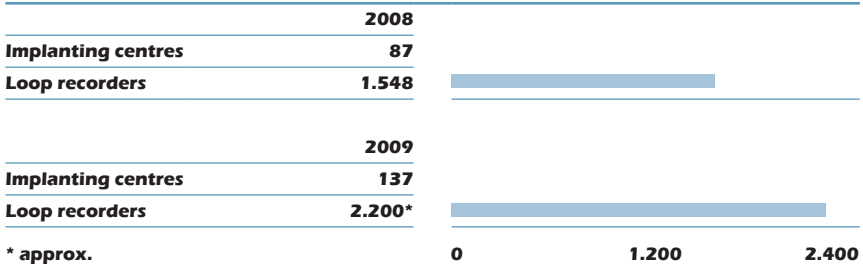


Specialty performing implants

Cardiologists	100%
Surgeons	0%

8. Loop recorders

Loop recorders implanted and number of implanting centres



* approx.



Specialty performing implants

Cardiologists	100%
Surgeons	0%

9. Device specific

Availability of remote monitoring of devices

National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input checked="" type="checkbox"/>
CCAD	

Availability of a national quality insurance system or complication registry **No**

Availability of a national institution coordinating and guiding device recalls **Yes**
Medicines and Healthcare products Regulatory Agency

10. Interventional electrophysiology

Number of performing catheter ablation centres **40**

	2008	2009
Number of ablations performed	12.057	13.003
Mean number (ablations/centres)	310	280
Number of AF ablations	2.629	3.237

11. Guidelines

Guidelines adhered to ICD implants and pacemaker implants

National	<input checked="" type="checkbox"/>
U.S.	<input checked="" type="checkbox"/>
European	<input checked="" type="checkbox"/>

Necessity of guideline translation to national language **Yes**

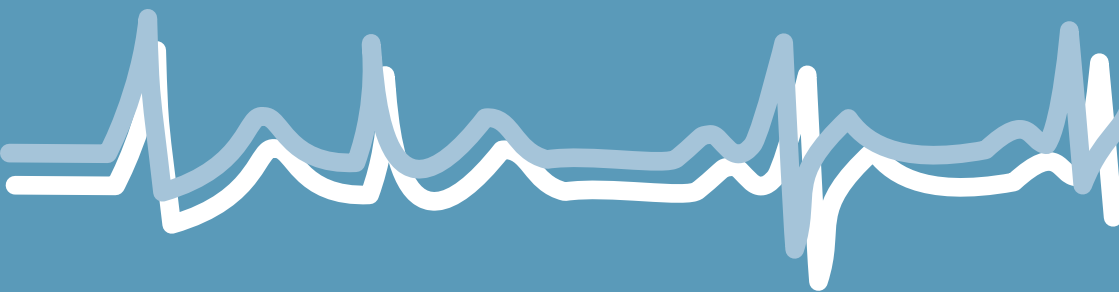
Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of reimbursement, limited financial resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lack of trained personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

* Lack of belief in applicability of guidelines to many patients seen in routine clinical practice **1 = no obstacle** **5 = great obstacle**

Sources: Heart Rhythm UK – President: Dr. Edward Rowland

3. SOURCES



3. Sources

Main Sources

The data in the White Book has been collected and authorized by the National Societies and National Working Groups.

**The National Societies and National Working Groups that participated in this edition of the White Book
re listed below:**

- **Arrhythmias Working Group of Armenia**
- **Armenian Working Group of Cardiac Pacing & Electrophysiology**
- **Austrian Working Group of Invasive Rhythmology**
- **Scientific Laboratory of Heart Arrhythmias of Belarus**
- **Belgian Heart Rhythm Association (BeHRA)**
- **Bulgarian Working Group of Electrophysiology**
- **Croatian Working Group on Arrhythmias and Cardiac Pacing**
- **Cyprus Society of Cardiology**
- **Working Group on Arrhythmias and Cardiac Pacing of Czech Republic**
- **Danish Working Group for Electrophysiology**
- **Egyptian Cardiac Rhythm Association (ECRA)**
- **Egyptian Society of Cardiology**
- **Estonian Working Group of Arrhythmias**
- **Finnish Working Group of Arrhythmias and Cardiac Pacing of the Finnish Cardiac Society**

Main Sources

- **FYRO, Macedonia Working Group on Electrophysiology and Cardiac Pacing**
- **Working Group on Arrhythmias and Cardiac Pacing – France**
- **Working Group on Arrhythmias of the Georgian College of Cardiology**
- **German Working Group on Cardiac Pacing and Arrhythmia**
- **Hellenic Working Group on Electrophysiology and Pacing**
- **Hungarian Society of Cardiology**
- **Hungarian Working Group on Arrhythmias and Cardiac Pacing**
- **Irish Working Group on Electrophysiology**
- **Israeli Working Group on Electrophysiology and Cardiac Pacing**
- **Italian Association on Arrhythmias and Cardiac Pacing (AIAC)**
- **Latvian Working Group on Arrhythmology and Cardiac Pacing**
- **Lithuanian Working Group on Arrhythmias Pacing and Electrophysiology**
- **National Institute of Cardiac Surgery and Interventional Cardiology (INCCI) of Luxembourg**
- **Pacemaker Center of Montenegro**
- **Netherlands Heart Rhythm Association (NHRA)**
- **Norwegian Working Group of Arrhythmias**

3. Sources

Main Sources

- **Heart Rhythm Division of the Polish Cardiac Society**
- **Portuguese Association of Arrhythmology, Pacing and Electrophysiology (APAPE)**
- **Romanian Society of Cardiology, Arrhythmias Working Group**
- **Russian Federation Working Group in Clinical Electrophysiology**
- **Serbian Working Group in Cardiac Pacemakers and Arrhythmias**
- **Slovak Heart Rhythm Association (SHRA)**
- **Slovenian Working Group for Pacing and Arrhythmias**
- **Spanish Section of Electrophysiology and Arrhythmias of the Spanish Society of Cardiology**
- **Study Group of Arrhythmias of the Associazione Nazionale Medici Cardiologi Ospedalieri (ANMCO)**
- **Swedish Working Group on Arrhythmias**
- **Swiss Working Group on Cardiac Pacing and Electrophysiology**
- **Tunisian Working Group on Arrhythmias**
- **Heart Rhythm United Kingdom**

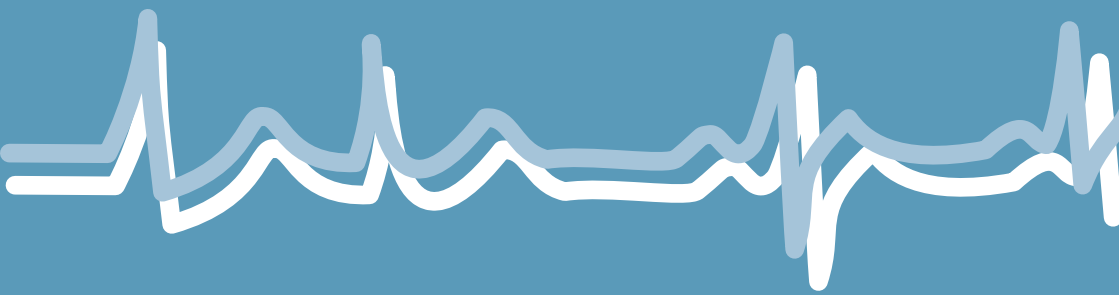
Additional Sources

- **Austrian National Ablation Registry**
- **Belgium National Statistical Institute**
- **Croatian Registry on Cardiac Pacing, ICD and Electrophysiology**
- **Estonian Pacemaker and ICD Implantation Registry**

Additional Sources

- **Health care systems in transition: Latvia. Copenhagen, European Observatory on Health Systems and Policies, 2001**
- **Health care systems in transition: Russian Federation. Copenhagen, European Observatory on Health Systems and Policies, 2003**
- **Health care systems in transition: The Former Yugoslav Republic of Macedonia. Copenhagen, European Observatory on Health Systems and Policies, 2000**
- **Hellenic National Statistical Service**
- **Ministry of Health of the Republic of Belarus**
- **Ministry of Labour, Health and Social Affairs of Georgia**
- **Norway Pacemaker Register**
- **Institute for Public Health and Protocols from Clinical Center Montenegro**
- **International Monetary Fund (IMF), Washington DC, USA.
<http://www.imf.org>**
- **Slovak registry of pacemakers, ICD and ablations (SLOVIMPULZ)**
- **Spanish Catheter Ablation Registry**
- **Statistical Information System (WHOSIS).
World Health Organization, Geneva, Switzerland.
<http://www.who.int/whosis/en/>**
- **U.S. Census Bureau, International. Atlanta, USA.
<http://www.census.gov/>**
- **World Health Statistics. World Health Organization, Geneva, Switzerland.
<http://www.who.org>**

4. APPENDIX



4. Appendix



EHRA Accreditation

The EHRA offers the first European certification of professional excellence, in two areas:

- Invasive Cardiac Electrophysiology
- Cardiac Pacing & ICDs

The EHRA is pleased to publish the list, starting from 2006, of professionals who are officially fully accredited, as well as that of the candidates who have passed the written part of the accreditation process. «Join us in congratulating them!»

Invasive Cardiac Electrophysiology

EHRA EP Accredited professionals

ARBELO LAINEZ	Elena	Spain	2009
AVELLA	Andrea	Italy	2009
BARRERA CORDERO	Alberto	Spain	2006
BELOTTI	Giusepina	Italy	2008
BENCSIK	Gabor	Hungary	2009
BERRUEZO SANCHEZ	Antonio	Spain	2010
BRUGADA TERRADELLAS	Josep	Spain	2009
BURRI	Haran	Switzerland	2008
DAVOODI	Gholamreza	Iran	2008
DURAY	Gábor Zoltán	Germany	2008
FERNANDEZ LOZANO	Ignacio	Spain	2006
GARCIA MORAN	Emilio	Spain	2007
GRECU	Mihaela	Romania	2007
HERNANDEZ-MADRID	Antonio	Spain	2009
HERREROS GUILARTE	Benito	Spain	2006
HUYBRECHTS	Wim	Belgium	2009
IVO PETRUS TRINES	Serge Alexander	Netherlands	2008
JANSEN	Ward P.J.	Netherlands	2010
JASTREZBSKI	Marek	Poland	2008
KEMME	Michiel	Netherlands	2009
KILISZEK	Marek	Poland	2010
LAURENZI	Francesco	Italy	2009
LETSAS	Konstantinos	Greece	2009
LUBINSKI	Andrzej	Poland	2007
MADRID	Antonio	Spain	2009

EHRA EP Accredited professionals

MARTINEZ ALDAY	Jesus	Spain	2006
MAZUR	Alexander	Italy	2006
MORENO PLANAS	Javier	Spain	2006
MOYA I. MITJANS	Angel	Spain	2006
NAVARRETE	Antonio	United States	2008
ORMAETXE MERODIO	José Miguel	Spain	2006
OSCA	Joaquin	Spain	2010
PAPIASHVILI	Giorgi	Georgia	2009
PASTOR FUENTES	Augustin	Spain	2006
PEINADO	Rafael	Spain	2007
PEREZ CASTELLANO	Nicasio	Spain	2006
PEREZ VILLACASTIN	Julian	Spain	2006
POZZETTI	Daniela	Italy	2007
ROTEN	Laurent	Switzerland	2009
SABATE DE LA CRUZ	Xavier	Spain	2007
SALGUERO BODES	Rafael	Spain	2009
SAUSE	Armin	Germany	2009
SEOW	Swee-Chong	Singapore	2007
SMIT	Jaap Jan Johannes	Netherlands	2009
TOQUERO RAMOS	Jorgue	Spain	2006
TZEIS	Stylianios	Greece	2010
VATASESCU	Radu-Gabriel	Romania	2009
VOSS	Frederik	Germany	2009
VUKAJLOVIC	Dejan	Serbia	2009
ZOPPO	Franco	Italy	2008

4. Appendix



EHRA Accreditation

Invasive Cardiac Electrophysiology

EP Accreditation candidates successful to exam

ABEDIN	Zainul	United States	2007
AL BUNNI	Muhamad	Italy	2007
ANGUERA CAMOS	Ignacio	Spain	2008
ARCOCHA TORRES	Maria Fe	Spain	2009
AYALA PAREDES	Felix	Canada	2007
BUERKLE	Gerd	Austria	2008
CANO PEREZ	Oscar	Spain	2009
CASTRO URDA	Victor	Spain	2009
CATANCHIN	Andrei	United Kingdom	2008
DE GROOT	Joris R	Netherlands	2009
DEL CASTILLO ARROJO	Silvia	Spain	2006
DEUTSCH	Alexandru	Germany	2009
EISENBERGER	Martin	United Kingdom	2008
FORCLAZ	Andrei	Switzerland	2009
GALLARDO LOBO	Rodrigo	Spain	2009
GAWRYCIAK	Marcin	Poland	2009
GLOWNIAK	Andrzej	Poland	2009
GONZALEZ VASSEROT	Maria del Mar	Spain	2007
GONZALEZ-ENRIQUEZ	Susana	Spain	2008
HERCZKU	Csaba	Hungary	2009
HOBBS	William	United Kingdom	2007
HOGLUND	Niklas	Sweden	2008
JANDA	Igor	Germany	2009
JOHAR	Sofian	United Kingdom	2009
JONES	David Gareth	United Kingdom	2009
MARTINEK	Martin	Austria	2008
MARTINEZ SANDE	Jose Luis	Spain	2009
MASSIN	Francois	Belgium	2009
MATIA FRANCES	Roberto	Spain	2009
MATIELLO	Maria	Spain	2007

EP Accreditation candidates successful to exam

MUELLER	Dirk	Germany	2008
PAISEY	John	United Kingdom	2008
PUCHOL	Alberto	Spain	2009
RAMANNA	Hemanth	Netherlands	2008
REBELLATO	Luca	Italy	2009
RODORF	Roberto	Italy	2009
SCHOONDERWOERD	Bas	Netherlands	2008
SIELSKI	Slawomir	Poland	2007
SKODA	Jan	Czech Republic	2008
SPADACINI	Gianmario	Italy	2006
SUMAN HORDUNA	Irina	Canada	2008
TOMLINSON	D	United Kingdom	2008
TREGUER	Frederic	France	2009
TRINES SERGE	Alexander Ivo Petrus	Netherlands	2006
URBAN	Lubos	Slovak Republic	2009
VITALE	Raffaele	Italy	2009
VUKAJLOVIC	Dejan	Serbia	2009
ZUCHELLI	Giulio	Italy	2008

Candidates successful to the exam need to have their logbook assessed by an EHRA grader to be fully accredited. EHRA Accreditation is valid for 10 years.

4. Appendix

EHRA Accreditation

«Accreditation in Cardiac Pacing & Implantable Cardioverter Defibrillators (ICDs)»

EHRA CP Accredited professionals

MARTINEK	Martin	Austria	2009
KETELS	Stefan	Belgium	2009
HJORTSHØJ	Søren	Denmark	2010
GRADAUS	Rainer	Germany	2007
KLEIN	Gunnar	Germany	2008
NEVEN	Kars	Germany	2008
DURAY	Gábor Zoltán	Germany	2009
LÜDORFF	Guido	Germany	2009
VOSS	Frederik	Germany	2009
HEIB	Klaus Dieter	Germany	2010
APOSTOLOPOULOS	Theodoros	Greece	2007
DILAVERIS	Polychronis	Greece	2007
IOANNIDIS	Panagiotis	Greece	2007
SIMEONIDOU	Eftihia	Greece	2007
VASILOPOULOS	Charambalos	Greece	2007
ZERVOPOULOS	George	Greece	2007
KARABINOS	Ilias K	Greece	2009
MERKELY	Bela	Hungary	2007
BOHM	Ádám	Hungary	2009
BENCSIK	Gábor	Hungary	2009
DAVOODI	Gholamreza	Iran	2006
LIPCHENCA	Igor Ariel	Israel	2009
AVELLA	Andrea	Italy	2006
BELOTTI	Giusepina	Italy	2006
AL BUNNI	Muhamad	Italy	2007
CALZOLARI	Vittorio	Italy	2007
CURNIS	Antonio	Italy	2007
MASCIOLI	Giosue	Italy	2007
POZZETTI	Daniela	Italy	2007
SGARITO	Guiseppe	Italy	2007
VACCARI	Diego	Italy	2007
ZOPPO	Franco	Italy	2007

EHRA CP Accredited professionals

MARINI	Massimiliano	Italy	2008
CROSATO	Martino	Italy	2009
PAULUSSEN	Guido	Netherlands	2007
SPIERENBURG	Han A.M.	Netherlands	2009
VAN OPSTAL	Jurren	Netherlands	2009
WESTENDORP	Iris C.D.	Netherlands	2009
KEMME	Michiel	Netherlands	2009
FOLKERINGA	Johan Richard	Netherlands	2009
BORGER VAN DER BURG	Alida Elisabeth	Netherlands	2009
BOUWELS	Leon HR	Netherlands	2009
BROERS	Bernard	Netherlands	2010
GJESTVANG	Finn Tore	Norway	2009
KÖPP	Ulf	Norway	2009
EIVINSDON	Gunvald	Norway	2009
MITROWSKI	Przemyslaw	Poland	2006
BISSINGER	Andrzej	Poland	2007
JASTREZBSKI	Marek	Poland	2007
PRZYBYLSKI	Andrzej	Poland	2008
MACIAG	Aleksander	Poland	2009
STERLINSKI	Maciej	Poland	2009
VATASESCU	Radu Gabriel	Romania	2007
GRECU	Mihaela	Romania	2009
SEOW	Swee-Chong	Singapore	2008
GARCIA BOLAO	José Ignacio	Spain	2006
HERREROS GUILARTE	Benito	Spain	2006
MORENO PLANAS	Javier	Spain	2006
PEREZ CASTELLANO	Nicasio	Spain	2006
GARCIA MORAN	Emilio	Spain	2007
PINDADO RODRIGUEZ	Javier	Spain	2010
HORNSTEN	Jonas	Sweden	2007
SJÖBLOM	Johanna	Sweden	2009
BURRI	Haran	Switzerland	2006

4. Appendix



EHRA Accreditation

«Accreditation in Cardiac Pacing & Implantable Cardioverter Defibrillators (ICDs)»

EHRA CP Accredited professionals

ROTEN	Laurent	Switzerland	2009
ZAKY	Hosam	United Arab Emirates	2007
OSMAN	Faizel	United Kingdom	2007
PUGH	Peter J	United Kingdom	2009
BOOS	Christopher John	United Kingdom	2009
RAO	Archana	United Kingdom	2009

«Accreditation in Cardiac Pacing & Implantable Cardioverter Defibrillators (ICDs)»

CP Accreditation candidates successful to exam

AARDEMA	Margriet W.	Netherlands	2006
AERTS	Arnaud	Netherlands	2009
ALDERGARD	Niklas	Sweden	2007
ALGALARRONDO	Vincent	France	2009
AYALA PAREDES	Felix Alejandro	Canada	2006
BACCHIONI	Giuseppe	Italy	2008
BAHGAT	Amr Kamal	Egypt	2009
BARTHEZ	Olivier	France	2009
BIJSTERVELD	Nick	Netherlands	2009
BLAAUW	Y	Netherlands	2009
BORRELLI	Alessio	Italy	2009
BREULS	Nico	Netherlands	2009
BUERKLE	Gerd	Austria	2008
CANDEIAS	Rui	Portugal	2008
CSONTOS	Pal	Hungary	2009
DE GROOT	Joris R	Netherlands	2009
DE JONG	Richard M	Netherlands	2007
DE JONG	Jonas	Netherlands	2009
DE JONG	Jeroen	Netherlands	2006
DE LA FUENTE	Sam	Netherlands	2009

CP Accreditation candidates successful to exam

DE LEEUW	Martin	Netherlands	2008
DE POTTER	Tom	Belgium	2008
DE WAARD	Daan	Netherlands	2007
DE WEERD	Gerjan	Netherlands	2009
DIAB	Ihab Gomaa	United Kingdom	2009
EISENBERGER	Martin	United Kingdom	2008
ENGBERS	Jos G	Netherlands	2009
ERCKERT	Martin	Italy	2006
ESCHEN	Ole	Denmark	2009
FLEVARI	Panayota	Greece	2008
FOLDESI	Csaba Laszlo	Hungary	2009
FOLEY	Paul	United Kingdom	2009
FRANCA PEREIRA	Roberto	United States	2007
FRYKMAN	Viveka	Sweden	2007
GALLARDO LOBO	Rodrigo	Hungary	2009
GEBETSBERGER	Franz	Austria	2008
GIANNOLA	Gabriele	Italy	2008
GONZALEZ-ENRIQUEZ	Susana	Spain	2008
HAUER	Herbert	Netherlands	2009
HAYES	Chris	United Kingdom	2009
HEMELS	Martin	Netherlands	2009
HERCZKU	Csaba	Hungary	2009
HURLIMANN	David	Switzerland	2009
HUYBRECHTS	Wim	Belgium	2008
IORGULESCU	Corneliu	Romania	2008
JANSEN	Annemieke	Netherlands	2008
JANSSSENS	Cornelis	Netherlands	2006
JOHANSSON	Peter	Sweden	2008
JONES	David Gareth	United Kingdom	2009
KJELLMAN	Bjorn	Sweden	2007
KNOPS	Reinoud	Netherlands	2008
KOEPFLI	Pascal	Switzerland	2007

4. Appendix

EHRA Accreditation

«Accreditation in Cardiac Pacing & Implantable Cardioverter Defibrillators (ICDs)»

CP Accreditation candidates successful to exam

KORANTZOPOULOS	Panagiotis	Greece	2009
KOULOURIS	Spyridon	Greece	2007
KOURGIANNIDIS	Georgios	Greece	2007
KRAVCHUK	Borys	Ukraine	2007
KRUPA	Wojciech	Poland	2006
LIEUW-A-FA	Mariska	Netherlands	2009
LINDELL	Peter	Sweden	2007
LINDGREEN	Ulf	Sweden	2008
LIPOLDOVA	Jolana	Czech Republic	2009
LITTERFELDT	Ingrid	Sweden	2008
LUZI	Mario	Italy	2008
MAASS	Alexander	Netherlands	2007
MAC GILLAVRY	Melvin	Netherlands	2008
MAGNUSSON	Peter	Sweden	2007
MARICONTI	Barbara	Italy	2008
MARTINEZ SANDE	Jose Luis	Spain	2009
MASSA	Thomas	Germany	2008
MAZZUCCO	Raffaele	Italy	2009
MEILTZ	Alexandre	Switzerland	2009
MEINE	Mathias	Netherlands	2007
MELANDER	Kjell	Sweden	2008
MLCOCHOVA	Hanka	Czech Republic	2009
MOLHOEK	Sander G	Netherlands	2008
MUELLER	Dirk	Germany	2008
MUNDEL	Markus	Germany	2008
MUNTINGA	Harm-Jans	Netherlands	2009
NAGARAJAN	Darbhamulla	United Kingdom	2007
NERI	Gianfilippo	Italy	2007
NICASTIA	Deborah	Netherlands	2009
NICOLAIDES	Eleftherios	United Kingdom	2007
ODLAND	Hans Henrik	Norway	2009
OIKARINEN	Lasse	Finland	2008

CP Accreditation candidates successful to exam

OSTROWSKA	Bozena	Sweden	2007
PAISEY	John	United Kingdom	2008
PARAVOLIDAKIS	Konstantinos	Greece	2008
PASCALE	Patrizio	Switzerland	2009
PAULUSSEN	Guido	Netherlands	2006
PENA HERNANDEZ	Jose Luis	Spain	2008
PEREZ DIEZ	Diego	Spain	2009
PETKAR	Sanjiv	United Kingdom	2008
PETRACCI	Barbara	Italy	2009
PETRU	Jan	Czech Republic	2009
PORRO	Rosa	Spain	2009
PUCHOL	Alberto	Spain	2009
RAMANNA	Hemanth	Netherlands	2008
REBELLATO	Luca	Italy	2009
RESTLE	Christian	Germany	2009
RUSSO	Giovanni	Italy	2009
SCHAUMANN	Anselm	Germany	2009
SCHEFFER	Michael G	Netherlands	2008
SCHOONDERWOERD	Bas	Netherlands	2008
SCHWAGTEN	Bruno	Belgium	2008
SENOUF	David	Switzerland	2009
SIELSKI	Slawomir	Poland	
STATESCU	Cristian	Romania	2009
STEEN	Torkel	Norway	2007
BOGDAN	Stefan Nicolea	Romania	2009
STEVENHAGEN	Jeroen	Netherlands	2008
STRIKWERDA	Sipke	Netherlands	2009
SWART	Hp	Netherlands	2009
TAHAPARY	Giovanni	Netherlands	2009
TEUBL	Alexander	Austria	2009
TIELEMAN	Robert	Netherlands	2009
TOMLINSON	D	United Kingdom	2009

4. Appendix

EHRA Accreditation

«Accreditation in Cardiac Pacing & Implantable Cardioverter Defibrillators (ICDs)»

CP Accreditation candidates successful to exam

TORN	Marieke	Netherlands	2009
TOSSEBRO	Morten Shoren	Norway	2009
TREGUER	Frederic	France	2009
TRINES	Serge	Netherlands	2008
TUININGA	Ype	Netherlands	2009
TUREL	Baybars	Turkey	2009
URBAN	Lubos	Slovak Republic	2009
VAN DEN BOS	Ewout-Jan	Netherlands	2009
VAN DER WEERDT	Arno Peter	Netherlands	2007
VAN HERENDAEL	Hugo	Belgium	2009
VAN KRAAIJ	Dave	Netherlands	2009
VAN NOORD	Trudeke	Netherlands	2007
VAN OOSTROM	Antonie	Netherlands	2009
VAN SCHAARDENBURGH	Pepijn	Netherlands	2009
VAN SCHAIKVAN DER WIELEN	MarieLouise	Netherlands	2009
VERGARA	Pasquale	Italy	2009
VET	Thijs	Netherlands	2008
VICENTINI	Alessandro	Italy	2009
WESTRA	Sjoerd	Netherlands	2009
WIDDERSHOVEN	Josef Jos	United Kingdom	2009
WIJCHERS	Sip	Netherlands	2009
WILLEMS	Albert Richard	Netherlands	2009
WIM	Anne	Belgium	2008
ZALEVSKY	Valery P	Ukraine	2007
ZIMA	Endre	Hungary	2009
ZUCHELLI	Giulio	Italy	2008

Candidates successful to the exam need to have their logbook assessed by an EHRA grader to be fully accredited.

EHRA Accreditation is valid for 10 years.



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