

Albania · Algeria · Armenia · Austria · Belarus · Belgium · Bosnia & Herzegovina · Bulgaria · Croatia · Cyprus · Czech Republic · Denmark · Egypt · Estonia · Finland · Former Yugoslav Republic of Macedonia · France · Georgia · Germany · Greece · Hungary · Iceland · Ireland · Israel · Italy · Latvia · Lebanon · Libya · Lithuania · Luxembourg · Malta · Morocco · Netherlands · Norway · Poland · Portugal · Republic of Moldova · Romania · Russian Federation · San Marino · Serbia · Slovakia · Slovenia · Spain · Sweden · Switzerland · Syria · Tunisia · Turkey · Ukraine · United Kingdom

# The EHRA White Book 2009

The Current Status of Cardiac Electrophysiology  
in ESC Member Countries

J. Brugada, P. Vardas, C. Wolpert



[www.escardio.org/EHRA](http://www.escardio.org/EHRA)





## **Acknowledgments**

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



## **Preface – The European White Book of Electrophysiology: The second edition**

In 2008, the first EHRA White Book of Electrophysiology 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 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 this year. The EHRA Summit provided the opportunity to share and exchange information from 29 member countries on specific needs for improvements, reimbursement policy and training issues, amongst other topics.

As stated in the 2008 edition, 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.

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 second edition and hope that with this new White Book we have set the ground for a continuous EHRA year 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 2010.

Josep Brugada, President EHRA (2007-2009)  
Panos Vardas, President Elect  
Christian Wolpert, Chairman National Societies



## Table of Contents

### 1. Scope and Methodology

4

### 2. ESC Countries Overview

5

Albania	7
Algeria	9
Armenia	11
Austria	21
Belarus	31
Belgium	41
Bosnia & Herzegovina	51
Bulgaria	53
Croatia	63
Cyprus	73
Czech Republic	83
Denmark	93
Egypt	103
Estonia	113
Finland	123
Former Yugoslav Republic of Macedonia	133
France	143
Georgia	153
Germany	163
Greece	173
Hungary	183
Iceland	193
Ireland	203
Israel	213
Italy	223
Latvia	233
Lebanon	243



Libya	253
Lithuania	255
Luxembourg	265
Malta	275
Morocco	277
Netherlands	279
Norway	289
Poland	299
Portugal	309
Republic of Moldavia	319
Romania	321
Russian Federation	331
San Marino	341
Serbia	343
Slovakia	353
Slovenia	363
Spain	373
Sweden	383
Switzerland	393
Syria	403
Tunisia	405
Turkey	415
Ukraine	417
United Kingdom	419

---

### 3. Sources 429

---

### 4. Appendix – EHRA Accreditation 435

---



## 1. Scope and Methodology

The EHRA White Book 2009 presents 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 sections of the book are:

1. Statistics
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, 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. To gather the data, the societies and working groups used a number of 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 2009 until end of May 2009.

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



## 2. ESC Countries Overview











# ALBANIA

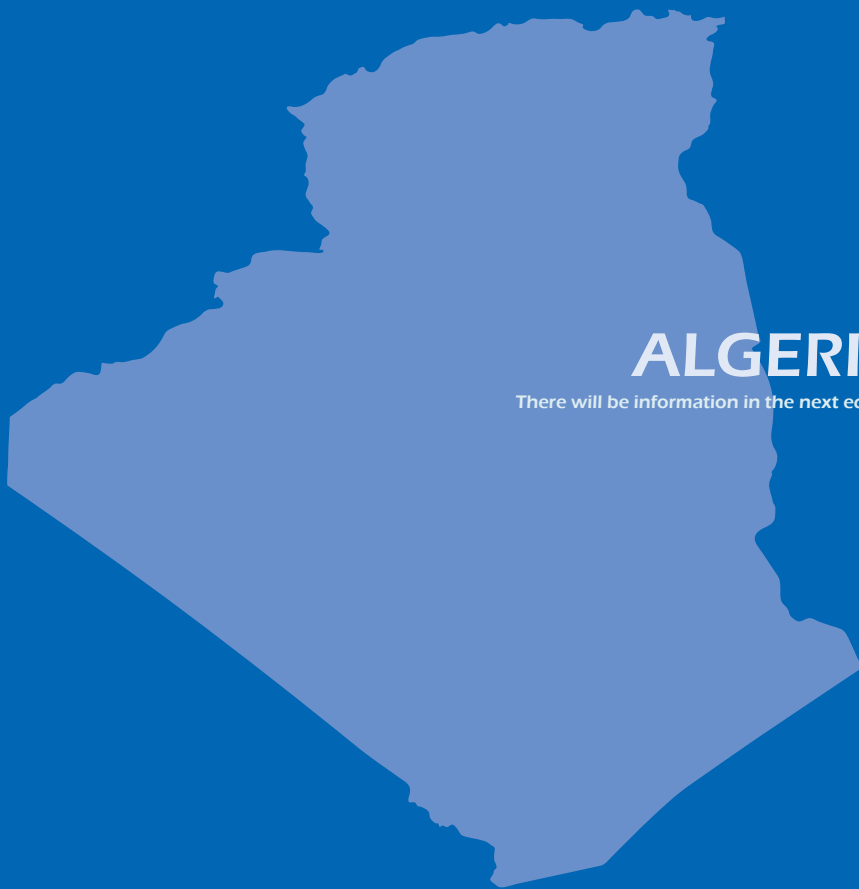
There will be information in the next edition.





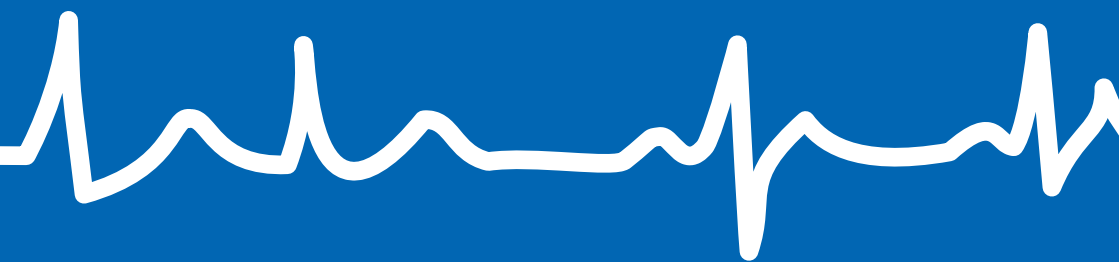






# ALGERIA

There will be information in the next edition.









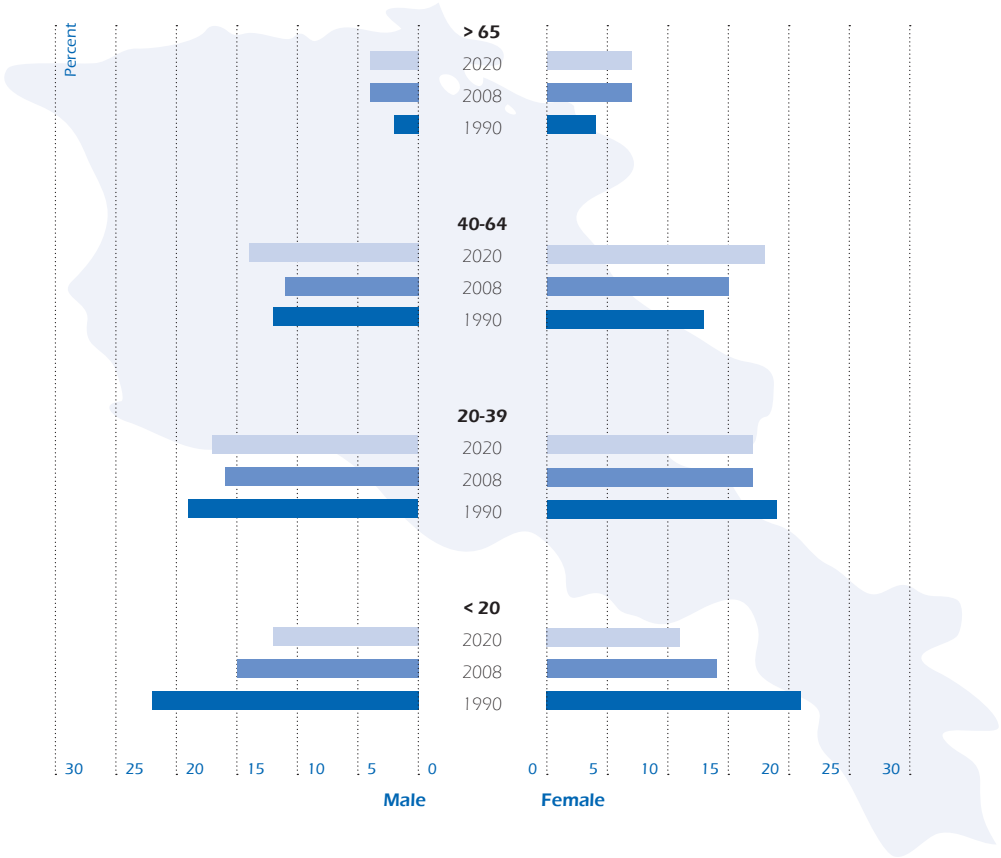
# ARMENIA





1. Statistics

Age pyramid for Armenia





### Healthcare data

Hospitals (per 100.000 population)	4,18	2007
Beds (per 100.000 population)	406,82	2007
Number of physicians	11.088	2007
Density of physicians (per 1.000 population)	3,44	2007
Number of nurses	13.326	2007
Density of nurses (per 1.000 population)	4,13	2007

### Population by age and sex

	Male	Female	Total
2020	1.424.970	1.592.400	3.017.370
2008	1.400.237	1.568.349	2.968.586
1990	1.655.623	1.721.160	3.376.783

### Economic information

Gross domestic product (U.S dollar-billions)	12.070*	2008
Gross domestic product per capita	3.400,56*	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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	43%
2008	not available




## 3. Healthcare System

The Armenian healthcare system comprises of a network of independent, self-financing (or mixed financing) health services that provide statutory and private services. In the past, hospitals had nominal accountability to the local administration. Today, they have financial autonomy and are increasingly responsible for their own budgets and management. Regional government, however, continues to monitor the care provided while the Ministry of Health retains regulatory functions. Authorities realize healthcare financing via State Healthcare Agency. Medical care is financed by state only in very few cases: 1) children 0-7 years old, 2) emergency medical care, 3) risk groups.





### Basic insurance availability

No

### Percentage of insured and uninsured citizens

Insured citizens	35%	
Uninsured citizens	65%	
		

### Distribution of insurance modality

Public insurance company	35%	
Private insurance company	2%	
Private co-payment	63%	
		

### 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 95% of cases patient or family have to pay the whole cost including Hospital stay for Pacemaker or ICD implant and for any kind of Ablation

#### 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 type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

#### National accreditation for physicians

No

#### National accreditation for centres to perform EP

Yes

Medicare service is a licenced activity in Armenia.

#### 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	No
---	----

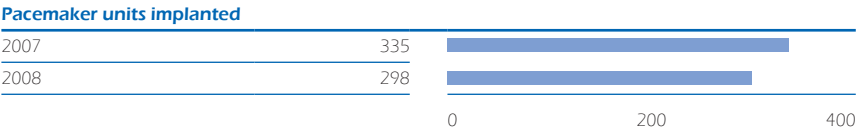
Required period of training to perform implantations	2 years
--	---------

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%
---	------

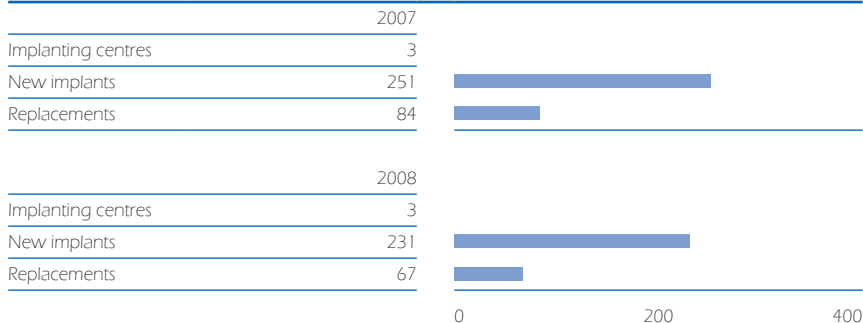
### 5. Pacemakers







### Pacemaker units implanted and number of implanting centres

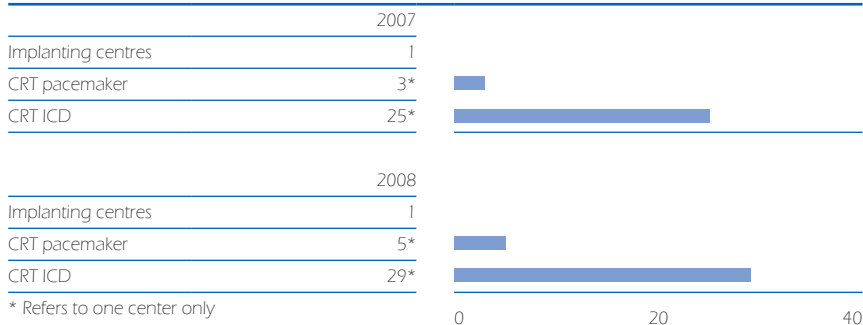


### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



\* Refers to one center only



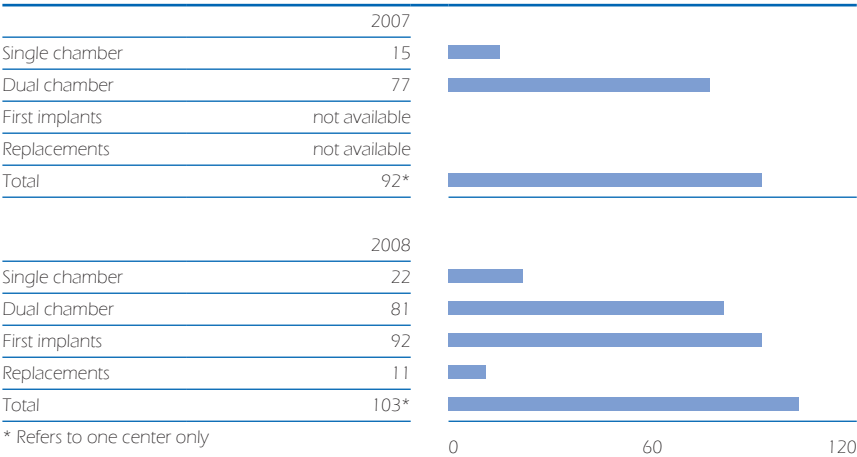
Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

Number of implanting centres	2
------------------------------	---

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

	2007	
Implanting centres	0	
Loop recorders	0	
	2008	
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

	2007	2008
Number of ablations performed	165	179
Mean number (ablations/centres)	165	179
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 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 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







# 1. Statistics

## Age pyramid for Austria





### Healthcare data

Hospitals (per 100.000 population)	3,25	2007
Beds (per 100.000 population)	776,34	2007
Number of physicians	31.175	2007
Density of physicians (per 1.000 population)	3,75	2007
Number of nurses	52.795	2007
Density of nurses (per 1.000 population)	6,35	2007

### Population by age and sex

	Male	Female	Total
2020	4.008.502	4.211.322	8.219.824
2008	4.004.272	4.201.261	8.205.533
1990	3.765.953	4.052.470	7.818.423

### Economic information

Gross domestic product (U.S dollar-billions)	432.404*	2008
Gross domestic product per capita	52.159,18*	2008
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

2007	400,7
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	44%
2008	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 healthcare 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	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 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

Subspeciality Diploma Cardiologist ("Facharzt für Kardiologie")

#### National accreditation for centres to perform EP

No

#### National Society supporting EHRA accreditation system

Yes

#### Specialty required for catheter ablation

Yes

Primarily cardiologist, surgeon

#### 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

## Number of medical faculties

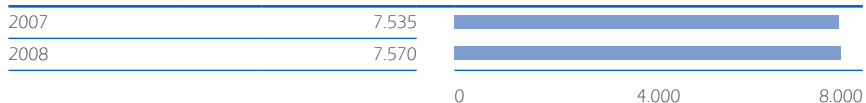
4

## Percentage of academic facilities among practicing EP and implant centres

not available

## 5. Pacemakers

### Pacemaker units implanted



### Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	65
New implants	not available
Replacements	not available
2008	
Implanting centres	65
New implants	not available
Replacements	not available

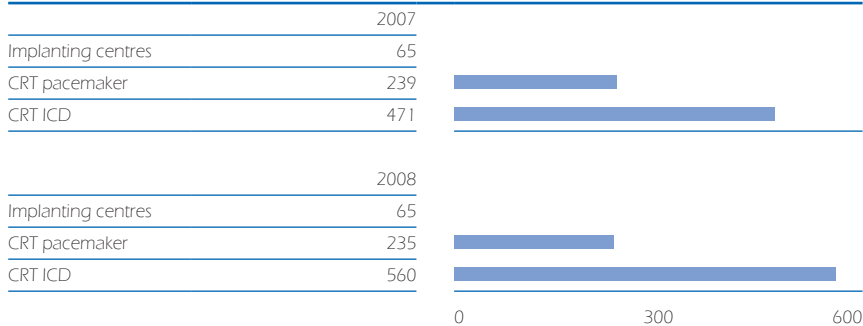
### Specialty performing implants

Cardiologists	20%
Surgeons	80%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

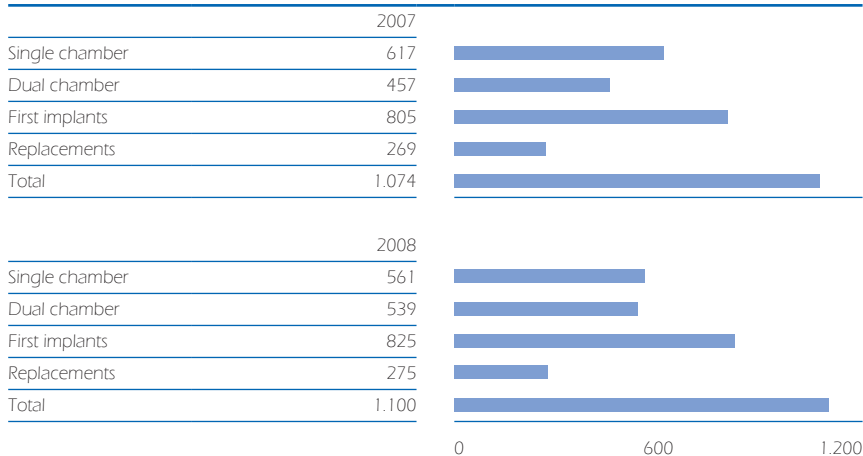
Cardiologists	35%
Surgeons	65%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

**32**

### ICD units implanted and number of implanting centres



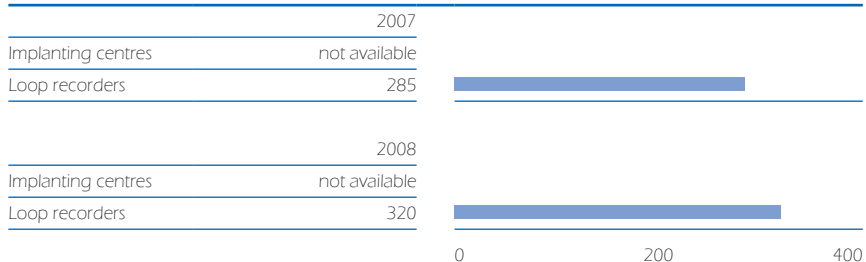


### Specialty performing implants

Cardiologists	25%
Surgeons	75%

## 8. Loop recorders

### Loop recorders implanted and number of implanting centres



### 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"/>

### Availability of a national quality insurance system or complication registry

Yes

In preparation (BIOG)

### 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

14

	2007	2008
Number of ablations performed	1.509	1.362
Mean number (ablations/centres)	107	97
Number of AF ablations	238	293

## 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 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







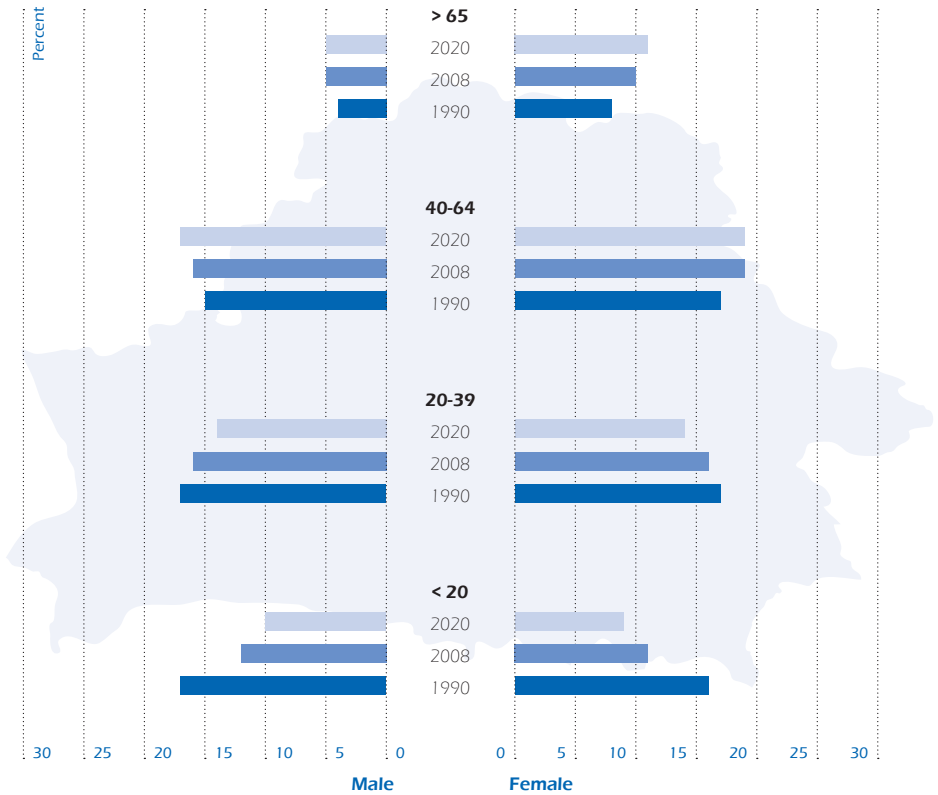
# BELARUS





# 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
Number of physicians	46.965	2007
Density of physicians (per 1.000 population)	4,84	2007
Number of nurses	1 16.193	2007
Density of nurses (per 1.000 population)	1 1,98	2007

### Population by age and sex

	Male	Female	Total
2020	4.293.342	4.955.811	9.249.153
2008	4.511.211	5.174.557	9.685.768
1990	4.776.392	5.424.345	10.200.737

### Economic information

Gross domestic product (U.S dollar-billions)	57.681*	2008
Gross domestic product per capita	6.058,45*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	724 per 100.000 citizens
2008	732 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

2007	52,8%
2008	52,6%

## 3. Healthcare System

National Health System

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	100%	<div><div></div></div>
Uninsured citizens	0%	
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div><div></div></div>
Private insurance company	1%*	<div><div></div></div>
Private co-payment	3%*	<div><div></div></div>
* 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	✓
ICD primary prevention	✓
ICD secondary prevention	✓
CRT devices	✓
Ablation	✓
Unlimited availability of treatment	✓

## 4. Education

### National accreditation availability

Device therapy	✓
Invasive electrophysiology	✓
Roentgen-endovascular surgery	

**National accreditation for physicians** Yes

**National accreditation for centres to perform EP** Yes

**National Society supporting EHRA accreditation system** No

**Specialty required for catheter ablation** Yes

Roentgen-endovascular surgeon

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

Roentgen-endovascular surgeon

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



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

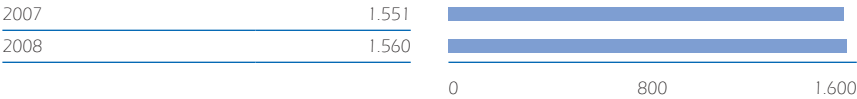
4

Percentage of academic facilities among practicing EP and implant centres

75%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	8
New implants	not available
Replacements	not available
2008	
Implanting centres	8
New implants	not available
Replacements	not available

Specialty performing implants

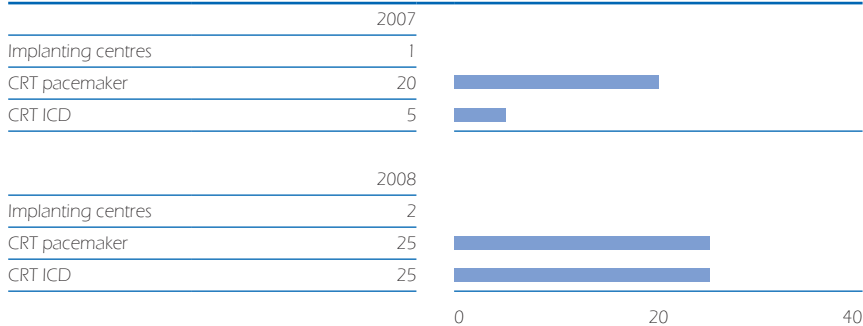
Cardiologists	0%
Surgeons	100%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

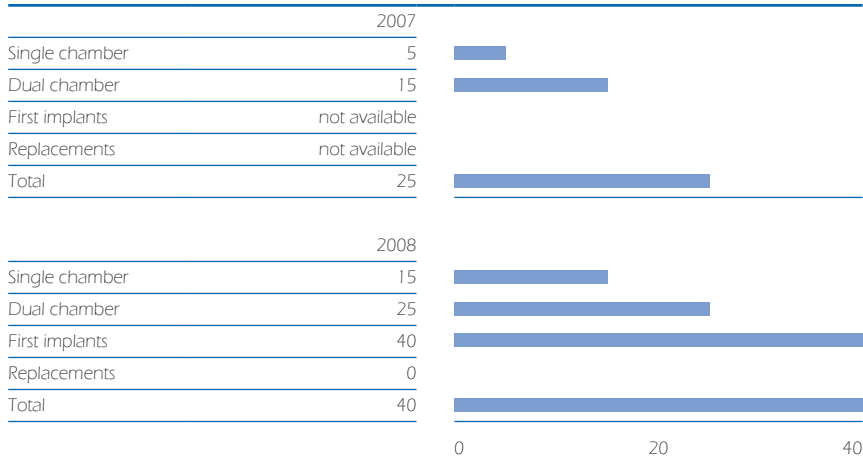
Cardiologists	0%
Surgeons	100%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

2

### ICD units implanted and number of implanting centres



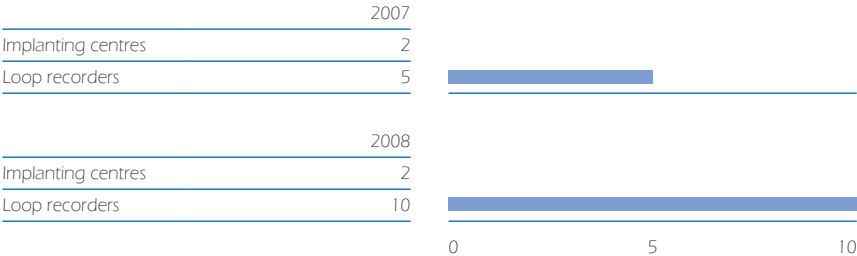


Specialty performing implants

Cardiologists	0%
Surgeons	100%

8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	0%
Surgeons	100%

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 **Yes**

Republican Scientific and Practical Centre of Cardiology and Ministry of Health





## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

2

	2007	2008
Number of ablations performed	66	170
Mean number (ablations/centres)	33	85
Number of AF ablations	6	14

## 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







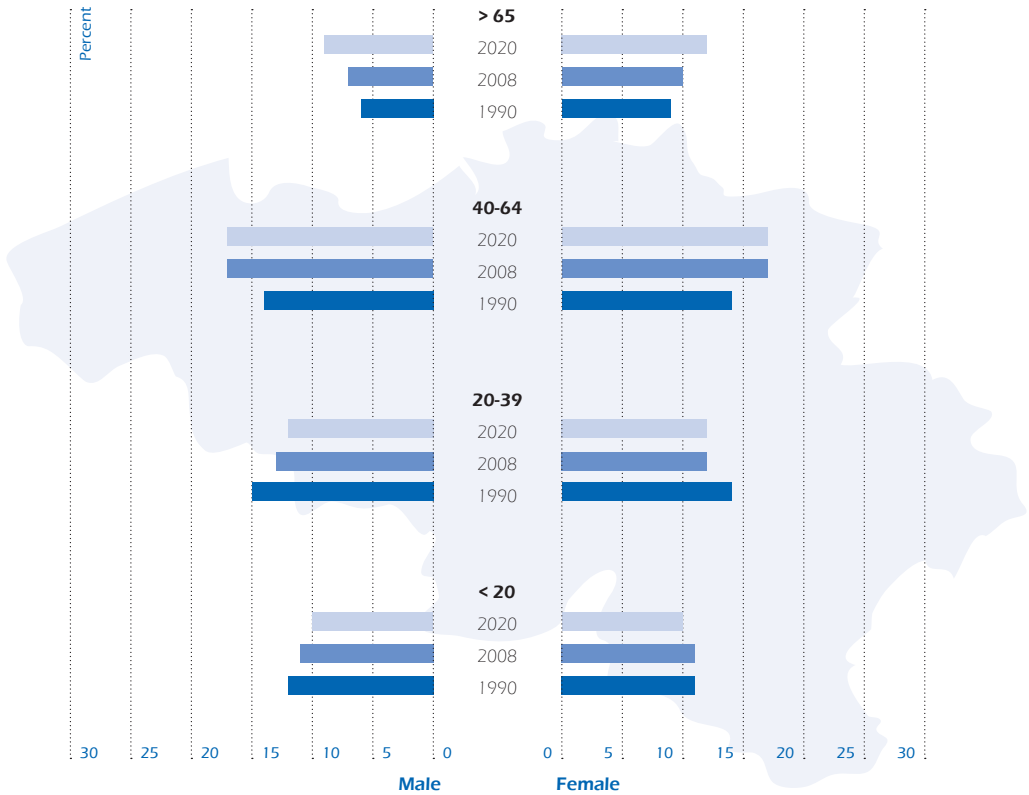
# BELGIUM





# 1. Statistics

## Age pyramid for Belgium







### Healthcare data

Hospitals (per 100.000 population)	2,01	2007
Beds (per 100.000 population)	525,06	2007
Number of physicians	44.124	2006
Density of physicians (per 1.000 population)	4,23	2006
Number of nurses	139.577	2004
Density of nurses (per 1.000 population)	13,41	2004

### Population by age and sex

	Male	Female	Total
2020	5.120.900	5.344.134	10.465.034
2008	5.092.834	5.311.117	10.403.951
1990	4.889.959	5.114.528	10.004.487

### Economic information

Gross domestic product (U.S dollar-billions)	530.613*	2008
Gross domestic product per capita	49.430,28*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

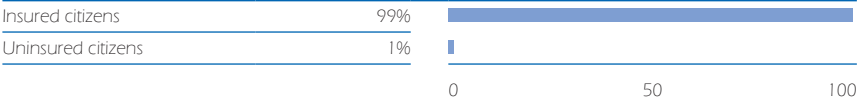
2007	not available
2008	not available

## 3. Healthcare System

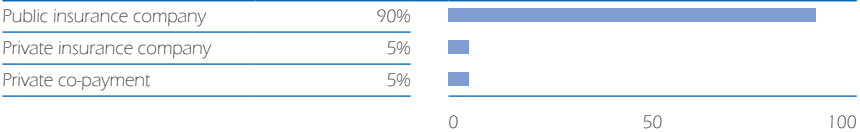
Belgium has a compulsory healthcare system based on the social health insurance model. It is publicly funded and mainly provided privately. The federal government regulates and supervises the health insurance system. (Source: Highlights on health in Belgium. WHO, 2004)

### 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"/>

#### 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 to perform EP** 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 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**

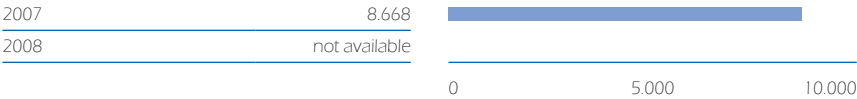
Pacemaker	40
ICD implantation	25
Electrophysiological studies and catheter ablation	20
CRT implantation	20
Atrial fibrillation ablation	10

**Number of medical faculties**
**7**

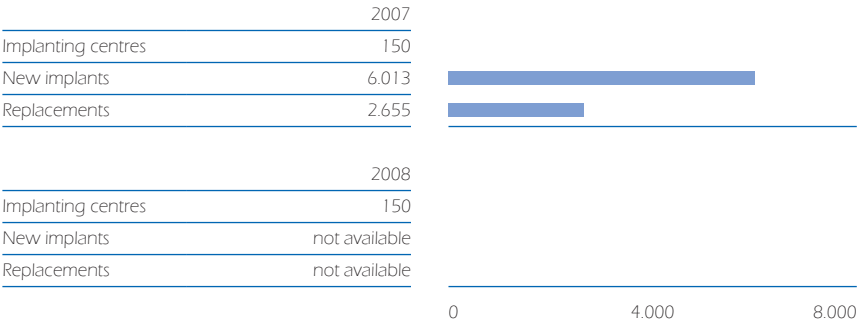
**Percentage of academic facilities among practicing EP and implant centres**
**35%**

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



**Specialty performing implants**

Cardiologists	55%
Surgeons	45%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres

	2007	
Implanting centres	35	
CRT pacemaker	not available	
CRT ICD	not available	
	2008	
Implanting centres	35	
CRT pacemaker	not available	
CRT ICD	not available	

### Specialty performing implants

Cardiologists	95%
Surgeons	5%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

20

### ICD units implanted and number of implanting centres

	2007	
Single chamber	not available	
Dual chamber	not available	
First implants	not available	
Replacements	not available	
Total	1.600*	
	2008	
Single chamber	1.000	
Dual chamber	600	
First implants	not available	
Replacements	not available	
Total	1.600*	

\* approx.

0 800 1.600

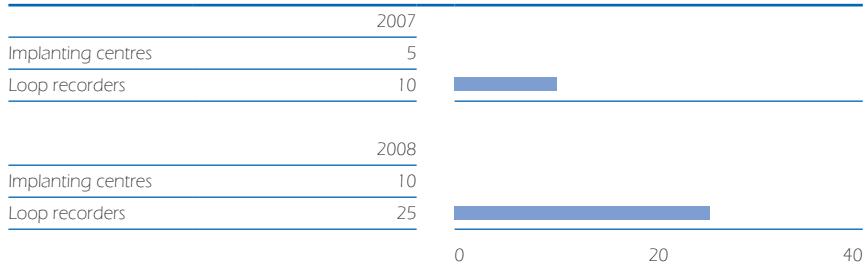


### Specialty performing implants

Cardiologists	80%
Surgeons	20%

## 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"/>

### 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

35

	2007	2008
Number of ablations performed	not available	3.785
Mean number (ablations/centres)	not available	108
Number of AF ablations	not available	704

## 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 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









# BOSNIA & HERZEGOVINA

There will be information in the next edition.









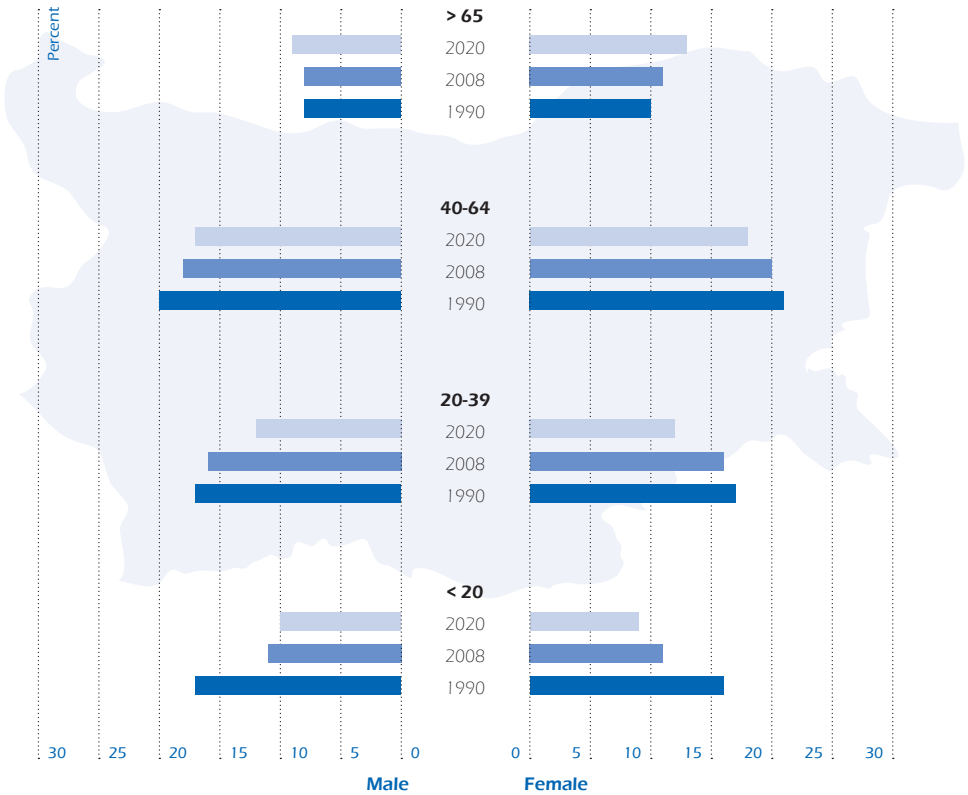
# BULGARIA





# 1. Statistics

## Age pyramid for Bulgaria







### Healthcare data

Hospitals (per 100.000 population)	4,44	2007
Beds (per 100.000 population)	636,43	2007
Number of physicians	27.911	2007
Density of physicians (per 1.000 population)	3,64	2007
Number of nurses	32.244	2007
Density of nurses (per 1.000 population)	4,21	2007

### Population by age and sex

	Male	Female	Total
2020	3.132.107	3.436.850	6.568.957
2008	3.485.012	3.777.663	7.262.675
1990	4.144.045	4.297.827	8.441.872

### Economic information

Gross domestic product (U.S dollar-billions)	51.933*	2008
Gross domestic product per capita	6.849,48*	2008
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

2007	971 per 100.000 citizens
2008	988 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country



2007	65,8%
2008	68%

## 3. Healthcare System




The National Health system includes National Health System Fund and twenty private insurance funds. Basic healthcare insurance is mandatory for every citizen. Private co-payment is against the regulations.

### Basic insurance availability Yes

#### Percentage of insured and uninsured citizens

Insured citizens	86,9%	
Uninsured citizens	13,1%	
		0 50 100

#### Distribution of insurance modality

Public insurance company	63%	
Private insurance company	0,7%	
Private co-payment	36,3%	
		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"/>

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

National accreditation for physicians is in process of regulation.

### National accreditation for centres to perform EP

No

National accreditation of centres is also 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	5
ICD implantation	3
Electrophysiological studies and catheter ablation	1
CRT implantation	3
Atrial fibrillation ablation	1

Number of medical faculties

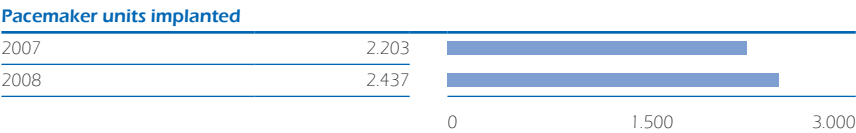
6

Percentage of academic facilities among practicing EP and implant centres

71,4%

50% among ablation or ICD centres, for pacemakers it is less - 21%

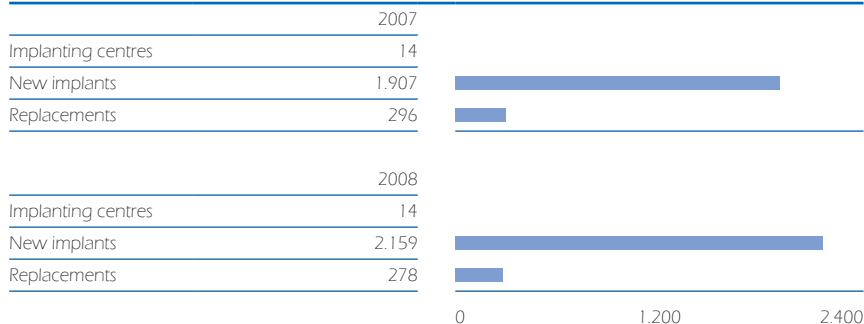
### 5. Pacemakers







### Pacemaker units implanted and number of implanting centres

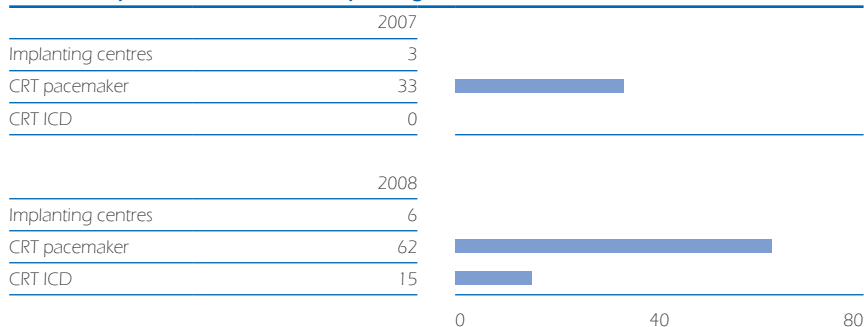


### Specialty performing implants

Cardiologists	82,4%
Surgeons	17,6%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

Cardiologists	87,5%
Surgeons	12,5%

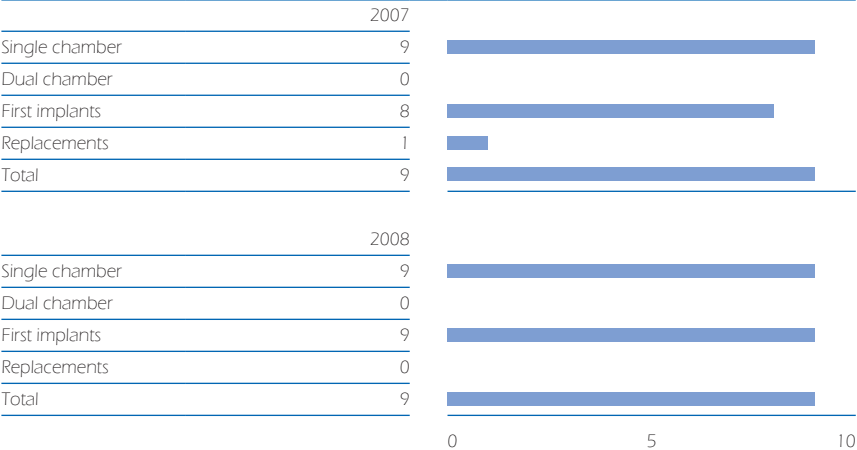


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

5

### ICD units implanted and number of implanting centres

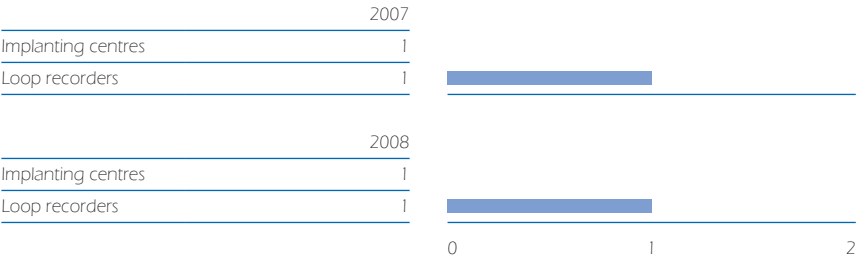


### Specialty performing implants

Cardiologists	85,7%
Surgeons	14,3%

## 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 at the National Heart Hospital

### Availability of a national quality insurance system or complication registry

No

National Medical standards for device therapy and invasive electrophysiology are in process of regulation by the Ministry of Health.

### Availability of a national institution coordinating and guiding device recalls

No

Device recalls are carried out by the implanting centres. Complicated implantations are referred to high volume academic centres.

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

1

	2007	2008
Number of ablations performed	299	290
Mean number (ablations/centres)	299	290
Number of AF ablations	18	15



# 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



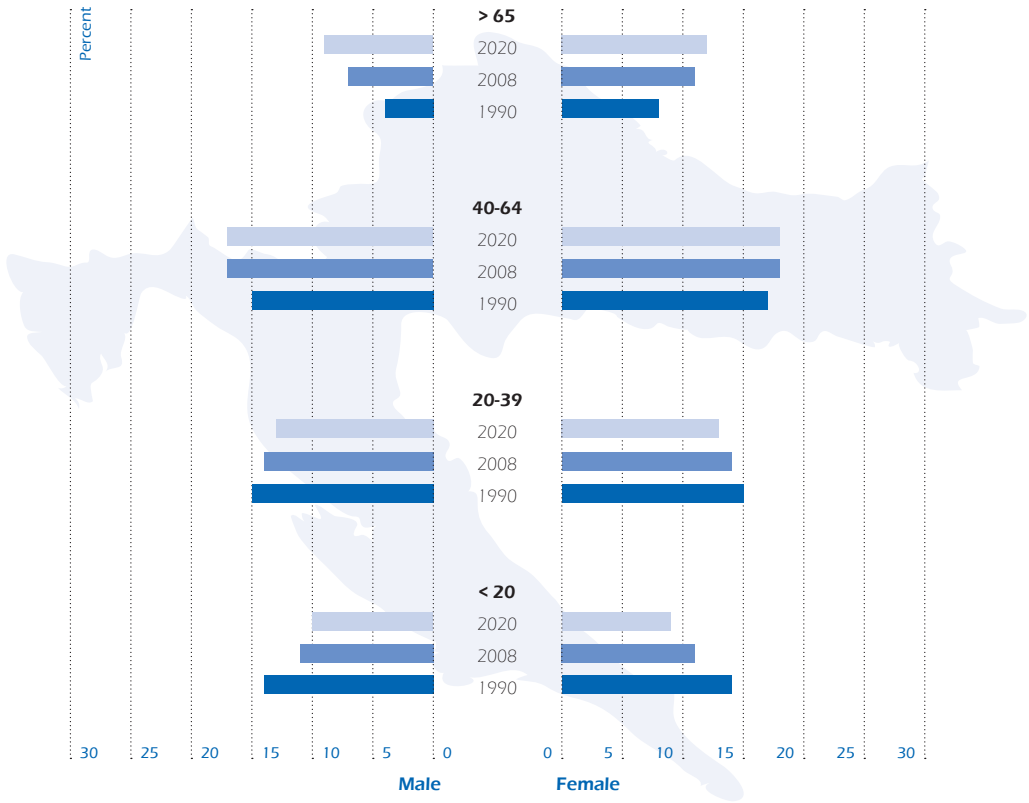
# CROATIA





# 1. Statistics

## Age pyramid for Croatia





### Healthcare data

Hospitals (per 100 000 population)	1,73	2007
Beds (per 100 000 population)	534,6	2007
Number of physicians	11.799	2007
Density of physicians (per 1000 population)	2,59	2007
Number of nurses	23.852	2007
Density of nurses (per 1000 population)	5,24	2007

### Population by age and sex

	Male	Female	Total
2020	2.136.454	2.290.828	4.427.282
2008	2.160.729	2.330.814	4.491.543
1990	2.185.030	2.355.611	4.540.641

### Economic information

Gross domestic product (U.S dollar-billions)	63.948*	2008
Gross domestic product per capita	14.414,36*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	50%
2008	50%

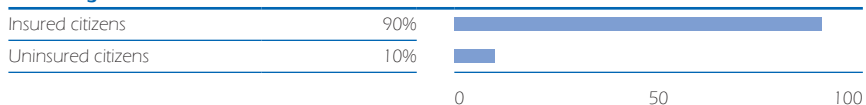
## 3. Healthcare System

Croatia has a National healthcare system. The Croatian Health Insurance Institute play a key role in the health system. Private insurances are also available in the country. (Health Care System in transition: Croatia, 1999)

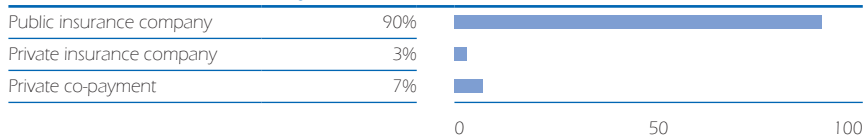
### Basic insurance availability

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 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 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

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

No



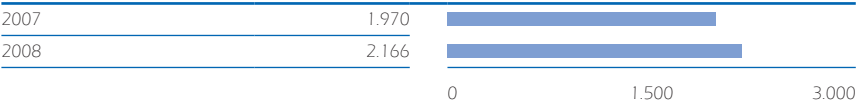
Training centres availability

Pacemaker	4
ICD implantation	3
Electrophysiological studies and catheter ablation	3
CRT implantation	3
Atrial fibrillation ablation	0

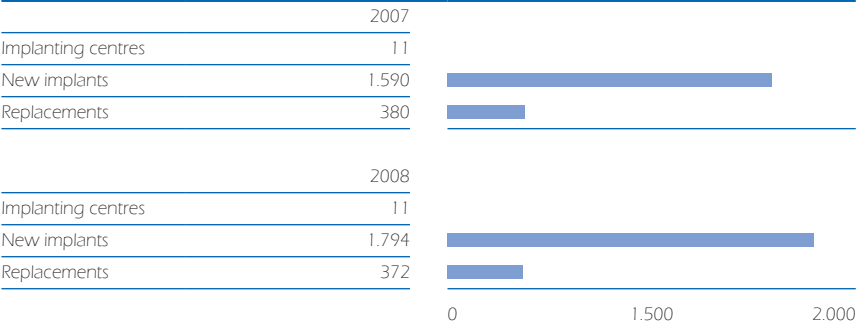
Depending on which devices and ablation procedures

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



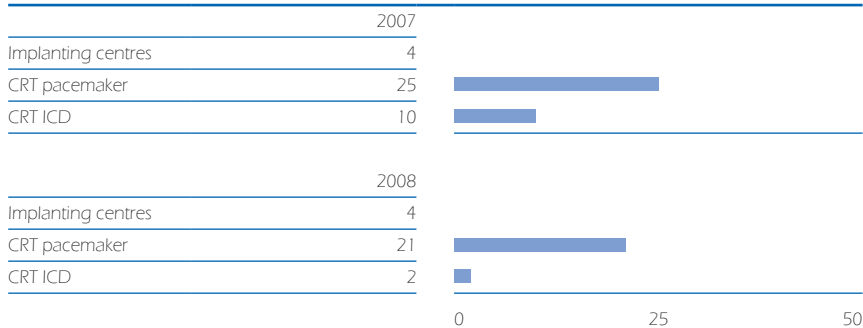
Specialty performing implants

Cardiologists	80%
Surgeons	20%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

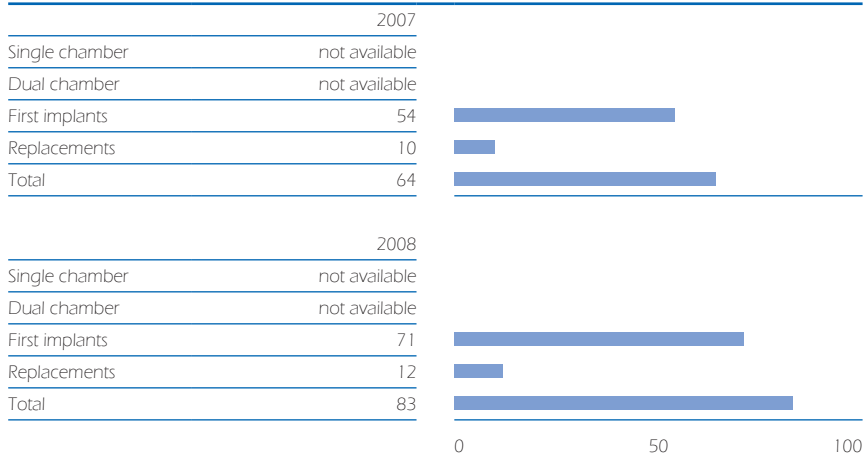
Cardiologists	80%
Surgeons	20%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

5

### ICD units implanted and number of implanting centres





### Specialty performing implants

Cardiologists	20%
Surgeons	80%

## 8. Loop recorders

### Loop recorders implanted and number of implanting centres

	2007	
Implanting centres	0	
Loop recorders	0	
	2008	
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

Not yet fully established

### 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

	2007	2008
Number of ablations performed	217	264
Mean number (ablations/centres)	54	68
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 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 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







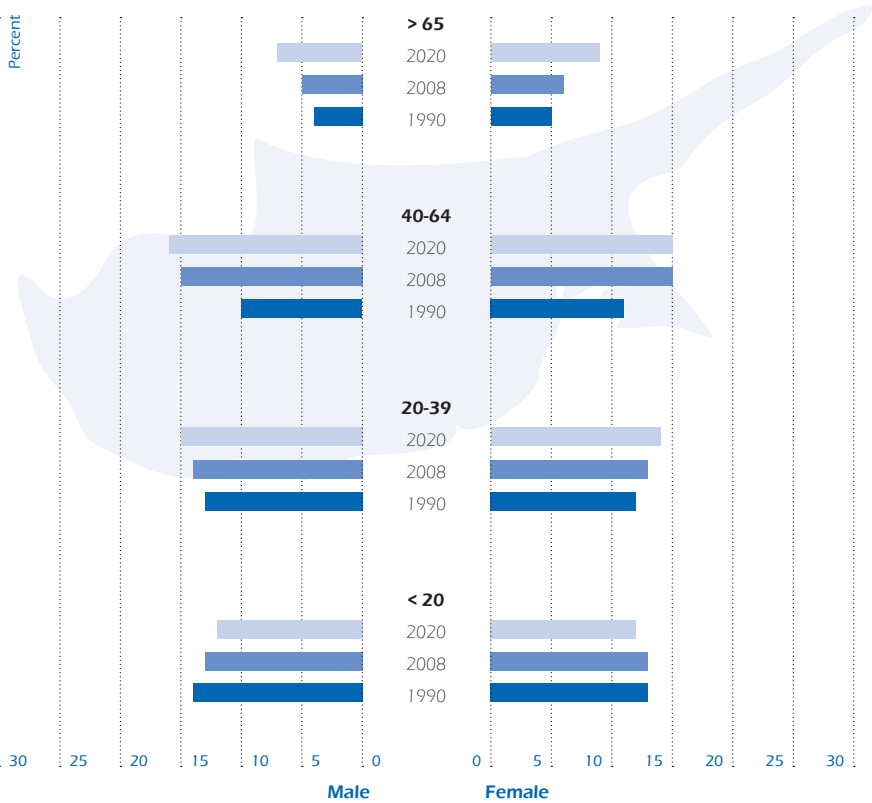
# CYPRUS





1. Statistics

Age pyramid for Cyprus







### Healthcare data

Hospitals (per 100.000 population)	12,32	2006
Beds (per 100.000 population)	371,5	2006
Number of physicians	1.950	2006
Density of physicians (per 1.000 population)	2,53	2006
Number of nurses	3.361	2006
Density of nurses (per 1.000 population)	4,36	2006

### Population by age and sex

	Male	Female	Total
2020	418.702	420.428	839.130
2008	395.737	396.867	792.604
1990	339.644	341.705	681.349

### Economic information

Gross domestic product (U.S dollar-billions)	25.585*	2008
Gross domestic product per capita	32.194,93*	2008
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

2007	720 per 100.000 people
2008	720 per 100.000 people

### Proportion cardiac mortality over total mortality of the country

2007	29%
2008	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.

### 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%	<div></div>
Private insurance company	30%	<div></div>
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 to perform EP** 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

0

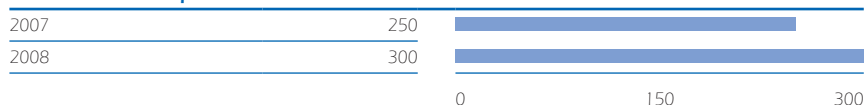
Medical school to be established in 2011

### Percentage of academic facilities among practicing EP and implant centres

0%

## 5. Pacemakers

### Pacemaker units implanted



### Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	5
New implants	not available
Replacements	not available
2008	
Implanting centres	5
New implants	not available
Replacements	not available

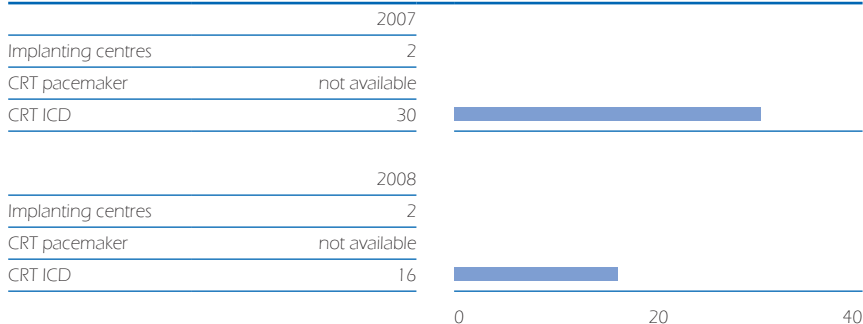
### Specialty performing implants

Cardiologists	100%
Surgeons	0%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

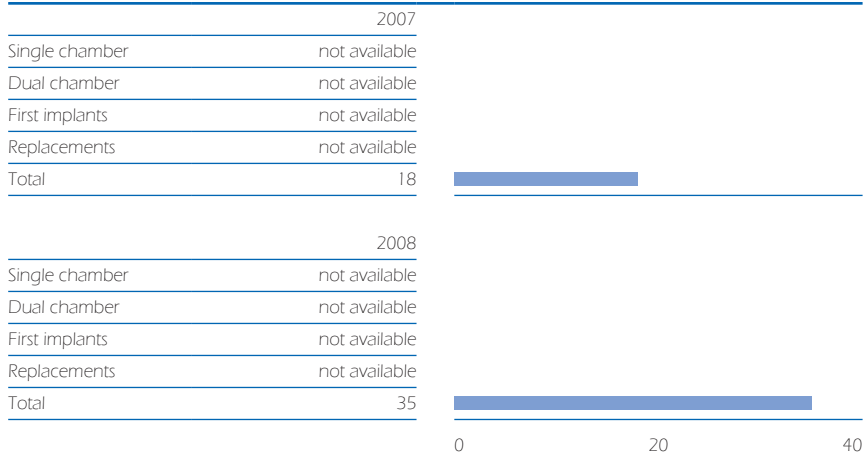
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

3

### ICD units implanted and number of implanting centres



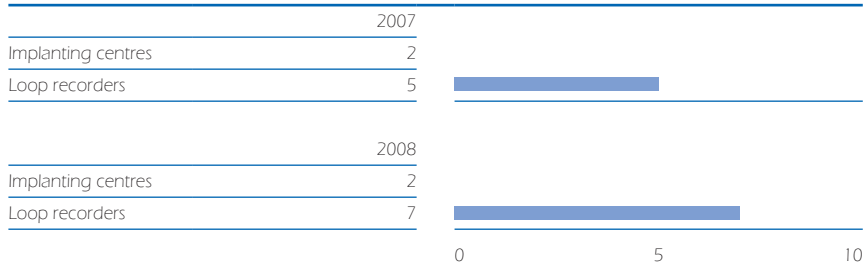


### Specialty performing implants

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

	2007	2008
Number of ablations performed	0	12
Mean number (ablations/centres)	0	12
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 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 type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle







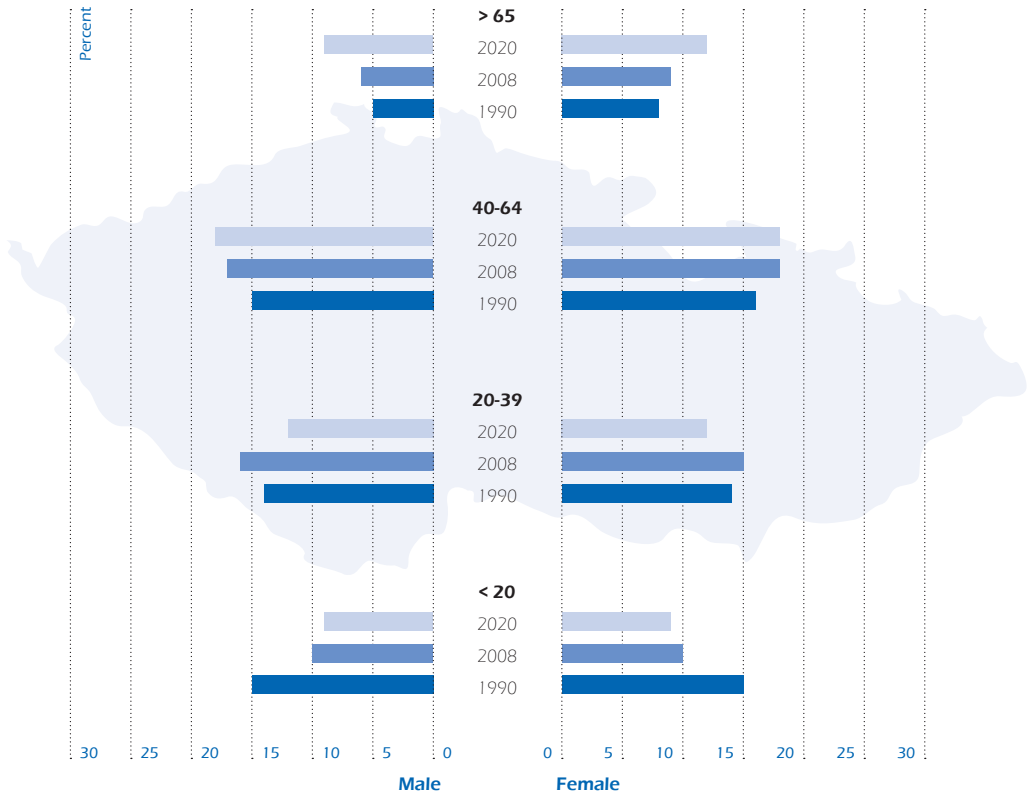
# CZECH REPUBLIC





# 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
Number of physicians	36.815	2007
Density of physicians (per 1.000 population)	3,57	2007
Number of nurses	86.989	2007
Density of nurses (per 1.000 population)	8,43	2007

### Population by age and sex

	Male	Female	Total
2020	4.883.416	5.130.003	10.013.419
2008	4.981.619	5.239.292	10.220.911
1990	5.001.688	5.303.470	10.305.158

### Economic information

Gross domestic product (U.S dollar-billions)	217.215*	2008
Gross domestic product per capita	21.040,64*	2008
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

2007	508 per 100.000 people
2008	511 per 100.000 people

### Proportion cardiac mortality over total mortality of the country

2007	50,1%
2008	49,8%

## 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	100%	<div></div>
Uninsured citizens	0%	
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div></div>
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"/>

#### 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"/>
Licences of the Czech Chamber of Physicians	

**National accreditation for physicians** Yes

**National accreditation for centres to perform EP** Yes

For Cardiology training yes, for 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, surgeon



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

Czech Chamber of Physicians Licenses and recommendations of The Working group on arrhythmias and cardiac pacing

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

**Training centres availability**

Pacemaker	18
ICD implantation	15
Electrophysiological studies and catheter ablation	15
CRT implantation	16
Atrial fibrillation ablation	9

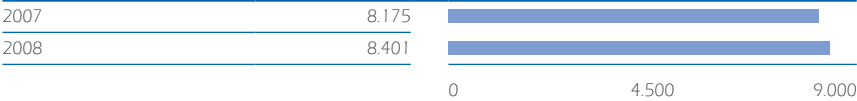
**Number of medical faculties**
7

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

50% among ablation or ICD centres, for pacemakers it is less - 21%

**5. Pacemakers**

**Pacemaker units implanted**





### Pacemaker units implanted and number of implanting centres

	2007
Implanting centres	38
New implants	not available
Replacements	not available

	2008
Implanting centres	39
New implants	not available
Replacements	not available

### Specialty performing implants

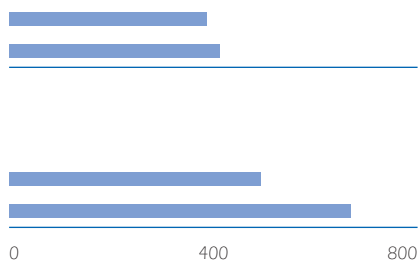
Cardiologists	80%
Surgeons	20%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres

	2007
Implanting centres	16
CRT pacemaker	387
CRT ICD	412

	2008
Implanting centres	15
CRT pacemaker	492
CRT ICD	669



### Specialty performing implants

Cardiologists	80%
Surgeons	20%

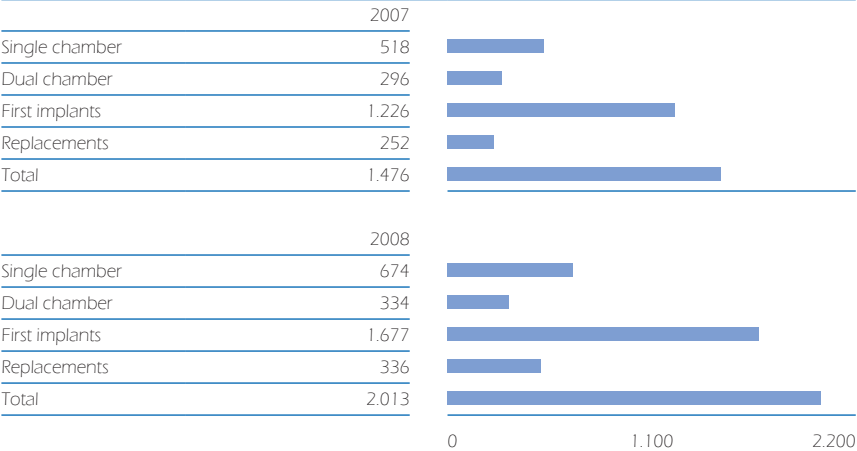


# 7. Implantable Cardiac Defibrillator

Number of implanting centres

15

## ICD units implanted and number of implanting centres

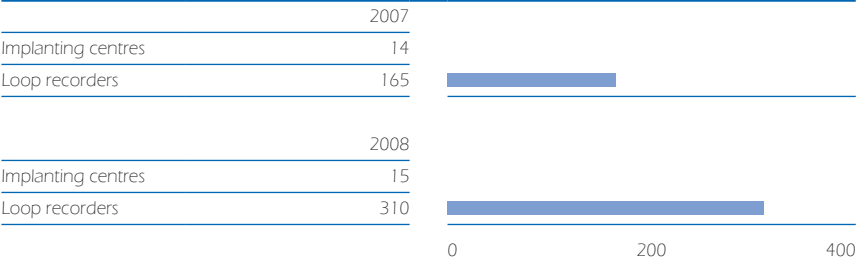


## Specialty performing implants

Cardiologists	80%
Surgeons	20%

# 8. Loop recorders

## Loop recorders implanted and number of implanting centres





### 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"/>

### Availability of a national quality insurance system or complication registry

No

### Availability of a national institution coordinating and guiding device recalls

Yes

State institution SUKL – National administration for drug control

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

14

14 for adults, 2 for children

	2007	2008
Number of ablations performed	2.901	3.470
Mean number (ablations/centres)	207.2	247.8
Number of AF ablations	546	900



# 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 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 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 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



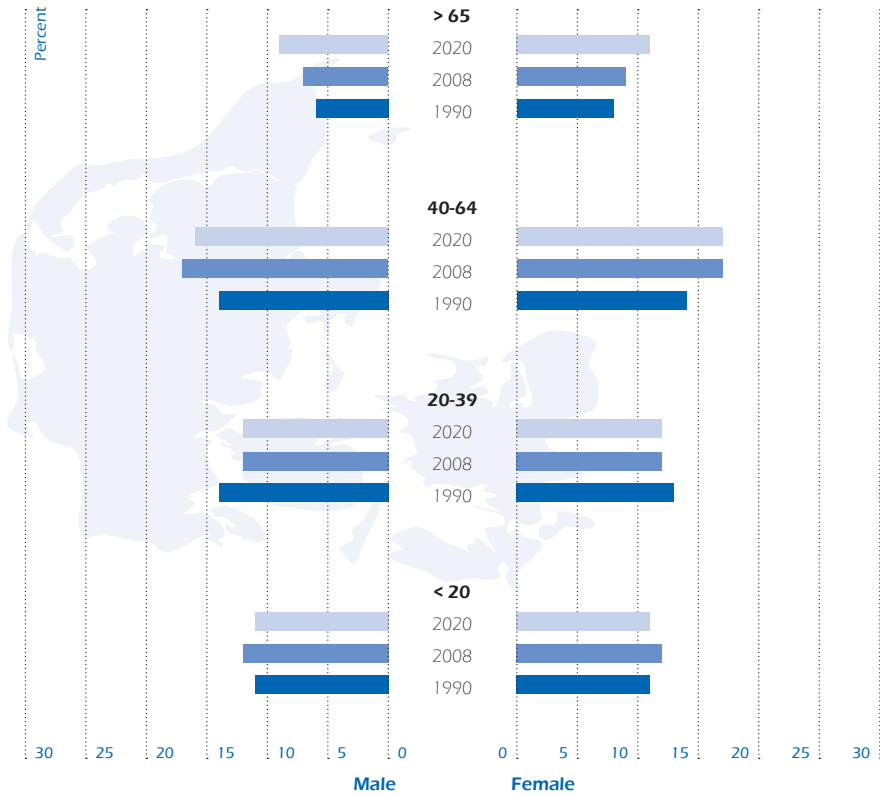
# DENMARK





# 1. Statistics

## Age pyramid for Denmark





### Healthcare data

Hospitals (per 100.000 population)	1,09	2005
Beds (per 100.000 population)	349,48	2007
Number of physicians	17.226	2006
Density of physicians (per 1.000 population)	3,2	2006
Number of nurses	51.787	2006
Density of nurses (per 1.000 population)	9,61	2006

### Population by age and sex

	Male	Female	Total
2020	2.772.476	2.869.821	5.642.297
2008	2.709.804	2.774.919	5.484.723
1990	2.540.449	2.613.903	5.154.352

### Economic information

Gross domestic product (U.S dollar-billions)	369.583*	2008
Gross domestic product per capita	67.386,89*	2008
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

2007	not available
2008	not available

Available for 2006, where it was 220 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

Available for 2006, where it was 19%

## 3. Healthcare System

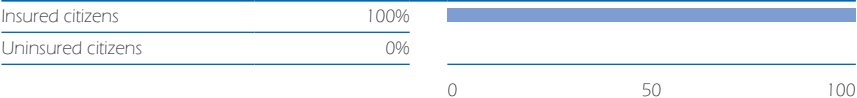
Denmark has a decentralised healthcare system providing universal coverage for all residents. It is tax based.

Hospital care, general practitioner services and healthcare services are free at the point of use.

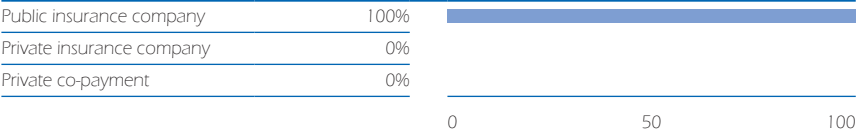
(Highlights on health in Denmark, WHO, 2004)

### 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 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 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** Yes

**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



<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

**Training centres availability**

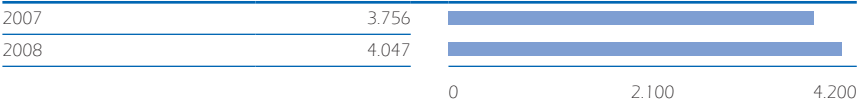
Pacemaker	13
ICD implantation	5
Electrophysiological studies and catheter ablation	6
CRT implantation	5
Atrial fibrillation ablation	6

<b>Number of medical faculties</b>	<b>3</b>
------------------------------------	----------

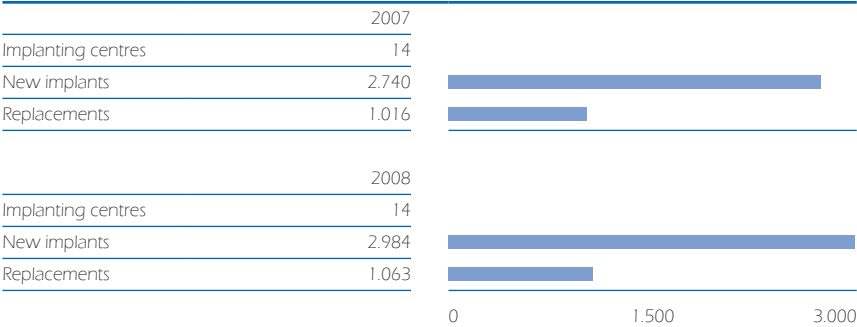
<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>50%</b>
--	------------

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



**Specialty performing implants**

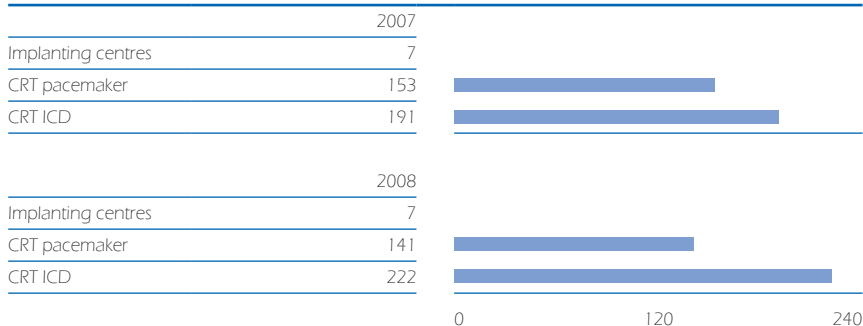
Cardiologists	100%
Surgeons	0%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

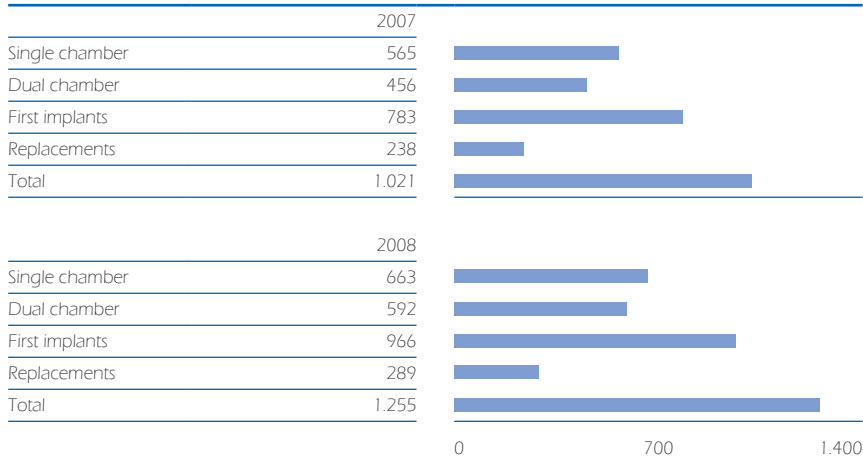
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

5

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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"/>

### Availability of a national quality insurance system or complication registry

Yes

Danish Pacemaker and ICD registry

### Availability of a national institution coordinating and guiding device recalls

Yes

Danish Pacemaker and ICD Register



## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

6

	2007	2008
Number of ablations performed	2.350	2.315
Mean number (ablations/centres)	390	385
Number of AF ablations	1.130	1.100

## 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 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 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 checked="" 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







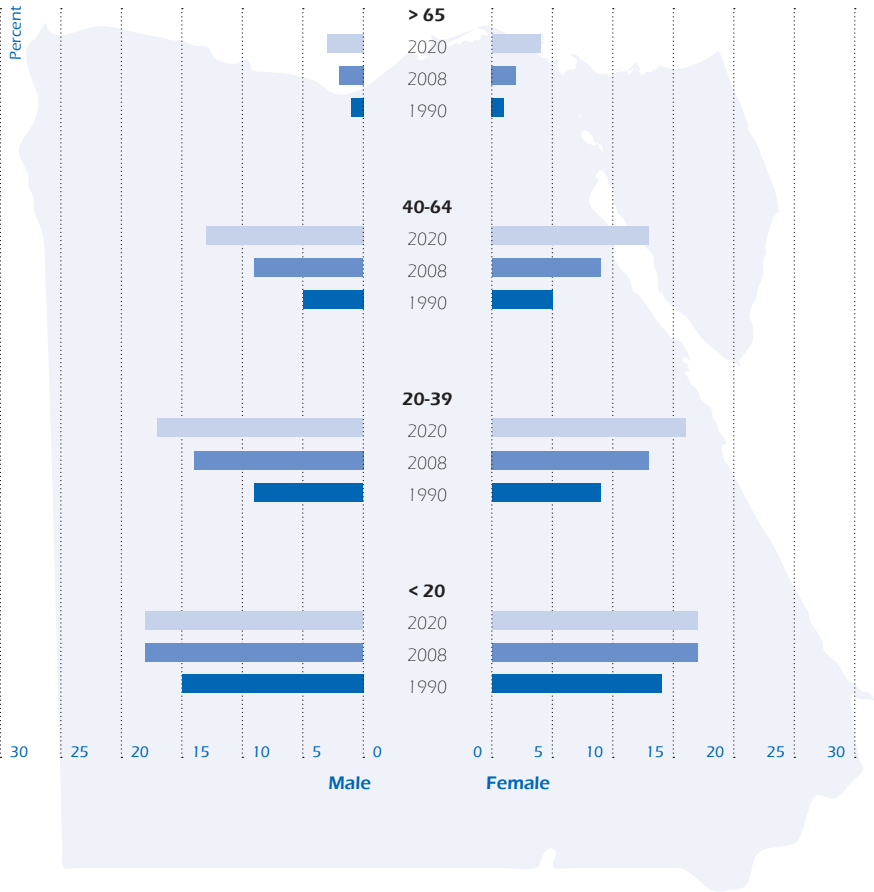
# EGYPT





# 1. Statistics

## Age pyramid for Egypt





### Healthcare data

Hospitals (per 100.000 population)	not available	not available
Beds (per 100.000 population)	220	2005
Number of physicians	179.900	2005
Density of physicians (per 1.000 population)	2,4	2005
Number of nurses	249.787	2005
Density of nurses (per 1.000 population)	3,4	2005

### Population by age and sex

	Male	Female	Total
2020	49.021.745	48.444.320	97.466.065
2008	41.186.961	40.526.556	81.713.517
1990	28.706.068	27.977.152	56.683.220

### Economic information

Gross domestic product (U.S dollar-billions)	158.255*	2008
Gross domestic product per capita	2.108,80*	2008
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

2007	1.000 per 1000.000 citizens
2008	1.100 per 1000.000 citizens

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

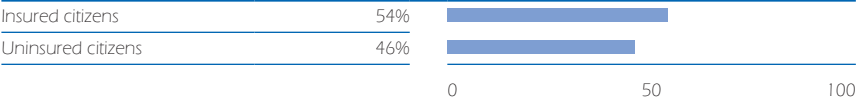
## 3. Healthcare System

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.

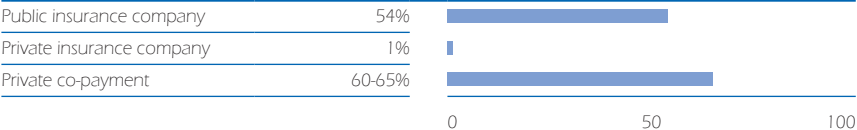
### Basic insurance availability

No

### Percentage of insured and uninsured citizens



### 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 checked="" type="checkbox"/>
Ablation	<input type="checkbox"/>
Co-payment for DDI pacemakers 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 checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>

#### National accreditation for physicians

Yes

Certification/licencing

#### National accreditation for centres to perform EP

No

#### National Society supporting EHRA accreditation system

No

#### Specialty required for catheter ablation

Yes

Cardiologist, subspecialty electrophysiologist

#### Specialty required for ICD or pacemaker implants

Yes

Cardiologist, subspecialty electrophysiologist



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

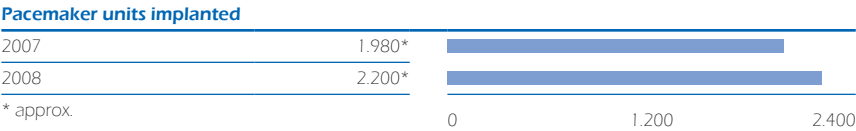
Required period of training to perform implantations	4 years
--	---------

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	not available
-----------------------------	---------------

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

### 5. Pacemakers





### Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	not available
New implants	not available
Replacements	not available
2008	
Implanting centres	not available
New implants	not available
Replacements	not available

### Specialty performing implants

Cardiologists	40%
Surgeons	5%
Other (Critical care physicians)	55%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres

2007	
Implanting centres	5
CRT pacemaker	55*
CRT ICD	30*
2008	
Implanting centres	6
CRT pacemaker	75*
CRT ICD	33*

\* Refer to a critical care center only

0 40 80



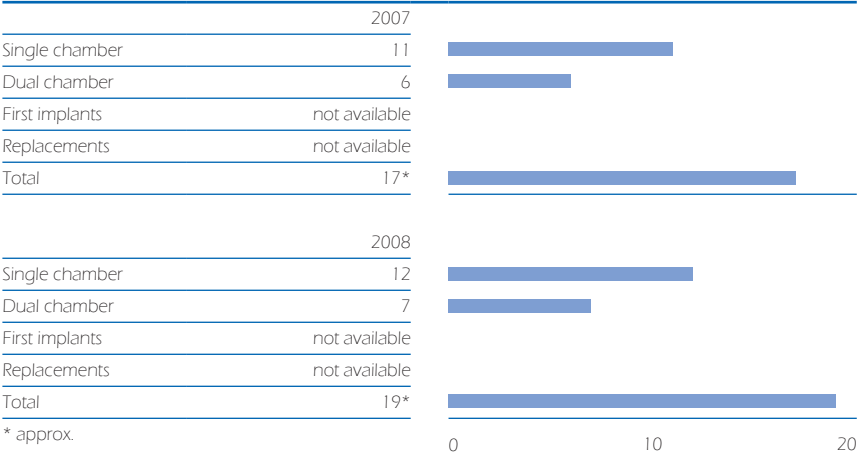
Specialty performing implants

Cardiologists	50%
Surgeons	0%
Other (Critical care physicians)	50%

7. Implantable Cardiac Defibrillator

Number of implanting centres	8
------------------------------	---

ICD units implanted and number of implanting centres



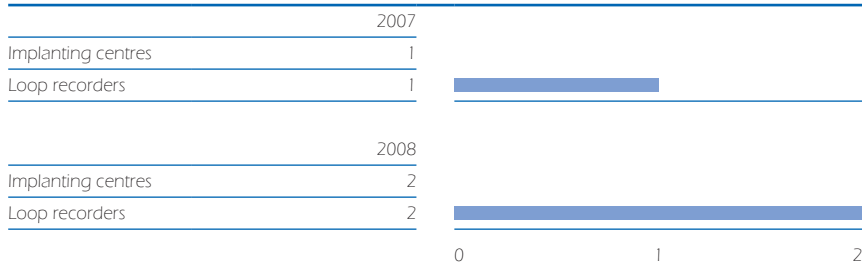
Specialty performing implants

Cardiologists	40%
Surgeons	5%
Other (Critical care physicians)	55%



## 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

6

	2007	2008
Number of ablations performed	225*	250*
Mean number (ablations/centres)	37,5	41,6
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 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 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



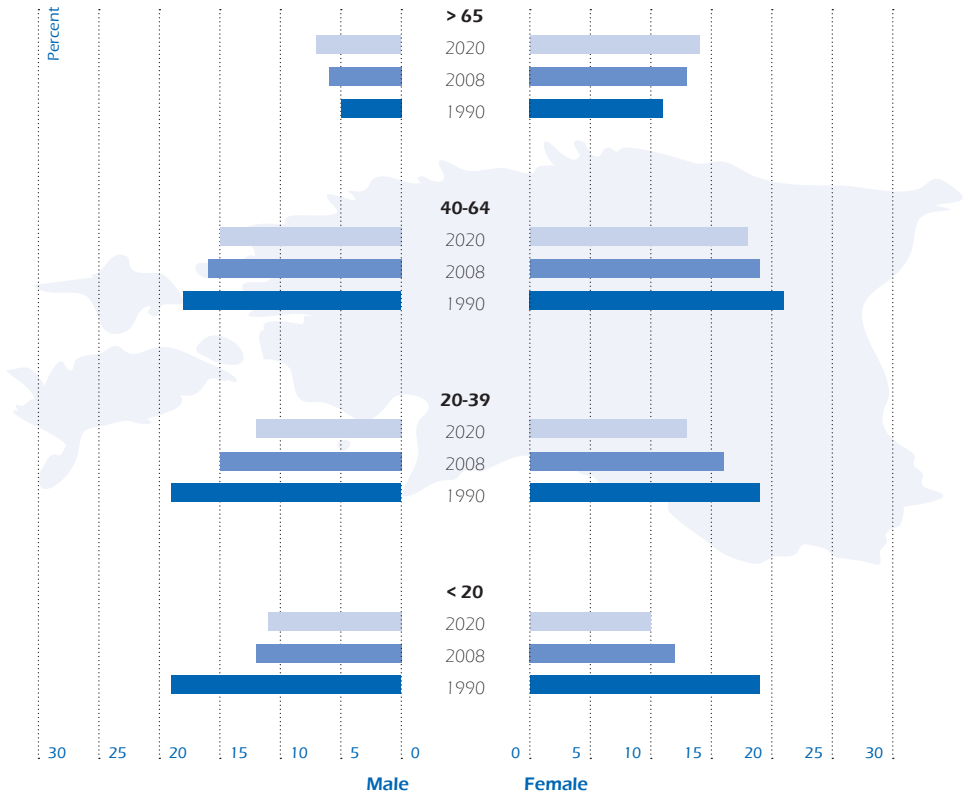
# ESTONIA





# 1. Statistics

## Age pyramid for Estonia







### Healthcare data

Hospitals (per 100.000 population)	4,25	2007
Beds (per 100.000 population)	556,99	2007
Number of physicians	4.414	2006
Density of physicians (per 1.000 population)	3,29	2006
Number of nurses	8.803	2006
Density of nurses (per 1.000 population)	6,55	2006

### Population by age and sex

	Male	Female	Total
2020	546.095	656.609	1.202.704
2008	597.210	710.395	1.307.605
1990	733.648	835.674	1.569.322

### Economic information

Gross domestic product (U.S dollar-billions)	25.207*	2008
Gross domestic product per capita	18.809,06*	2008
Total expenditure on health as % of GDP	5	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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	671 per 100.000 citizens
2008	673 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

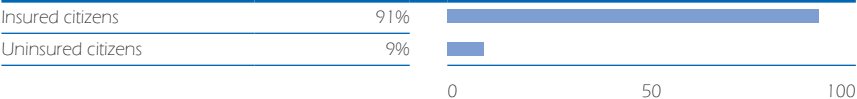
2007	52%
2008	54%

## 3. Healthcare System

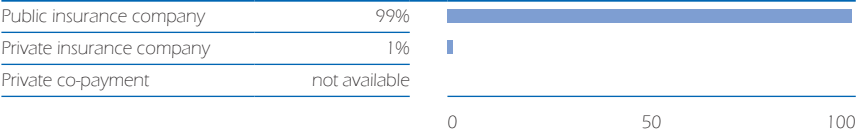
Estonia has a State owned central tax-based sick fund. Emergency medical care is free of charge to all citizens. Most of the hospitals are public. Private hospitals focus on gynaecology and obstetrics, vascular surgery, reconstructive surgery and orthopaedics. Hospitals are categorized by competence level. Tartu University Clinic and North Estonian Medical Centre have the highest level of competence and are reference hospitals for others. First line level healthcare is provided by family doctors (GP).

### 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"/>

Insured patients will pay an average of 2 Euros for every night stayed in the hospital.

No additional payments are needed.

### 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"/>

Reimbursement for ICDs starts in July 2009

## 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

Yes

Applies to all healthcare providers

### National Society supporting EHRA accreditation system

Yes

EHRA accreditation is voluntary, not demanded by National Society

### Specialty required for catheter ablation

Yes

Cardiologist; no subspecialty – electrophysiologist officially established, special training on-site after residency in cardiology required



<b>Specialty required for ICD or pacemaker implants</b>	<b>Yes</b>
Cardiologist, cardiac surgeon	

<b>Official national competency guidelines for electrophysiological studies or catheter ablation</b>	<b>Yes</b>
ESC guidelines	

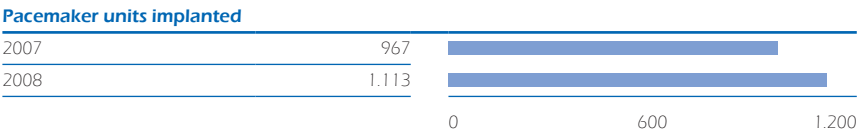
<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

<b>Training centres availability</b>	
Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	1

<b>Number of medical faculties</b>	<b>1</b>
------------------------------------	----------

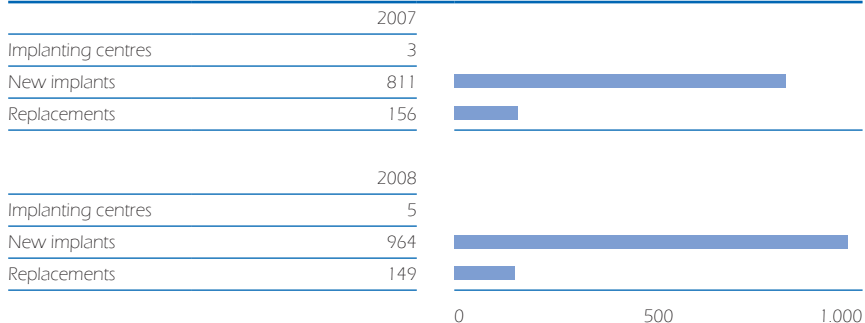
<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>50%</b>
Pacemaker implant centres 20% and ICD and CRT implanting centres 50%	

## 5. Pacemakers





### Pacemaker units implanted and number of implanting centres

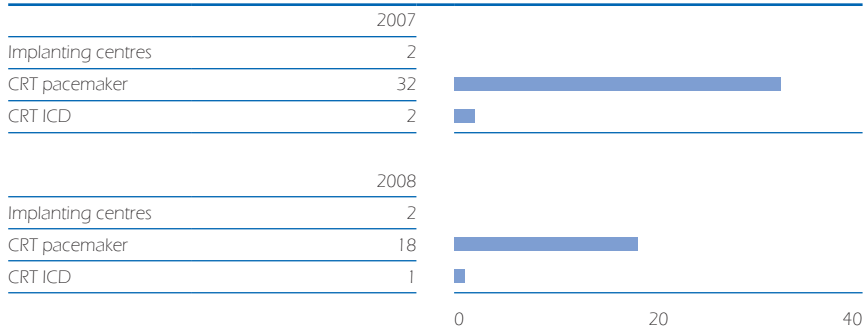


### Specialty performing implants

Cardiologists	62%
Surgeons	38%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

Cardiologists	76%
Surgeons	24%

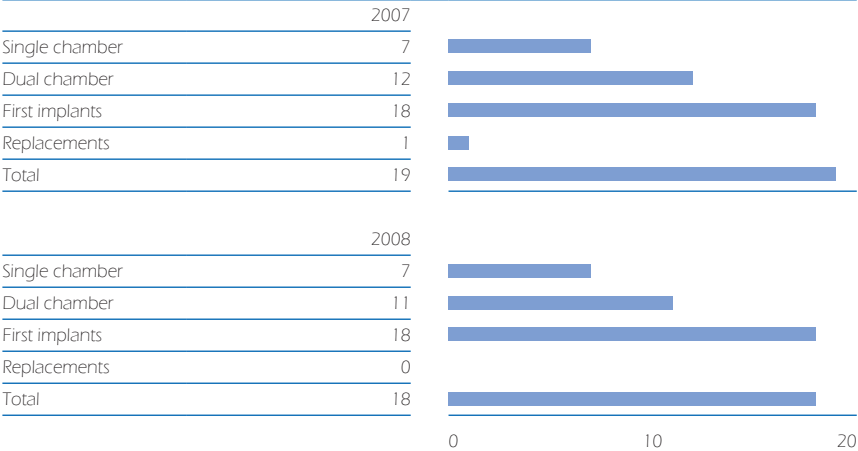


# 7. Implantable Cardiac Defibrillator

## Number of implanting centres

2

### ICD units implanted and number of implanting centres

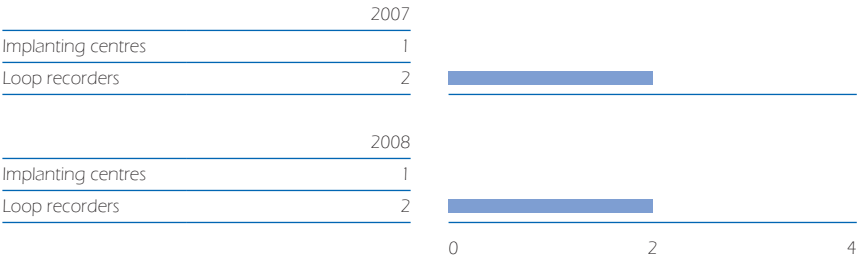


### Specialty performing implants

Cardiologists	81%
Surgeons	19%

# 8. Loop recorders

## Loop recorders implanted and number of implanting centres







### Specialty performing implants

Cardiologists	0%
Surgeons	100%

## 9. Device specific

### Availability of remote monitoring of devices



Will be available for ICD-s from autumn 2009

### National registry for

ICD	<input checked="" type="checkbox"/>
Pacing	<input checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
Estonian Registry for pacemakers and ICDs	

### Availability of a national quality insurance system or complication registry

No

### Availability of a national institution coordinating and guiding device recalls

Yes

Function of the State Agency of Medicines

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

2

	2007	2008
Number of ablations performed	406	497
Mean number (ablations/centres)	203	248
Number of AF ablations	30*	96*

\* catheter based



# 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 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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

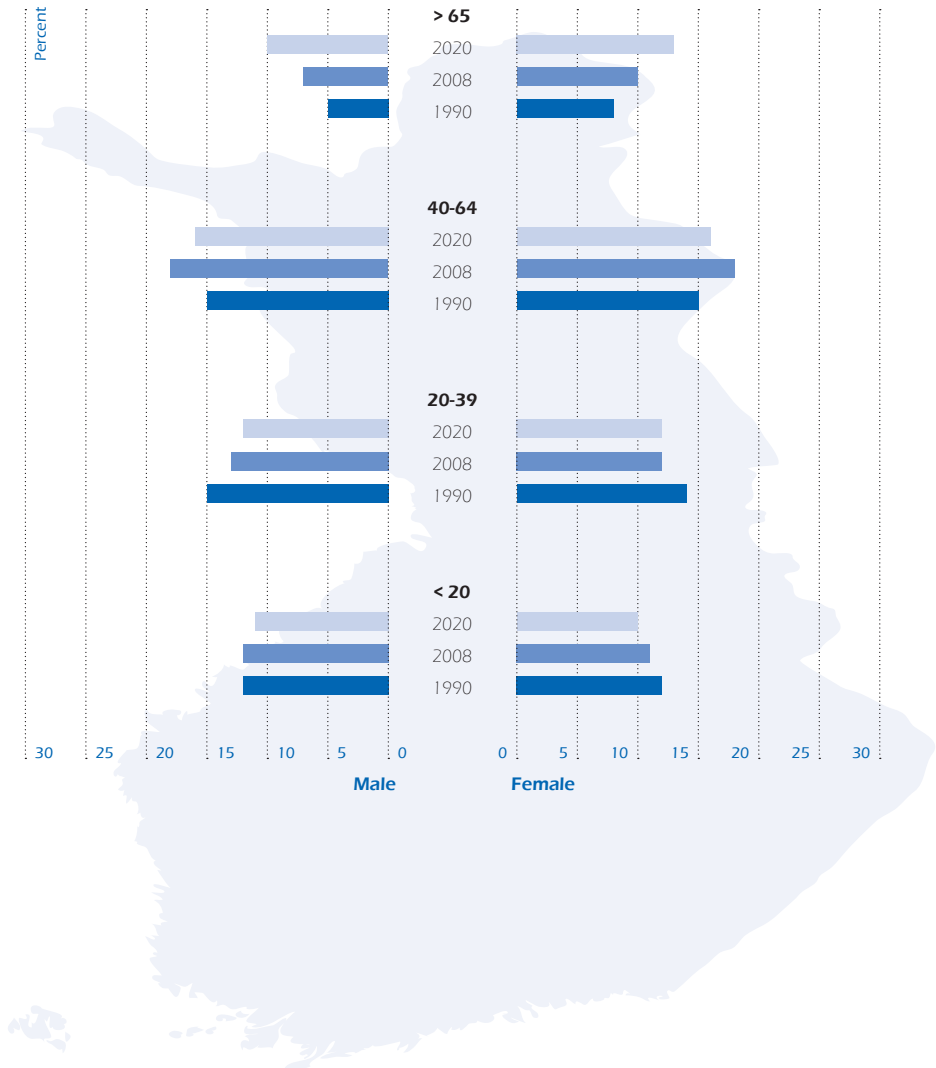






# 1. Statistics

## Age pyramid for Finland





### Healthcare data

Hospitals (per 100.000 population)	6,45	2007
Beds (per 100.000 population)	682,49	2007
Number of physicians	17.503	2007
Density of physicians (per 1.000 population)	3,31	2007
Number of nurses	45.040	2006
Density of nurses (per 1.000 population)	8,55	2006

### Population by age and sex

	Male	Female	Total
2020	2.576.746	2.695.245	5.271.991
2008	2.566.796	2.677.953	5.244.749
1990	2.434.646	2.579.140	5.013.786

### Economic information

Gross domestic product (U.S dollar-billions)	287.621*	2008
Gross domestic product per capita	54.577,85*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	20,7%

## 3. Healthcare System

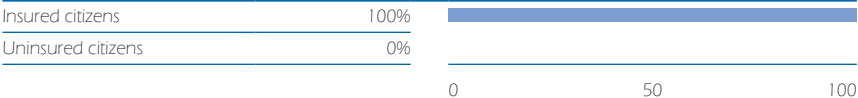
Finland has a compulsory healthcare system which is tax based. It provides comprehensive coverage for the entire population. The Ministry of Social Affairs and Health issues the legislation on health and social care policies and monitors the implementation. At a local level, the municipal health committee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

(Source: Highlights on health in Finland. WHO 2004)

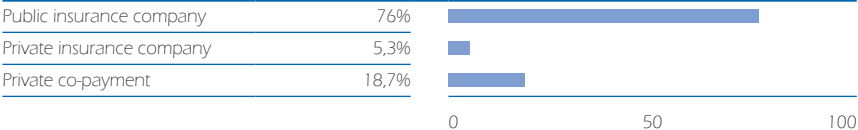
### Basic insurance availability

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"/>

Patients only have to pay a nominal fee for hospital admission but no fee is charged for the devices or ablation.

### 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** Yes

**Specialty required for catheter ablation** No

There are no official requirements, however special training in EP is recommended.

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

There are no official requirements, however special training in EP is recommended.

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



<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

**Training centres availability**

Pacemaker	16
ICD implantation	5
Electrophysiological studies and catheter ablation	5
CRT implantation	5
Atrial fibrillation ablation	3

<b>Number of medical faculties</b>	<b>5</b>
------------------------------------	----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>20%</b>
--	------------

20% for devices and approx. 95% for ablations

**5. Pacemakers**

**Pacemaker units implanted**

2007	3.891	<div></div>
2008	4.214	<div></div>
		0 2500 5000

**Pacemaker units implanted and number of implanting centres**

2007		
Implanting centres	25	
New implants	2855	<div></div>
Replacements	1036	<div></div>
2008		
Implanting centres	25	
New implants	3161	<div></div>
Replacements	1053	<div></div>
		0 2.000 4.000





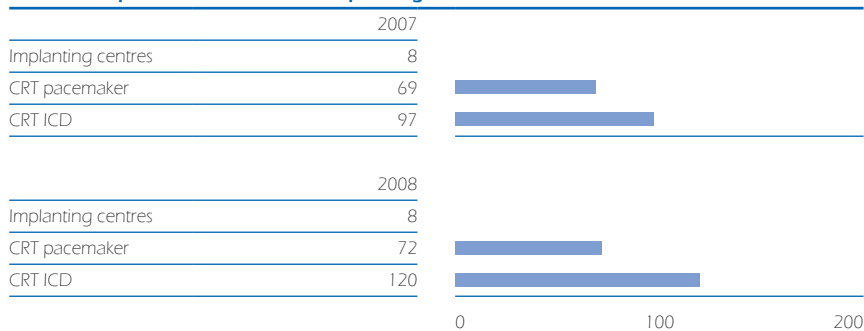
### Specialty performing implants

Cardiologists	85%
Surgeons	10%*
Internal medicine	5%

\*mainly replacements

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

Cardiologists	95%
Surgeons	5%*

\* mainly replacements

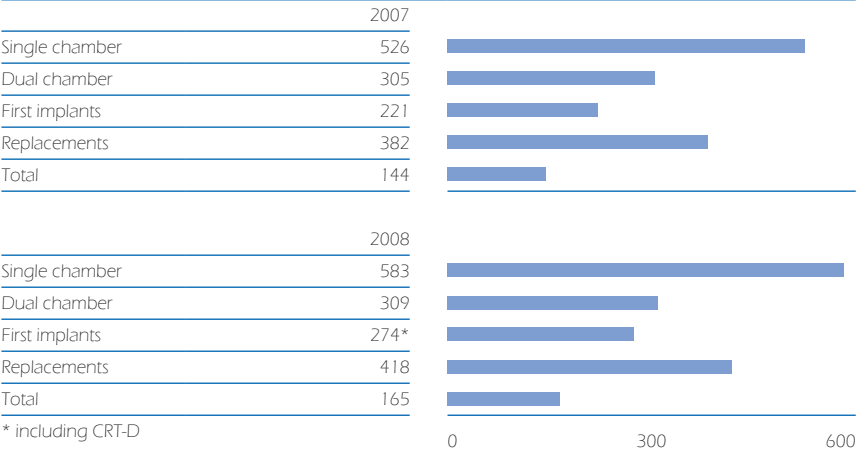


# 7. Implantable Cardiac Defibrillator

Number of implanting centres

16

## ICD units implanted and number of implanting centres



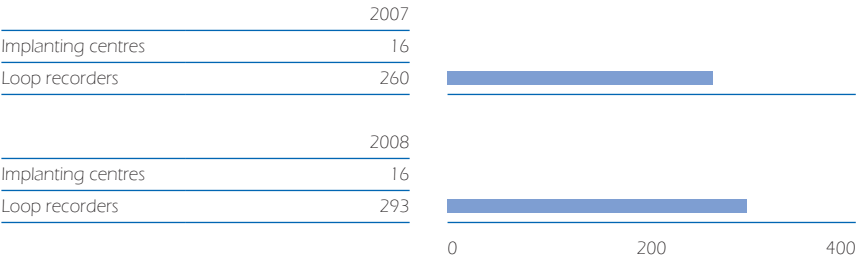
## Specialty performing implants

Cardiologists	95%
Surgeons	10%*

\* mainly replacements

# 8. Loop recorders

## Loop recorders implanted and number of implanting centres







### Specialty performing implants

Cardiologists	95%
Surgeons	0%
Internal medicine	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 Medical Device Department

### Availability of a national institution coordinating and guiding device recalls

Yes

National Agency for Medicines Medical Device Department

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

7

	2007	2008
Number of ablations performed	1.184	1.205
Mean number (ablations/centres)	169	172
Number of AF ablations	215	252



# 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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle

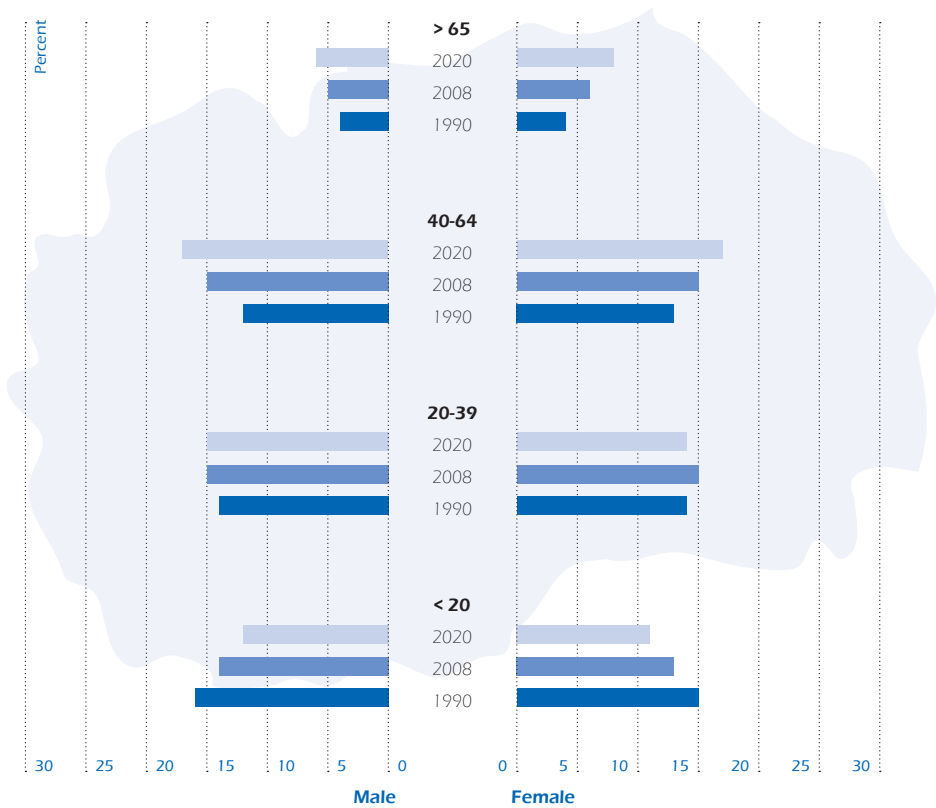






# 1. Statistics

## Age pyramid for FYROM





### Healthcare data

Hospitals (per 100.000 population)	2,69	2007
Beds (per 100.000 population)	462,69	2006
Number of physicians	5.187	2006
Density of physicians (per 1.000 population)	2,54	2006
Number of nurses	7.545	2006
Density of nurses (per 1.000 population)	2,54	2006

### Population by age and sex

	Male	Female	Total
2020	1.051.601	1.061.173	2.112.774
2008	1.028.698	1.032.617	2.061.315
1990	968.931	966.103	1.935.034

### Economic information

Gross domestic product (U.S dollar-billions)	9.624*	2008
Gross domestic product per capita	4.683,24*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

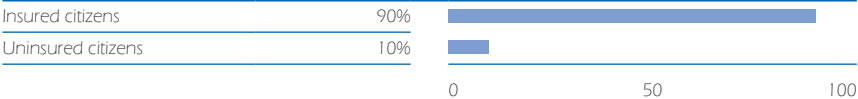
## 3. Healthcare System

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.

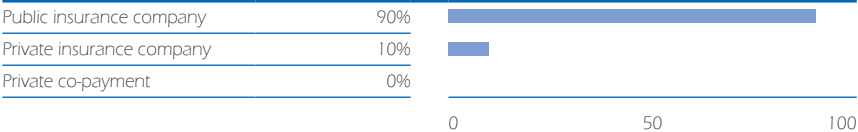
(Health care systems in transition, 2000)

### 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 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 to perform EP

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	No
---	----

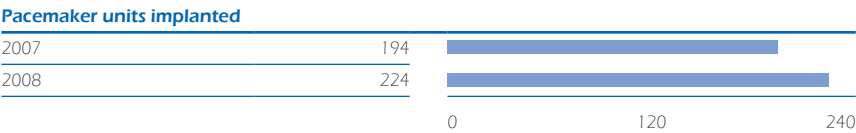
Required period of training to perform implantations	No
--	----

Training centres availability	
Pacemaker	1
ICD implantation	1
Electrophysiological studies and catheter ablation	1
CRT implantation	1
Atrial fibrillation ablation	0

Number of medical faculties	2
-----------------------------	---

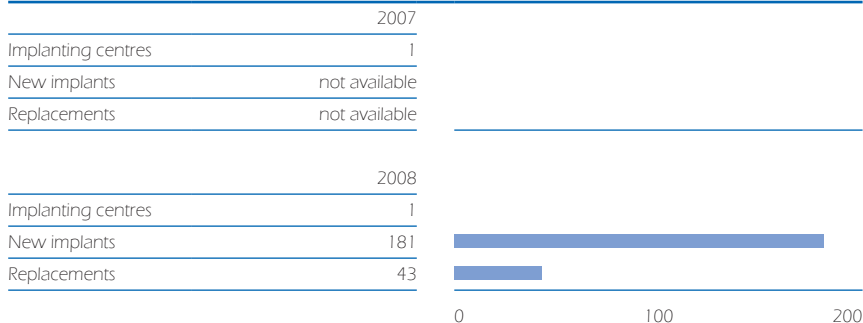
Percentage of academic facilities among practicing EP and implant centres	1%
---	----

### 5. Pacemakers





### Pacemaker units implanted and number of implanting centres

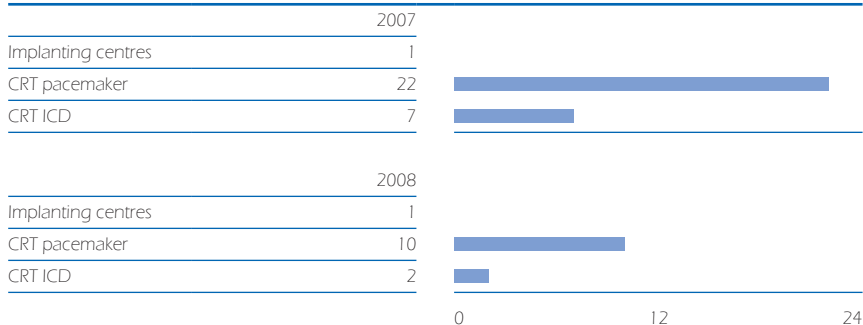


### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

Cardiologists	100%
Surgeons	0%

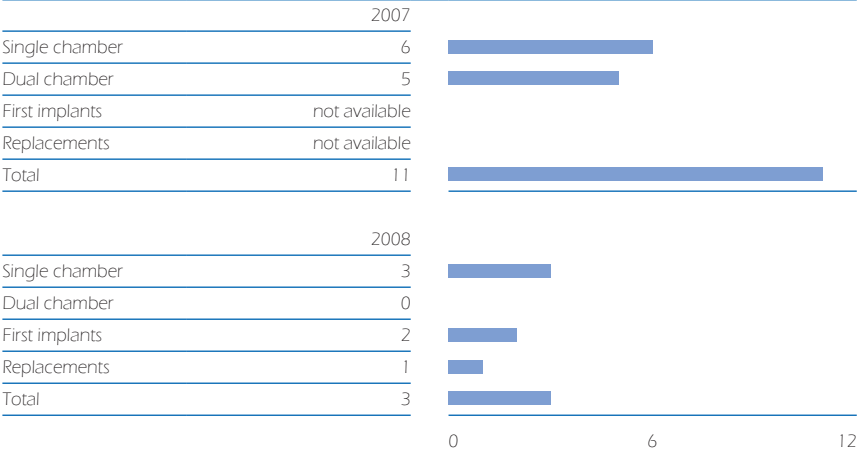


# 7. Implantable Cardiac Defibrillator

## Number of implanting centres

1

### 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

2007	
Implanting centres	1
Loop recorders	0
2008	
Implanting centres	1
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

	2007	2008
Number of ablations performed	69	51
Mean number (ablations/centres)	69	51
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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



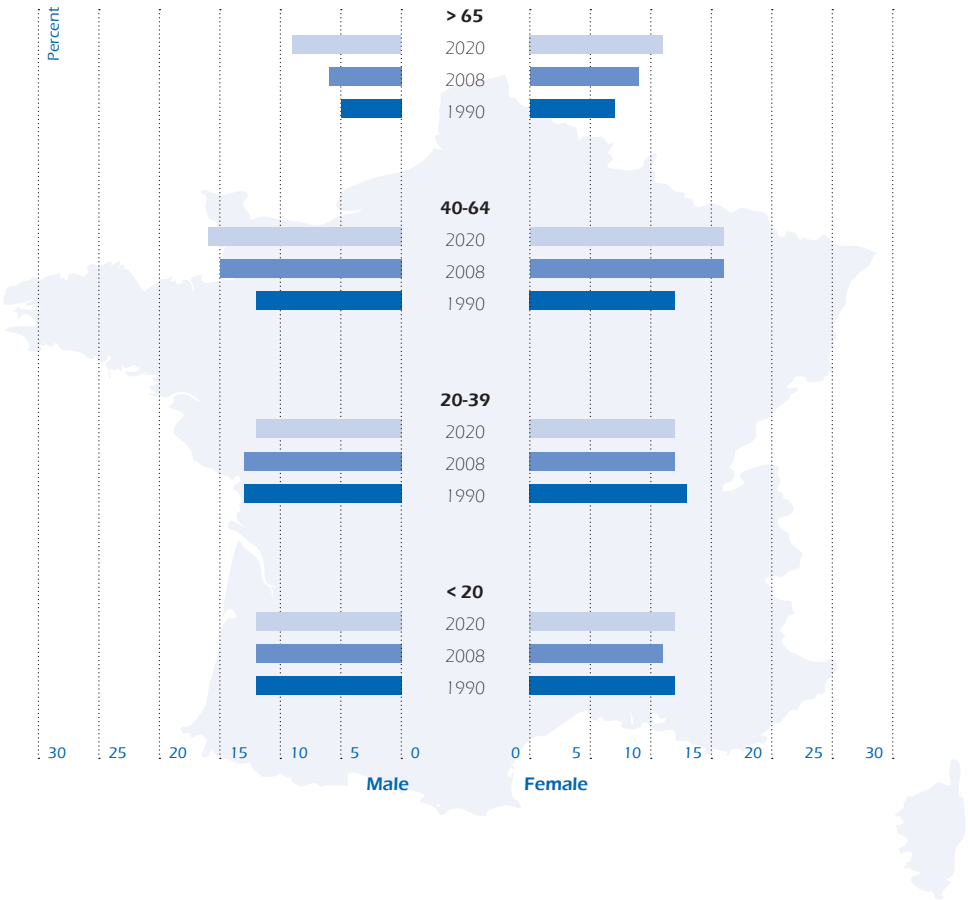
# FRANCE





# 1. Statistics

## Age pyramid for France





### Healthcare data

Hospitals (per 100 000 population)	4,68	2005
Beds (per 100 000 population)	7 16,78	2006
Number of physicians	208.191	2007
Density of physicians (per 1 000 population)	3,42	2007
Number of nurses	483.380	2007
Density of nurses (per 1 000 population)	7,93	2007

### Population by age and sex

	Male	Female	Total
2020	33.067.921	34.449.594	67.517.515
2008	31.312.486	32.745.304	64.057.790
1990	28.330.633	29.837.527	58.168.160

### Economic information

Gross domestic product (U.S dollar-billions)	2.978.121*	2008
Gross domestic product per capita	48.012,01*	2008
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

2007	390 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	45%
2008	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%	<div><div></div></div>
Uninsured citizens	0%	<div><div></div></div>
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div><div></div></div>
Private insurance company	0%	<div><div></div></div>
Private co-payment	40%	<div><div></div></div>
		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** **Yes**

For CRT and ICD

**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



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

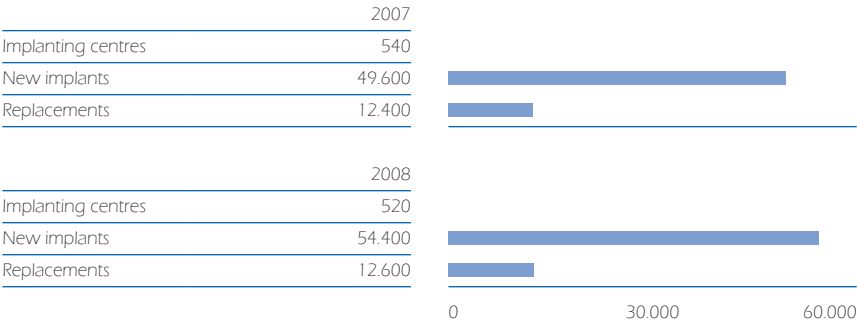
50%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



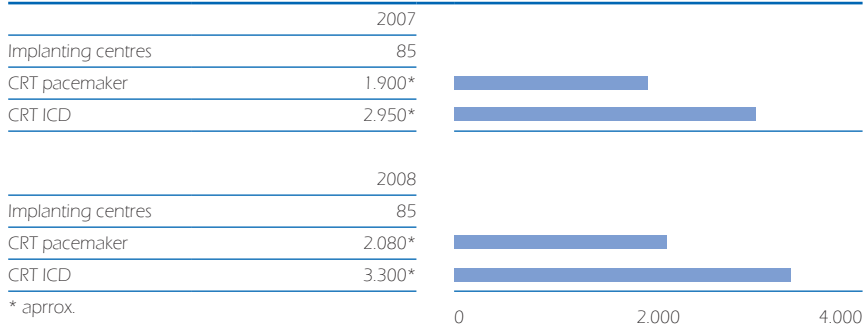
Specialty performing implants

Cardiologists	95%
Surgeons	5%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

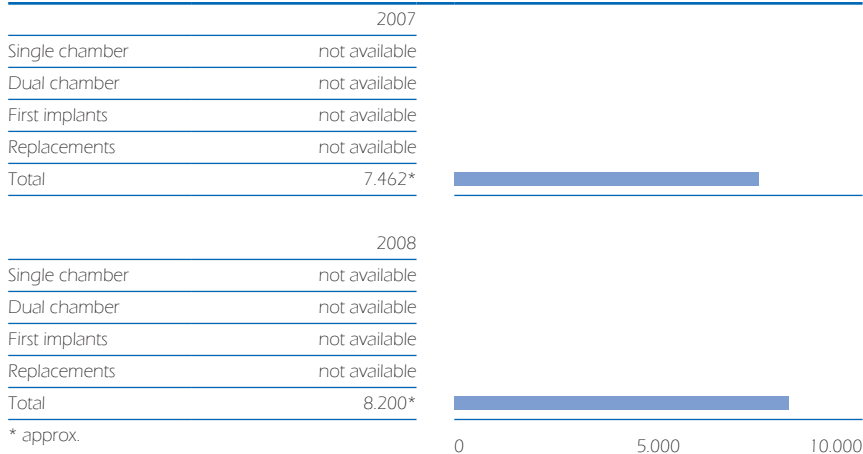
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

80

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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 type="checkbox"/>
Stixdefix	

### Availability of a national quality insurance system or complication registry

No

### Availability of a national institution coordinating and guiding device recalls

Yes

AFSAPS



## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

207

	2007	2008
Number of ablations performed	18.200	not available
Mean number (ablations/centres)	87	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle







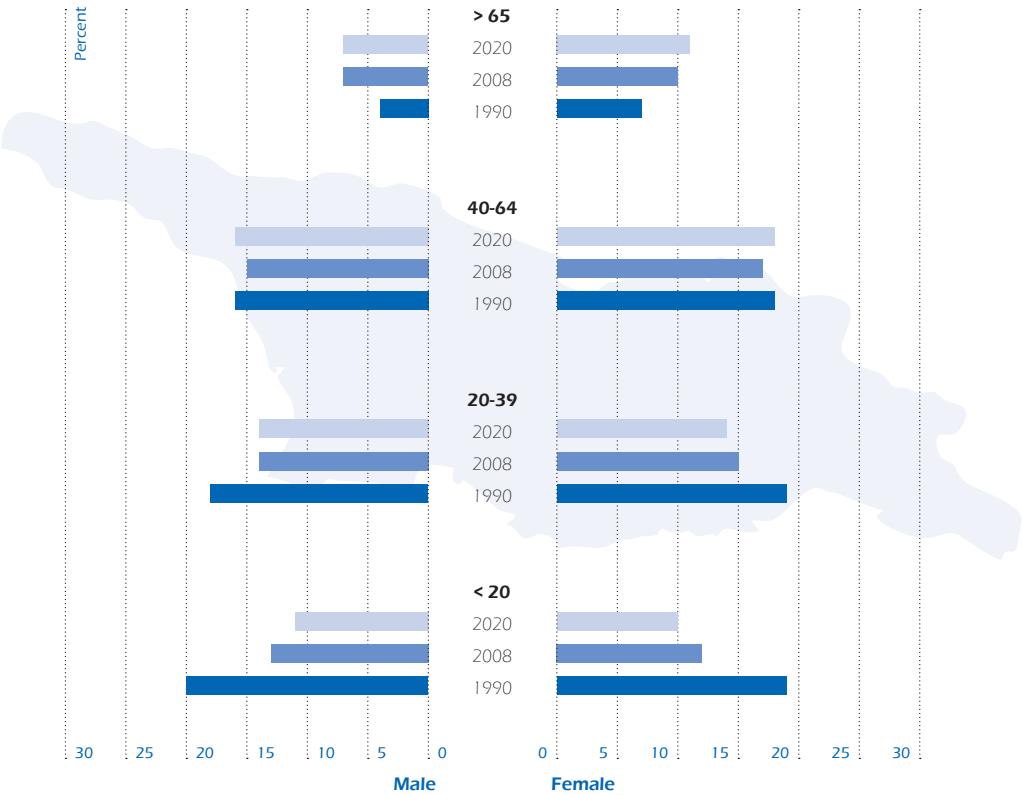
# GEORGIA





# 1. Statistics

## Age pyramid for Georgia





### Healthcare data

Hospitals (per 100.000 population)	6,04	2007
Beds (per 100.000 population)	331,9	2007
Number of physicians	19.951	2007
Density of physicians (per 1.000 population)	4,55	2007
Number of nurses	15.948	2007
Density of nurses (per 1.000 population)	3,63	2007

### Population by age and sex

	Male	Female	Total
2020	2.123.322	2.316.430	4.439.752
2008	2.207.558	2.423.283	4.630.841
1990	2.576.049	2.850.158	5.426.207

### Economic information

Gross domestic product (U.S dollar-billions)	13.283*	2008
Gross domestic product per capita	3.060,93*	2008
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

2007	341 per 100.000 citizens
2008	332 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

2007	36%
2008	35%

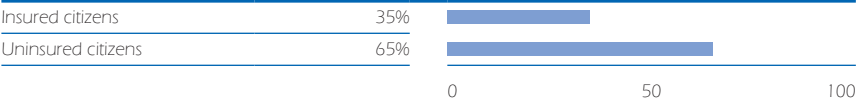
## 3. Healthcare System

NHS fund, Private Insurance and Private Payment

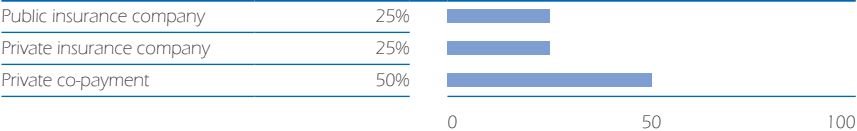
### Basic insurance availability

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"/>

There are non-insured patients who have to pay by themselves





### 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"/>
Reimbursement often is much less than actual costs	

## 4. Education

### National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>
It is a part of cardiology specialization	

**National accreditation for physicians** Yes

**National accreditation for centres to perform EP** Yes

**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**

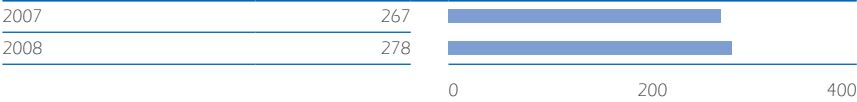
Pacemaker	0
ICD implantation	0
Electrophysiological studies and catheter ablation	0
CRT implantation	0
Atrial fibrillation ablation	0

**Number of medical faculties** 6

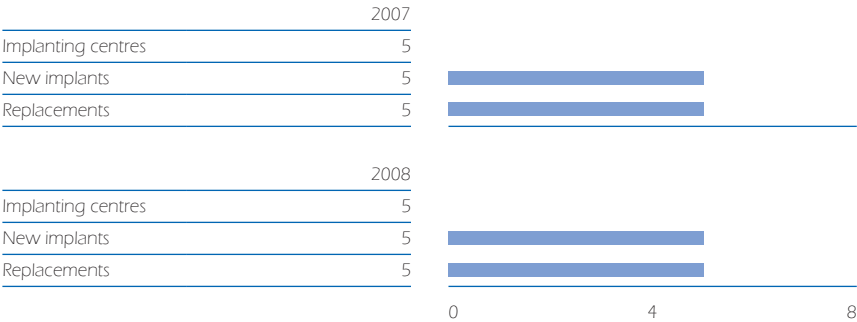
**Percentage of academic facilities among practicing EP and implant centres** 60%

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



**Specialty performing implants**

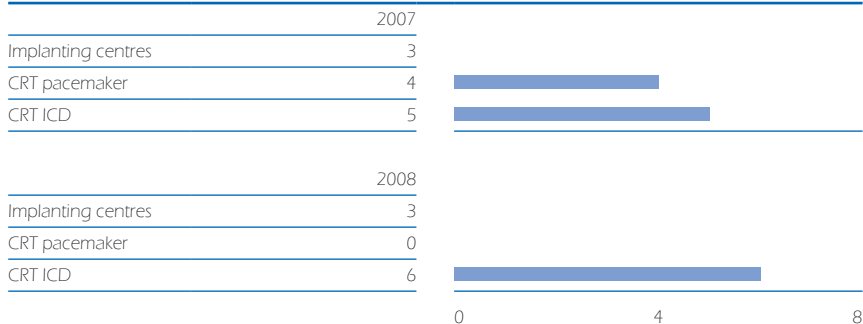
Cardiologists	90%
Surgeons	10%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

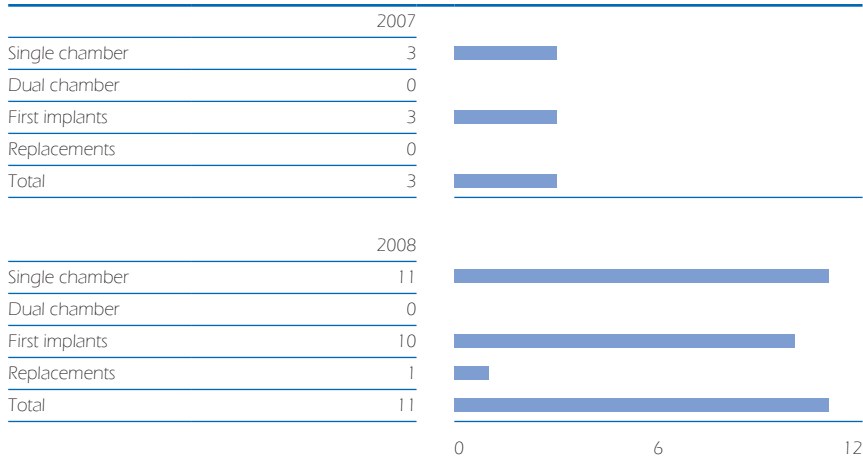
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

4

### 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

	2007	
Implanting centres	0	
Loop recorders	0	
	2008	
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

3

	2007	2008
Number of ablations performed	64	108
Mean number (ablations/centres)	21	35
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

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 checked="" 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 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







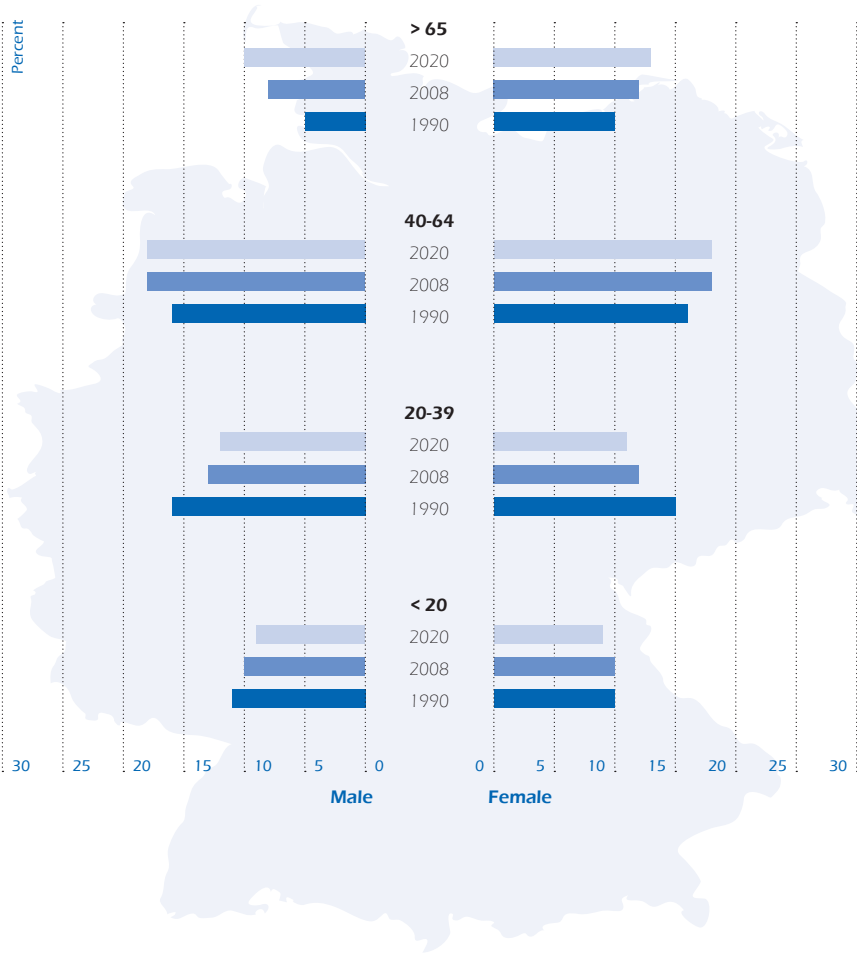
# GERMANY





# 1. Statistics

## Age pyramid for Germany







### Healthcare data

Hospitals (per 100 000 population)	4,07	2006
Beds (per 100 000 population)	829,09	2006
Number of physicians	288.182	2007
Density of physicians (per 1000 population)	3,48	2007
Number of nurses	644.000	2006
Density of nurses (per 1000 population)	7,81	2006

### Population by age and sex

	Male	Female	Total
2020	40.108.410	41.313.963	81.422.373
2008	40.482.726	41.886.822	82.369.548
1990	38.657.711	41.326.533	79.984.244

### Economic information

Gross domestic product (U.S dollar-billions)	3.818.470*	2008
Gross domestic product per capita	46.498,66*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	46,8%
2008	43,4%

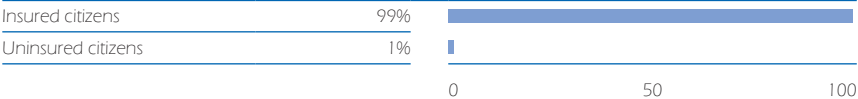
## 3. Healthcare System

The German healthcare system has three arms: family doctors, outpatient specialists and hospitals. The hospitals are in part public, private or academic hospitals. They provide regular, advanced or maximal patient care. Social health insurance is compulsory and there are 3 co-existing schemes: the statutory health insurance market, which covers 87% of the population (2003), the private health insurance market, which covers 10% of the population and the governmental scheme, which covers 2% of the population.

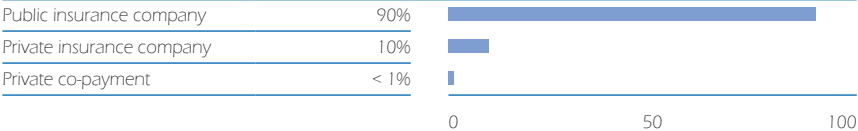
### Basic insurance availability

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 checked="" type="checkbox"/>

## 4. Education

#### National accreditation availability

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

Leitlinien (Guidelines) für invasive elektrophysiologische Diagnostik 2007; Leitlinien (Guidelines) zur Herzschrittmachertherapie 2006; Kommentar zu den „ESC-Guidelines for cardiac pacing and cardiac resynchronization therapy“ 2008; Kommentar zu „ACC/AHA/ESC 2006 Guidelines for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death“ 2008; Curriculum ICD Therapie 2007; Curriculum „Praxis der Herzschrittmachertherapie“ 2006; „Leitlinien zur Katheterablation“ 2007  
Leitlinien zur Implantation von Defibrillatoren 2006; Statement of the WG of pacemakers of the German Cardiac Society: Safety of asynchronous cardiac pacing 2006

#### 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

#### Specialty required for ICD or pacemaker implants

Yes

Examined Cardiologist or Surgeon is a precondition to receive the level of competency accreditation and to train another physician.



<b>Official national competency guidelines for electrophysiological studies or catheter ablation</b>	<b>Yes</b>
German Cardiac Society (Deutsche Gesellschaft für Kardiologie - Herz- und Kreislaufforschung e.V.)	

<b>Required period of training to perform implantations</b>	<b>5-7 years</b>
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.	

<b>Training centres availability</b>	
Pacemaker	1.024
ICD implantation	300*
Electrophysiological studies and catheter ablation	300*
CRT implantation	100*
Atrial fibrillation ablation	30*
* approx.	

<b>Number of medical faculties</b>	<b>36</b>
------------------------------------	-----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>20%*</b>
* approx.	

## 5. Pacemakers

<b>Pacemaker units implanted</b>		
2007	98.800	<div></div>
2008	98.300	<div></div>
		<div></div> <div>050.000100.000</div>



### Pacemaker units implanted and number of implanting centres

	2007
Implanting centres	1.024
New implants	not available
Replacements	not available

	2008
Implanting centres	1.035
New implants	not available
Replacements	not available

### Specialty performing implants

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

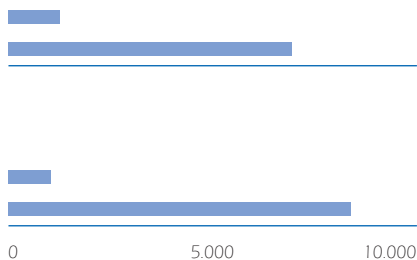
## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres

	2007
Implanting centres	332*
CRT pacemaker	1.264
CRT ICD	6.932

	2008
Implanting centres	not available
CRT pacemaker	1.040
CRT ICD	8.400

\* CRT-P: 132; CRT-D: 200.



### Specialty performing implants

Cardiologists	45%
Surgeons	5%
Other (both together)	50%

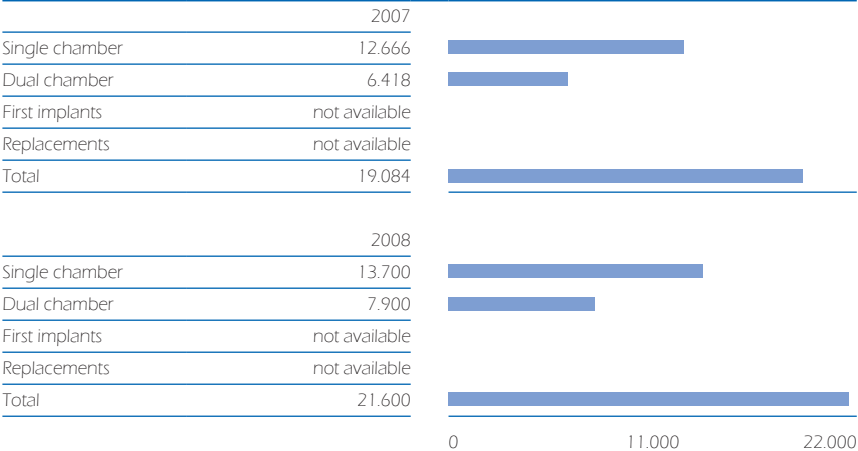


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

360

### 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

	2007	
Implanting centres	not available	
Loop recorders	not available	
	2008	
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 checked="" type="checkbox"/>
Electrophysiology	<input type="checkbox"/>
Deutsches Herzschrittmacher-Register	

### Availability of a national quality insurance system or complication registry

Yes

BOS Registry

Already existing and 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 (Bundesinstitut für Arzneimittel und Medizinprodukte: BfArM)

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

350\*

\* approx.

	2007	2008
Number of ablations performed	30.200	30.000*
Mean number (ablations/centres)	not available	not available
Number of AF ablations	not available	8.500*

\* approx.



# 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 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 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



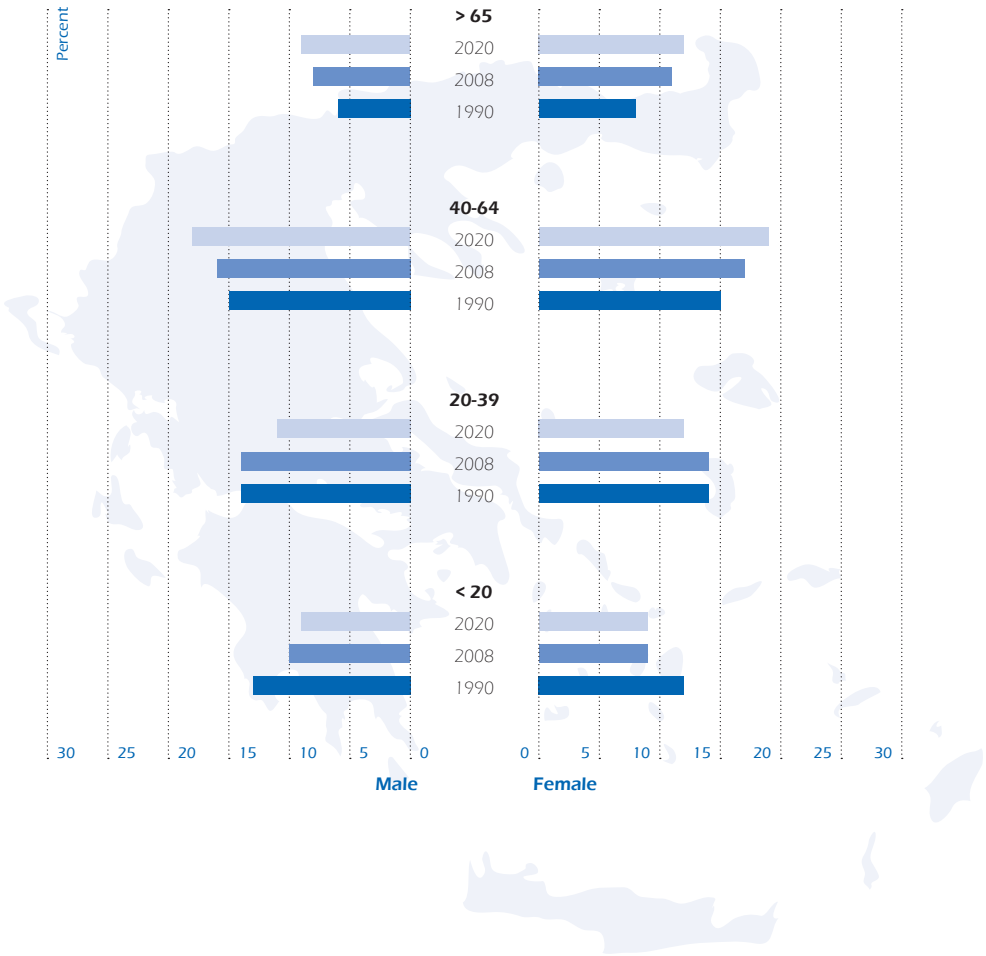
# GREECE





# 1. Statistics

## Age pyramid for Greece





### Healthcare data

Hospitals (per 100.000 population)	2,84	2006
Beds (per 100.000 population)	481,69	2006
Number of physicians	59.599	2006
Density of physicians (per 1.000 population)	5,35	2006
Number of nurses	36.434	2006
Density of nurses (per 1.000 population)	3,27	2006

### Population by age and sex

	Male	Female	Total
2020	5.234.464	5.507.568	10.742.032
2008	5.255.575	5.467.241	10.722.816
1990	5.052.070	5.198.810	10.250.880

### Economic information

Gross domestic product (U.S dollar-billions)	373.516*	2008
Gross domestic product per capita	33.433,84*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	31,68%
2008	not available

## 3. Healthcare System

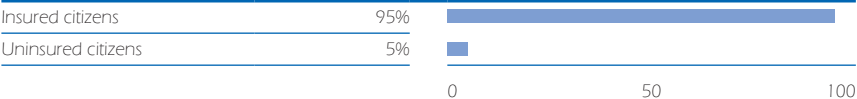
The Greek healthcare system is characterized by the coexistence of the National Health Service (NHS), a compulsory social insurance and a voluntary private health insurance system. The NHS provides universal coverage to the population and offers equal access to health services for all and social cohesion.

[Source: Highlights in health. WHO, 2004]

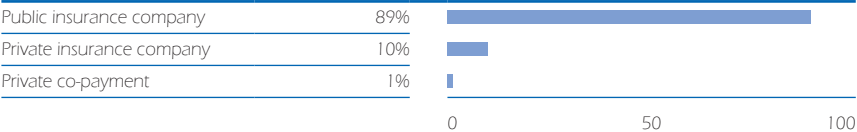
### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens



### 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"/>
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"/>

## 4. Education

#### National accreditation availability

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

Only for pacemakers there is requirement for a minimum training of one year at an implanting center

#### National accreditation for physicians

Yes

Board for Cardiology. Not for subspecialties

#### National accreditation for centres to perform EP

Yes

For pacing and ICD implanting centers

#### National Society supporting EHRA accreditation system

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 or Cardiothoracic Surgery	

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

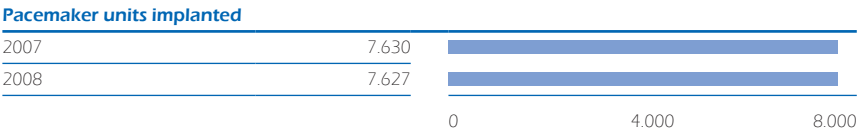
Required period of training to perform implantations	1 year
--	--------

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%
---	-----

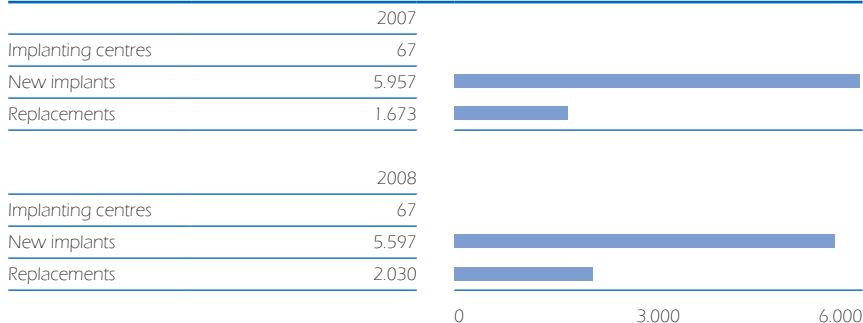
### 5. Pacemakers







### Pacemaker units implanted and number of implanting centres

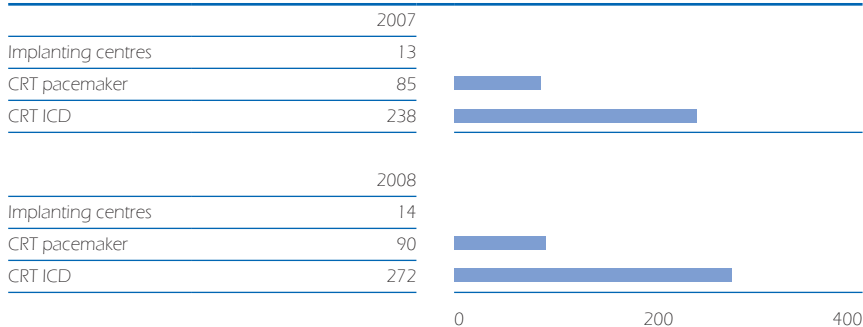


### Specialty performing implants

Cardiologists	95%
Surgeons	5%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres





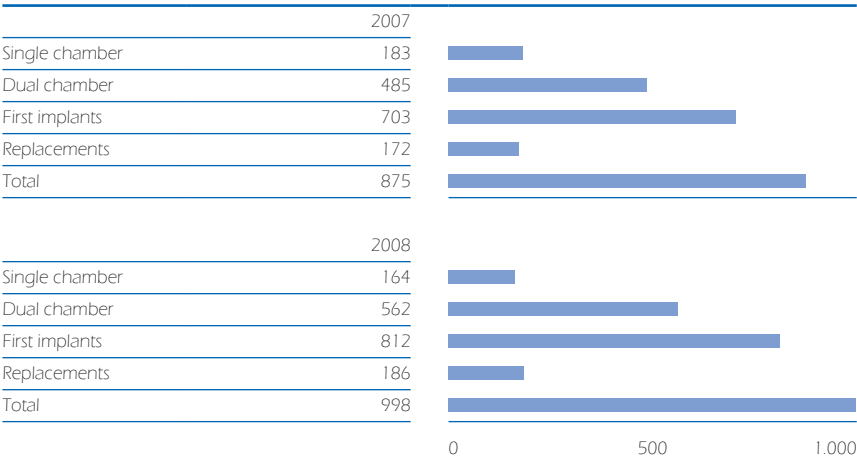
Specialty performing implants

Cardiologists	99%
Surgeons	1%

7. Implantable Cardiac Defibrillator

Number of implanting centres	23
------------------------------	----

ICD units implanted and number of implanting centres



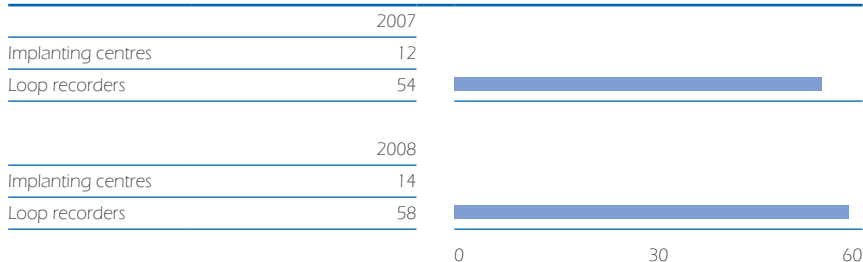
Specialty performing implants

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"/>

### Availability of a national quality insurance system or complication registry

No

Under proposal to the Ministry of Health by the Working Group

### Availability of a national institution coordinating and guiding device recalls

Yes

EFET



## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

23

	2007	2008
Number of ablations performed	1.275	1.213
Mean number (ablations/centres)	55	53
Number of AF ablations	166	164

## 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



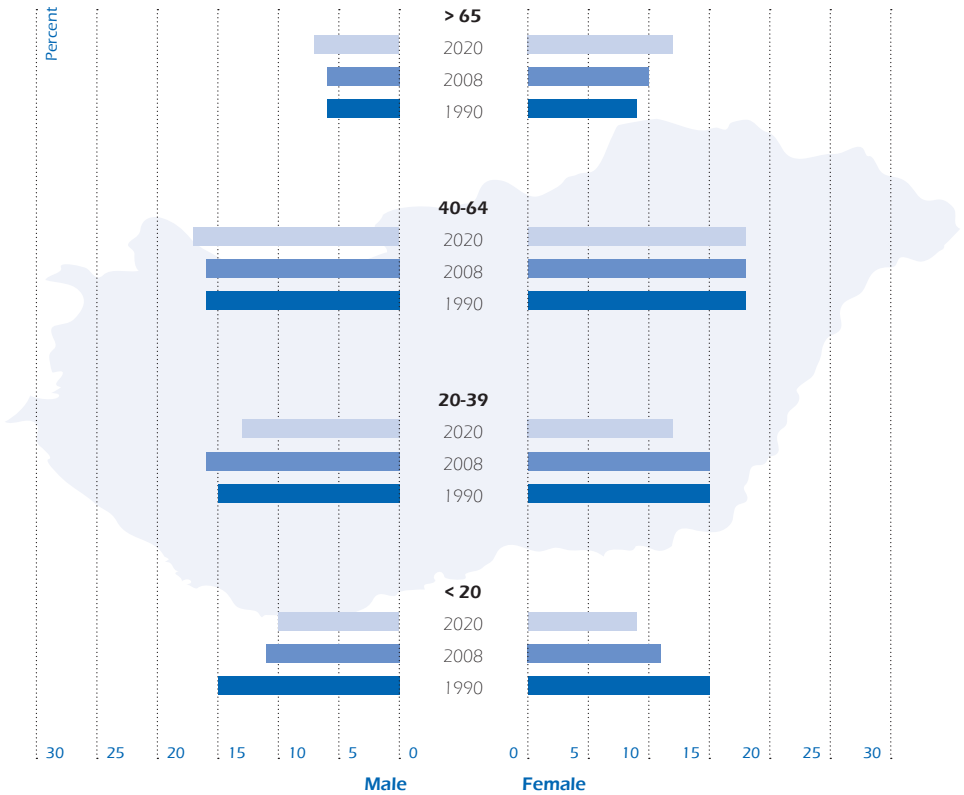
# HUNGARY





# 1. Statistics

## Age pyramid for Hungary





### Healthcare data

Hospitals (per 100.000 population)	1,76	2007
Beds (per 100.000 population)	712,55	2007
Number of physicians	27.957	2007
Density of physicians (per 1.000 population)	2,78	2007
Number of nurses	90.889	2007
Density of nurses (per 1.000 population)	9,04	2007

### Population by age and sex

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

### Economic information

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

\* IMF estimative



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	349 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	75%
2008	not available

## 3. Healthcare System

National Health Insurance Fund

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	100%	<div><div></div></div>
Uninsured citizens	0%	<div><div></div></div>
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div><div></div></div>
Private insurance company	5-10%*	<div><div></div></div>
Private co-payment	5-10%*	<div><div></div></div>
* 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"/>

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 Device Therapy (Pacemaker/ICD/CRT)

### National accreditation for physicians

Yes

### National accreditation for centres to perform EP

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



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

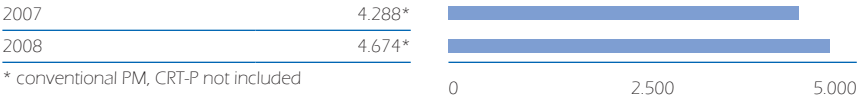
4

Percentage of academic facilities among practicing EP and implant centres

27%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	15
New implants	not available
Replacements	not available
2008	
Implanting centres	15
New implants	not available
Replacements	not available

Specialty performing implants

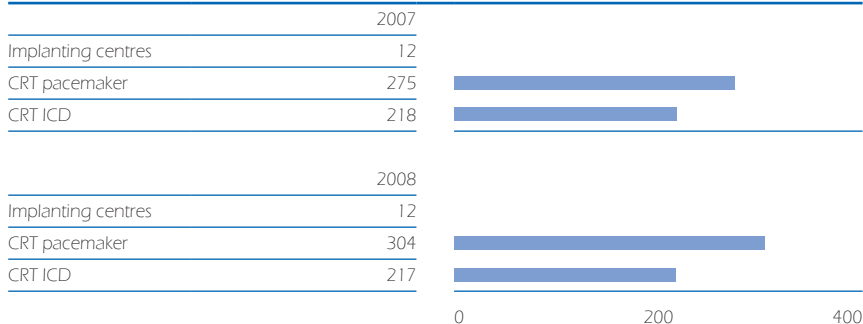
Cardiologists	90%
Surgeons	5%
Other (Anesthesiologist)	5%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

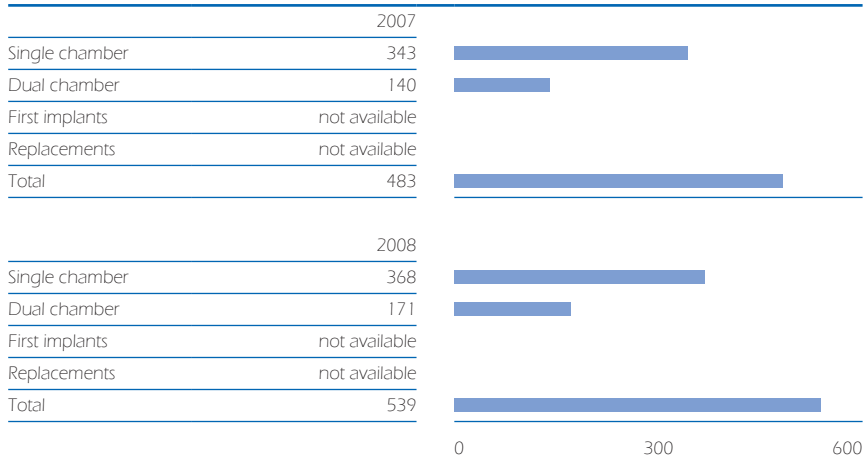
Cardiologists	93%
Surgeons	2%
Other (Anesthesiologist)	5%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

12

### ICD units implanted and number of implanting centres



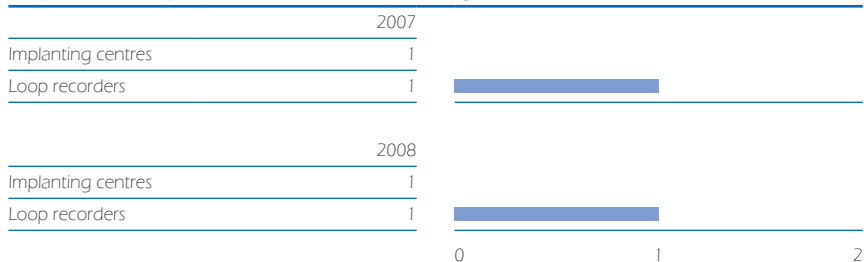


### Specialty performing implants

Cardiologists	90%
Surgeons	5%
Other (Anesthesiologist)	5%

## 8. Loop recorders

### Loop recorders implanted and number of implanting centres



### 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 on-line pacemaker registry and individual paper based data collection from centers

### Availability of a national quality insurance system or complication registry

Yes

Hungarian on-line 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

	2007	2008
Number of ablations performed	2.371	2.190
Mean number (ablations/centres)	237,1	219,0
Number of AF ablations	237	309

## 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 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











# 1. Statistics

## Age pyramid for Iceland







### Healthcare data

Hospitals (per 100.000 population)	6,76	2005
Beds (per 100.000 population)	750,80	2002
Number of physicians	1.120	2006
Density of physicians (per 1.000 population)	3,68	2006
Number of nurses	2.760	2004
Density of nurses (per 1.000 population)	9,43	2004

### Population by age and sex

	Male	Female	Total
2020	163.803	165.318	329.121
2008	152.261	152.106	304.367
1990	133.446	132.629	266.075

### Economic information

Gross domestic product (U.S dollar-billions)	19.023*	2008
Gross domestic product per capita	60.121,73*	2008
Total expenditure on health as % of GDP	9,3	2006
General government expenditure on health as % of total expenditure on health	83,1	2006
Private expenditure on health as % of total expenditure on health	16,9	2006

\* IMF estimative



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	22%
2008	22%



## 3. Healthcare System

National healthcare system provided by the state and financed by taxes. There is open access to all citizens and in hospital procedures without patient charge. Open primary care against nominal fee (less than 5 euro) and specialist service paid approximately 1/3 by the patient and 2/3 by the state.




### 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	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"/>

#### 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 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** **No**

**National Society supporting EHRA accreditation system** **Yes**

**Specialty required for catheter ablation** **Yes**

Cardiologist with EP subspecialty training (certified)

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

Cardiologists

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

BeHRA guidelines



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

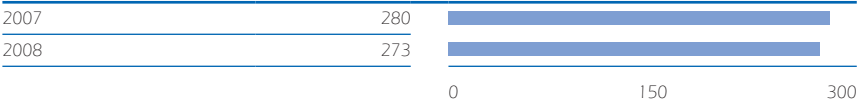
1

Percentage of academic facilities among practicing EP and implant centres

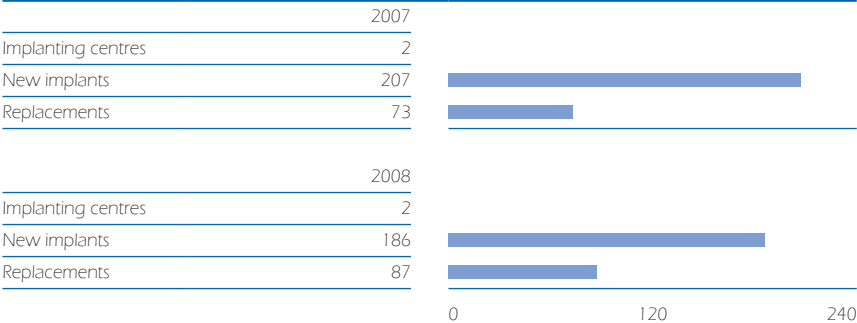
100%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



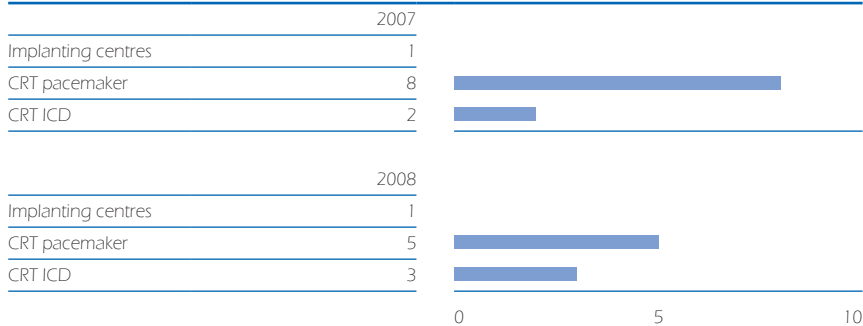
Specialty performing implants

Cardiologists	50%
Surgeons	50%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

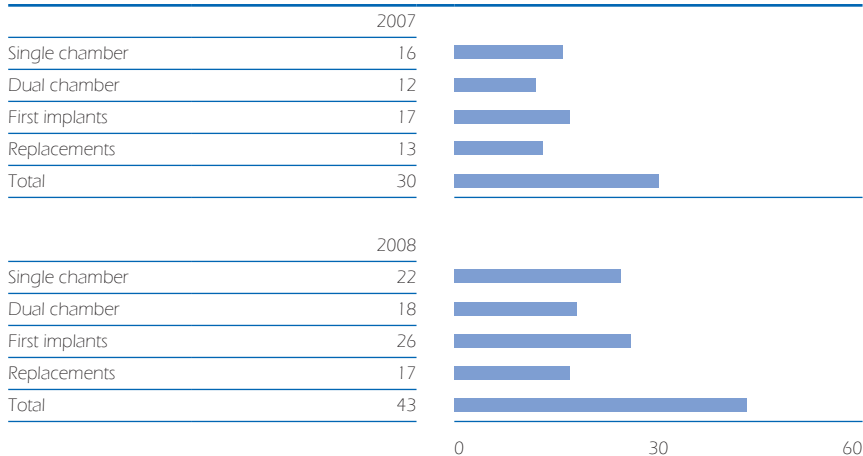
Cardiologists	50%
Surgeons	50%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

1

### ICD units implanted and number of implanting centres



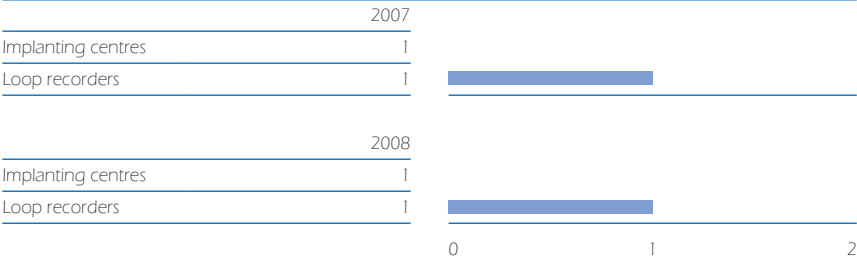


Specialty performing implants

Cardiologists	50%
Surgeons	50%

8. Loop recorders

Loop recorders implanted and number of implanting centres



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

	2007	2008
Number of ablations performed	83	77
Mean number (ablations/centres)	83	77
Number of AF ablations	8	15

## 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 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







# 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
Number of physicians	13.141	2007
Density of physicians (per 1.000 population)	3,03	2007
Number of nurses	67.245	2007
Density of nurses (per 1.000 population)	15,5	2007

### Population by age and sex

	Male	Female	Total
2020	2.324.321	2.349.827	4.674.148
2008	2.067.014	2.089.105	4.156.119
1990	1.805.228	1.830.951	3.636.179

### Economic information

Gross domestic product (U.S dollar-billions)	285.018*	2008
Gross domestic product per capita	64.659,90*	2008
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

2007	230 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	19.1%*
2008	not available

\* Refer to CHD deaths

## 3. Healthcare System

An individual 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. Individuals 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.

(Source: Health Service Executive, 2008)



### 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	32%	
Private insurance company	47,2%	
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"/>
Refund of drugs scheme and other small arrangements	

#### 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** **No**

**National accreditation for centres to perform EP** **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
---	----

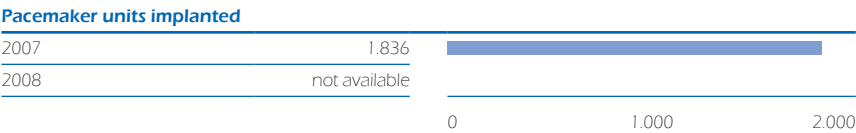
Required period of training to perform implantations	No
--	----

Training centres availability	
Pacemaker	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	not available
-----------------------------	---------------

Percentage of academic facilities among practicing EP and implant centres	80%
---	-----

### 5. Pacemakers





### Pacemaker units implanted and number of implanting centres

	2007	
Implanting centres	13	
New implants	not available	
Replacements	not available	
	2008	
Implanting centres	not available	
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

	2007	
Implanting centres	not available	
CRT pacemaker	not available	
CRT ICD	not available	
	2008	
Implanting centres	not available	
CRT pacemaker	not available	
CRT ICD	not available	

### Specialty performing implants

Cardiologists	not available
Surgeons	not available

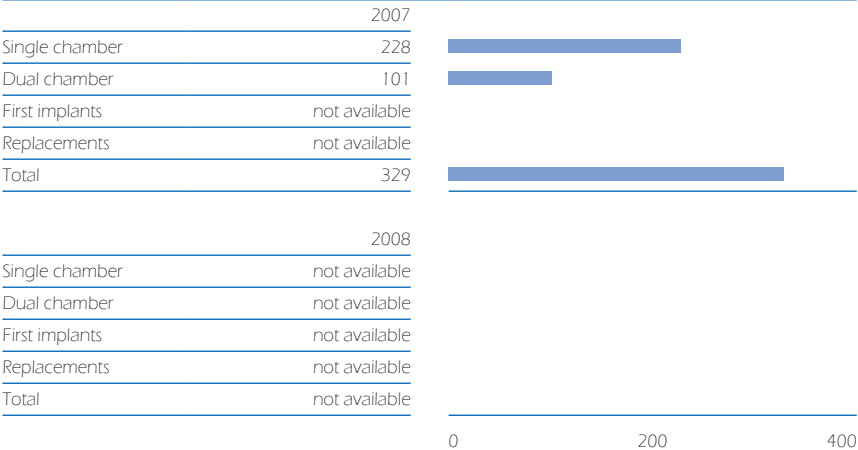


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

12

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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

Yes

Irish Medicines Board

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

8

	2007	2008
Number of ablations performed	335	not available
Mean number (ablations/centres)	40,9	not available
Number of AF ablations	400*	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 No

## Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input 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 type="checkbox"/>
Lack of referral	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle 5 = great obstacle



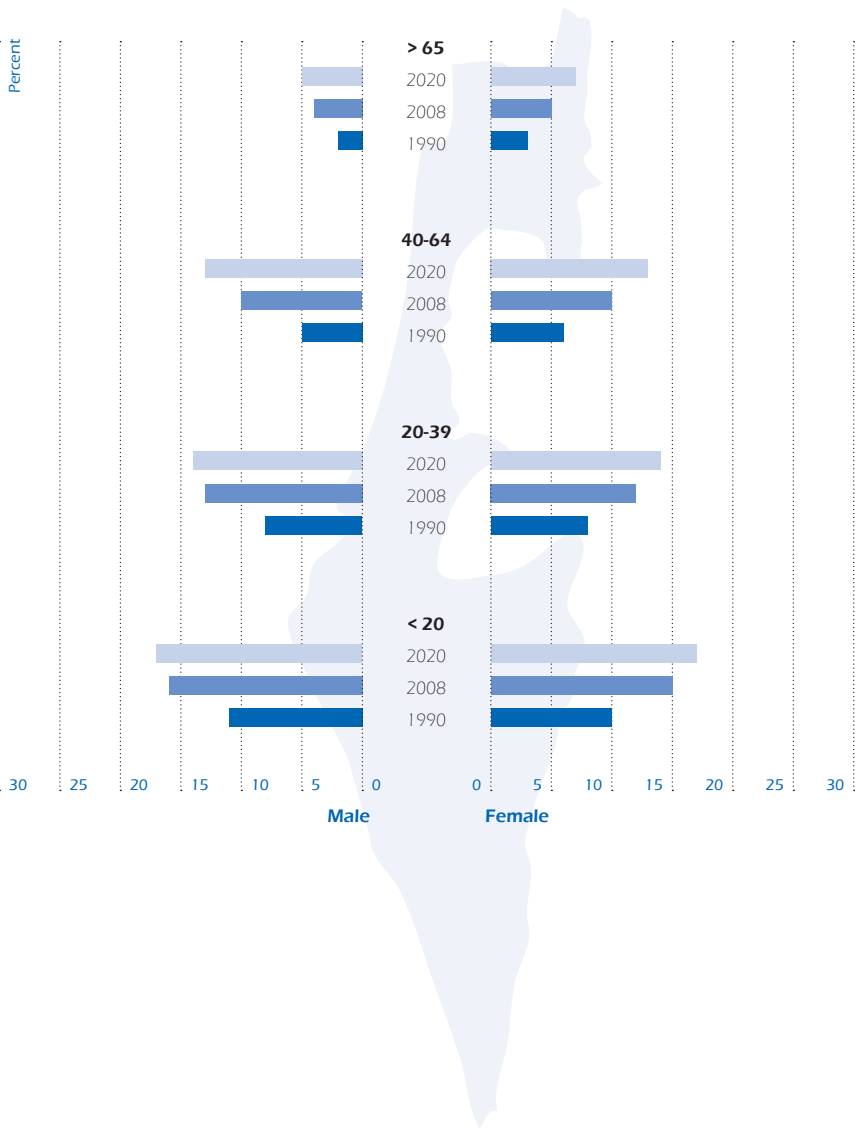
# ISRAEL





1. Statistics

Age pyramid for Israel





### Healthcare data

Hospitals (per 100.000 population)	0,3	2008
Beds (per 100.000 population)	200	2008
Number of physicians	25.314	2007
Density of physicians (per 1.000 population)	3,53	2007
Number of nurses	41.571	2007
Density of nurses (per 1.000 population)	5,79	2007

### Population by age and sex

	Male	Female	Total
2020	4.255.930	4.222.665	8.478.595
2008	3.564.446	3.547.913	7.112.359
1990	2.233.274	2.244.534	4.477.808

### Economic information

Gross domestic product (U.S dollar-billions)	188.746*	2008
Gross domestic product per capita	26.535,60*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

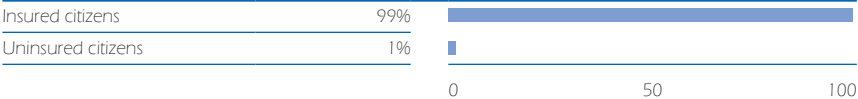
## 3. Healthcare System

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). Private medical insurance is also available in the country.

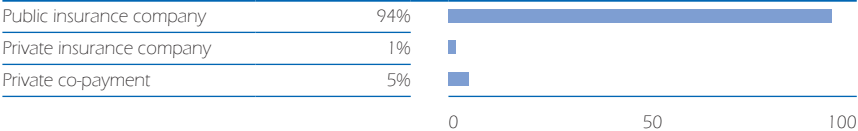
### Basic insurance availability

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"/>

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).

## 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

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
---	----

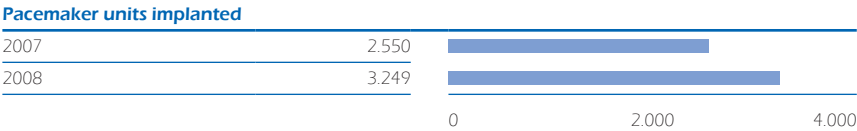
Required period of training to perform implantations	No
--	----

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 and number of implanting centres**

	2007	
Implanting centres	17	
New implants	not available	
Replacements	not available	
	2008	
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**

	2007	
Implanting centres	12	
CRT pacemaker	79	<div style="width: 10%;"></div>
CRT ICD	489	<div style="width: 60%;"></div>
	2008	
Implanting centres	12	
CRT pacemaker	123	<div style="width: 15%;"></div>
CRT ICD	699	<div style="width: 85%;"></div>

\* approx.

0 400 800

**Specialty performing implants**

Cardiologists	95%
Surgeons	5%

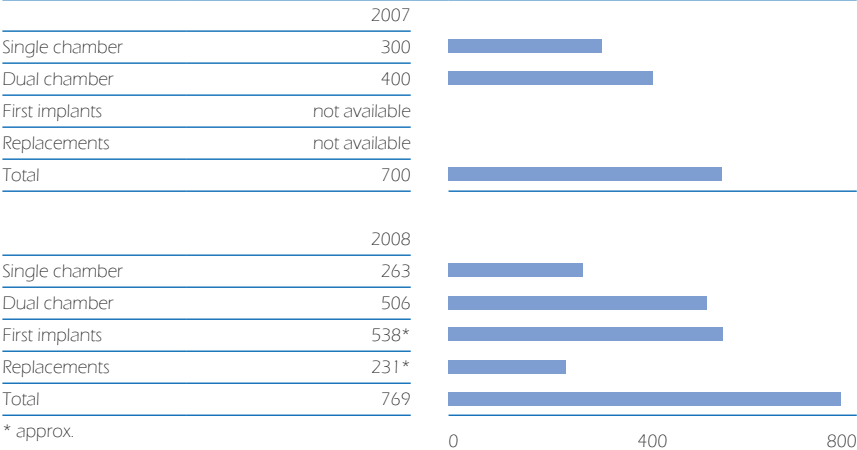


# 7. Implantable Cardiac Defibrillator

Number of implanting centres

17

## 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

	2007	
Implanting centres	12	
Loop recorders	not available	
	2008	
Implanting centres	12	
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"/>

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

	2007	2008
Number of ablations performed	1.640	1.900
Mean number (ablations/centres)	137	158
Number of AF ablations	150	200



# 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle



**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
Number of physicians	215.377	2006
Density of physicians (per 1.000 population)	3,65	2006
Number of nurses	413.000	2006
Density of nurses (per 1.000 population)	7,01	2006

### Population by age and sex

	Male	Female	Total
2020	28.104.685	28.923.539	57.028.224
2008	28.485.387	29.659.934	58.145.321
1990	27.583.007	29.257.840	56.840.847

### Economic information

Gross domestic product (U.S dollar-billions)	2.399.287*	2008
Gross domestic product per capita	40.449,60*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

## 3. Healthcare System

National Health System

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	100%	<div></div>
Uninsured citizens	0%	
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div></div>
Private insurance company	10%	<div></div>
Private co-payment	10%	<div></div>
		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"/>

AIAC is starting with the first accreditation exam for device therapy and invasive electrophysiology (not yet acknowledged by the National Health Care System)

National accreditation for physicians	No
---------------------------------------	----

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

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	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

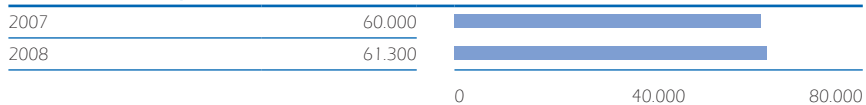
90

### Percentage of academic facilities among practicing EP and implant centres

5%

## 5. Pacemakers

### Pacemaker units implanted



### Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	456
New implants	not available
Replacements	not available
2008	
Implanting centres	470
New implants	not available
Replacements	not available

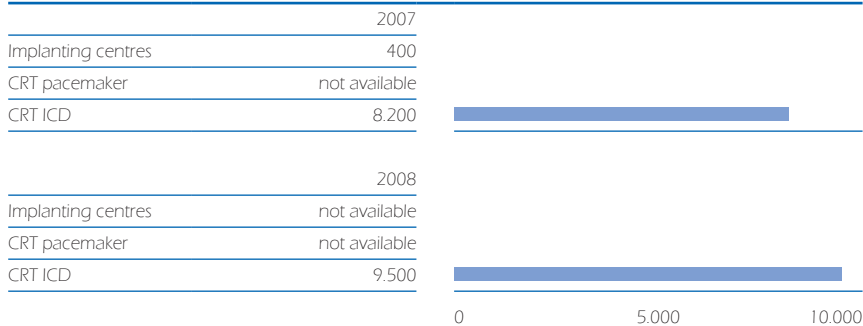
### Specialty performing implants

Cardiologists	99%
Surgeons	1%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

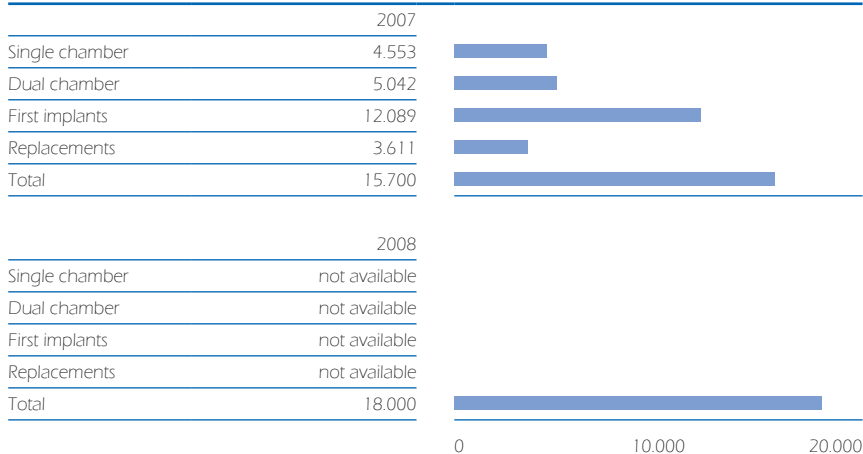
Cardiologists	99%
Surgeons	1%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

**400**

### ICD units implanted and number of implanting centres



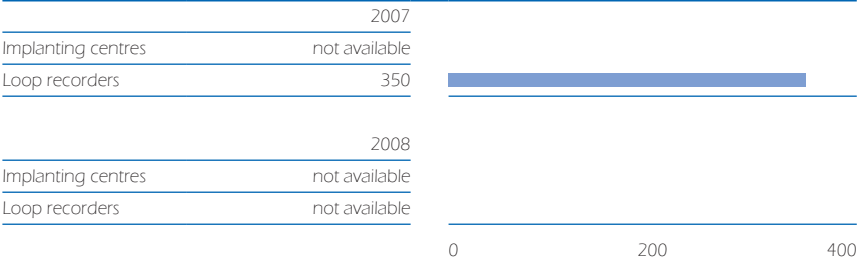


Specialty performing implants

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****No**

A Recall and Complication Registry has been organized by AIAC since 2004. The objectives of the Registry is to monitor device recalls and advisories and to draw guidelines to manage them.

**10. Interventional electrophysiology****Number of performing catheter ablation centres****95**

	2007	2008
Number of ablations performed	13.137	not available
Mean number (ablations/centres)	138	not available
Number of AF ablations	3.447	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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

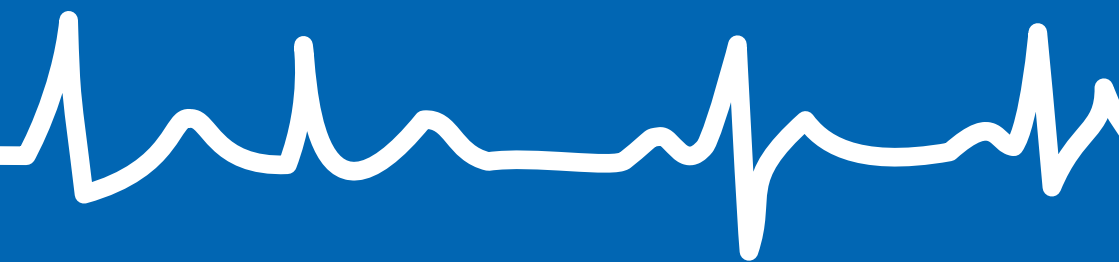
5 = great obstacle







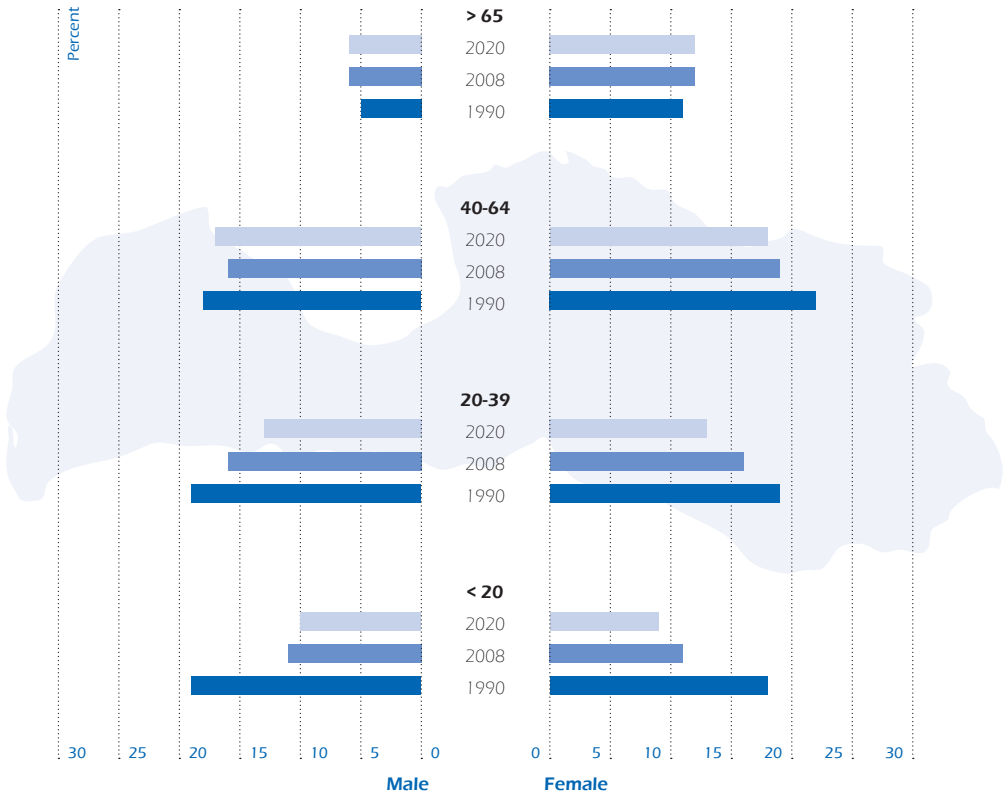
**LATVIA**





# 1. Statistics

## Age pyramid for Latvia





### Healthcare data

Hospitals (per 100.000 population)	4,13	2007
Beds (per 100.000 population)	757,13	2007
Number of physicians	6.940	2007
Density of physicians (per 1.000 population)	3,05	2007
Number of nurses	12.472	2007
Density of nurses (per 1.000 population)	5,48	2007

### Population by age and sex

	Male	Female	Total
2020	965.111	1.112.336	2.077.447
2008	1.039.711	1.205.712	2.245.423
1990	1.238.635	1.424.955	2.663.590

### Economic information

Gross domestic product (U.S dollar-billions)	33.902*	2008
Gross domestic product per capita	14.930,12*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	54,7%
2008	53,4%

## 3. Healthcare System

In Latvia, a National healthcare system is divided between the Ministry of Welfare and municipalities.

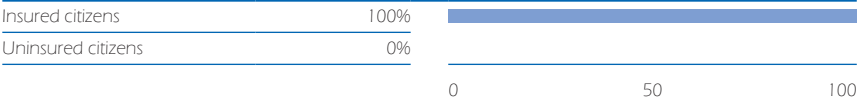
It is a decentralized and mainly based on local administrative structures.

(Source: Health Care Systems in Transition: Latvia, European Observatory on Health Care Systems, 2001)

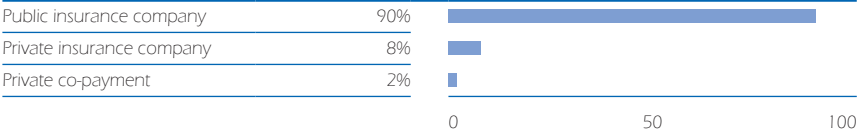
### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens



### Distribution of insurance modality



### 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 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 to perform EP** 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



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

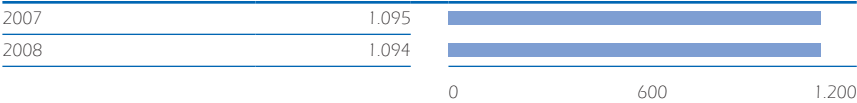
2

Percentage of academic facilities among practicing EP and implant centres

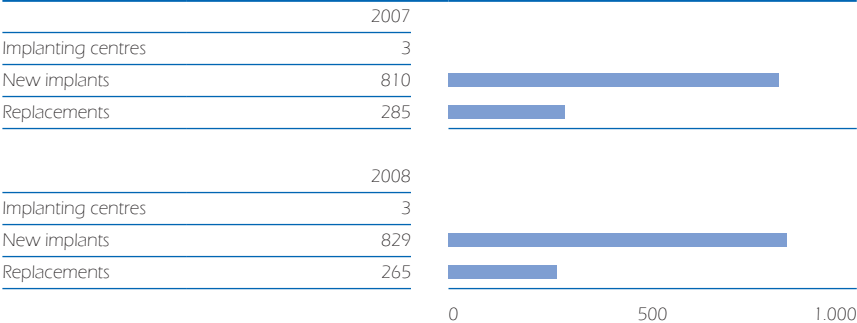
2%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres



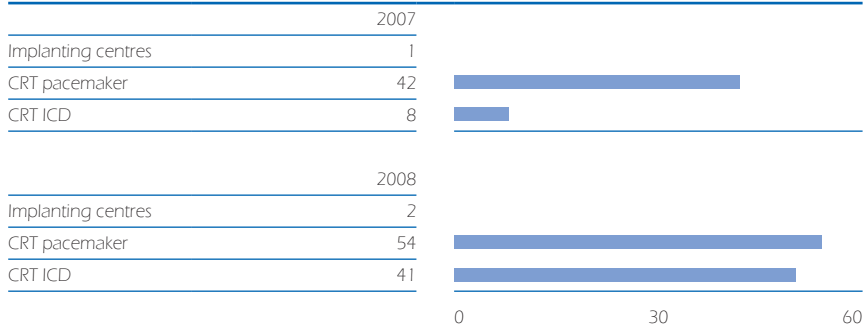
Specialty performing implants

Cardiologists	60%
Surgeons	40%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

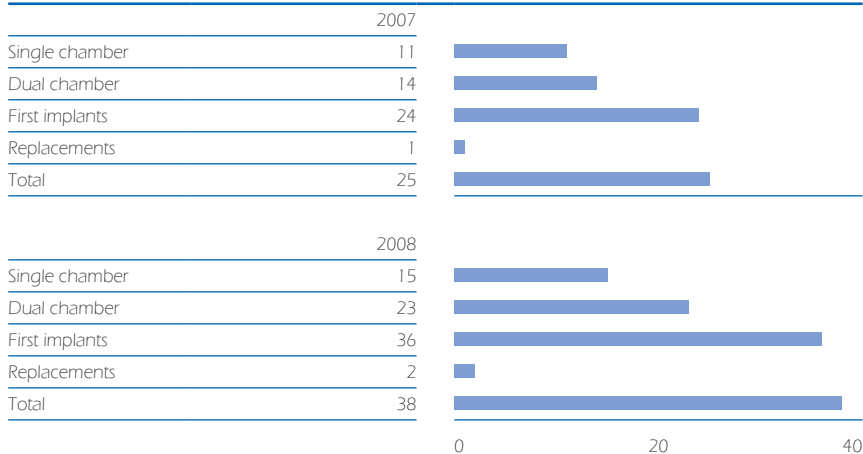
Cardiologists	60%
Surgeons	40%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

2

### ICD units implanted and number of implanting centres



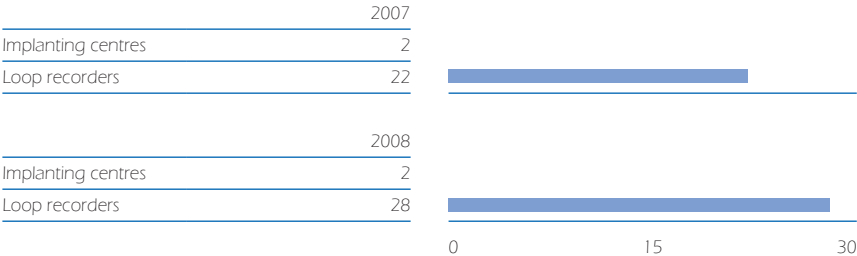


Specialty performing implants

Cardiologists	60%
Surgeons	40%

8. Loop recorders

Loop recorders implanted and number of implanting centres



Specialty performing implants

Cardiologists	60%
Surgeons	40%

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"/>

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**

	2007	2008
Number of ablations performed	215	304
Mean number (ablations/centres)	107,5	152
Number of AF ablations	16	42

**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 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







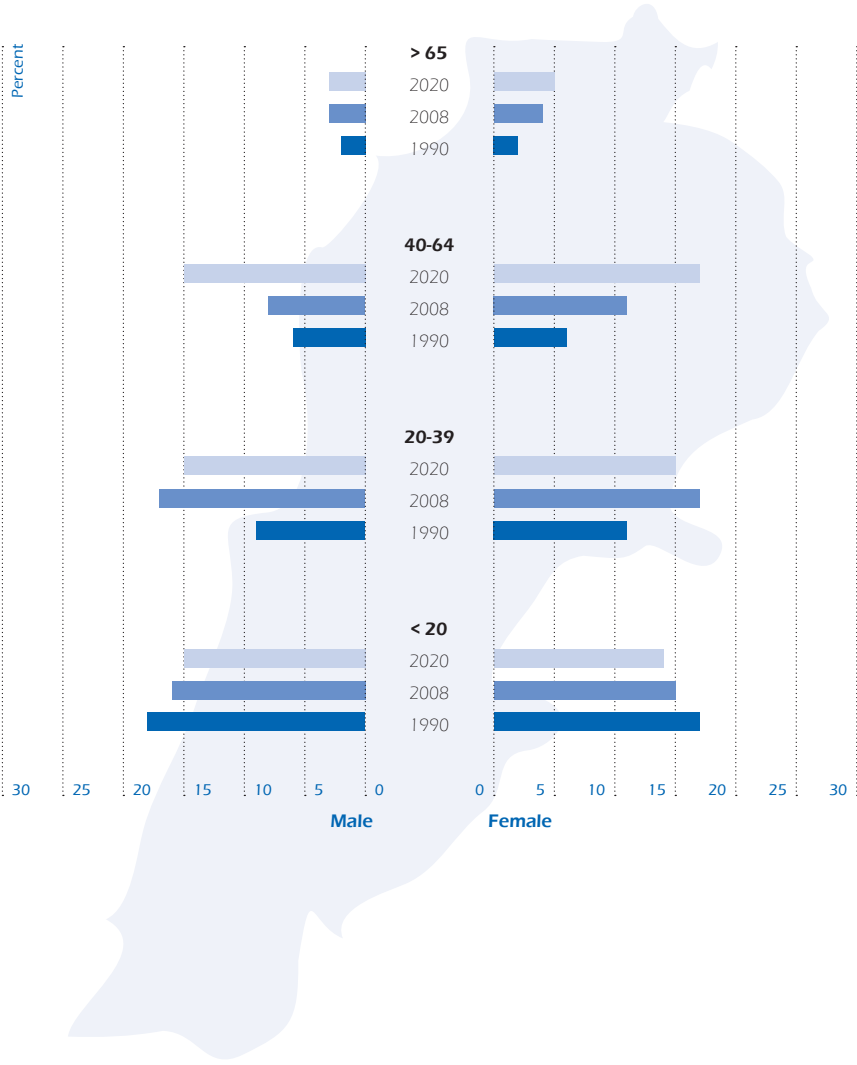
# LEBANON





# 1. Statistics

## Age pyramid for Lebanon





### Healthcare data

Hospitals (per 100.000 population)	not available	not available
Beds (per 100.000 population)	360	2005
Number of physicians	8.440	2005
Density of physicians (per 1.000 population)	2,4	2005
Number of nurses	4.720	2005
Density of nurses (per 1.000 population)	1,3	2005

### Population by age and sex

	Male	Female	Total
2020	2.157.474	2.264.786	4.422.260
2008	1.930.017	2.041.924	3.971.941
1990	1.525.407	1.624.267	3.149.674

### Economic information

Gross domestic product (U.S dollar-billions)	28.024*	2008
Gross domestic product per capita	7.375,85*	2008
Total expenditure on health as % of GDP	8,9	2006
General government expenditure on health as % of total expenditure on health	46,8	2006
Private expenditure on health as % of total expenditure on health	53,2	2006

\* IMF estimative



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	not available
2008	not available

## 3. Healthcare System

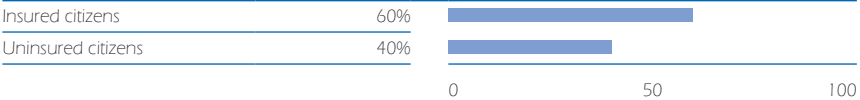
Lebanon's healthcare system is funded by various schemes: public, not-for-profit and private. It includes governmental social insurance, private insurance companies and the National Social Security Fund (NSSF) which cover all employees in the formal sector.

(WHO, 2005)

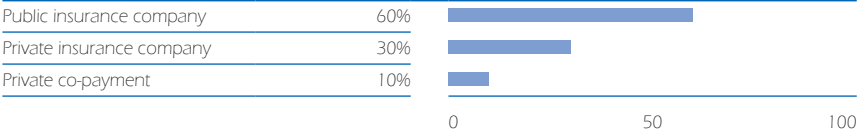
### Basic insurance availability

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"/>

It represents 15% of the total amount.

#### Reimbursement availability

Internal loop recorders	not available
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** **No**

**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	No
---	----

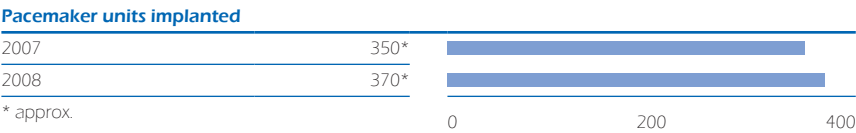
Required period of training to perform implantations	No
--	----

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	5
-----------------------------	---

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

### 5. Pacemakers







**Pacemaker units implanted and number of implanting centres**

2007	
Implanting centres	not available
New implants	not available
Replacements	not available
2008	
Implanting centres	not available
New implants	not available
Replacements	not available

**Specialty performing implants**

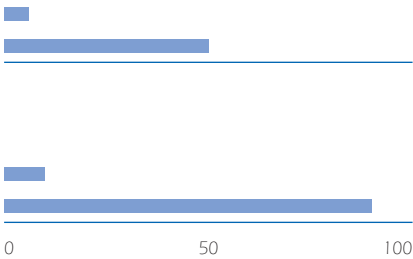
Cardiologists	100%
Surgeons	0%

**6. Cardiac resynchronization therapy devices**

**CRT units implanted and number of implanting centres**

2007	
Implanting centres	10
CRT pacemaker	6*
CRT ICD	50*
2008	
Implanting centres	10
CRT pacemaker	10*
CRT ICD	90*

\* approx.



**Specialty performing implants**

Cardiologists	100%
Surgeons	0%

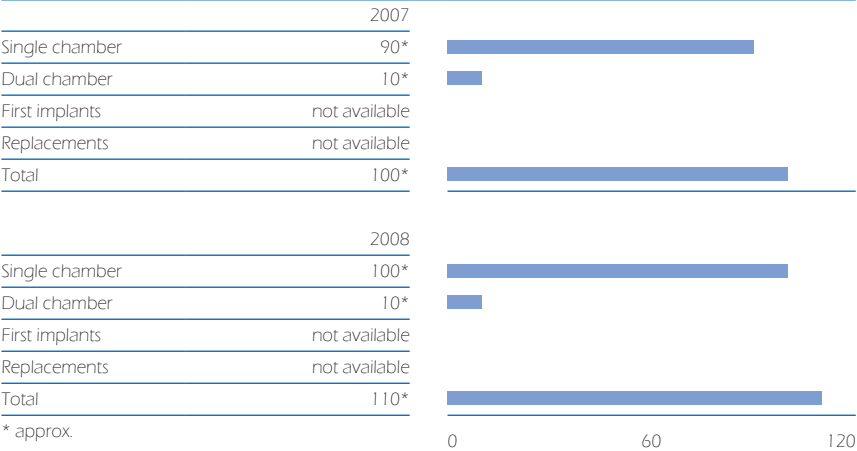


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

10

### 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

	2007	
Implanting centres	0	
Loop recorders	0	

	2008	
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** **3**

	2007	2008
Number of ablations performed	90	100
Mean number (ablations/centres)	30	33
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 No

## Obstacles to guideline implementation

	1	2	3	4	5
Lack of centres	<input 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 type="checkbox"/>
Lack of referral	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low awareness of guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of operators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

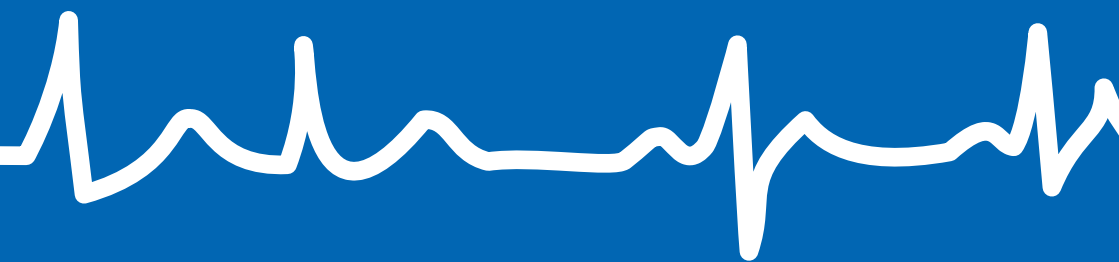
5 = great obstacle





# LIBYA

There will be information in the next edition.









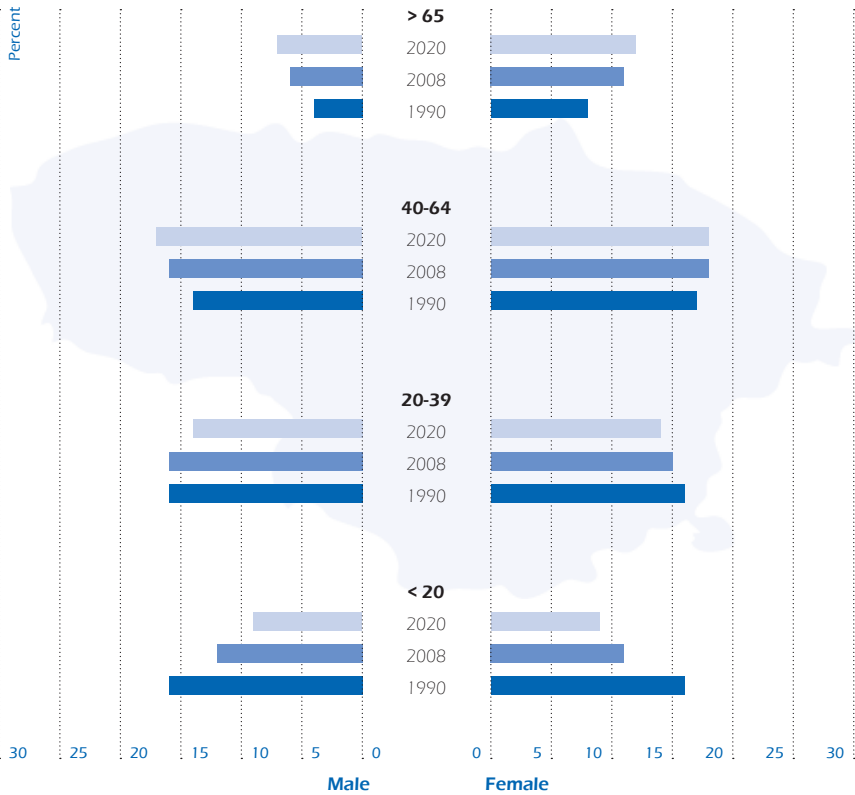
# LITHUANIA





# 1. Statistics

## Age pyramid for Lithuania







### Healthcare data

Hospitals (per 100.000 population)	4,89	2007
Beds (per 100.000 population)	813,95	2007
Number of physicians	13.729	2007
Density of physicians (per 1.000 population)	4,07	2007
Number of nurses	24.804	2007
Density of nurses (per 1.000 population)	7,35	2007

### Population by age and sex

	Male	Female	Total
2020	1.620.495	1.814.847	3.435.342
2008	1.676.402	1.888.803	3.565.205
1990	1.749.096	1.945.740	3.694.836

### Economic information

Gross domestic product (U.S dollar-billions)	48.747*	2008
Gross domestic product per capita	14.456,17*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

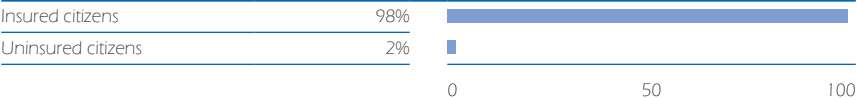
2007	not available
2008	not available

## 3. Healthcare System

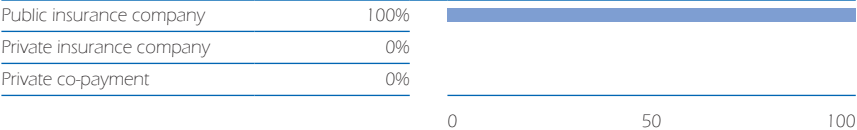
Near 100 percent financing via Patient State fund.

### 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"/>

## 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** Yes

**National Society supporting EHRA accreditation system** Yes

**Specialty required for catheter ablation** Yes

Cardiologist, cardiac surgeon (cardiac surgeons perform epicardial lead implants)

**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	3
ICD implantation	3
Electrophysiological studies and catheter ablation	3
CRT implantation	3
Atrial fibrillation ablation	2

**Number of medical faculties**

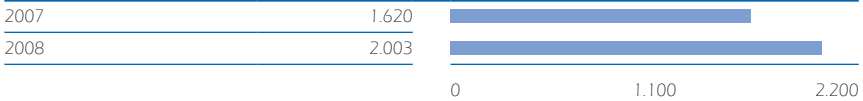
**2**

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

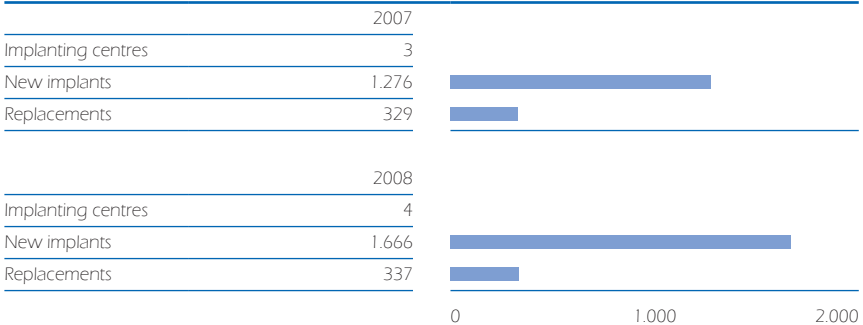
**50%**

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



**Specialty performing implants**

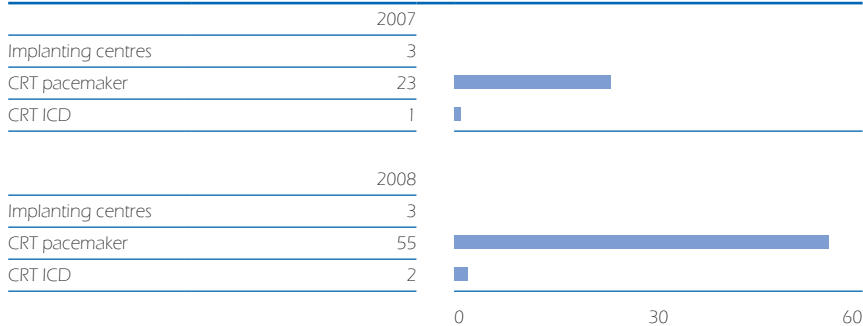
Cardiologists	96,5%
Surgeons	3,5%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

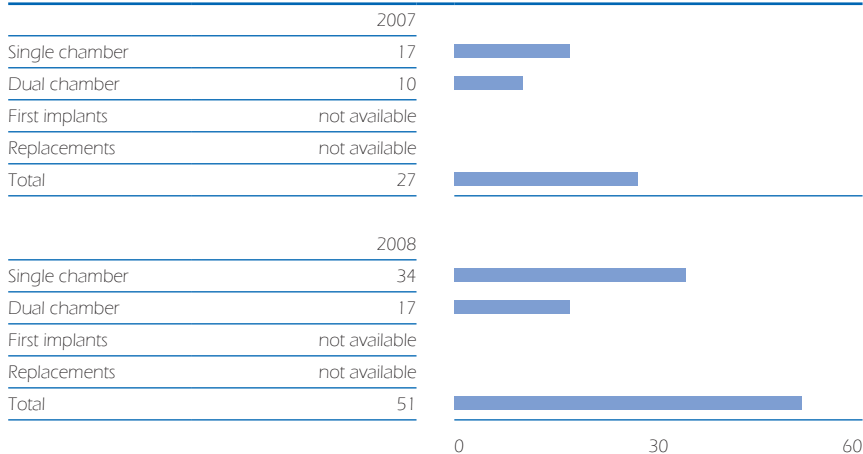
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

3

### ICD units implanted and number of implanting centres



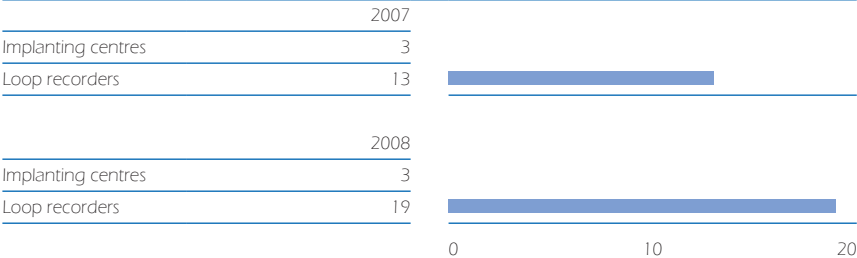


Specialty performing implants

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

	2007	2008
Number of ablations performed	580	797
Mean number (ablations/centres)	193	266
Number of AF ablations	32	38

## 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 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







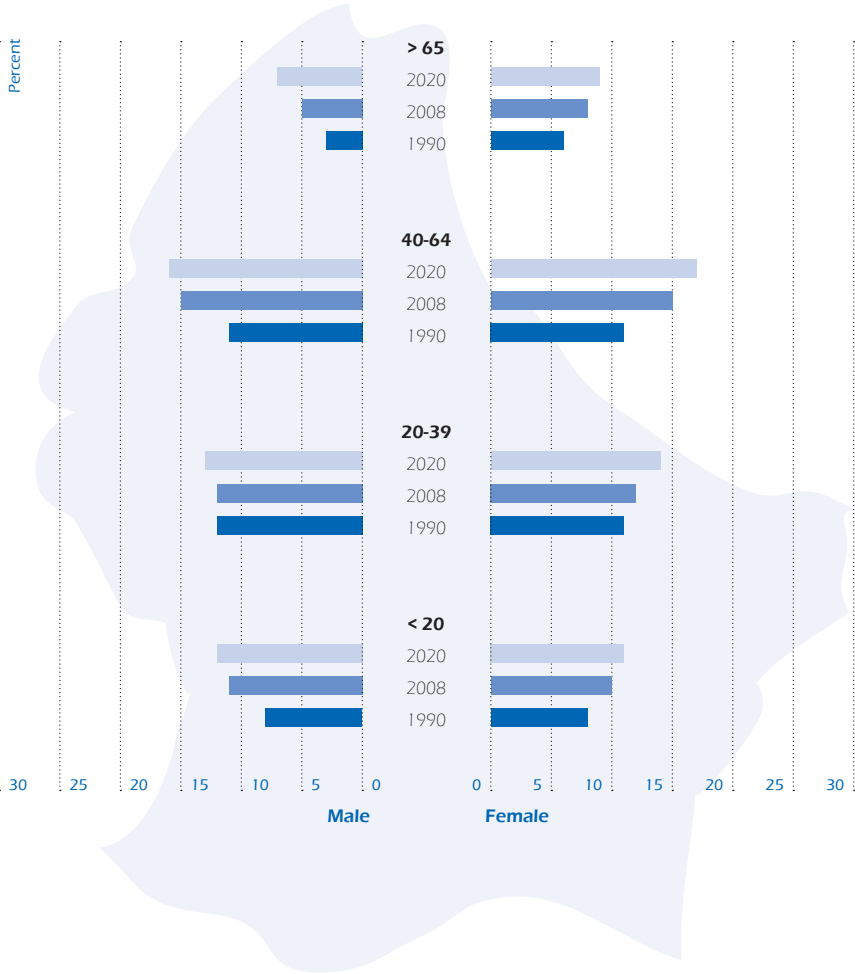
# LUXEMBOURG





1. Statistics

Age pyramid for Luxembourg







### Healthcare data

Hospitals (per 100.000 population)	3,96	2004
Beds (per 100.000 population)	633,36	2004
Number of physicians	1.326	2005
Density of physicians (per 1.000 population)	2,9	2005
Number of nurses	4.678	2005
Density of nurses (per 1.000 population)	10,23	2005

### Population by age and sex

	Male	Female	Total
2020	273.218	282.940	556.158
2008	239.291	246.715	486.006
1990	189.847	197.305	387.152

### Economic information

Gross domestic product (U.S dollar-billions)	57.609*	2008
Gross domestic product per capita	118.045,18*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

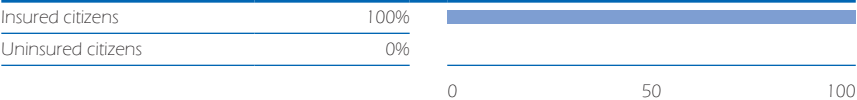
2007	not available
2008	not available

## 3. Healthcare System

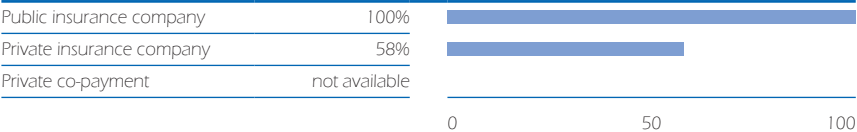
Luxemburg's healthcare system is based on three principles: compulsory health insurance, free choice of provider for patients and compulsory provider compliance with the fixed set of fees for services.  
(Highlights on health, WHO 2004)

### Basic insurance availability Yes

#### Percentage of insured and uninsured citizens



#### 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 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** **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%
---	----

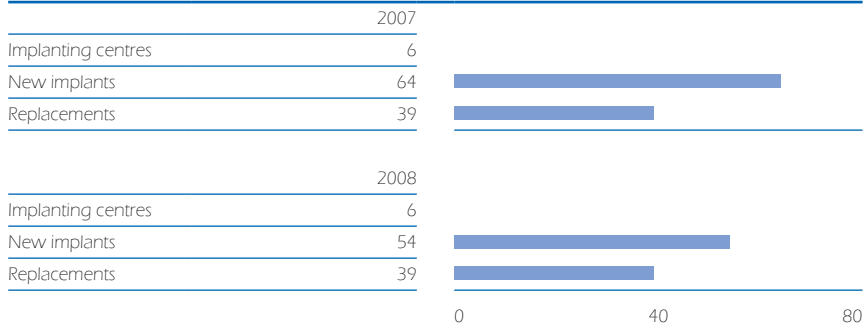
### 5. Pacemakers

Pacemaker units implanted	
2007	103*
2008	93*
* It refers to only one center	

Year	Units Implanted
2007	103
2008	93



### Pacemaker units implanted and number of implanting centres

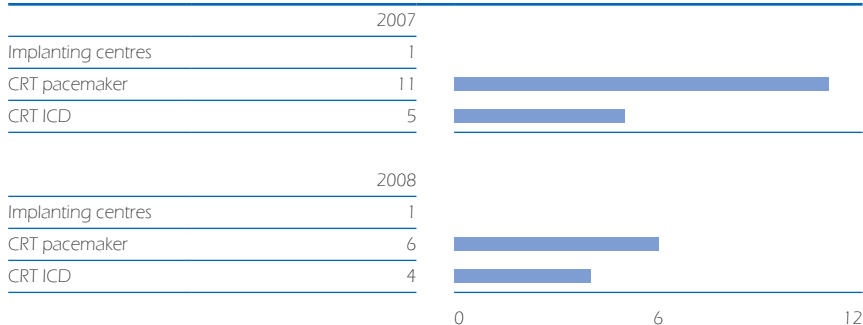


### Specialty performing implants

Cardiologists	95%
Surgeons	5%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

Cardiologists	100%
Surgeons	0%

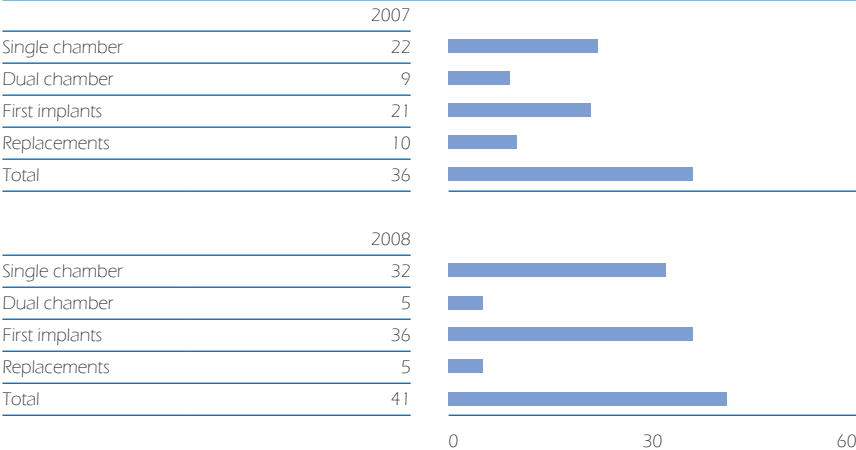


# 7. Implantable Cardiac Defibrillator

## Number of implanting centres

1

### ICD units implanted and number of implanting centres

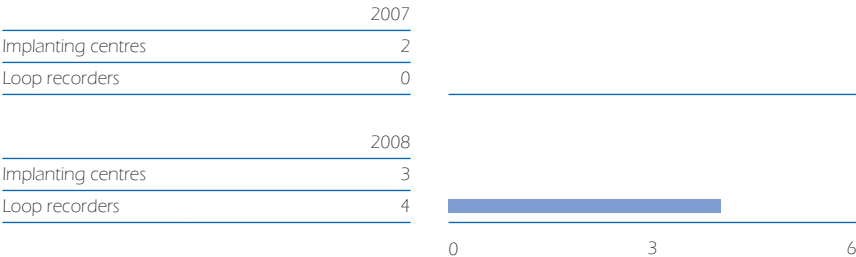


### Specialty performing implants

Cardiologists	95%
Surgeons	5%

# 8. Loop recorders

## Loop recorders implanted and number of implanting centres







### Specialty performing implants

Cardiologists	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 Sante

## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

1

	2007	2008
Number of ablations performed	80	99
Mean number (ablations/centres)	80	99
Number of AF ablations	0	9



# 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 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 (Lack of local facilities)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle





# MALTA

There will be information in the next edition.











# MOROCCO

There will be information in the next edition.









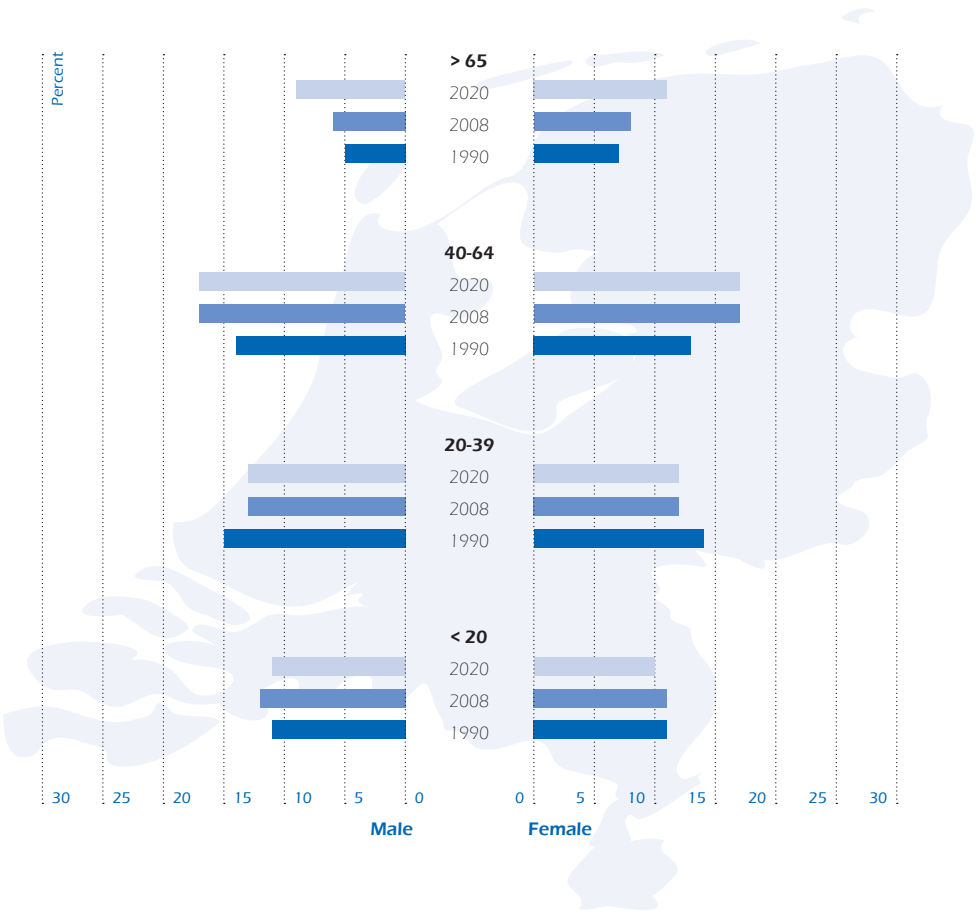
# NETHERLANDS





# 1. Statistics

## Age pyramid for Netherlands





### Healthcare data

Hospitals (per 100.000 population)	1,16	2007
Beds (per 100.000 population)	480,8	2007
Number of physicians	64.417	2007
Density of physicians (per 1.000 population)	3,93	2007
Number of nurses	246.545	2007
Density of nurses (per 1.000 population)	15,05	2007

### Population by age and sex

	Male	Female	Total
2020	8.558.880	8.773.125	17.332.005
2008	8.242.283	8.403.030	16.645.313
1990	7.644.907	7.814.147	15.459.054

### Economic information

Gross domestic product (U.S dollar-billions)	909.465*	2008
Gross domestic product per capita	54.445,06*	2008
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

2007	248 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	33%
2008	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	98,6%	<div><div></div></div>
Uninsured citizens	1,4%	<div><div></div></div>
		0 50 100

### Distribution of insurance modality

Public insurance company	0%	<div><div></div></div>
Private insurance company	100%	<div><div></div></div>
Private co-payment	0%	<div><div></div></div>
		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	✓
ICD primary prevention	✓
ICD secondary prevention	✓
CRT devices	✓
Ablation	✓
Unlimited availability of treatment	✓

## 4. Education

### National accreditation availability

Device therapy	✓
Invasive electrophysiology	✓
EHRA, no official Dutch accreditation	

### National accreditation for physicians

Yes

GAIA

### National accreditation for centres to perform EP

Yes

### National Society supporting EHRA accreditation system

Yes

### Specialty required for catheter ablation

Yes

Electrophysiologist (with EHRA exam) also surgeons perform PVI in consultation with the electrophysiologist

### Specialty required for ICD or pacemaker implants

Yes

ICD cardiologist + EHRA exam

### Official national competency guidelines for electrophysiological studies or catheter ablation

Yes

European Guidelines



Training centres availability

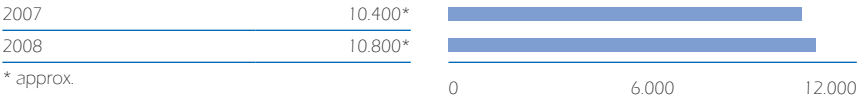
Pacemaker	17
ICD implantation	17
Electrophysiological studies and catheter ablation	13
CRT implantation	17
Atrial fibrillation ablation	13

Number of medical faculties

Percentage of academic facilities among practicing EP and implant centres

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	not available
New implants	not available
Replacements	not available
2008	
Implanting centres	not available
New implants	not available
Replacements	not available

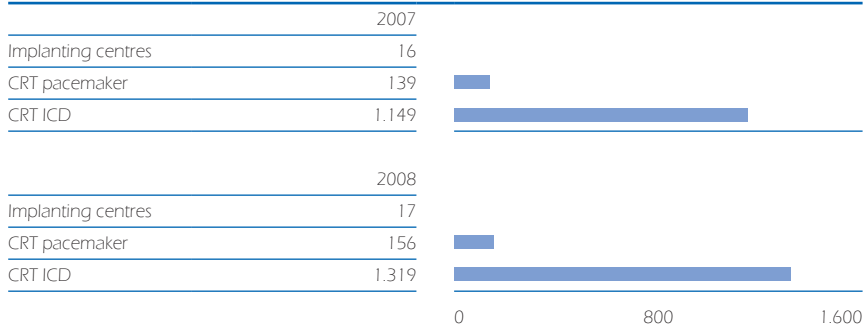
Specialty performing implants

Cardiologists	99%
Surgeons	1%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

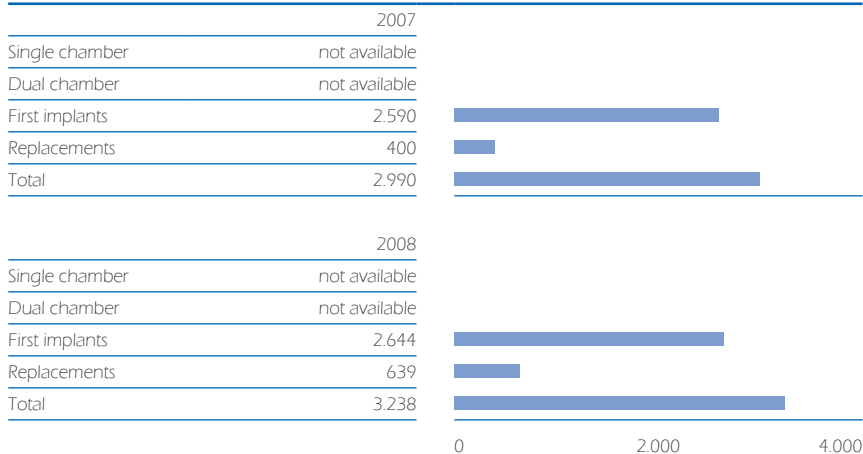
Cardiologists	99%
Surgeons	1%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

17

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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"/>
DIPR	

### Availability of a national quality insurance system or complication registry

No

### Availability of a national institution coordinating and guiding device recalls

Yes

NHRA device committee



## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

13

	2007	2008
Number of ablations performed	3.481	4.368
Mean number (ablations/centres)	268	336
Number of AF ablations	1.052	1.536

## 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 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 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"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle







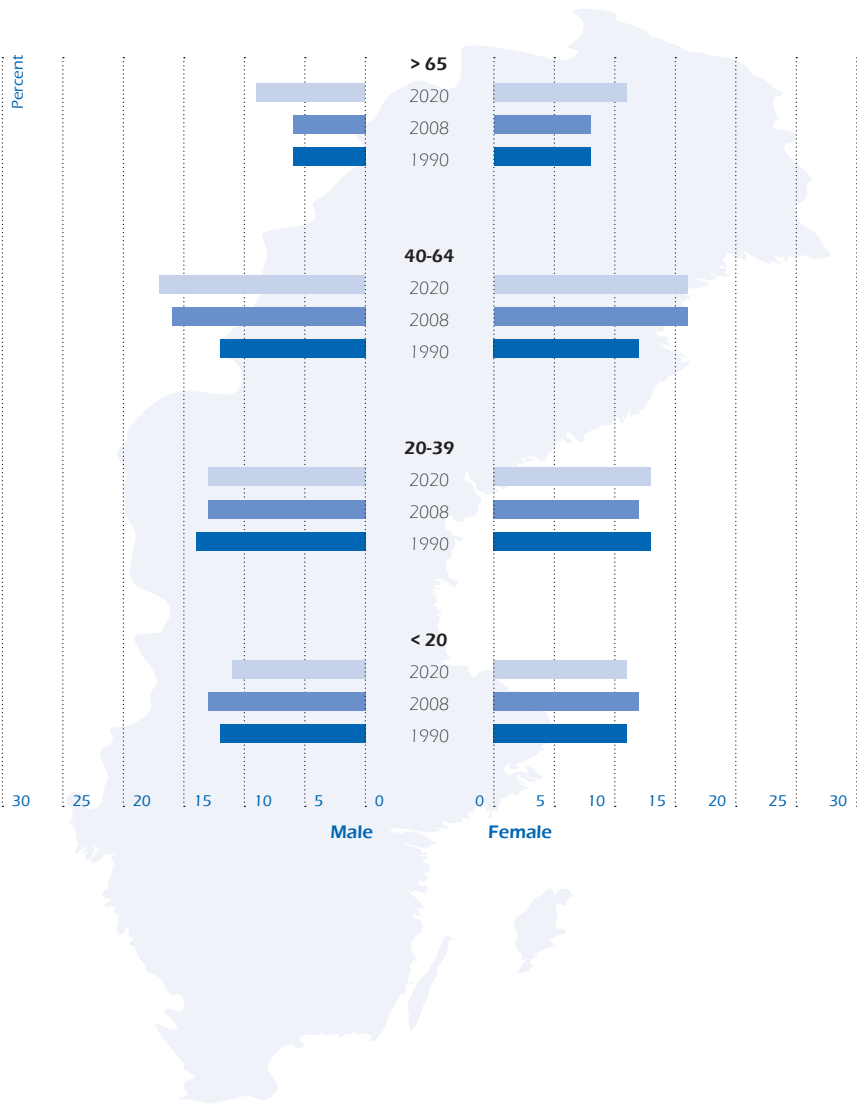
# NORWAY





# 1. Statistics

## Age pyramid for Norway





### Healthcare data

Hospitals (per 100.000 population)	1,5	2006
Beds (per 100.000 population)	391,19	2007
Number of physicians	18.143	2007
Density of physicians (per 1.000 population)	3,8	2007
Number of nurses	73.768	2007
Density of nurses (per 1.000 population)	15,47	2007

### Population by age and sex

	Male	Female	Total
2020	2.393.591	2.442.865	4.836.456
2008	2.303.071	2.341.386	4.644.457
1990	2.107.177	2.154.556	4.261.733

### Economic information

Gross domestic product (U.S dollar-billions)	481.148*	2008
Gross domestic product per capita	102.524,55*	2008
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

2007	189 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	21%*
2008	not available

\* not including vascular disease

## 3. Healthcare System

National Health System

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	100%	<div><div></div></div>
Uninsured citizens	0%	
		0 50 100

### Distribution of insurance modality

Public insurance company	100%	<div><div></div></div>
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 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** No

No formal rules but in practice only qualified electrophysiologists perform.

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

No formal rules

**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	5
CRT implantation	4
Atrial fibrillation ablation	1

### Number of medical faculties


4

### Percentage of academic facilities among practicing EP and implant centres



20%

## 5. Pacemakers

### Pacemaker units implanted

2007	2.730*	
2008	not available	
* including replacements		0 2.000 4.000

### Pacemaker units implanted and number of implanting centres

2007		
Implanting centres	25	
New implants	2.121	
Replacements	609	
2008		
Implanting centres	not available	
New implants	not available	
Replacements	not available	
		0 1.200 2.400

### Specialty performing implants

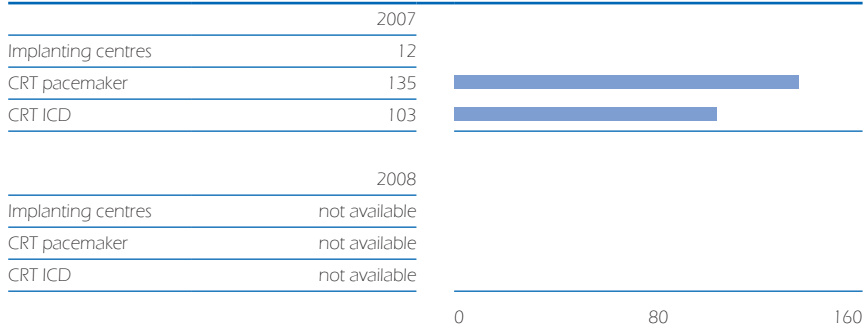
Cardiologists	98%
Surgeons	2%*
* approx.	





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

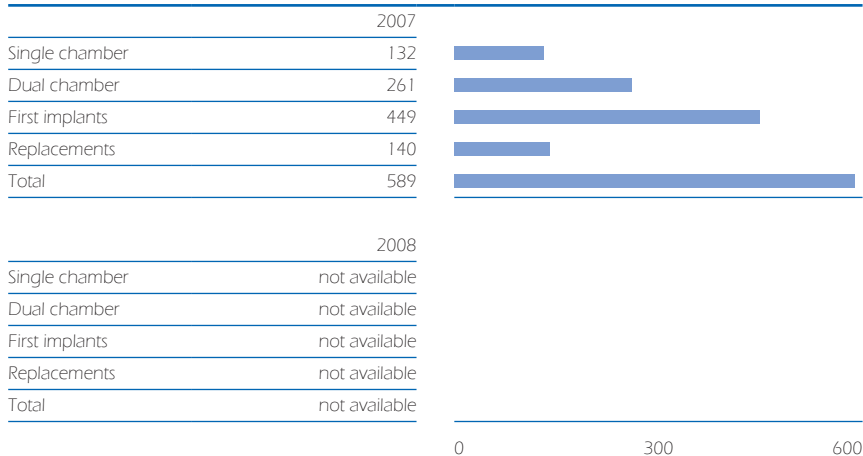
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

12

### ICD units implanted and number of implanting centres



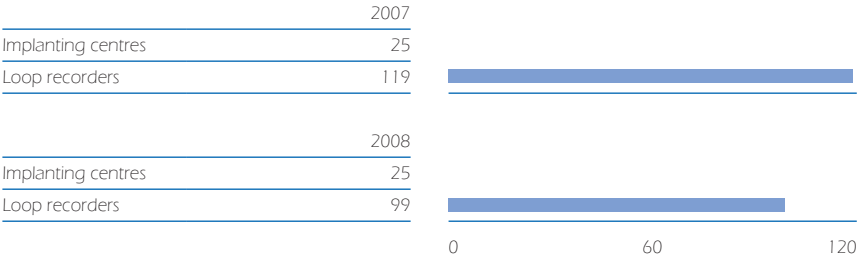


Specialty performing implants

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"/>
Norsk Pacemakerregister	

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

5

	2007	2008
Number of ablations performed	1.157	1.201
Mean number (ablations/centres)	231	240
Number of AF ablations	295	359

## 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 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 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 checked="" 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"/>

1 = no obstacle

5 = great obstacle







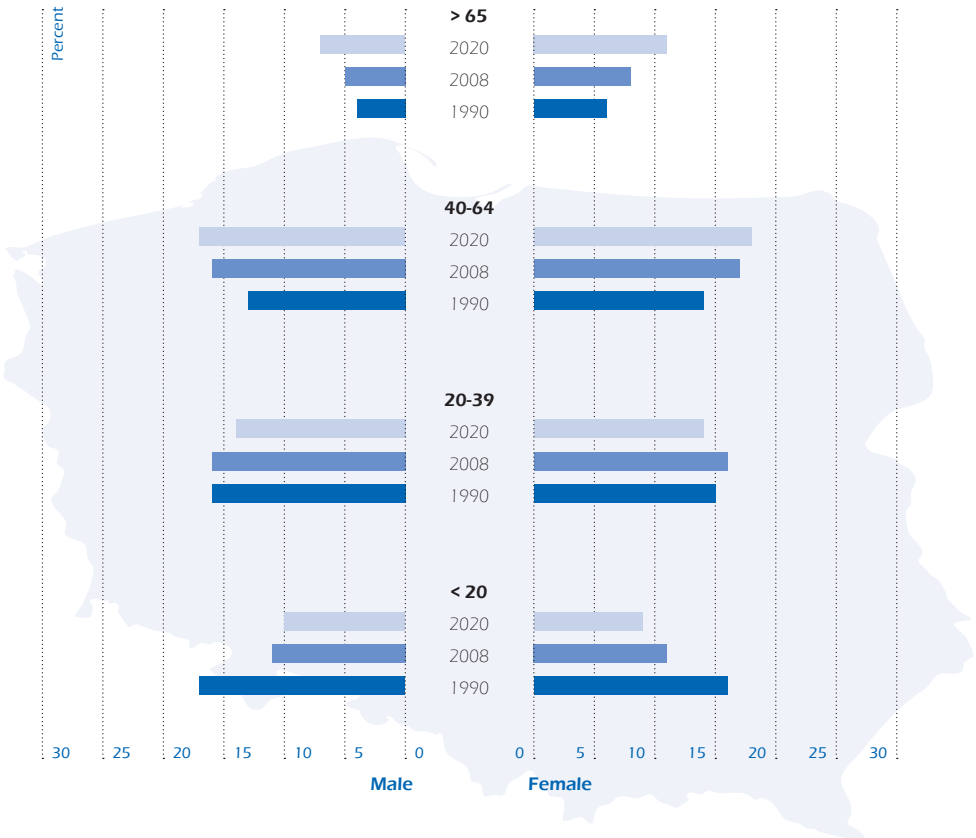
**POLAND**





# 1. Statistics

## Age pyramid for Poland







### Healthcare data

Hospitals (per 100.000 population)	2,08	2006
Beds (per 100.000 population)	516,17	2006
Number of physicians	77.479	2006
Density of physicians (per 1.000 population)	2,03	2006
Number of nurses	178.781	2006
Density of nurses (per 1.000 population)	4,69	2006

### Population by age and sex

	Male	Female	Total
2020	18.329.087	19.620.041	37.949.128
2008	18.659.067	19.841.629	38.500.696
1990	18.577.268	19.542.140	38.119.408

### Economic information

Gross domestic product (U.S dollar-billions)	567.413*	2008
Gross domestic product per capita	14.892,80*	2008
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

2007	200 per 100.000 citizens*
2008	not available

\* Male only

### Proportion cardiac mortality over total mortality of the country

2007	44%
2008	not available



## 3. Healthcare System

Poland has the healthcare 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	90%*	
Private insurance company	1%*	
Private co-payment	10%*	

\* 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 checked="" 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	50
ICD implantation	30
Electrophysiological studies and catheter ablation	10
CRT implantation	10
Atrial fibrillation ablation	5

### Number of medical faculties

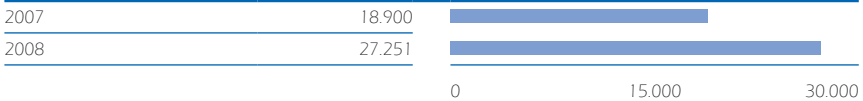
15

### Percentage of academic facilities among practicing EP and implant centres

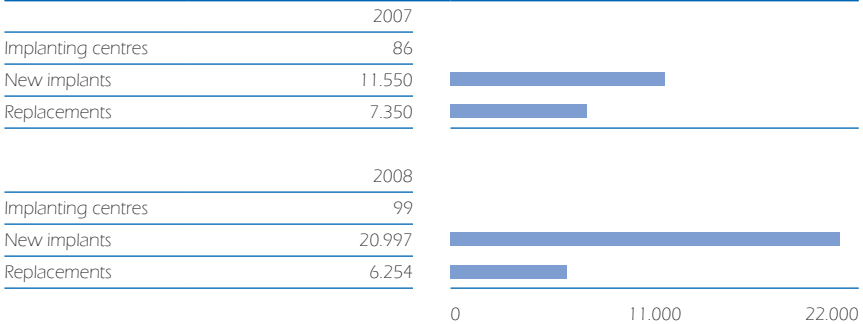
28%

## 5. Pacemakers

### Pacemaker units implanted



### Pacemaker units implanted and number of implanting centres



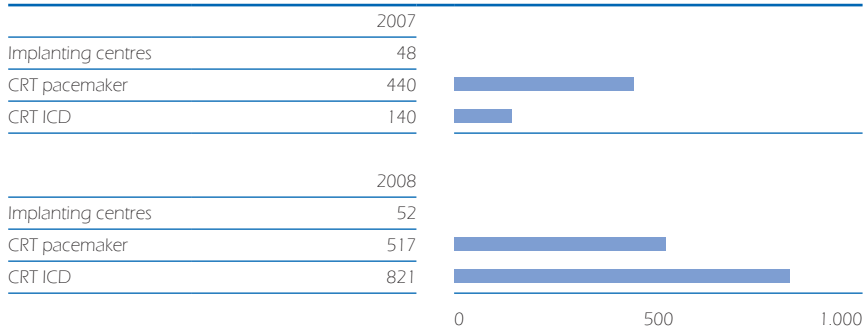
### Specialty performing implants

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



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

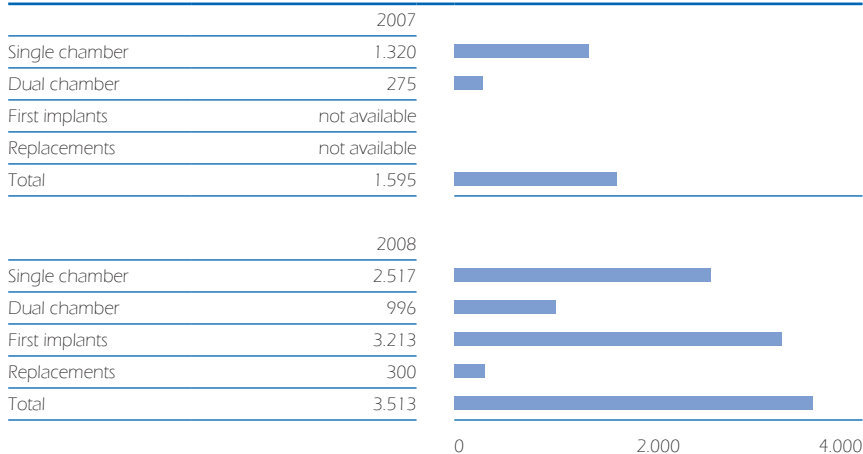
Cardiologists	>99%
Surgeons	0%
Other (Pediatrics)	<1%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

63

### ICD units implanted and number of implanting centres



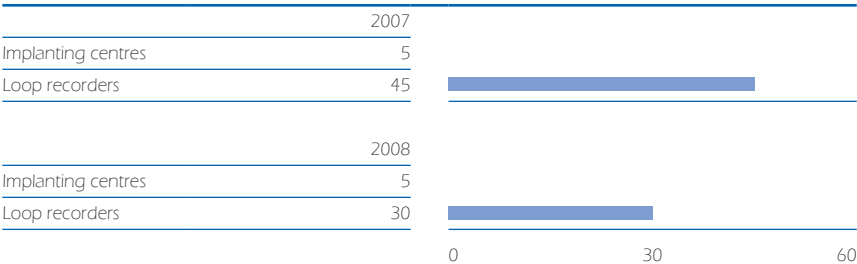


Specialty performing implants

Cardiologists	99%
Surgeons	0%
Other	1%

8. Loop recorders

Loop recorders implanted and number of implanting centres



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****38**

	2007	2008
Number of ablations performed	3.100	4.716
Mean number (ablations/centres)	82	124
Number of AF ablations	228	236

**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







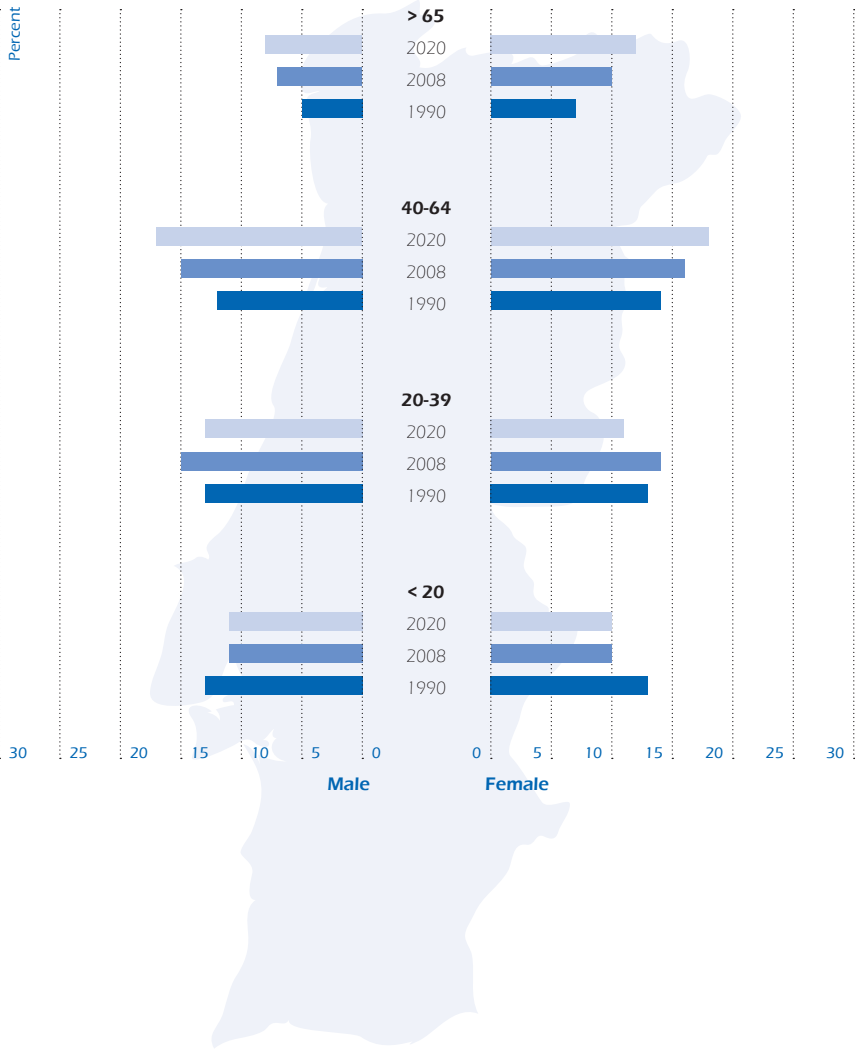
# PORTUGAL





1. Statistics

Age pyramid for Portugal







### Healthcare data

Hospitals (per 100.000 population)	1,93	2005
Beds (per 100.000 population)	345,44	2006
Number of physicians	36.138	2005
Density of physicians (per 1.000 population)	3,43	2005
Number of nurses	50.955	2006
Density of nurses (per 1.000 population)	4,81	2006

### Population by age and sex

	Male	Female	Total
2020	5.306.576	5.535.462	10.842.038
2008	5.192.343	5.484.567	10.676.910
1990	4.772.282	5.146.727	9.919.009

### Economic information

Gross domestic product (U.S dollar-billions)	255.483*	2008
Gross domestic product per capita	24.031,24*	2008
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

2007	310 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	32,2%
2008	not available

## 3. Healthcare System

The Portuguese healthcare system is characterised by three coexisting schemes. The National Health Service (NHS), the special social health schemes for certain professionals and the voluntary private health insurance. The NHS provides universal coverage. The Ministry of Health is responsible for developing healthcare policies as well as managing NHS.

(Highlights on health. WHO 2004)

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	100%	<div></div>
Uninsured citizens	0%	<div></div>

0 50 100

### Distribution of insurance modality

Public insurance company	85%	<div></div>
Private insurance company	15%	<div></div>
Private co-payment	0%	<div></div>

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"/>
According to guidelines	

## 4. Education

#### National accreditation availability

Device therapy	<input type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
Sub-specialty in Cardiac Electrophysiology	

#### National accreditation for physicians

Yes

Under the Medical Board (Cardiology Sub-specialty)

#### National accreditation for centres to perform EP

No

But there are defined center requirements

#### National Society supporting EHRA accreditation system

Yes

#### Specialty required for catheter ablation

Yes

Required to have the Cardiac Electrophysiology Sub-specialty

#### Specialty required for ICD or pacemaker implants

Yes

For ICD Cardiac Electrophysiology Sub-specialty required



<b>Official national competency guidelines for electrophysiological studies or catheter ablation</b>	<b>Yes</b>
Sub-specialty in Cardiac Electrophysiology	

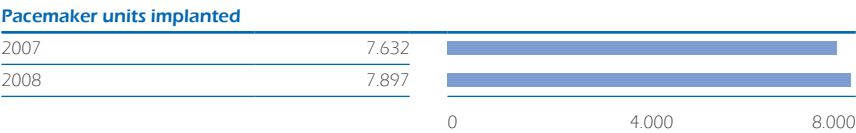
<b>Required period of training to perform implantations</b>	<b>2 years</b>
---	----------------

<b>Training centres availability</b>	
Pacemaker	19
ICD implantation	5
Electrophysiological studies and catheter ablation	5
CRT implantation	5
Atrial fibrillation ablation	4

<b>Number of medical faculties</b>	<b>7</b>
------------------------------------	----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>25%</b>
--	------------

## 5. Pacemakers







### Pacemaker units implanted and number of implanting centres

	2007	
Implanting centres	40	
New implants	not available	
Replacements	not available	
	2008	
Implanting centres	41	
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

	2007	
Implanting centres	20	
CRT pacemaker	96	<div></div>
CRT ICD	289	<div></div>
	2008	
Implanting centres	21	
CRT pacemaker	117	<div></div>
CRT ICD	329	<div></div>

0 200 400

### Specialty performing implants

Cardiologists	99%
Surgeons	1%

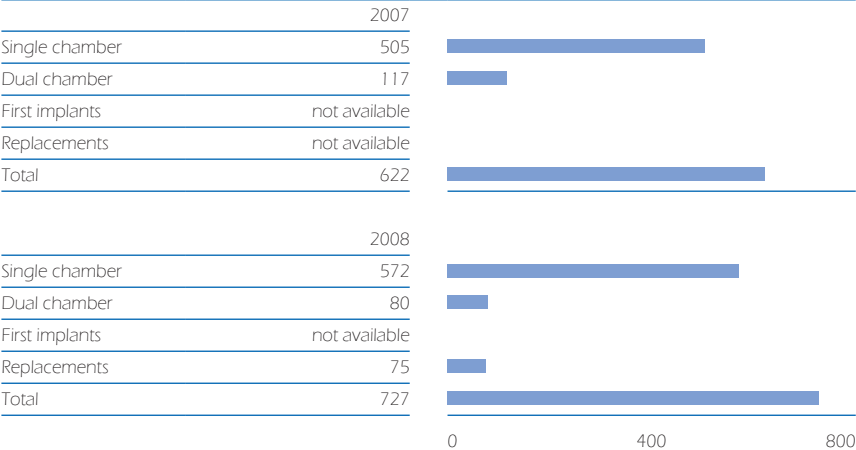


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

20

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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 checked="" type="checkbox"/>
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

	2007	2008
Number of ablations performed	1.480	1.594
Mean number (ablations/centres)	93	100
Number of AF ablations	150	233



# 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 checked="" type="checkbox"/>	<input 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle





# REPUBLIC OF MOLDOVA

There will be information in the next edition.









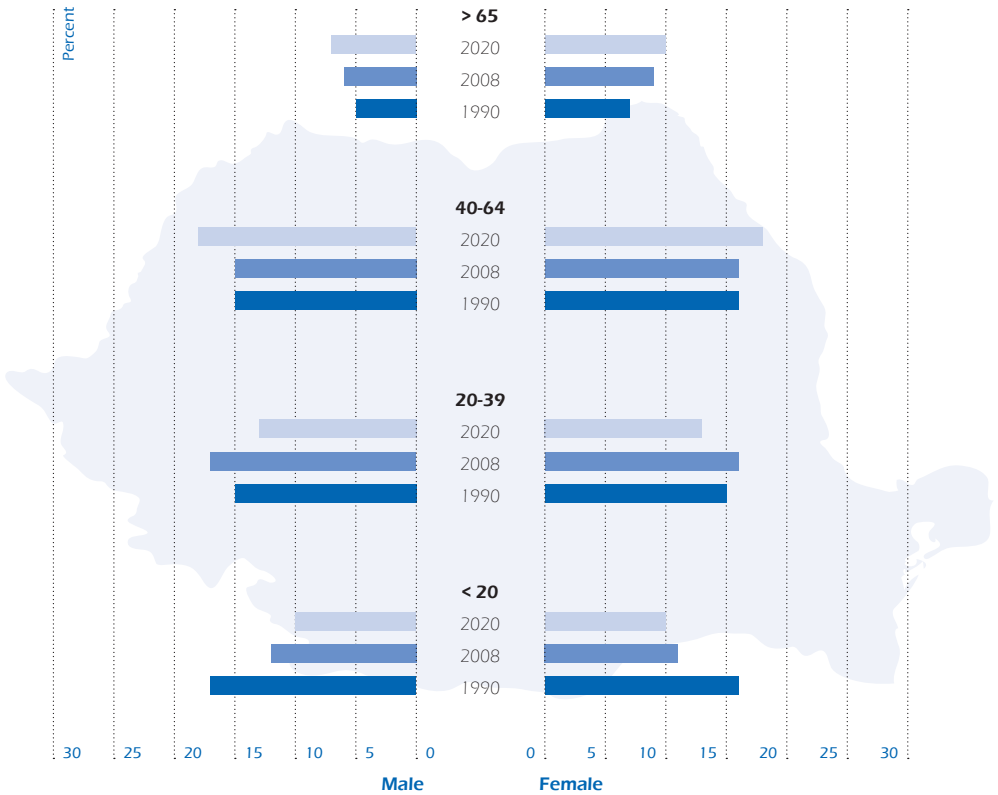
# ROMANIA





# 1. Statistics

Age pyramid for Romania







### Healthcare data

Hospitals (per 100.000 population)	1,94	2006
Beds (per 100.000 population)	654,29	2006
Number of physicians	41.455	2006
Density of physicians (per 1.000 population)	1,92	2006
Number of nurses	85.785	2006
Density of nurses (per 1.000 population)	3,97	2006

### Population by age and sex

	Male	Female	Total
2020	10.508.310	11.139.718	21.648.028
2008	10.834.904	11.411.958	22.246.862
1990	11.203.286	11.593.741	22.797.027

### Economic information

Gross domestic product (U.S dollar-billions)	213.891*	2008
Gross domestic product per capita	9.953,33*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	30%
2008	not available

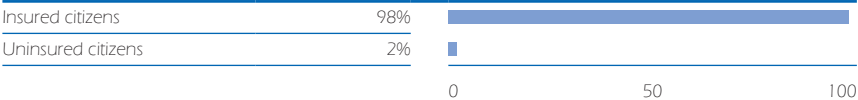
## 3. Healthcare System

The adoption of the Law on Social Health Insurance in 1997 initiated the transformation of the Romanian healthcare 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.

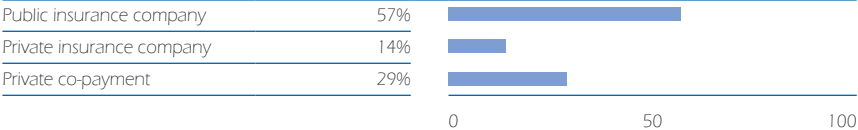
### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens



### 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 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 to perform EP** 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



<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

**Training centres availability**

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

<b>Number of medical faculties</b>	<b>11</b>
------------------------------------	-----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>100%</b>
--	-------------

**5. Pacemakers**

**Pacemaker units implanted**

2007	1.969	<div></div>
2008	2.348	<div></div>
		01.3002.600

**Pacemaker units implanted and number of implanting centres**

2007		
Implanting centres	17	
New implants	not available	
Replacements	not available	
2008		
Implanting centres	18	
New implants	not available	
Replacements	not available	

**Specialty performing implants**

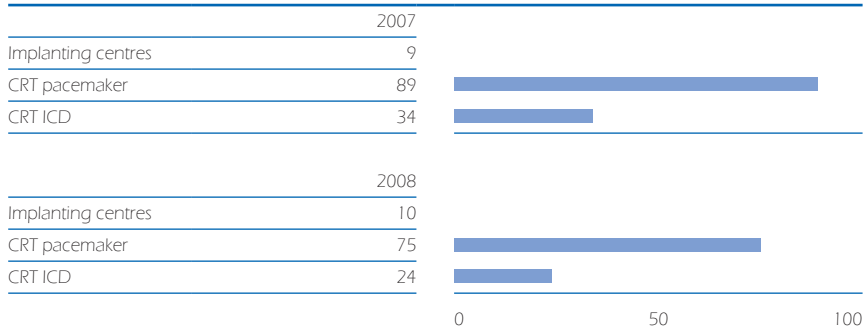
Cardiologists	100%
Surgeons	0%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

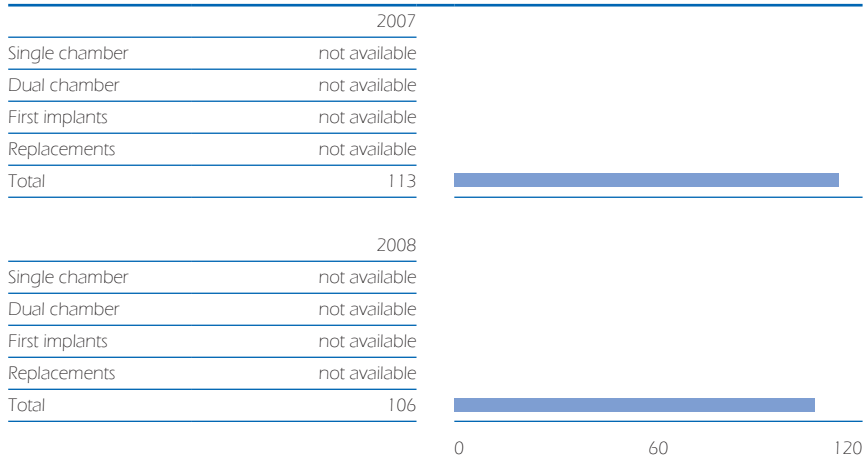
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

12

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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

10

	2007	2008
Number of ablations performed	550	780
Mean number (ablations/centres)	not available	70
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 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

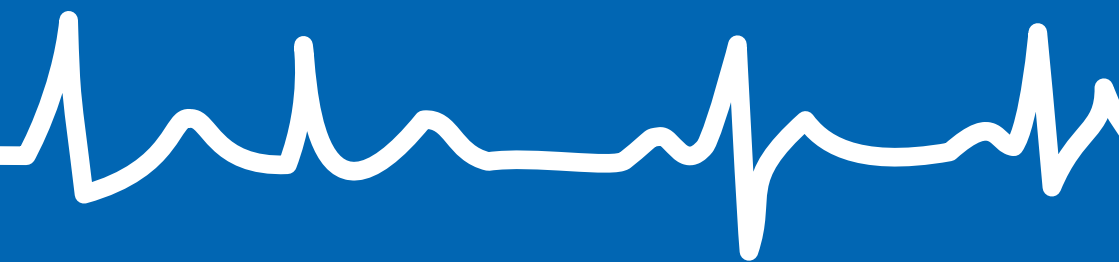
5 = great obstacle







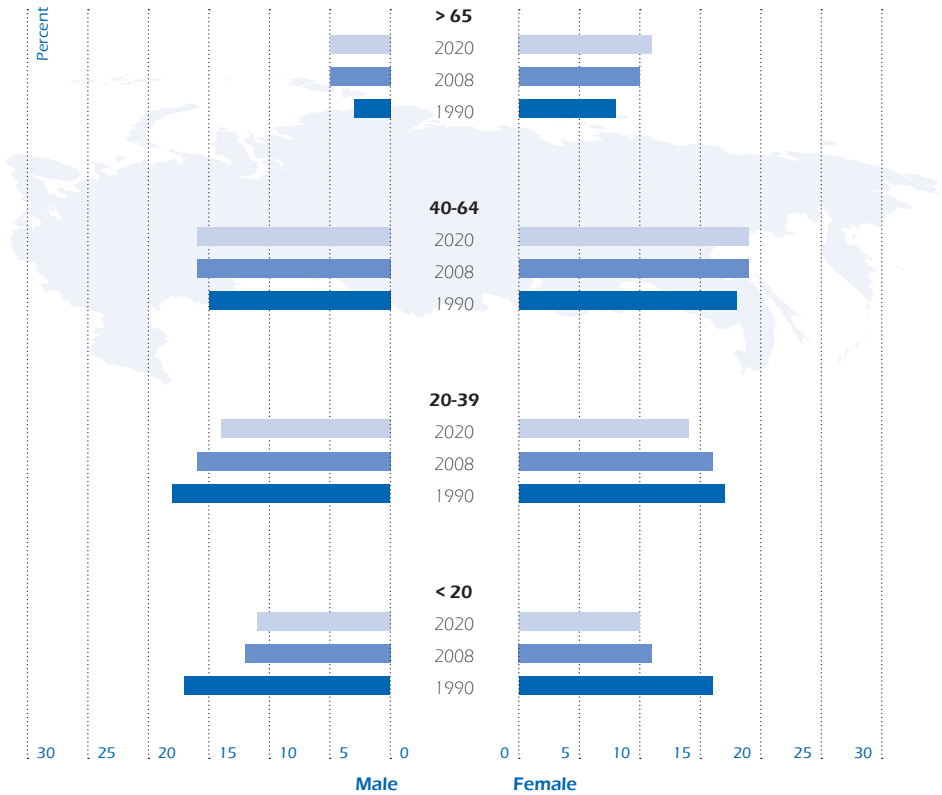
# RUSSIAN FEDERATION





# 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
Number of physicians	614.183	2006
Density of physicians (per 1.000 population)	4,31	2006
Number of nurses	1.148.755	2006
Density of nurses (per 1.000 population)	8,06	2006

### Population by age and sex

	Male	Female	Total
2020	60.294.465	71.947.652	132.242.117
2008	64.928.065	75.774.029	140.702.094
1990	69.231.611	78.741.465	147.973.076

### Economic information

Gross domestic product (U.S dollar-billions)	1.778.693*	2008
Gross domestic product per capita	12.578,52*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	1.460 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	50,3%
2008	not available

## 3. Healthcare System

National and Private healthcare systems.

### Basic insurance availability

No

### Percentage of insured and uninsured citizens

Insured citizens	0%
Uninsured citizens	0%

### Distribution of insurance modality

Public insurance company	0%
Private insurance company	0%
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 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 to perform EP** 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

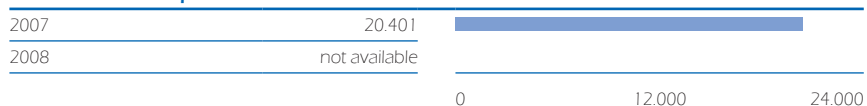
not available

### Percentage of academic facilities among practicing EP and implant centres

not available

## 5. Pacemakers

### Pacemaker units implanted



### Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	110
New implants	not available
Replacements	not available
2008	
Implanting centres	not available
New implants	not available
Replacements	not available

### Specialty performing implants

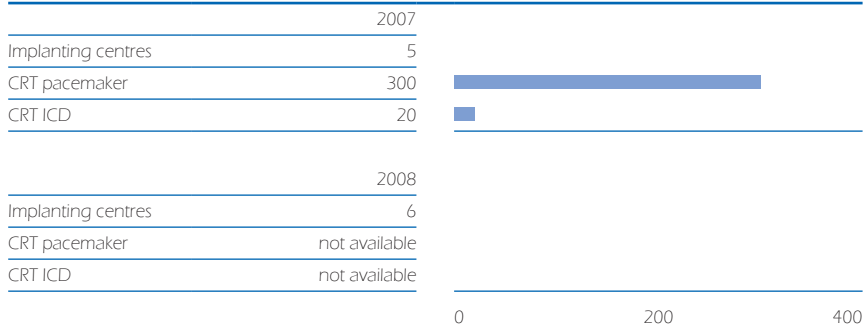
Cardiologists	70%
Surgeons	30%





## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

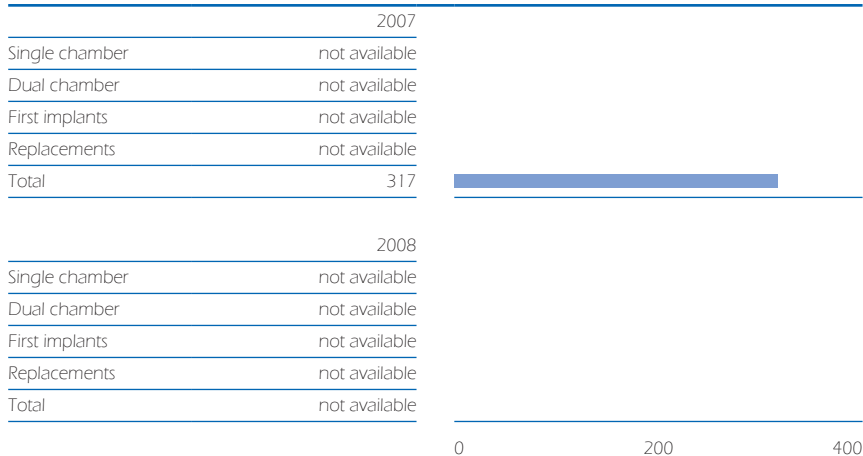
Cardiologists	70%
Surgeons	30%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

39

### ICD units implanted and number of implanting centres



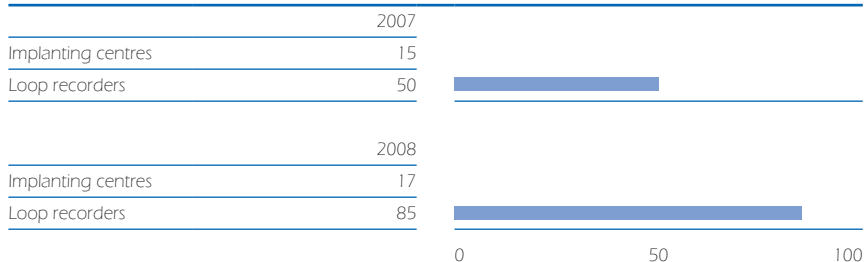


### Specialty performing implants

Cardiologists	70%
Surgeons	30%

## 8. Loop recorders

### Loop recorders implanted and number of implanting centres



### Specialty performing implants

Cardiologists	40%
Surgeons	60%

## 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"/>

### 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

	2007	2008
Number of ablations performed	9.022	not available
Mean number (ablations/centres)	158	not available
Number of AF ablations	1.426	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 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"/>

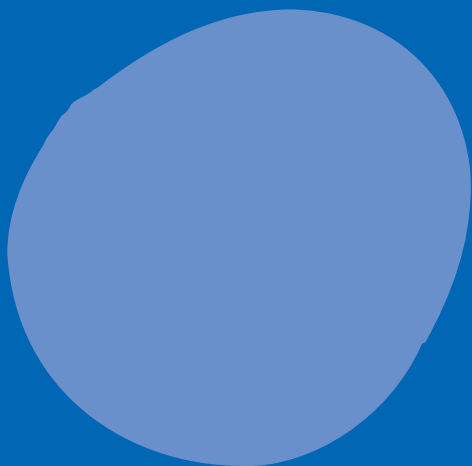
1 = no obstacle

5 = great obstacle









# SAN MARINO

There will be information in the next edition.









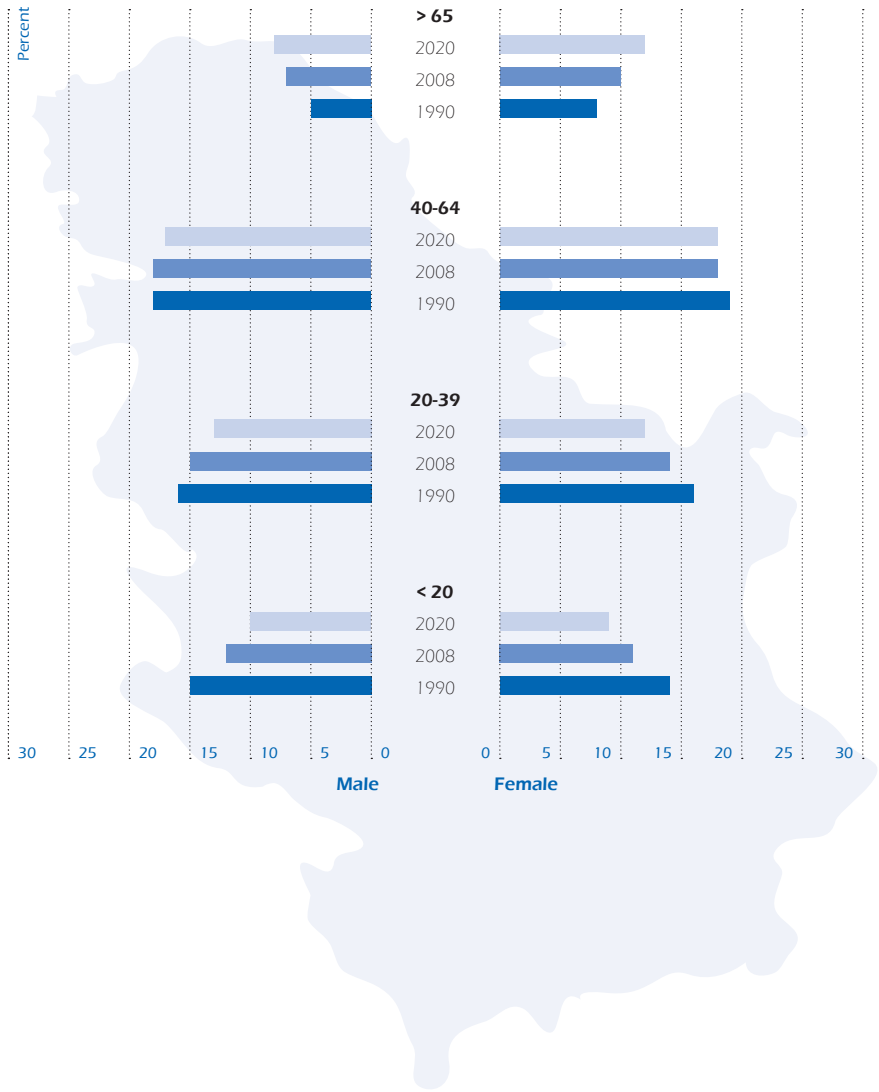
# SERBIA





# 1. Statistics

## Age pyramid for Serbia





### Healthcare data

Hospitals (per 100.000 population)	1,4	2007
Beds (per 100.000 population)	540,26	2007
Number of physicians	20.013	2007
Density of physicians (per 1.000 population)	2,71	2007
Number of nurses	41.144	2007
Density of nurses (per 1.000 population)	5,57	2007

### Population by age and sex

	Male	Female	Total
2020	3.417.676	3.594.489	7.012.165
2008	3.615.651	3.798.231	7.413.882
1990	3.825.272	3.961.125	7.786.397

### Economic information

Gross domestic product (U.S dollar-billions)	52.183*	2008
Gross domestic product per capita	7.054,06*	2008
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

2007	not available
2008	304 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

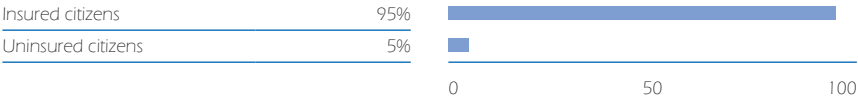
2007	not available
2008	not available

## 3. Healthcare System

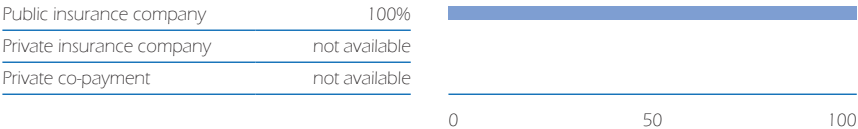
The National healthcare system in Serbia is provided through an established network of health centers and health stations (primary care). As a secondary and tertiary care, general hospitals, university clinical centers and specialised institutions are providing services. Private healthcare is not incorporated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

### 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 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

WG on Cardiac Pacing gives the suggestion on the necessity for new pacing centers in country to the Ministry of Health for the approval

#### 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



Training centres availability

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

Number of medical faculties

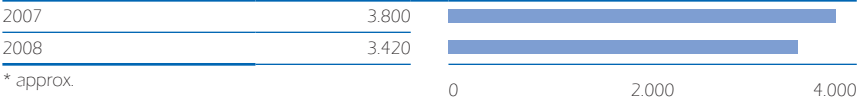
3

Percentage of academic facilities among practicing EP and implant centres

75%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	16
New implants	not available
Replacements	not available
2008	
Implanting centres	16
New implants	not available
Replacements	not available

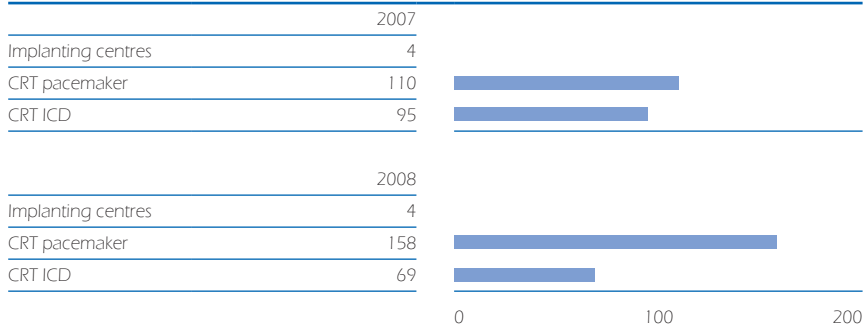
Specialty performing implants

Cardiologists	95%
Surgeons	5%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

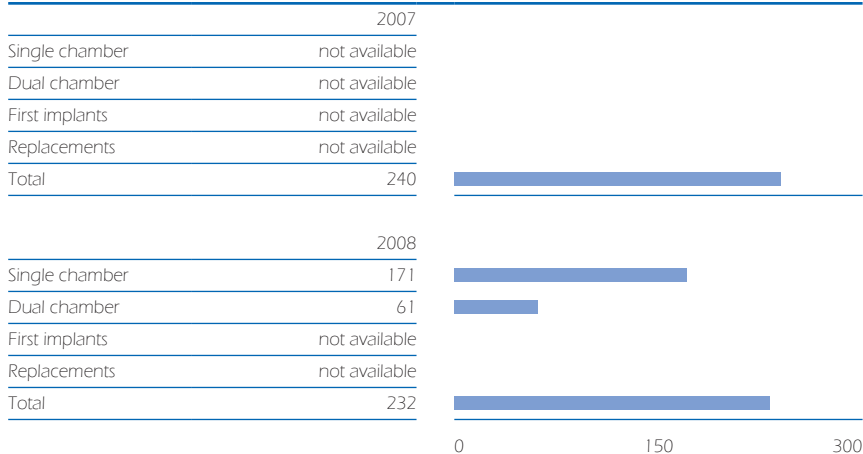
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

5

### ICD units implanted and number of implanting centres



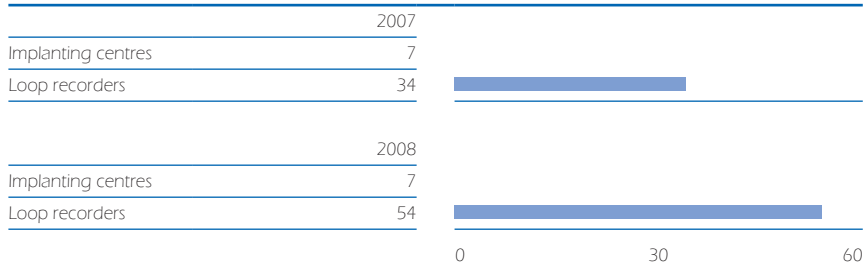


### Specialty performing implants

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"/>

### 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

	2007	2008
Number of ablations performed	650	610
Mean number (ablations/centres)	217	203
Number of AF ablations	not available	55

## 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

1 = no obstacle

5 = great obstacle







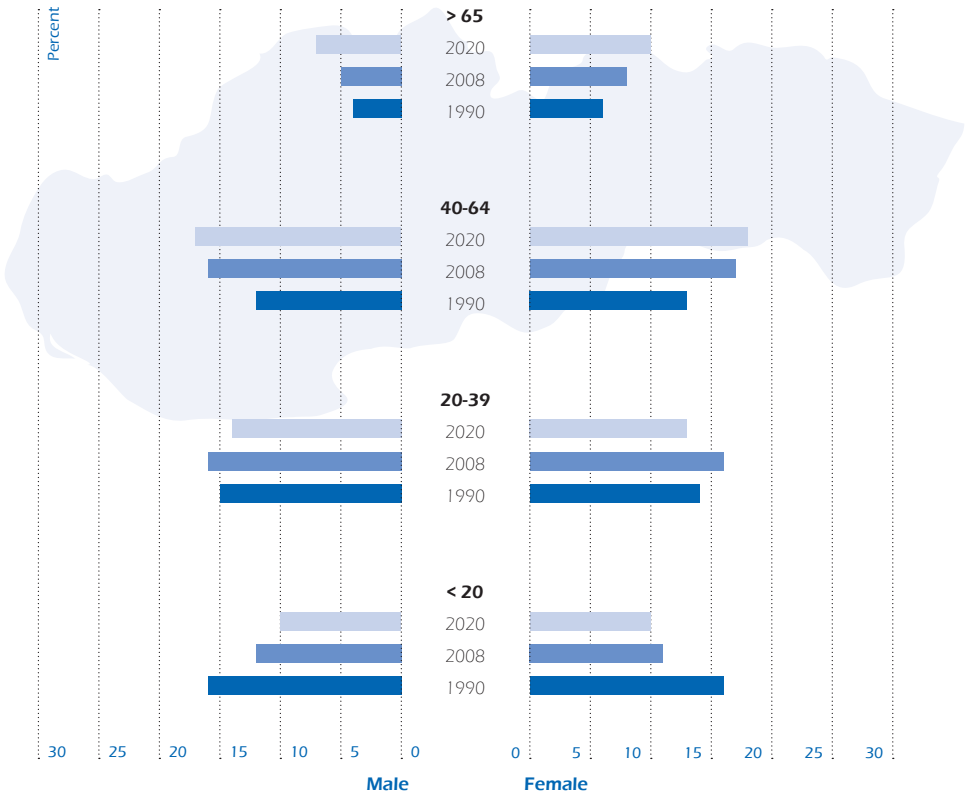
# SLOVAKIA





# 1. Statistics

## Age pyramid for Slovakia







### Healthcare data

Hospitals (per 100.000 population)	2,65	2007
Beds (per 100.000 population)	678,84	2007
Number of physicians	16.868	2004
Density of physicians (per 1.000 population)	3,13	2004
Number of nurses	34.038	2005
Density of nurses (per 1.000 population)	6,32	2005

### Population by age and sex

	Male	Female	Total
2020	2.660.218	2.833.910	5.494.128
2008	2.645.982	2.809.425	5.455.407
1990	2.577.022	2.704.588	5.281.610

### Economic information

Gross domestic product (U.S dollar-billions)	100.569*	2008
Gross domestic product per capita	18.584,56*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	485 per 100.000 citizens
2008	461 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

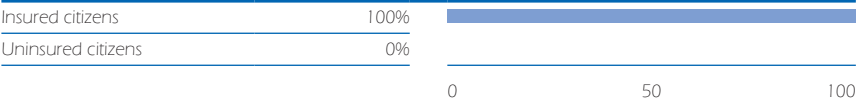
2007	53%
2008	53%

## 3. Healthcare System

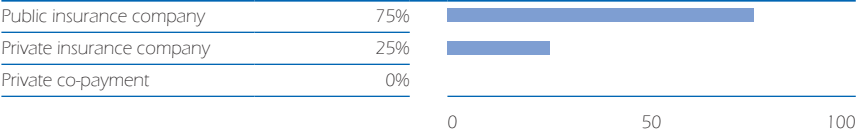
National health system with universal health insurance coverage, major hospitals (incl. university hospitals) owned and operated by government, regional hospitals mostly non-profit organizations or privately owned. General practitioners and most specialists work in private offices (on the basis of agreements with insurance companies), no (or very little) cash contribution from the patients. There is no patient financial contribution for arrhythmia devices or interventions.

### 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"/>

## 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  
 Certified clinical activity in diagnostic and interventional electrophysiology

#### 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

Cardiologist

#### Specialty required for ICD or pacemaker implants

Yes

Cardiologist, surgeon



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

Yes

Slovak Medical University, Faculty of medical specialty studies, Chair for Cardiology and Angiology  
(elaborated in cooperation with Slovak Heart Rhythm Association)

**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**

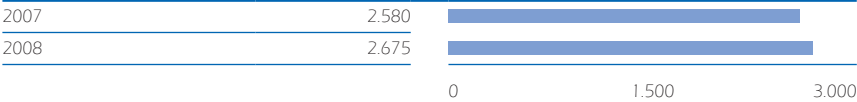
4

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

50%

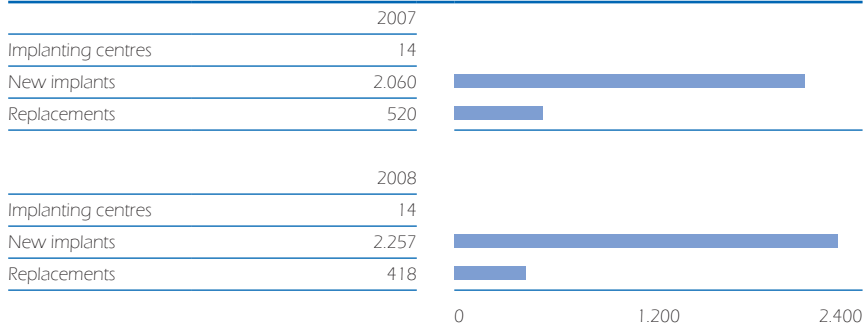
**5. Pacemakers**

**Pacemaker units implanted**





### Pacemaker units implanted and number of implanting centres

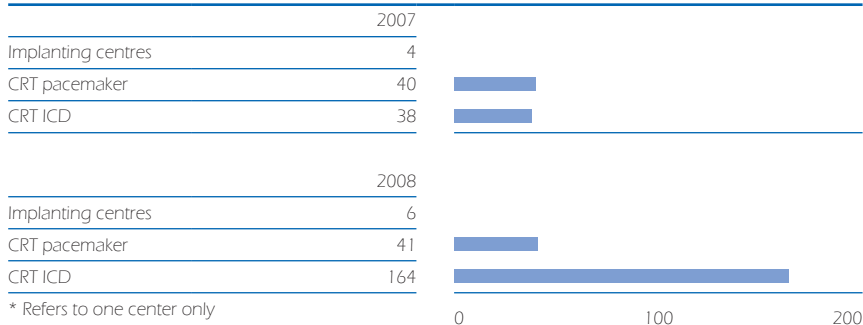


### Specialty performing implants

Cardiologists	75%
Surgeons	25%

## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres





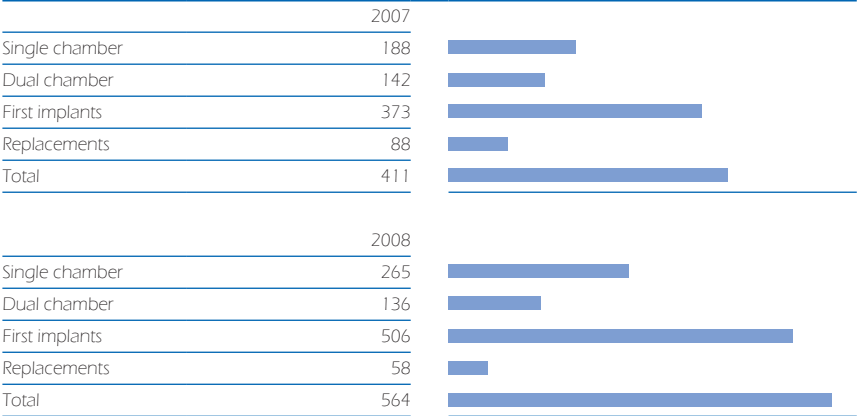
Specialty performing implants

Cardiologists	100%
Surgeons	0%

7. Implantable Cardiac Defibrillator

Number of implanting centres	4
------------------------------	---

ICD units implanted and number of implanting centres



\* Refers to one center only

Specialty performing implants

Cardiologists	75%
Surgeons	25%



## 8. Loop recorders

### Loop recorders implanted and number of implanting centres

	2007	
Implanting centres	3	
Loop recorders	not available	
	2008	
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"/>
Dr.Gabriela KALISKA	

### 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

	2007	2008
Number of ablations performed	640	878
Mean number (ablations/centres)	160	220
Number of AF ablations	109	118

## 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



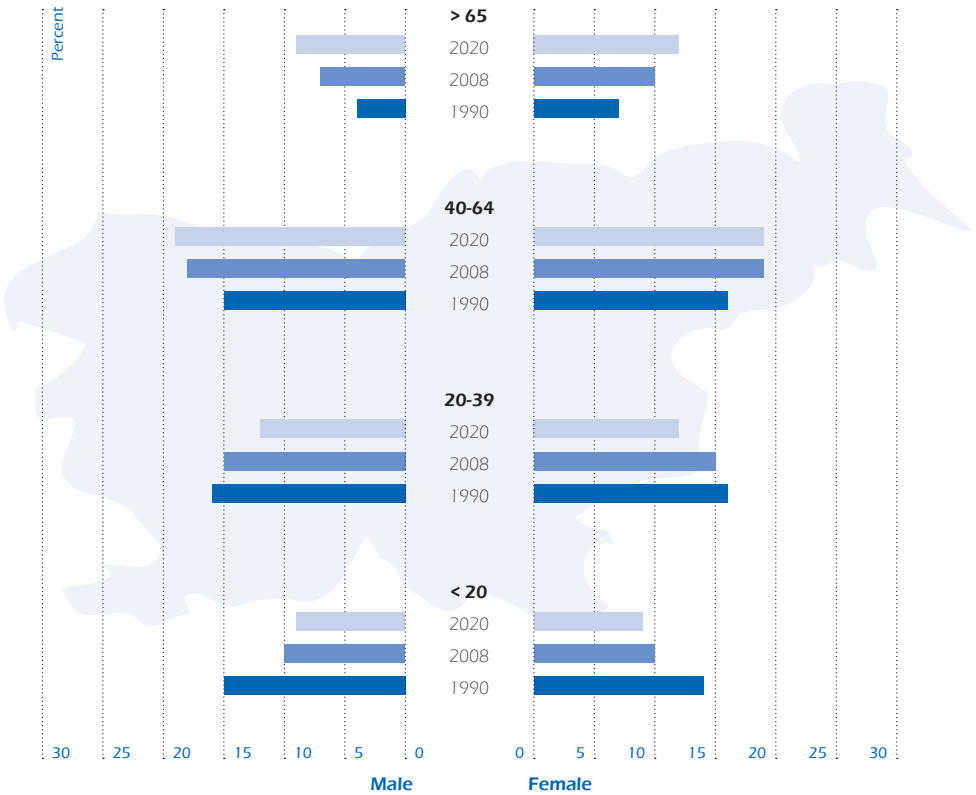
# SLOVENIA





# 1. Statistics

## Age pyramid for Slovenia







### Healthcare data

Hospitals (per 100.000 population)	1,44	2007
Beds (per 100.000 population)	466,18	2007
Number of physicians	4.766	2006
Density of physicians (per 1.000 population)	2,37	2006
Number of nurses	15.361	2006
Density of nurses (per 1.000 population)	7,65	2006

### Population by age and sex

	Male	Female	Total
2020	949.486	1.001.872	1.951.358
2008	977.688	1.030.023	2.007.711
1990	970.157	1.029.323	1.999.480

### Economic information

Gross domestic product (U.S. dollar-billions)	57.013*	2008
Gross domestic product per capita	28.328,22*	2008
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

2007	259,2 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	36%
2008	not available

## 3. Healthcare System

In Slovenia, there is a Public healthcare system. The National health insurance institute is an autonomous fund.

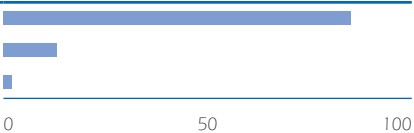
### Basic insurance availability

No

### Percentage of insured and uninsured citizens

Insured citizens	not available
Uninsured citizens	not available

### Distribution of insurance modality

Public insurance company	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 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 to perform EP** No

**National Society supporting EHRA accreditation system** No

**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**

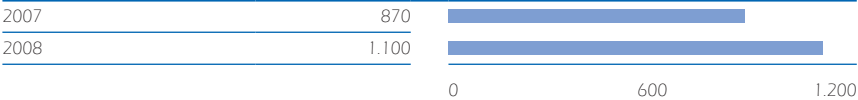
Pacemaker	2
ICD implantation	2
Electrophysiological studies and catheter ablation	2
CRT implantation	2
Atrial fibrillation ablation	2

**Number of medical faculties** 2

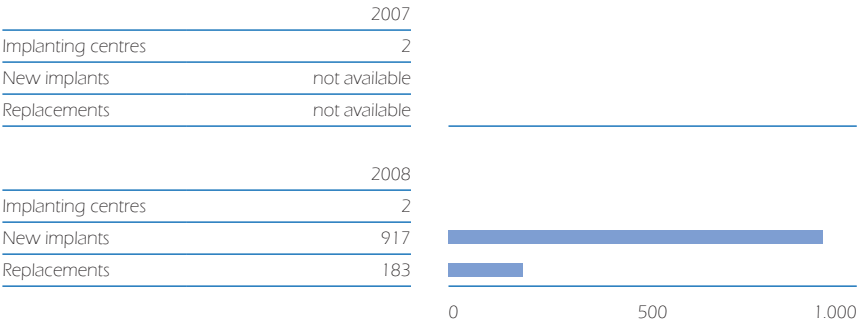
**Percentage of academic facilities among practicing EP and implant centres** 100%

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



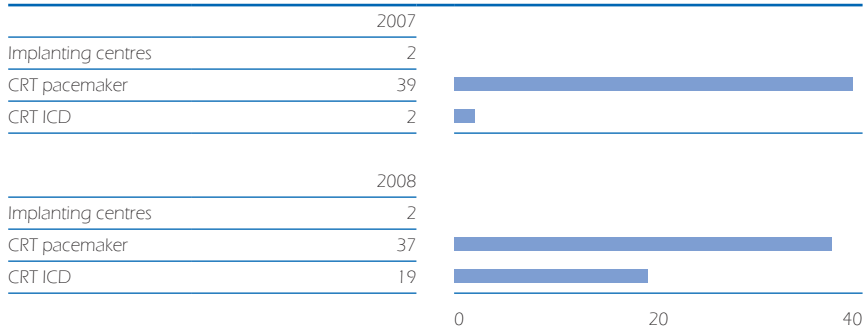
**Specialty performing implants**

Cardiologists	0%
Surgeons	100%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

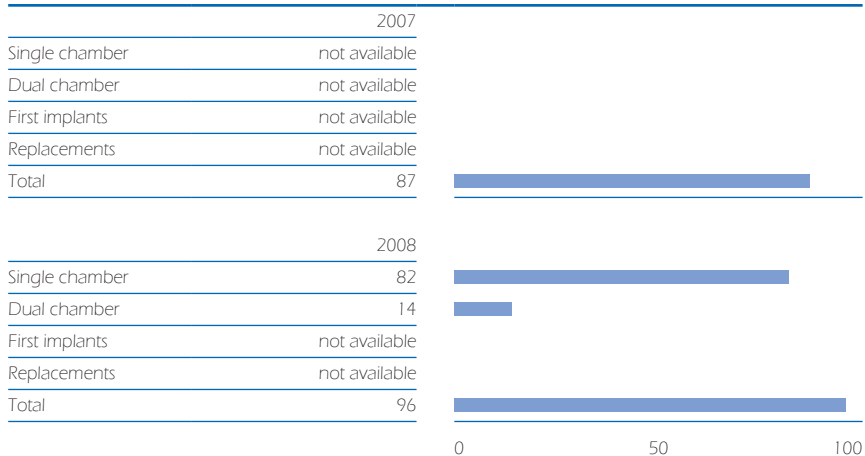
Cardiologists	95%
Surgeons	5%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

2

### ICD units implanted and number of implanting centres



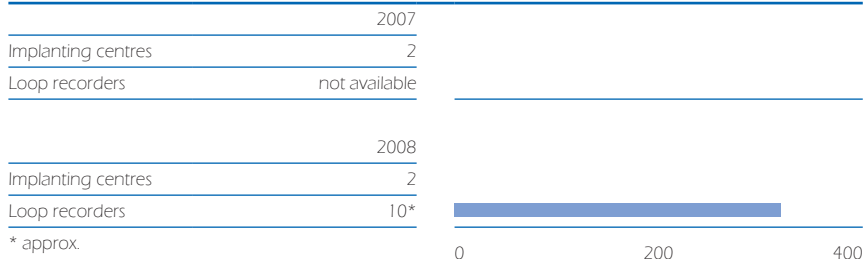


### Specialty performing implants

Cardiologists	31%
Surgeons	69%

## 8. Loop recorders

### Loop recorders implanted and number of implanting centres



### Specialty performing implants

Cardiologists	50%
Surgeons	50%

## 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

Yes

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





## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

2

	2007	2008
Number of ablations performed	262	296
Mean number (ablations/centres)	131	148
Number of AF ablations	not available	50

## 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







# 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
Number of physicians	163.800	2007
Density of physicians (per 1.000 population)	3,76	2007
Number of nurses	322.600	2006
Density of nurses (per 1.000 population)	7,44	2006

### Population by age and sex

	Male	Female	Total
2020	19.571.227	20.548.664	40.119.891
2008	19.784.905	20.706.146	40.491.051
1990	19.350.660	20.110.758	39.461.418

### Economic information

Gross domestic product (U.S dollar-billions)	1.683.232*	2008
Gross domestic product per capita	36.970,46*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	204,1 per 100.000 citizens
2008	203,7 per 100.000 citizens

### Proportion cardiac mortality over total mortality of the country

2007	32,1%
2008	31,5%

## 3. Healthcare System

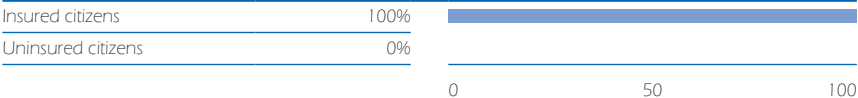
Spain's healthcare system is based on a national health system with autonomous community management of health related resources. Private insurance companies offer complementary healthcare coverage. The autonomous community decide how to organise and deliver health services and implement the national legislation.

(Highlights on health. WHO 2004)

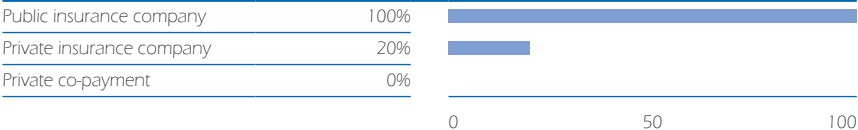
### Basic insurance availability

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 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 to perform EP

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



<b>Official national competency guidelines for electrophysiological studies or catheter ablation</b>	<b>Yes</b>
Sociedad Española de Cardiología	

<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

<b>Training centres availability</b>	
Pacemaker	43
ICD implantation	36
Electrophysiological studies and catheter ablation	37
CRT implantation	31
Atrial fibrillation ablation	14

<b>Number of medical faculties</b>	<b>26</b>
------------------------------------	-----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>50%</b>
--	------------

### 5. Pacemakers

<b>Pacemaker units implanted</b>	
2007	30.090
2008	32.000*
* approx.	

Year	Units Implanted
2007	30,090
2008	32,000



### Pacemaker units implanted and number of implanting centres

	2007
Implanting centres	105
New implants	not available
Replacements	not available

	2008
Implanting centres	114
New implants	not available
Replacements	not available

### Specialty performing implants

Cardiologists	75%
Surgeons	20%
Other	5%

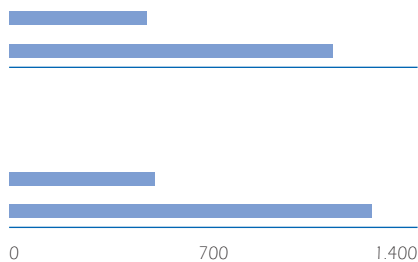
## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres

	2007
Implanting centres	37
CRT pacemaker	473
CRT ICD	1,108

	2008
Implanting centres	37
CRT pacemaker	500*
CRT ICD	1,244

\* approx.





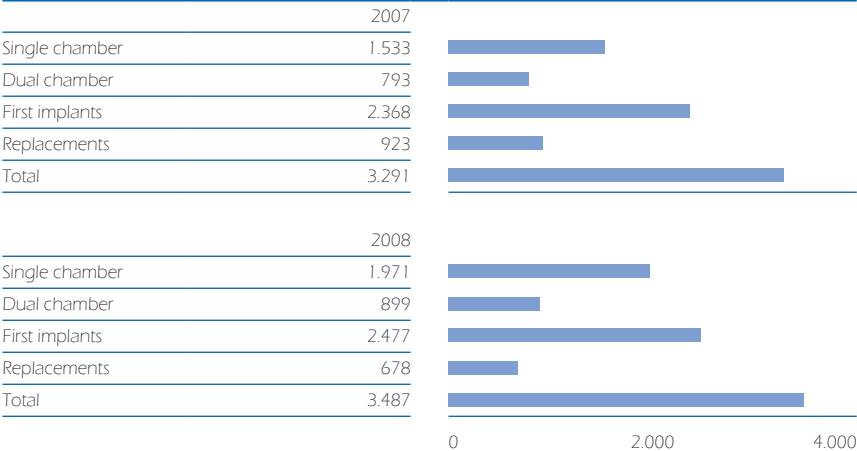
Specialty performing implants

Cardiologists	98%
Surgeons	2%

7. Implantable Cardiac Defibrillator

Number of implanting centres	114
------------------------------	-----

ICD units implanted and number of implanting centres



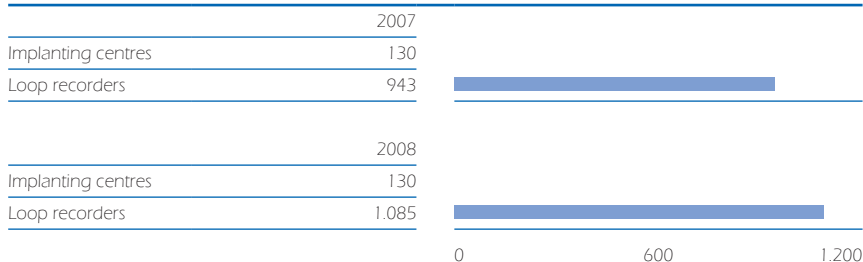
Specialty performing implants

Cardiologists	70%
Surgeons	25,3%
Other	4,7%



## 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"/>

### 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)



## 10. Interventional electrophysiology

**Number of performing catheter ablation centres** **50**

	2007	2008
Number of ablations performed	7.062	7.063
Mean number (ablations/centres)	141	146
Number of AF ablations	659	622

## 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 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

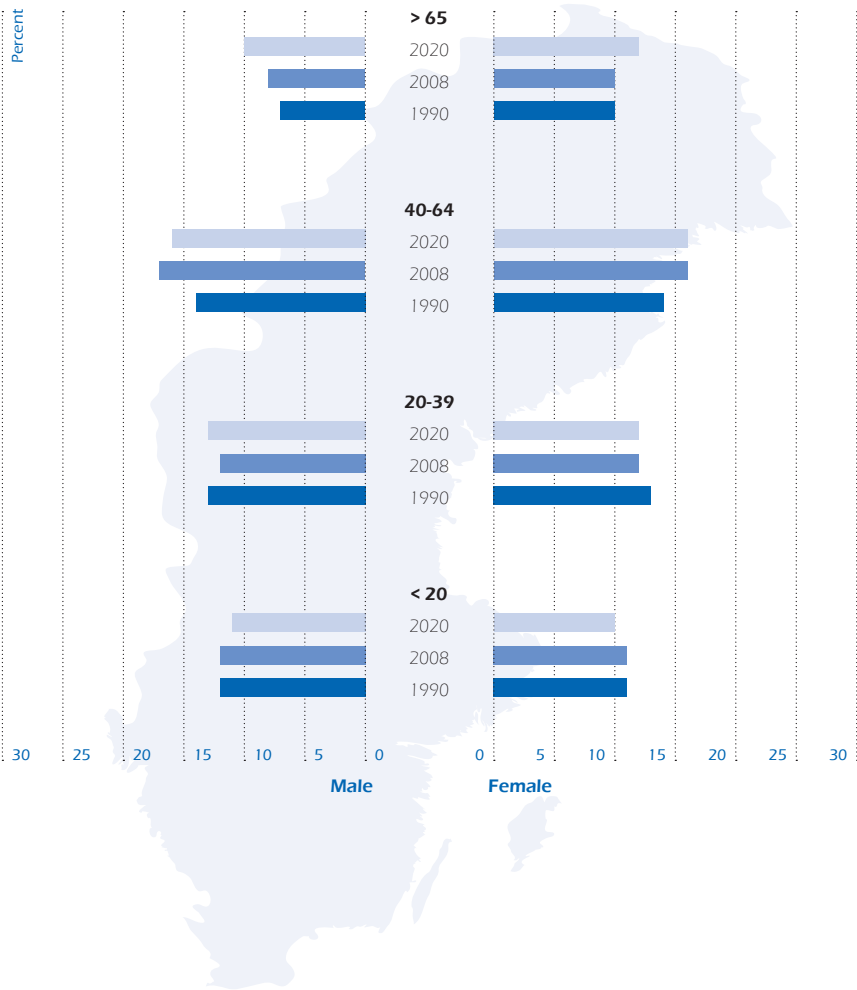






# 1. Statistics

## Age pyramid for Sweden





### Healthcare data

Hospitals (per 100.000 population)	0,9	2004
Beds (per 100.000 population)	3,7	2004
Number of physicians	32.495	2006
Density of physicians (per 1.000 population)	3,58	2006
Number of nurses	98.378	2006
Density of nurses (per 1.000 population)	10,83	2006

### Population by age and sex

	Male	Female	Total
2020	4.575.708	4.669.206	9.244.914
2008	4.482.758	4.562.631	9.045.389
1990	4.282.627	4.385.485	8.668.112

### Economic information

Gross domestic product (U.S dollar-billions)	512.889*	2008
Gross domestic product per capita	55.623,77*	2008
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

2007	423 per 100.000 citizens*
2008	not available
* 2006	

### Proportion cardiac mortality over total mortality of the country

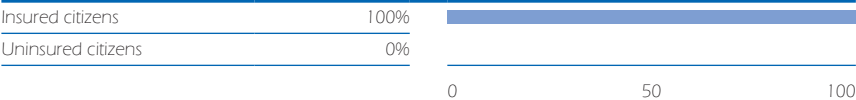
2007	34%*
2008	not available
* 2006	

## 3. Healthcare System

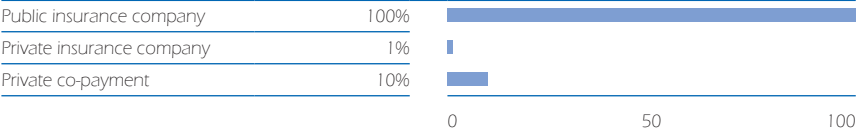
Sweden's health system is compulsory and tax based. It covers all Sweden's residents. Voluntary health insurance is very limited and normally provides only supplementary coverage. The healthcare system is region based, but publicly operated. There are three levels of organisation: national, regional and local. The National sets the fundamental objectives and assures it runs efficiently, the regional level provides and finance 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



#### 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 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 **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	7
ICD implantation	7
Electrophysiological studies and catheter ablation	6
CRT implantation	6
Atrial fibrillation ablation	6

Number of medical faculties	7
-----------------------------	---

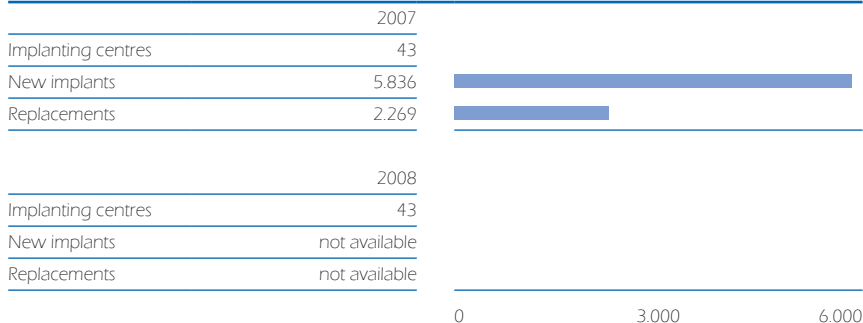
Percentage of academic facilities among practicing EP and implant centres	97%*
* EP: 97%; implant 36%	

### 5. Pacemakers

Pacemaker units implanted		
2007	8.098	<div></div>
2008	8.300*	<div></div>
* approx.		<div></div> <div>0</div> <div>5.000</div> <div>10.000</div>



### Pacemaker units implanted and number of implanting centres

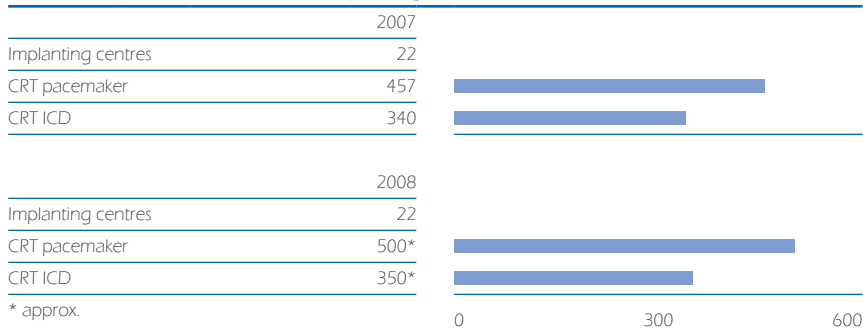


### Specialty performing implants

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%

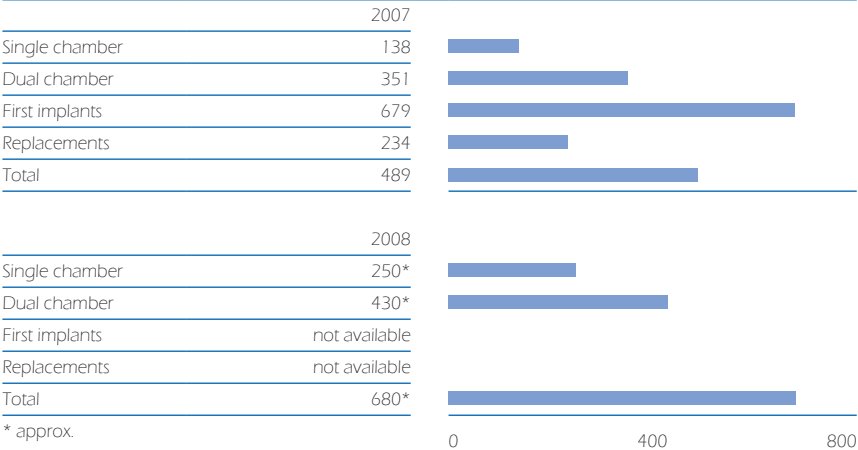


## 7. Implantable Cardiac Defibrillator

Number of implanting centres

15

### 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

	2007	
Implanting centres	not available	
Loop recorders	not available	

	2008	
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"/>

Swedish Pacemaker and ICD registry, National Ablation Registry

### Availability of a national quality insurance system or complication registry

No

Both registries 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

8

	2007	2008
Number of ablations performed	2.314	2.594
Mean number (ablations/centres)	289	324
Number of AF ablations	514	608



# 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 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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle



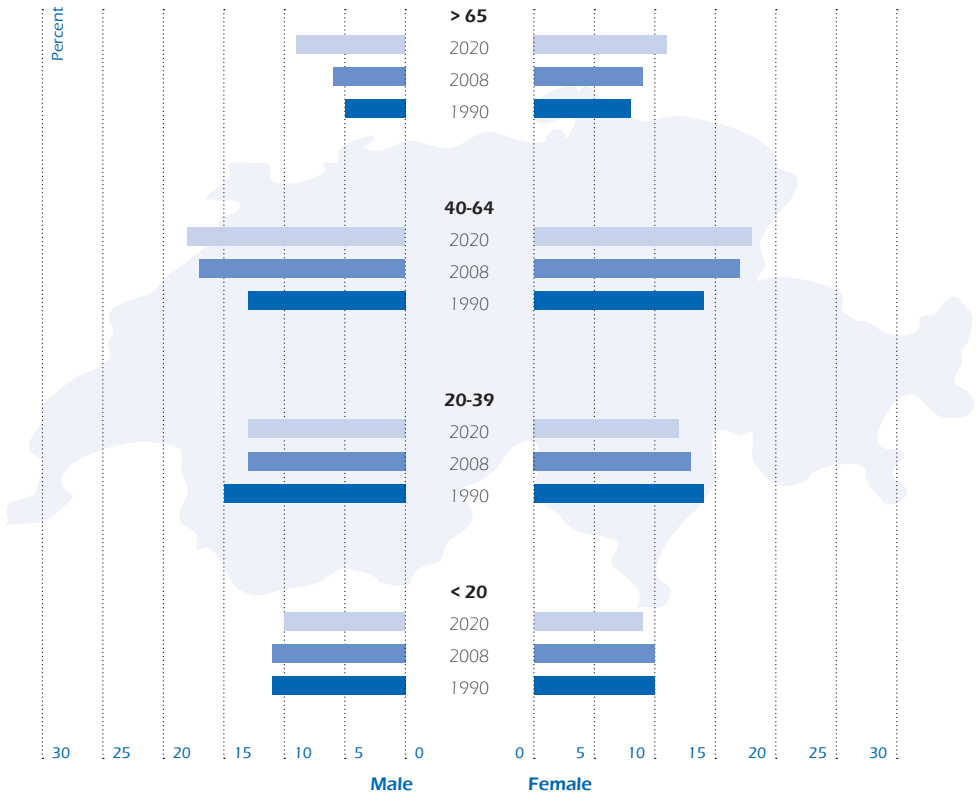
# SWITZERLAND





# 1. Statistics

## Age pyramid for Switzerland





### Healthcare data

Hospitals (per 100 000 population)	4,53	2005
Beds (per 100 000 population)	553,92	2005
Number of physicians	28.812	2006
Density of physicians (per 1000 population)	3,85	2006
Number of nurses	77.120	2002
Density of nurses (per 1000 population)	10,75	2002

### Population by age and sex

	Male	Female	Total
2020	3.810.745	3.939.991	7.750.736
2008	3.729.956	3.851.564	7.581.520
1990	3.414.936	3.505.626	6.920.562

### Economic information

Gross domestic product (U.S. dollar-billions)	492.553*	2008
Gross domestic product per capita	67.378,87*	2008
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

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country



2007	37,1%
2008	not available

## 3. Healthcare System




In Switzerland, there is a National insurance for congenital diseases/defects until the age of 20 years old.  
Private insurance companies are available in addition and after the age of 20 years old.

### 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	34%*	
Private insurance company	not available	
Private co-payment	66%	
* 17+ 17% taxpayers		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

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

**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

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



<b>Required period of training to perform implantations</b>	<b>No</b>
---	-----------

**Training centres availability**

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

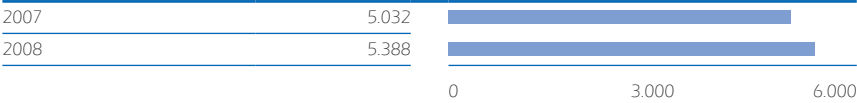
<b>Number of medical faculties</b>	<b>5</b>
------------------------------------	----------

<b>Percentage of academic facilities among practicing EP and implant centres</b>	<b>8-50%</b>
--	--------------

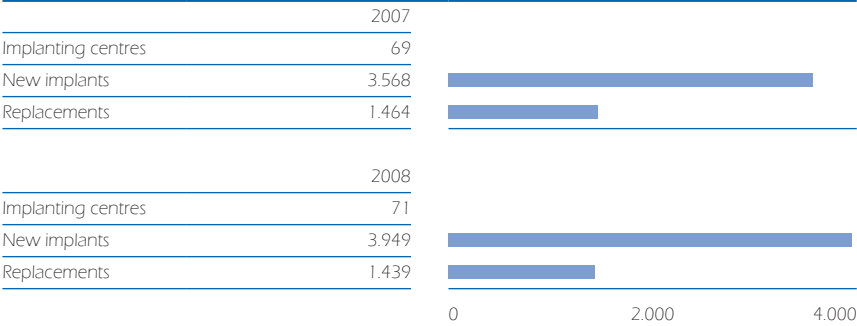
Depending on which devices and ablation procedures

**5. Pacemakers**

**Pacemaker units implanted**



**Pacemaker units implanted and number of implanting centres**



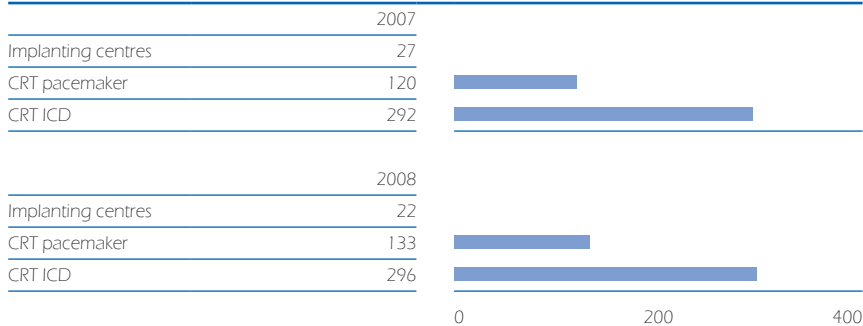
**Specialty performing implants**

Cardiologists	95%
Surgeons	5%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

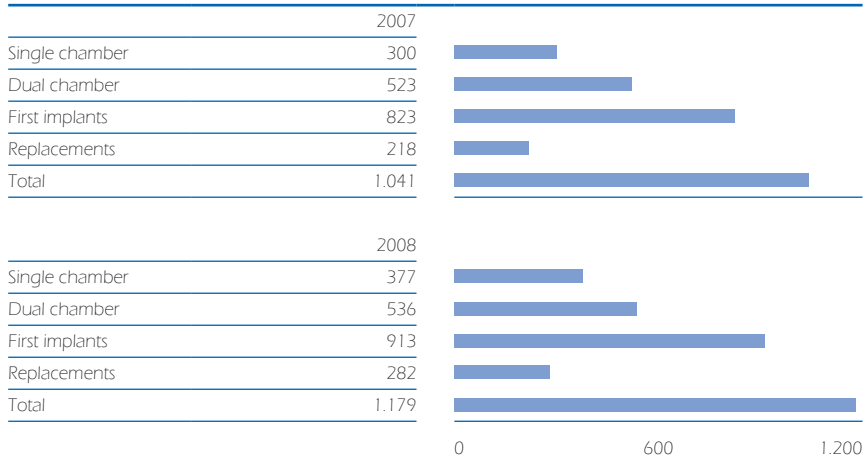
Cardiologists	99%
Surgeons	1%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

**28**

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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

Yes

Swissmedic (national institution)



## 10. Interventional electrophysiology

### Number of performing catheter ablation centres

19

	2007	2008
Number of ablations performed	3.123	3.497
Mean number (ablations/centres)	173	184
Number of AF ablations	829	999

## 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 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 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









# SYRIA

There will be information in the next edition.









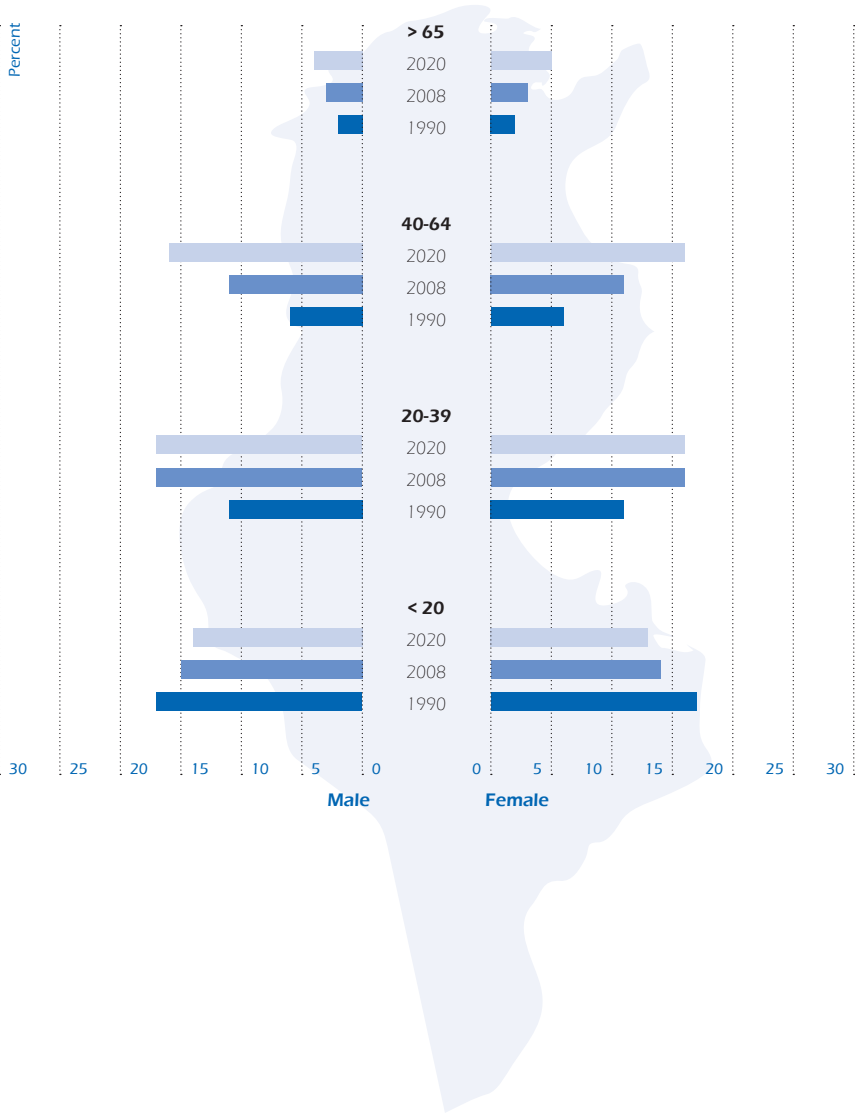
# TUNISIA





1. Statistics

Age pyramid for Tunisia





### Healthcare data

Hospitals (per 100.000 population)	1,76	2004
Beds (per 100.000 population)	190	2006
Number of physicians	13.330	2004
Density of physicians (per 1.000 population)	1,3	2004
Number of nurses	28.537	2004
Density of nurses (per 1.000 population)	2,9	2004

### Population by age and sex

	Male	Female	Total
2020	5.816.763	5.741.967	11.558.730
2008	5.229.757	5.153.820	10.383.577
1990	4.147.279	4.063.726	8.211.005

### Economic information

Gross domestic product (U.S dollar-billions)	41.769*	2008
Gross domestic product per capita	4.032,36*	2008
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

2007	437 per 100.000 citizens
2008	not available

### Proportion cardiac mortality over total mortality of the country

2007	23%
2008	not available

## 3. Healthcare System

National Health System

### Basic insurance availability

Yes

### Percentage of insured and uninsured citizens

Insured citizens	90%	<div><div></div></div>
Uninsured citizens	10%	<div><div></div></div>
		0 50 100

### Distribution of insurance modality

Public insurance company	80%	<div><div></div></div>
Private insurance company	15%	<div><div></div></div>
Private co-payment	5%	<div><div></div></div>
		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 checked="" type="checkbox"/>

\* Ablation of AF





### 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"/>
Reimbursement is not total for ablation of AF	

## 4. Education

### National accreditation availability

Device therapy	<input checked="" type="checkbox"/>
Invasive electrophysiology	<input checked="" type="checkbox"/>
CEC de Rythmologie et de Stimulation Cardiaque	

**National accreditation for physicians** Yes

**National accreditation for centres to perform EP** Yes

**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

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



Training centres availability

Pacemaker	15
ICD implantation	8
Electrophysiological studies and catheter ablation	7
CRT implantation	10
Atrial fibrillation ablation	1

Number of medical faculties

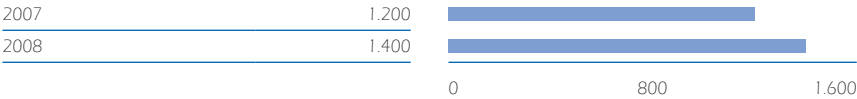
4

Percentage of academic facilities among practicing EP and implant centres

70%

5. Pacemakers

Pacemaker units implanted



Pacemaker units implanted and number of implanting centres

2007	
Implanting centres	8
New implants	not available
Replacements	not available
2008	
Implanting centres	8
New implants	not available
Replacements	not available

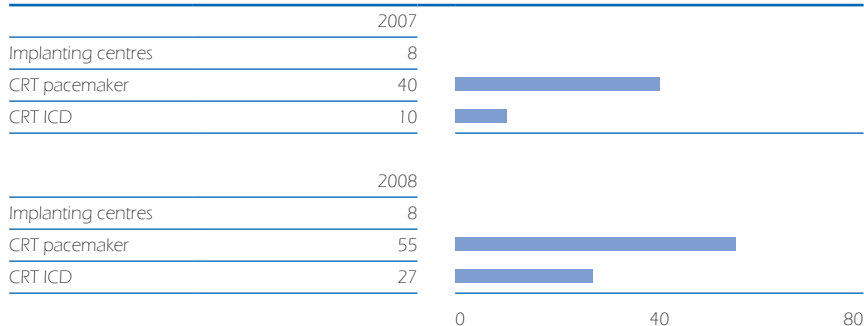
Specialty performing implants

Cardiologists	90%
Surgeons	10%



## 6. Cardiac resynchronization therapy devices

### CRT units implanted and number of implanting centres



### Specialty performing implants

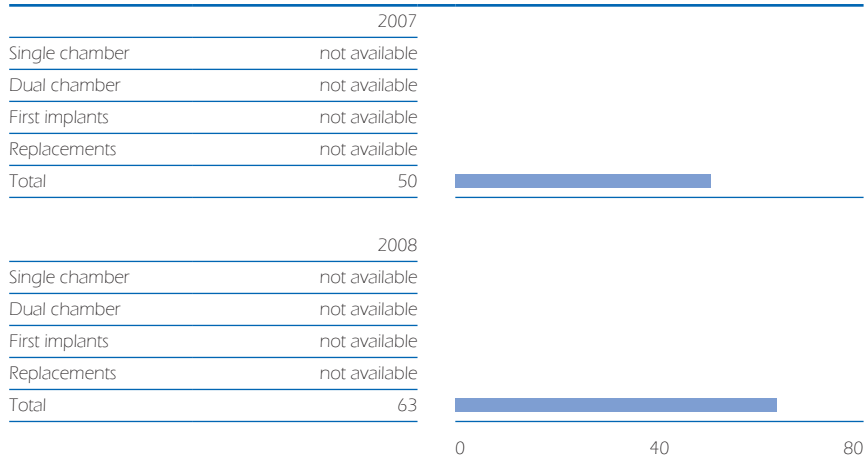
Cardiologists	100%
Surgeons	0%

## 7. Implantable Cardiac Defibrillator

### Number of implanting centres

8

### 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

2007	
Implanting centres	not available
Loop recorders	not available
2008	
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

7

	2007	2008
Number of ablations performed	400	450
Mean number (ablations/centres)	50	60
Number of AF ablations	0	17

## 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 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 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"/>

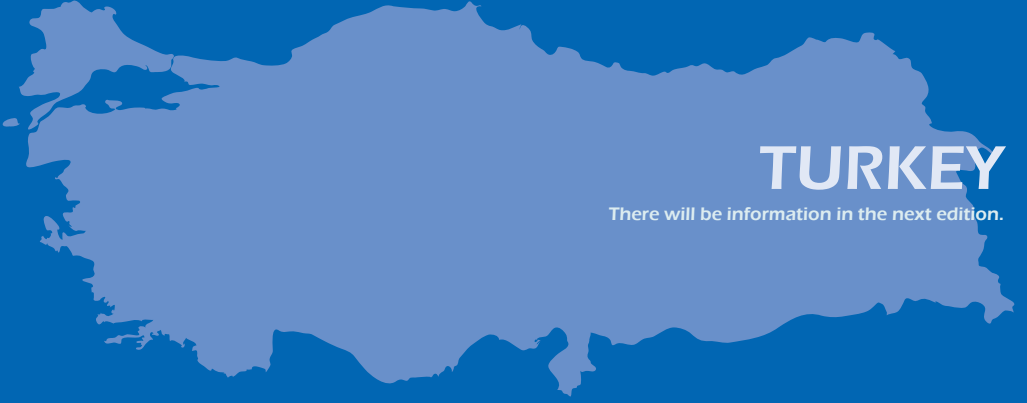
1 = no obstacle

5 = great obstacle









# TURKEY

There will be information in the next edition.











# UKRAINE

There will be information in the next edition.

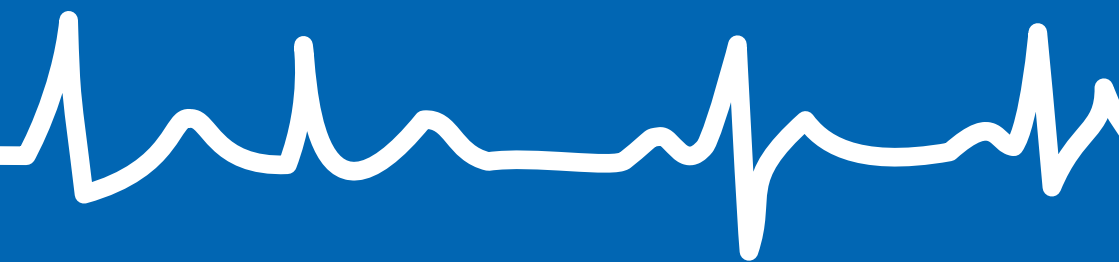








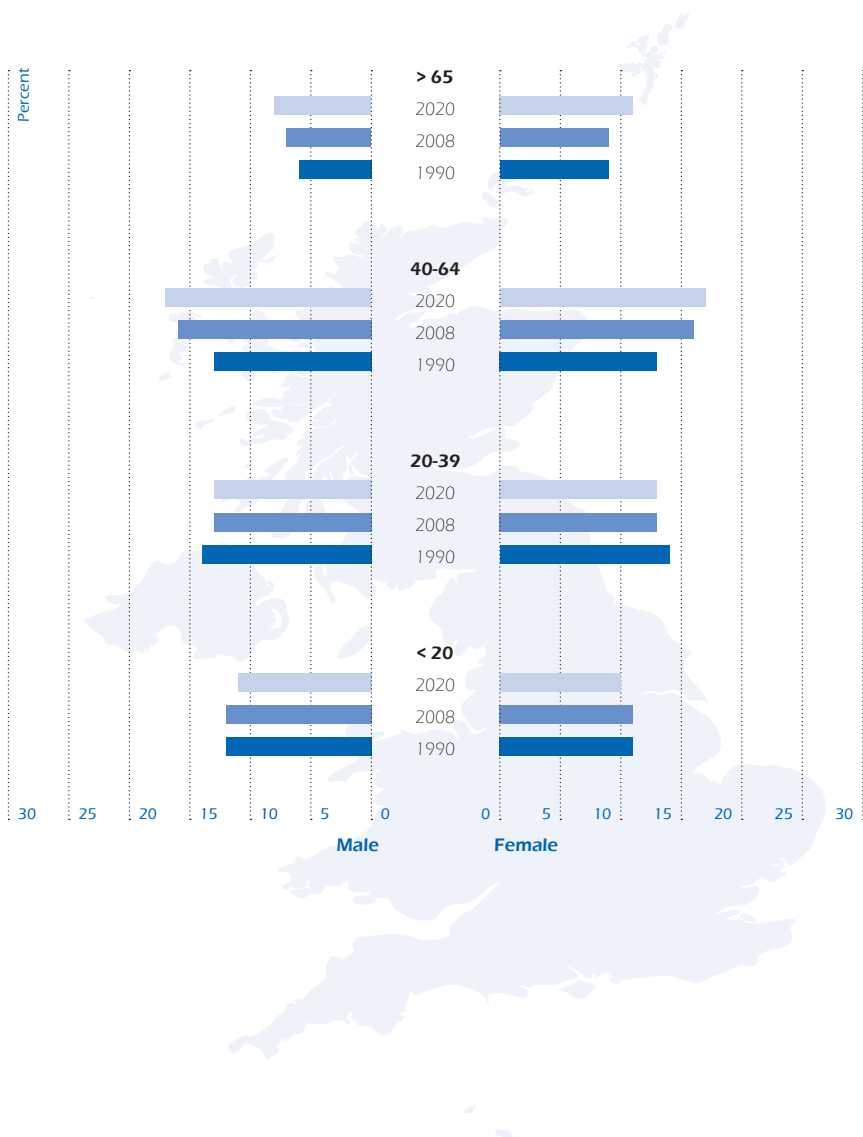
# UNITED KINGDOM





# 1. Statistics

## Age pyramid for United Kingdom







### Healthcare data

Hospitals (per 100.000 population)	1.400	2004
Beds (per 100.000 population)	389,72	2004
Number of physicians	126.126	2002
Density of physicians (per 1.000 population)	2,13	2002
Number of nurses	548.730	2004
Density of nurses (per 1.000 population)	9,3	2004

### Population by age and sex

	Male	Female	Total
2020	31.289.657	31.778.359	63.068.016
2008	30.172.796	30.771.116	60.943.912
1990	28.181.737	29.483.909	57.665.646

### Economic information

Gross domestic product (U.S dollar-billions)	2.787.371*	2008
Gross domestic product per capita	45.681,00*	2008
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



## 2. Country

### Proportion of deaths resulting from cardiovascular disease

2007	not available
2008	not available

### Proportion cardiac mortality over total mortality of the country

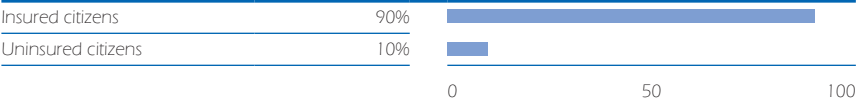
2007	15%
2008	15%

## 3. Healthcare System

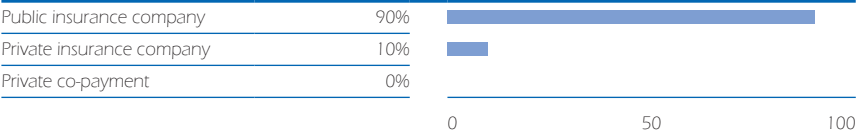
In United Kingdom, a National Health System (NHS) covers 100% of the population. It is mainly funded through national taxation. All legal residents of the United Kingdom, residents of the European economic area and citizens of other countries with which the UK has reciprocal agreements are covered under the United Kingdom NHS. Therefore, the subscription to private health insurance is very low.  
(WHO 2004)

### 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"/>
National guidelines	

#### 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 type="checkbox"/>
Invasive electrophysiology	<input type="checkbox"/>

**National accreditation for physicians** **No**

**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	No
---	----

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

Training centres availability	
Pacemaker	20
ICD implantation	20
Electrophysiological studies and catheter ablation	20
CRT implantation	20
Atrial fibrillation ablation	20

Number of medical faculties	35
-----------------------------	----

Percentage of academic facilities among practicing EP and implant centres	20%*
* approx.	

### 5. Pacemakers

Pacemaker units implanted	
2007	36.600*
2008	38.500*
* approx.	

Year	Units Implanted
2007	36,600
2008	38,500





**Pacemaker units implanted and number of implanting centres**

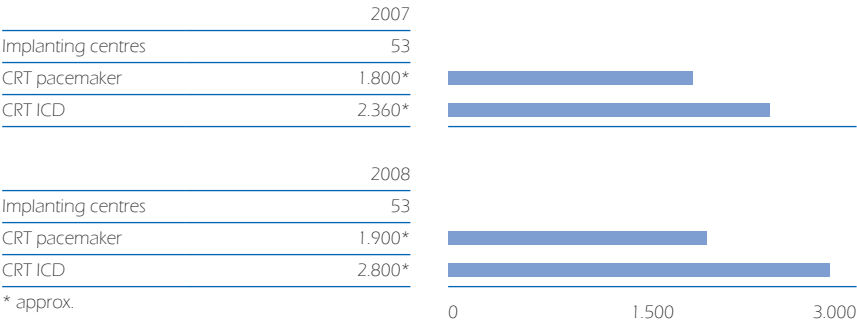
	2007	
Implanting centres	120	
New implants	not available	
Replacements	not available	
	2008	
Implanting centres	120	
New implants	not available	
Replacements	not available	

**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%

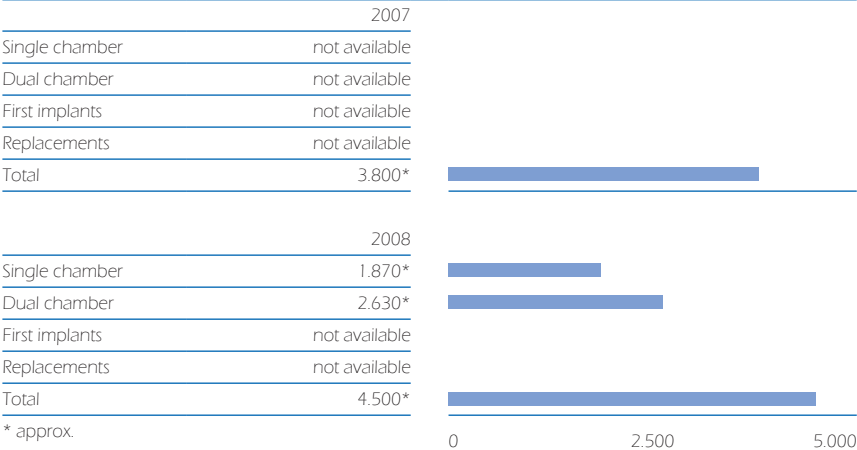


# 7. Implantable Cardiac Defibrillator

Number of implanting centres

53

## 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

	2007	
Implanting centres	not available	
Loop recorders	not available	
	2008	
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 checked="" type="checkbox"/>
CCAD	

### Availability of a national quality insurance system or complication registry

Yes

CCAD

### 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

38

	2007	2008
Number of ablations performed	7.300	not available
Mean number (ablations/centres)	192	not available
Number of AF ablations	1.200	not available



# 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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 = no obstacle

5 = great obstacle



### 3. SOURCES





### 3. Sources

#### Main Sources

---

The data in the White Book has been collected from a wide number of sources. Most important are the National Societies and National Working Groups. Every data published was authorised by the National Societies or National Working Groups of each participating country.

The National Societies and National Working Groups are listed below:

- Working Group on Arrhythmias – Armenia
- Working Group of Cardiac Pacing & Electrophysiology – Armenia
- Working Group of Electrophysiology – Austria
- Scientific Laboratory of Heart Arrhythmias – Belarus
- Belgian Heart Rhythm Association (BeHRA) – Belgium
- Working Group on Arrhythmias, Society of Cardiology – Bulgaria
- Working Group on Arrhythmias and Cardiac Pacing – Croatia
- Cyprus Society of Cardiology - Cyprus
- National Working Group on Arrhythmias and Cardiac Pacing – Czech Republic
- Working Group on Arrhythmias – Denmark
- National Working Group of Arrhythmias – Estonia
- Working Group on Arrhythmias and Cardiac Pacing – Finland
- Working Group on Electrophysiology and Cardiac Pacing – Former Yugoslav Republic of Macedonia
- Working Group on Arrhythmias and Cardiac Pacing – France



## Main Sources

---

- Working Group on Arrhythmias of the Georgian College of Cardiology – Georgia
- Working Group on Cardiac Pacing and Arrhythmia – Germany
- Hellenic Working Group on Electrophysiology and Pacing – Greece
- Hungarian Society of Cardiology - Hungary
- Working Group on Arrhythmias and Cardiac Pacing – Hungary
- Icelandic Society of Cardiology - Iceland
- Working Group on Electrophysiology and Cardiac Pacing – Israel
- Italian Association on Arrhythmias and Cardiac Pacing – Italy
- The registry of the European Working Group on Cardiac Pacing (EWGCP) – Latvia
- Working Group on Arrhythmology and Cardiac Pacing – Latvia
- Working Group on Electrophysiology – Lebanon
- Working Group on Arrhythmias Pacing and Electrophysiology – Lithuania
- National Institute of Cardiac Surgery and Interventional Cardiology (INCCI) – Luxembourg
- National Society of Cardiology - Luxembourg
- Dutch Working Group on Cardiac Pacing – Netherlands
- Working Group on Pacing and Electrophysiology – Norway
- Heart Rhythm Division Polish Cardiac Society – Poland



### 3. Sources

#### Main Sources

---

- Portuguese Association of Arrhythmology, Pacing and Electrophysiology (APAPE) - Portugal
- Arrhythmia Working Group, Romanian Society of Cardiology – Romania
- Clinical Electrophysiology, Arrhythmology and Cardiac Pacing – Russian Federation
- National Working Group on Cardiac Pacing – Serbia
- Slovak Heart Rhythm Association (SHRA) – Slovakia
- Working Group on Arrhythmias and Pacing – Slovenia
- Working Group on Arrhythmias – Sweden
- Working Group on Cardiac Pacing and Electrophysiology – Switzerland
- Working Group on Arrhythmias – Tunisia
- Heart Rhythm UK – United Kingdom

#### Additional Sources

---

- Arrhythmology Cardiology Group (ACG) - Armenia
- Armenian Ministry of Health
- Austrian National Ablation Registry
- Bulgarian Ministry of Health
- Bulgarian National Statistical Institute
- Federal Statistical Office (FSO) - Swiss Statistics
- Georgian Ministry of Labour



## Additional Sources

---

- Greek Pacemaker and ICD Registry
- Health and Social Affairs of Georgia
- 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
- Hungarian National Health Insurance Fund
- Ministry of Health of the Republic of Belarus
- Norway Pacemaker Register
- International Monetary Fund (IMF), Washington DC, USA. <http://www.imf.org>
- Italian Association of Rhythmology and Cardiac Stimulation (A.I.A.C.)
- Revista española de cardiología. Sociedad Española de Cardiología 2007; 60 (12): 129–130 3
- Sección de Estimulación Cardíaca. Madrid, Spain. <http://www.marcapasossec.org/>
- 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 2005, 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

ABEDIN	Zainul	(US)
ARBELO LAINEZ	Elena	(ES)
AVELLA	Andrea	(IT)
BARRERA CORDERO	Alberto	(ES)
BELOTTI	Giuseppina	(IT)
BRUGADA	Josep	(ES)
BURRI	Haran	(CH)
DAVOODI	Gholamreza	(IR)
DURAY	Gabor Zoltan	(DE)
FERNANDEZ LOZANO	Ignacio	(ES)
GARCIA MORAN	Emilio	(ES)
GONZALEZ VASSEROT	Maria del Mar	(ES)
GRECU	Mihaela	(RO)
HERREROS GUILARTE	Benito	(ES)



## Invasive Cardiac Electrophysiology

### EHRA EP Accredited professionals

JASTRZEBSKI	Marek	(PL)
KEMME	Michiel	(NL)
LAURENZI	Francesco	(IT)
LUBINSKI	Andrzej	(PL)
MADRID	Antonio	(ES)
MARTINEZ ALDAY	Jesus Daniel	(ES)
MAZUR	Alexander	(US)
MORENO PLANAS	Javier	(ES)
MOYA I MITJANS	Angel	(ES)
NAVARRETE CASAS	Antonio Javier	(US)
ORMAETXE MERODIO	José Miguel	(ES)
PASTOR FUENTES	Agustin	(ES)
PEINADO	Rafael	(ES)
PEREZ CASTELLANO	Nicasio	(ES)
PEREZ-VILLACASTIN	Julian	(ES)
POZZETTI	Daniela	(IT)
SABATE DE LA CRUZ	Francisco Xavier	(ES)
SALGUERO BODES	Rafael	(ES)
SAUSE	Armin	(DE)
SEOW	Swhee-Chong	(SG)
TOQUERO RAMOS	Jorge	(ES)
TRINES	Serge Alexander Ivo	(NL)
VOSS	Frederik	(DE)
ZOPPO	Franco	(IT)



## 4. Appendix

### EHRA Accreditation

---

## Invasive Cardiac Electrophysiology

### EP Accreditation candidates successful to exam

AL BUNNI	Muhamad	(IT)
ANGUERA CAMOS	Ignacio	(ES)
AYALA PAREDES	Felix	(CA)
BERRUEZO SANCHEZ	Antonio	(ES)
BUERKLE	Gerd	(AT)
CATANCHIN	Andrei	(UK)
DEL CASTILLO ARROJO	Silvia	(ES)
EISENBERGER	Martin	(UK)
GONZALEZ-ENRIQUEZ	Susana	(SP)
HOBBS	William	(UK)
HOGLUND	Niklas	(SE)
HUYBRECHTS	Wim	(BE)
LETSAS	Konstantinos	(GR)
MARTINEK	Martin	(AT)
MATIELLO	Maria	(ES)
MUELLER	Dirk	(DE)
OSCA ASENSI	Joaquin	(ES)
PAISEY	John	(UK)
PAPIASHVILI	Giorgi	(GE)
RAMANNA	Hemanth	(NL)
ROTEN	Laurent	(CH)
SCHOONDERWOERD	Bas	(NL)
SIELSKI	Slawomir	(PL)
SKODA	Jan	(CZ)
SMIT	Jaap Jan	(NL)
SPADACINI	Gianmario	(IT)
SUMAN HORDUNA	Irina	(CA)
TOMLINSON	D	(UK)
VATASESCU	Radu-Gabriel	(RO)
ZUCCHELLI	Giulio	(IT)



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

### EHRA CP Accredited professionals

AL BUNNI	Muhamad	(IT)
APOSTOLOPOULOS	Theodoros	(GR)
AVELLA	Andrea	(IT)
BELOTTI	Giuseppina	(IT)
BISSINGER	Andrzej	(PL)
BÖHM	Ádám	(HU)
BOOS	Christopher	(UK)
BURRI	Haran	(CH)
CALZOLARI	Vittorio	(IT)
CURNIS	Antonio	(IT)
DAVOODI	Gholamreza	(IR)
DILAVERIS	Polychronis E	(GR)
DUREY	Gábor Zoltán	(DE)
EIVINDSON	Gunvald	(NO)
GARCIA BOLAO	Jose Ignacio	(ES)
GARCIA MORAN	Emilio	(ES)
GJESTVANG	Finn Tore	(NO)
GRADAUS	Rainer	(DE)
HERREROS GUILARTE	Benito	(ES)
HORNSTEN	Jonas	(SE)
IONNIDIS	Panagiotis	(GR)
JASTRZEBSKI	Marek	(PL)
KLEIN	Gunnar	(DE)
KÖPP	Ulf	(NO)
LIPCHENCA	Igor Ariel	(IL)
LUEDORFF	Guido	(DE)
MACIAG	Aleksander	(PL)
MARINI	Massimiliano	(IT)
MASCIOLI	Giosue	(IT)



## 4. Appendix

### EHRA Accreditation

---

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

##### EHRA CP Accredited professionals

MERKELY	Bela	(HU)
MITKOWSKI	Przemyslaw Piotr	(PL)
MORENO PLANAS	Javier	(ES)
NEVEN	Kars	(NL)
OSMAN	Faizel	(UK)
PAULUSSEN	Guido	(NL)
PEREZ CASTELLANO	Nicasio	(ES)
POZZETTI	Daniela	(IT)
PRZYBYLSKI	Andrzej	(PL)
PUGH	Peter	(UK)
RAO	Archana	(UK)
SEOW	Swee-Chong	(SG)
SGARITO	Giuseppe	(IT)
SIMEONIDOU	Eftihia	(GR)
SJOBLOM	Johanna	(SE)
SPIERENBURG	Han	(NL)
VACCARI	Diego	(IT)
VAN OPSTAL	Jurren	(NL)
VASILOPOULOS	Charalabos	(GR)
VATASESCU	Radu- Gabriel	(RO)
VOSS	Frederik	(DE)
WESTENDORP	Iris	(NL)
ZAKY	Hosam	(AE)
ZERVOPOULOS	George	(GR)
ZOPPO	Franco	(IT)



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

### CP Accreditation candidates successful to exam

AARDEMA	Margriet W.	(NL)
ALDERGARD	Niklas	(SE)
ANNE	Wim	(NL)
AYALA PAREDES	Felix Alejandro	(CA)
BACCHIONI	Giuseppe	(IT)
BENCSIK	Gabor	(HU)
BORGER VAN DER BURG	Alida Elisabeth	(NL)
BOUWELS	Leon H.R.	(NL)
BUERKLE	Gerd	(AT)
CANDEIAS	Rui	(PT)
CROSATO	Martino	(IT)
DE JONG	Richard M	(NL)
DE JONG	Jeroen	(NL)
DE LEEUW	Martin	(NL)
DE POTTER	Tom	(BE)
DE WAARD	Daan	(NL)
EISENBERGER	Martin	(UK)
ERCKERT	Martin	(IT)
FLEVARI	Panayota	(GR)
FOLKERINGA	Richard	(NL)
FRANCA PEREIRA	Roberto	(US)
FRYKMAN	Viveka	(SE)
GEBETSBERGER	Franz	(AT)
GIANNOLA	Gabriele	(IT)
GONZALEZ-ENRIQUEZ	Susana	(ES)



## 4. Appendix

### EHRA Accreditation

---

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

### CP Accreditation candidates successful to exam

GRECU	Mihaela	(RO)
HJORTSHOJ	Soren	(DK)
HUYBRECHTS	Wim	(BE)
IORGULESCU	Corneliu	(RO)
JANSEN	Annemieke	(NL)
JANSSENS	Cornelis	(NL)
JOHANSSON	Peter	(SE)
KARABINOS	Ilias K	(GR)
KEMME	Michiel	(NL)
KETELS	Stefan	(BE)
KJELLMAN	Bjorn	(SE)
KNOPS	Reinoud	(NL)
KOEPFLI	Pascal	(CH)
KOULOURIS	Spyridon	(GR)
KOURGIANNIDIS	Georgios	(GR)
KRAVCHUK	Borys	(UA)
KRUPA	Wojciech	(PL)
LINDELL	Peter	(SE)
LINDGREEN	Ulf	(SE)
LITTERFELDT	Ingrid	(SE)
LUZI	Mario	(IT)
MAASS	Alexander	(NL)
MAC GILLAVRY	Melvin	(NL)
MAGNUSSON	Peter	(SE)
MARICONTI	Barbara	(IT)
MARTINEK	Martin	(AT)
MASSA	Thomas	(DE)
MEINE	Mathias	(NL)
MELANDER	Kjell	(SE)
MOLHOEK	Sander G	(NL)



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

### CP Accreditation candidates successful to exam

MUELLER	Dirk	(DE)
MUNDEL	Markus	(DE)
NAGARAJAN	Darbhamalla	(UK)
NERI	Gianfilippo	(IT)
NICOLAIDES	Eleftherios	(UK)
OIKARINEN	Lasse	(FI)
OSTROWSKA	Bozena	(SE)
PAISEY	John	(UK)
PARAVOLIDAKIS	Konstantinos	(GR)
PENA HERNANDEZ	Jose Luis	(ES)
PETKAR	Sanjiv	(UK)
RAMANNA	Hemanth	(NL)
ROTEN	Laurent	(CH)
SCHEFFER	Michael G	(NL)
SCHOONDERWOERD	Bas	(NL)
SCHWAGTEN	Bruno	(BE)
SIELSKI	Slawomir	(PL)
STEEN	Torkel	(NO)
STERLINSKI	Maciej	(PL)
STEVENHAGEN	Jeroen	(NL)
TRINES	Serge	(NL)
VAN DER WEERDT	Arno Peter	(NL)
VAN NOORD	Trudeke	(NL)
VET	Thijs	(NL)
ZALEVSKY	Valery P	(UA)
ZUCHELLI	Giulio	(IT)

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













## European Heart Rhythm Association

ESC Office for Associations (EHRA)  
2035 Route des Colles  
Les Templiers - BP 179  
06903 Sophia Antipolis Cedex  
France  
Tel: +33 (0)4 92 94 76 00  
Fax: +33 (0)4 92 94 86 46  
Email: [EHRA@escardio.org](mailto:EHRA@escardio.org)  
[www.escardio.org/EHRA](http://www.escardio.org/EHRA)

The EHRA White Book 2009 was made possible with the aid of  
unrestricted educational grant from BIOTRONIK GmbH & Co. KG



**BIOTRONIK**  
excellence for life