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 Moldavia - Romania - Russian Federation - San Marino - Serbia - Slovakia Slovenia Spain - Sweden

Tunisia - Turkey Ukraine - United Kingdom

# The EHRA White Book 2008

The Current Status of Cardiac Electrophysiology in ESC Member Countries J. Brugada, P. Vardas, C. Wolpert







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 first necessary step towards equal access to therapy in Europe

One of the roles of a European Association like the European Heart Rhythm Association (EHRA), a registered branch of the European Society of Cardiology (ESC), is to promote equal access to therapy for all patients across Europe. To do so, the first step is to compile data on the current situation in various ESC membership countries, compare them, and propose actions to move towards harmonization.

The current leadership of EHRA agreed on the importance of obtaining as much current information as possible concerning the situation of the practice of electrophysiology in Europe. A group was created under the leadership of Professors Christian Wolpert and Panos Vardas to begin work on this objective. To ensure up to date data, Presidents of the different Working Groups or National Societies were contacted and asked not only to provide data, but also to verify and authorize all the information that became available through various sources. The result is the "White Book of Electrophysiology in Europe" that we present to you.

The book is intended to be the starting point in a move towards a homogeneous way of looking at data, resources, physicians, etc., across Europe. Comparison among the different ESC countries should help to standardize health resources by promoting knowledge of the status and bringing it to the attention of all public authorities. It is also the point of comparison for the future: by knowing where we are today, we will be able to benchmark in the future and see how diverse countries evolve. This means that this book must be an ongoing process, with updated information, new and additional data, and the inclusion of information from those countries that have not yet been able to collect and transmit their records.

Our objective is to include all countries that are members of the European Society of Cardiology, and we hope that the next edition will contain the data that missing in this version. Although all information has been validated and authorized by the National Working Groups' Representatives, some data may still be incomplete or reflect only a portion of the statistics. Because of the ongoing nature of this book, new editions will reflect updates and any additional information we may receive. We take this opportunity to express our appreciation to the European Heart House staff, and to all the National Working Group contributors who made the creation of this book possible.

We hope that this book will be useful to all electrophysiologists in Europe and will initiate an era of evolution towards a more unified Europe in terms of equal access to therapy for all patients, independently of their country of origin.

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

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## 3. Appendix

## 1. Methodology used

A primary research was conducted by the means of a survey within National Cardiology Societies and Working Groups of Cardiac Pacing and Electrophysiology. A secondary research was conducted on third part sources.

All data is for the latest available year, at the time of the publication. Some countries, however, did not have available data for all of the sections of the book.

The book presents the following data:

**Demographic data:** Demographic data is sourced from governmental departments and international agencies, namely the World Health Organization, U.S Census Bureau.

**Economic data:** Economic data is sourced from governmental departments and the International Monetary Fund (IMF).

**Healthcare Statistics data:** Healthcare Statistics data is sourced from National Ministries of Health as well as third parties from agencies such as the World Health Organization.

Healthcare System, Education, Cardiac Pacing and Interventional Electrophysiology data: Healthcare System, Education, Cardiac Pacing and Interventional Electrophysiology data is sourced and authorized for publication from National Societies and National Working Groups on Arrhythmias as well from third parties from the medical devices industry.

The survey was undertaken from April 2008 until July 2008.

# 2. ESC Countries Overview



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# ALBANIA

There will be information in the next edition.

# ALGERIA

There will be information in the next edition.



# ARMENIA

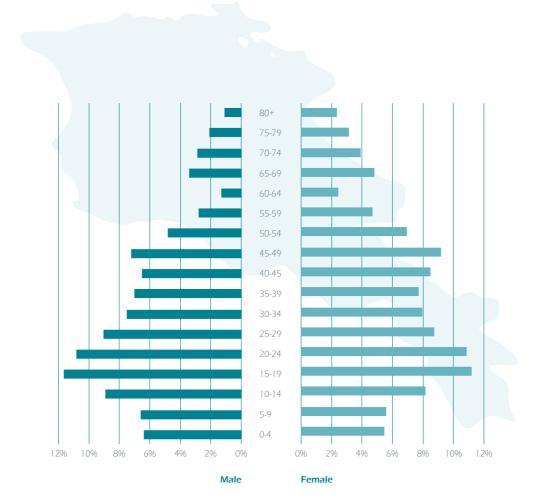


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# 1. Statistics

## Age pyramid for Armenia (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	378059	333 358	711713	19%
15-64	1 244 170	1 427 964	2672054	70%
65+	163771	252678	418000	11%
Total	1 786 000	2014000	3800000	100%

#### **Demographic information**

Population	3 800 000	2007
Population annual growth rate (%)	0.70%	2005
Life expectancy at birth	73.08	2003
Death rate (per 1000 population)	34.54	2006
Live births (per 1000 population)	11.65	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	7 974	2007
Gross domestic product per capita	2 297.485*	2007
Total expenditure on health as % of GDP	7.1	2004
General government expenditure on health as % of total expenditure on health	69.2	2004
Private expenditure on health as % of total expenditure on health	30.8	2004

#### Healthcare data

Hospitals (per 100000 population)	4.35	2006
Beds (per 100 000 population)	443.2	2006
Number of physicians	10983	2003
Density of physicians (per 1 000 population)	4.3	2003
Number of nurses	13320	2003
Density of nurses (per 1 000 population)	4.35	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System Fund

## Proportion of deaths resulting from cardiovascular disease

42 181 per 100 000 persons

;				
Possibility of subscribing to priva	te health insura	ance plans		Yes
* estimative				
		0	50	100
Private cash payment	65%			
Private insurance company	2%			
	33%			

Reimbursement for	
ICD devices	
Pacemakers	
CRT devices	

\* Exact data is not available

Arguna

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	100%
Number of medical faculties	5
4. Pacemakers	
Number of implanting centres	3

## Pacemaker units implanted

	2006				
New implants	139 + 68*				
Replacements	53 + 8*				
Total	192 + 76*				
	2007				
New implants	173 + 78*				
Replacements	78 + 6*				
Total	251 + 84*				
		0	100	200	300

\* First figures refer to ACG Clinics only and second figures refer to Armenian Working Group of Arrhythmias

Specialty performing implants	
Cardiologists	95%
Surgeons	5%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 1

#### **CRT** units implanted



\* ACG database only

### Specialty performing implants

Cardiologists	95%
Surgeons	5%

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	1

#### **ICD** units implanted

	2006					
Single-chamber	22*					
Dual-chamber	26*					
Total	48*					
	2007					
Single-chamber	15*					
Dual-chamber	77*					
Total	92*					
		0	25	50	75	100

\* ACG database only

Angent

## Specialists performing implant surgeries

Cardiologists	95%
Surgeons	5%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	108	165
Centres performing catheter ablation	1	1
Mean number (ablations/centres)	108	165
Number of AF ablations	0	0

# 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating and	d guiding device recalls	Yes
Name of the institution:	Armenian Drug & Medical Technology	/ Agency

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	Yes
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Source: ACG Databases, Armenian Working Group of Cardiac Pacing & Electrophysiology

# AUSTRIA



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# 1. Statistics

## Age pyramid for Austria (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	633375	603459	1 236 834	15%
15-64	2781291	2749539	5530830	67%
65+	585747	846 372	1 432 1 1 9	17%
Total	4000413	4 199 370	8199783	100%

#### **Demographic information**

Population	8199783	2007
Population annual growth rate (%)	0.20%	2005
Life expectancy at birth	80.24	2006
Death rate (per 1000 population)	8.97	2006
Live births (per 1000 population)	9.41	2006

### **Economic information**

Gross domestic product (U.S dollars - billions)	373 943	2007
Gross domestic product per capita	45181.123*	2007
Total expenditure on health as % of GDP	10.3	2004
General government expenditure on health as % of total expenditure on health	75.6	2004
Private expenditure on health as % of total expenditure on health	24.4	2004

#### Healthcare data

Hospitals (per 100 000 population)	3.19	2006
Beds (per 100 000 population)	764.96	2006
Number of physicians	27413	2003
Density of physicians (per 1 000 population)	3.38	2003
Number of nurses	76161	2003
Density of nurses (per 1 000 population)	9.38	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

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

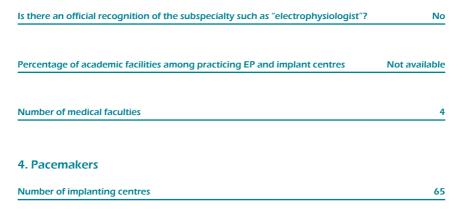
Proportion of deaths resulting from cardiovascular disease			44% 200	
Part of population publicly and priv	ately insured	t*		
Public insurance company	85%			
Private insurance company	15%			
Private cash payment	0%			
		0	50	1(
* estimative				
Possibility of subscribing to private	health insura	ince plans		Y
Part of the population affected by o	cardiac arrhyt	hmias		Not availab
Part of the population affected by a	cardiac arrhyt	hmias		Not availab
	cardiac arrhyt	hmias		Not availab

 $\checkmark$ 

CRT devices

-

## 3. Education



### Pacemaker units implanted

	2006					
Single-chamber	2 303*					
Dual-chamber	5003*					
Total	7 306*					
	2007					
Single-chamber	2 309 *					
Dual-chamber	5226*					
Total	7 535*					
		0	2000	4000	6000	800

\* Eucomed

Specialists performing implant surgeries	
Cardiologists	Not available
Surgeons	Not available

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 65

#### **CRT** units implanted



\* Eucomed

#### Specialists performing implant surgeries

Cardiologists	Not available
Surgeons	Not available

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	Not available
------------------------------	---------------

#### **ICD** units implanted

	2006				
Single-chamber	506*				
Dual-chamber	389*				
Total	895*				
	2007				
Single-chamber	617*				
Dual-chamber	457*				
Total	1074*				
		0	400	800	1 200

\* Eucomed

Arthory

## Specialists performing implant surgeries

Cardiologists	Not available
Surgeons	Not available

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	Not available	1 509*
Centres performing catheter ablation	19	19
Mean number (ablations/centres)	Not available	79
Number of AF ablations	Not available	238

\* total value for 10 centres only, there is no data available from remaining 9 centres. Source: National Catheter Ablation Registry

## 8. Device specific

Availability of remote monitoring of devices	$\mathbf{\nabla}$
--	-------------------

Availability of a national institution coordinating a	and guiding device recalls	Yes
Name of the institution:	Bundesamt für Sicherheit im Gesund	heitswesen

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	No
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National Working Group - Austria, National Registry, World Health Organisation and Eucomed

# BELARUS



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# 1. Statistics

## Age pyramid for Belarus (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	717885	677254	1 395 1 39	14%
15-64	3 3 3 3 6 9 9	3 5 3 1 9 2 0	6865619	71%
65+	459627	965 383	1 425 0 1 0	15%
Total	4511211	5174557	9685768	100%

#### **Demographic information**

Population	9685768	2007
Population annual growth rate (%)	-0.50%	2005
Life expectancy at birth	68.84	2005
Death rate (per 1000 population)	14.50	2005
Live births (per 1000 population)	9.24	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	44773*	2007
Gross domestic product per capita	4641.365*	2007
GDP growth	6.90%	2007
Total expenditure on health as % of GDP	6.2	2004
General government expenditure on health as % of total expenditure on health	74.9	2004
Private expenditure on health as % of total expenditure on health	25.1	2004

### Healthcare data

7.24	2006
1117.83	2006
45800	2004
4.60	2004
75685	2004
7.50	2004
	1117.83 45800 4.60 75685

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International, World Fact Book  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System

Proportion of deaths resulting from cardiovascular disease			Not available	
Part of population publicly and p	orivately insured	r		
Public insurance company	100%			
Private insurance company	0%			
Private cash payment	0%			
		0	50	100
estimative				
Part of the population affected b	oy cardiac arrhy	hmias		5%
Reimbursement for				
ICD devices				
Pacemakers				$\checkmark$
CRT devices				

Argente

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No	
Percentage of academic facilities among practicing EP and implant centres	Not available	
Number of medical faculties	4	
4. Pacemakers		
Number of implanting centres	8	

### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	1 575	1 870

Specialty	performing	implants
Specially	perioring	inpicites

Cardiologists	0%
Surgeons	100%

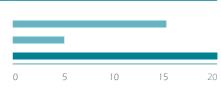
# 5. Cardiac resynchronization therapy devices

### Number of implanting centres

#### **CRT units implanted**

	2006			
CRT pacemaker	15			
CRT ICD	5			
Total	20			
		0	5	10
	2007			

CRT pacemaker	Not available
CRT ICD	Not available
Total	Not available



#### Specialty performing implants

Cardiologists	0%
Surgeons	100%

## 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

2

1

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	5	25

## Specialty performing implants

Cardiologists	0%
Surgeons	100%

mon

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	99	Not available
Centres performing catheter ablation	2	Not available
Mean number (ablations/centres)	49.5	Not available
Number of AF ablations	10	Not available

#### 8. Device specific

|--|

Availability of a national	institution coordinating and guiding device recalls	Yes
Name of the institution:	Republican Scientific and Practical Institute of Cardiology and Ministr	y of Health

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	

Necessity of guideline translation to national language	Yes

Source: Belarus National WG of Arrhythmias

### BELGIUM

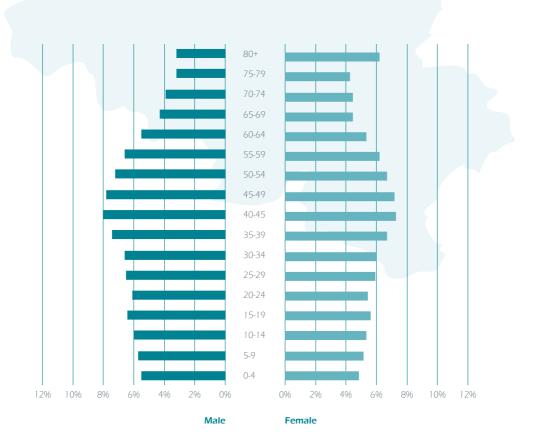


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#### 1. Statistics

#### Age pyramid for Belgium (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	873130	836785	1709915	16%
15-64	3 467 044	3 406 030	6873074	66%
65+	746969	1 062 268	1 809 237	18%
Total	5087143	5 305 083	10392226	100%

#### **Demographic information**

Population	10392226	2007
Population annual growth rate (%)	0.30%	2005
Life expectancy at birth	77.55	1997
Death rate (per 1000 population)	8.60	1997
Live births (per 1000 population)	11.26	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	453636	2007
Gross domestic product per capita	42 556.92	2007
GDP growth	2.70%	2007
Total expenditure on health as % of GDP	9.70	2004
General government expenditure on health as % of total expenditure on health	71.1	2004
Private expenditure on health as % of total expenditure on health	28.90	2004

#### Healthcare data

2.6	2006
528.49	2006
46 268	2002
4.49	2002
60142	2003
5.83	2003
	528.49 46.268 4.49 60.142

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International, World Fact Book  $^{\ast}$  IMF estimative

#### 2. Healthcare System

Belgium has a compulsory health care 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)

Proportion of deaths resulting	g from cardiovascu	lar disease		Not available
Part of population publicly ar	nd privately insured	r		
Public insurance company	100%			
Private insurance company	20%			
Private cash payment	Not available			
		0	50	100
* estimative		-		
Possibility of subscribing to p	rivate health insura	ance plans		Yes
Part of the population affecte	d by cardiac arrhy	hmias		Not available
Reimbursement for				
ICD devices				$\checkmark$

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	$\checkmark$

No

## Andersh

#### 3. Education

Percentage of academic facilities among practicing EP and implant centres	25%
Number of medical faculties	7
4. Pacemakers	
Number of implanting centres	130

Is there an official recognition of the subspecialty such as "electrophysiologist"?

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	11000*	11000*

#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

\* approx.

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### **CRT** units implanted

	2006	2007
CRT pacemaker	Not available	Not available
CRT ICD	Not available	Not available
Total	Not available	Not available

#### Specialty performing implants

Cardiologists	90%
Surgeons	10%

#### 6. Implantable Cardiac Defibrillator

Number of implanting centres	25

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	1 300	1 600

#### Specialty performing implants

Cardiologists	80%
Surgeons	20%

mon

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	4000	4 0 6 1
Centres performing catheter ablation	30	37
Mean number (ablations/centres)	133	109
Number of AF ablations	Not available	Not available

#### 8. Device specific

Availability of remote monitoring of devices	M

Availability of a national	nstitution coordinating and guiding device recalls	Yes
Name of the institution:	Federal Public Service Health, Food Chain Safety and Environment. General Public Health Protection: Medicinal Products Medical E	

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	No

Belgian Heart Rhythm Association (BeHRA) - Belgium

## **BOSNIA & HERZEGOVINA**

There will be information in the next edition.



### **BULGARIA**



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#### 1. Statistics

#### Age pyramid for Bulgaria (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	543703	517 520	1 06 1 2 2 3	14%
15-64	2 579 582	2666887	5246469	69%
65+	546356	786 192	1 332 548	17%
Total	3669641	3 970 599	7 640 240	100%

#### **Demographic information**

Population	7 640 240	2007
Population annual growth rate (%)	-0,86%	2007
Life expectancy at birth	72.6	2004
Death rate (per 1000 population)	14.8	2007
Live births (per 1000 population)	9.86	2007

#### **Economic information**

Gross domestic product (Euro-millions)	8 006.3	2007
Gross domestic product per capita (Euro)	1 047.9	2007
GDP growth	4.5%	2007
Total expenditure on health as % of GDP	4.4%	2007
General government expenditure on health as % of total expenditure on health	62.8	2007
Private expenditure on health as % of total expenditure on health	38.2	2007

#### Healthcare data

Hospitals (per 100 000 population)	3.82	2007
Beds (per 100 000 population)	584.4	2007
Number of physicians	28111	2007
Density of physicians (per 1 000 population)	3.67	2007
Number of nurses	48112	2007
Density of nurses (per 1 000 population)	6.29	2007

Sources: Bulgarian National Statistical Institute

#### 2. Healthcare System

In Bulgaria, the health care systrem is organised through a Public Health Care System plus 13 private insurance funds. In the year 2007 the voluntary private insurance population was 150 000, which equals to 10 millions Euro.

#### Proportion of deaths resulting from cardiovascular disease 971 per 100 000 population 2007

Part of the population affected by cardiac arrhythmias		238.3 per 10000	0 population	
				103
Possibility of subscribing to priva	ate health insura	ance plans		Yes
* estimative				
		0	50	100
Private cash payment	0%			
Private insurance company	1.1%	1.00		
Public insurance company	98.9%			

ICD devices	
Pacemakers	
CRT devices	

**Reimbursement for** 

Argent

#### 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	71,4%
Number of medical faculties	10
4. Pacemakers	
Number of implanting centres	14

#### Pacemaker units implanted

	2006				
Single-chamber	Not available				
Dual-chamber	Not available				
Total	Not available				
	2007				
Single Chamber	1 848				
Dual Chamber	355				
Total	2 203				
		0	1 000	2000	3000

Specialty performing implants	
Cardiologists	80%
Surgeons	20%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### **CRT** units implanted

	2006					
CRT pacemaker	Not available					
CRT ICD	Not available					
Total	Not available					
	2007					
CRT pacemaker	33					
CRT ICD	0					
Total	33					
		0	10	20	30	40

#### Specialty performing implants

Cardiologists	85.8%
Surgeons	14.2%

2007

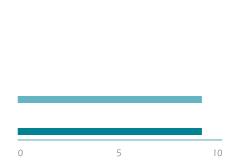
#### 6. Implantable Cardiac Defibrillator

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

#### ICD units implanted

	2006
Single-chamber	Not available
Dual-chamber	Not available
Total	Not available

	2007
Single-chamber	9
Dual-chamber	0
Total	9



3

Arter

#### Specialty performing implants

Cardiologists	83.4%
Surgeons	16.6%

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	Not available	299
Centres performing catheter ablation	Not available	1
Mean Number (ablations/centres)	Not available	299
Number of AF Ablations	Not available	18

#### 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating and guiding device recalls	Yes
Name of the institution:	Bulgarian Drug Agency

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	Not available
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	Yes
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Source: Bulgarian Cardiac Stimulation Society, Society of Cardiology

### CROATIA



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#### 1. Statistics

#### Age pyramid for Croatia (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	368639	349703	718342	16%
15-64	1 499 354	1515932	3015286	67%
65+	292526	467 158	759684	17%
Total	2160519	2 332 793	4493312	100%

#### **Demographic information**

Population	4493312	2007
Population annual growth rate (%)	-0.30%	2005
Life expectancy at birth	76.01	2006
Death rate (per 1000 population)	11.35	2006
Live births (per 1000 population)	9.33	2006

#### **Economic information**

Gross domestic product (U.S dollars - billions)	51356*	2007
Gross domestic product per capita	11576.008*	2007
GDP growth	4-6 %	2007
Total expenditure on health as % of GDP	7.70	2004
General government expenditure on health as % of total expenditure on health	81	2004
Private expenditure on health as % of total expenditure on health	19	2004

#### Healthcare data

1.76	2006
545.88	2006
10820	2003
2.44	2003
22 372	2003
5.05	2003
	545.88 10820 2.44 22.372

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

#### 2. Healthcare System

National Health System

	in cardiovascu	lar disease		50%	2007
Part of population publicly and p	rivately insured	*			
Public insurance company	90%				
Private insurance company	10%				
Private cash payment	0%				
		0	50		100
estimative					
Possibility of subscribing to privat	te health insura	ince plans			Yes
Possibility of subscribing to priva	te health insura	ince plans			Yes
				Not ava	
				Not ava	
Part of the population affected by				Not ava	
Part of the population affected by				Not ava	
Possibility of subscribing to private Part of the population affected by Reimbursement for ICD devices Pacemakers				Not ava	Yes

Argente

#### 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	80%
Number of medical faculties	4
4. Pacemakers	
Number of implanting centres	11

#### Pacemaker units implanted

	2006					
New implants	1 560					
Replacements	348					
Total	1 908					
	2007					
New implants	1 590					
Replacements	380					
Total	1 970					
		0	500	1 000	1 500	200

#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 6

7

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

#### 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

**ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	53	70

#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

Argent

### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	167	200
Centres performing catheter ablation	5	5
Mean number (ablations/centres)	33.4	40
Number of AF ablations	0	0

#### 8. Device specific

Availability of remote monitoring of devices	
--	--

Availability of a national institution coordinating and gui	ding device recalls Yes	S
Name of the institution:	Ministry of Health and Social Care	е

#### 9. Guidelines

#### Guidelines adhered to ICD implants and pacemaker implants

National	$\checkmark$
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	Yes
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Source: National Working Group - Croatia

### **CYPRUS**

There will be information in the next edition.



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### **CZECH REPUBLIC**

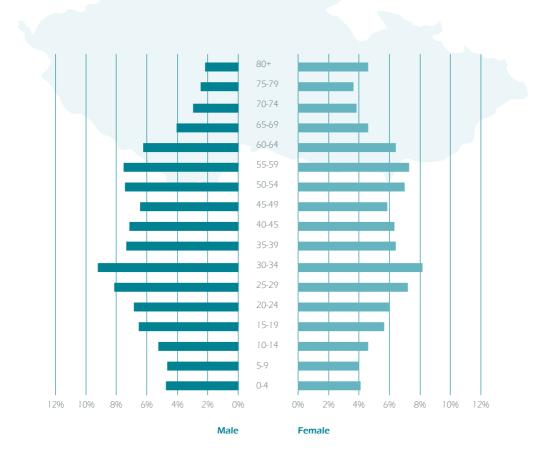


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#### 1. Statistics

#### Age pyramid for Czech Republic (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

· optimition by ag				
Age	Male	Female	Both sexes	Percent
0-14	749391	709413	1 458 804	14%
15-64	3712371	3681535	7 393 906	71%
65+	597 299	931121	1 528 420	15%
Total	5059062	5 322 068	10381130	100%

#### Demographic information

Population	10381130	2007
Population annual growth rate (%)	-0.10%	2005
Life expectancy at birth	76.19	2005
Death rate (per 1000 population)	10.55	2005
Live births (per 1000 population)	9.99	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	175309	2007
Gross domestic product per capita	17069.744*	2007
GDP growth	5.70%	2007
Total expenditure on health as % of GDP	7.3	2004
General government expenditure on health as % of total expenditure on health	89.2	2004
Private expenditure on health as % of total expenditure on health	10.8	2004

#### Healthcare data

3.49	2006
837.99	2006
35960	2003
3.56	2003
99351	2003
9.71	2003
	837.99 35.960 3.56

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

#### 2. Healthcare System

National Health System

Proportion of deaths resulting fr	om cardiovascu	lar disease		52 464
Part of population publicly and p	orivately insured	r		
Public insurance company	100%			
Private insurance company	0%			
Private cash payment	0%			
		0	50	100
* estimative				
Possibility of subscribing to priva	te health insura	ince plans		No
Part of the population affected b	y cardiac arrhy	:hmias		Not available
Reimbursement for				
ICD devices				$\checkmark$
Pacemakers				$\checkmark$

 $\checkmark$ 

CRT devices

# Arter

38

Yes

#### 3. Education

4 licences - 2 for devices (implant and FU) and 2 for EP (diagnostics and ablations)	
Percentage of academic facilities among practicing EP and implant centres	579
Jumber of medical faculties	

Is there an official recognition of subspecialties such as "electrophysiologists"?

#### Pacemaker units implanted

	2006					
Single-chamber	3647*					
Dual-chamber	4776**					
Total	8683					
	2007					
Single-chamber	3270*					
Dual-chamber	4 4 96**					
Total	8175					
* remaining 5% are CRT P		0	2 500	5000	7 500	1000

\*\* remaining 3% are CRT P

#### Specialty performing implants

Cardiologists	80%
Surgeons	20%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### **CRT** units implanted

	2006					
CRT pacemaker	Not available					
CRT ICD	Not available					
Total	Not available					
	2007					
CRT pacemaker	313					
CRT ICD	608					
Total	921					
		0	250	500	750	1 000

#### Specialty performing implants

Cardiologists	80%
Surgeons	20%

#### 6. Implantable Cardiac Defibrillator

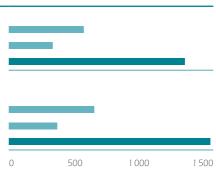
#### Number of implanting centres

15

#### **ICD** units implanted

	2006
Single-chamber	549
Dual-chamber	321
Total	1 290

	2007
Single-chamber	625
Dual-chamber	356
Total	1 478



Cardiologists	95%
Surgeons	5%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2769	2901
Centres performing catheter ablation	Not available	16
Mean number (ablations/centres)	Not available	180
Number of AF ablations	Not available	540

# 8. Device specific

Availability of remote monitoring of devices
--

Availability of a national institution coordinating and guiding	g device recalls	Yes
Name of the institution:	State Institute for Drug	Control

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	

Necessity of guideline translation to national language	Yes
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Source: National Working Group on Arrhythmias and Cardiac Pacing – Czech Republic and National Registry

# DENMARK



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# 1. Statistics

# Age pyramid for Denmark (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	520669	494 228	1014897	19%
15-64	1817757	1 792 974	3610731	66%
65+	363828	478664	842492	15%
Total	2702254	2765866	5468120	100%

#### **Demographic information**

Population	5468120	2007
Population annual growth rate (%)	0.40%	2005
Life expectancy at birth	77.3	2001
Death rate (per 1000 population)	3.06	2001
Live births (per 1000 population)	65.5	2001

#### **Economic information**

Gross domestic product (U.S dollars - billions)	311905	2007
Gross domestic product per capita	57 260.949*	2007
GDP growth	1.70%	2007
Total expenditure on health as % of GDP	8.6	2004
General government expenditure on health as % of total expenditure on health	82.3	2004
Private expenditure on health as % of total expenditure on health	17.7	2004

#### Healthcare data

Hospitals	76	2004
Beds (per 100000 population)	4.30	2004
Number of physicians	18.043	2004
Density of physicians (per 1 000 population)	3.40	2004
Number of nurses	27.166	2004
Density of nurses (per 1 000 population)	5.2	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International, World Fact Book  $^{\ast}$  IMF estimative

# 2. 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)

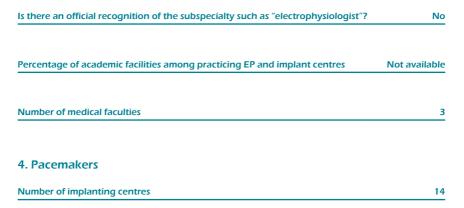
Proportion of deaths resulting fro	om cardiovascu	lar disease		0,19	2006
Part of population publicly and p	rivately insured	1.			
Public insurance company	99%				
Private insurance company	1%	1.0			
Private cash payment	0%				
		0	50		100
* estimative					
Possibility of subscribing to priva	te health insura	ance plans			Ye
Possibility of subscribing to priva	te health insura	ance plans			Ye
				Not a	
				Not a	
Part of the population affected b				Not a	
Possibility of subscribing to private Part of the population affected by Reimbursement for CD devices				Not a	Yes vailable

 $\checkmark$ 

CRT devices

Arguna

## 3. Education



#### Pacemaker units implanted

	2006					
Single-chamber	1 524*					
Dual-chamber	2 530*					
Total	4054*					
	2007					
Single-chamber	1 27 1*					
Dual-chamber	2 2 3 2*					
Total	3 503*					
		0	1 000	2000	3000	4000

\* Eucomed

Specialty performing implants	
Cardiologists	100%
Surgeons	0%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

7

#### **CRT** units implanted



\* Eucomed

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	5

#### ICD units implanted

	2006					
Single-chamber	398*					
Dual-chamber	167*					
Total	565*					
	2007					
Single-chamber	555*					
Dual-chamber	191*					
Total	746*					
		0	200	400	600	80

\* Eucomed

# Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2550	Not available
Centres performing catheter ablation	6	Not available
Mean number (ablations/centres)	425	Not available
Number of AF ablations	1400	Not available

# 8. Device specific

Availability of remote monitoring of devices	M

Availability of a national institution coordinating and guiding device re	ecalls Yes
Name of the institution:	Danish Medicines Agency

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European		

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

Source: National Arrhythmia Body, Eucomed and WHO

# EGYPT

There will be information in the next edition.



# **ESTONIA**

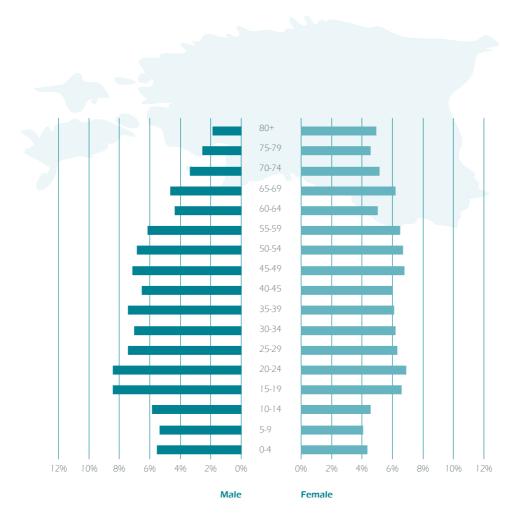


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# 1. Statistics

# Age pyramid for Estonia (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	100 143	94450	194593	15%
15-64	420896	462072	882 968	68%
65+	76171	153873	230 044	18%
Total	597 210	710395	1 307 605	100%

#### **Demographic information**

Population	1 307 605	2007
Population annual growth rate (%)	-0.80%	2005
Life expectancy at birth	72.89	2005
Death rate (per 1000 population)	12.86	2005
Live births (per 1000 population)	10.66	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	21 278	2007
Gross domestic product per capita	15850.71	2007
Total expenditure on health as % of GDP	5.3	2004
General government expenditure on health as % of total expenditure on health	76	2004
Private expenditure on health as % of total expenditure on health	24	2004

#### Healthcare data

Hospitals (per 100000 population)	4.9	2006
Beds (per 100000 population)	564.77	2006
Number of physicians	6118	2000
Density of physicians (per 1 000 population)	4.48	2000
Number of nurses	11618	2000
Density of nurses (per 1 000 population)	8.50	2000

Sources: Euro WHO, IMF, U.S. Census Bureau, International

# 2. Healthcare System

The Healthcare System is covered by a National Health Insurance Fund. Citizens pay 13% tax as obligatory health insurance which covers the costs for medical services.

Proportion of deaths resulting fro	m cardiovascu	lar disease		Not available
Part of population publicly and pupelocities Public insurance company	rivately insured	1.		
Private insurance company	1%			
Private cash payment	0%			
		0	50	100
* estimative				
Possibility of subscribing to privat	e health insura	ance plans		Yes
Possibility of subscribing to privat	e health insura	ance plans		Yes
				Yes Not available
Part of the population affected by				
Part of the population affected by Reimbursement for				
Possibility of subscribing to privat Part of the population affected by Reimbursement for ICD devices Pacemakers				

Argente

# 3. Education

Is there an official recognition of subspecialties such as "electrophysiologists"?	
Percentage of academic facilities among practicing EP and implant centres	50%
Number of medical faculties	1
4. Pacemakers	
Number of implanting centres	

#### Pacemaker units implanted

	2006			
Single-chamber	314			
Dual-chamber	613			
Total	927			
	2007			
Single-chamber	275			
Dual-chamber	692			
Total	967			
		0	500	1 C

Specialty performing implants	
Cardiologists	75%
Surgeons	25%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 2

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

2007

### 6. Implantable Cardiac Defibrillator

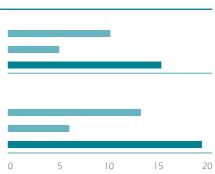
#### Number of implanting centres

2

#### **ICD** units implanted

	2006
Single-chamber	10
Dual-chamber	5
Total	15

	2007
Single-chamber	13
Dual-chamber	6
Total	19



mon

#### Specialists performing implant surgeries

Cardiologists	66%
Surgeons	33%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	389	406
Centres performing catheter ablation	2	2
Mean number (ablations/centres)	195	203
Number of AF ablations	Not available	30

# 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating and guiding device	ecalls Yes
Name of the institution:	State Agency of Medicines

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Source: National Working Group of Arrhythmias – Estonia

# **FINLAND**



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# 1. Statistics

# Age pyramid for Finland (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	449 548	433253	882801	17%
15-64	1 768 996	1727143	3 4 9 6 1 3 9	67%
65+	344798	514722	859 520	16%
Total	2 563 342	2675118	5238460	100%

#### **Demographic information**

Population	5238460	2007
Population annual growth rate (%)	0.30%	2005
Life expectancy at birth	79.36	2005
Death rate (per 1000 population)	9.1	2005
Live births (per 1000 population)	11.01	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	245013	2007
Gross domestic product per capita	46601.865*	2007
Total expenditure on health as % of GDP	7.1	2004
General government expenditure on health as % of total expenditure on health	77.2	2004
Private expenditure on health as % of total expenditure on health	22.80	2004

#### Healthcare data

Hospitals (per 100 000 population)	6.63	2006
Beds (per 100 000 population)	696.67	2006
Number of physicians	16446	2002
Density of physicians (per 1 000 population)	3.16	2002
Number of nurses	74450	2002
Density of nurses (per 1 000 population)	14.33	2002

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. 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 helthcare. (Source: Highlights on health in Finland. WHO, 2004)

Proportion of deaths resulting from cardiovascular disease		20.7 men /	/ 12.2 female
vately insured	r		
76%			
5.3%			
18.7%			
	0	50	100
health insura	ance plans		Yes
cardiac arrhyt	:hmias		Not available
			$\checkmark$
	vately insured 76% 5.3% 18.7%	<b>vately insured</b> * 76% 5.3% 18.7%	vately insured*          76%         5.3%         18.7%         0       50

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	

mon

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	20%
Number of medical faculties	5
4. Pacemakers	
Number of implanting centres	25

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	3 405	3891

#### Specialty performing implants

Cardiologists	90%
Surgeons	10%*

\* surgeons + internal medicine

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 8

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	95%
Surgeons	5%*

\* epicardial leads during open heart surgery

# 6. Implantable Cardiac Defibrillator



#### **ICD** units implanted

	2006				
Single-chamber	255				
Dual-chamber	172				
Total	427				
	2007				
Single-chamber	305				
Dual-chamber	221				
Total	526				
		0	200	400	

Argente

#### Specialty performing implants

specially performing implants	
Cardiologists	95%
Surgeons	5%*

\* surgeons + internal medicine

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	1160	1184
Centres performing catheter ablation	7	7
Mean number (ablations/centres)	166	169
Number of AF ablations	215	Not available

# 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordin	nating and guiding device recalls	Yes
Name of the institution:	National Agency for Medicines Medical Devices Depart	tment

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language N	No
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Source: Working Group on Arrhythmias and Cardiac Pacing - Finland

# Former Yugoslav Republic of MACEDONIA



The EHRA White Book 2008 · 99

# 1. Statistics

# Age pyramid for FYROM (2007)

Source: US Census Bureau



Age	Male	Female	Both sexes	Percent
0-14	205827	191449	397 276	19%
15-64	712345	700790	1413135	69%
65+	100002	129814	229817	11%
Total	1018175	1 022 053	2040228	100%

#### **Demographic information**

Population	2 0 4 0 2 2 8	2006
Population annual growth rate (%)	Not available	Not available
Life expectancy at birth	73	2005
Death rate (per 1000 population)	Not available	Not available
Live births (per 1000 population)	11.04	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	7 497*	2007
Gross domestic product per capita	3658.972*	2007
Total expenditure on health as % of GDP	8	2004
General government expenditure on health as % of total expenditure on health	71	2004
Private expenditure on health as % of total expenditure on health	29	2004

#### Healthcare data

Hospitals (per 100000 population)	0.05	2006
Beds (per 100000 population)	Not available	Not available
Number of physicians	5176	2006
Density of physicians (per 1 000 population)	2.5	2006
Number of nurses	6118	2006
Density of nurses (per 1 000 population)	3.0	2006

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System

	om cardiovascul	ardisease		58.7%	2006
Part of population publicly and p	rivately insured				
Public insurance company	90%				
Private insurance company	10%				
Private cash payment	0%				
		0	50		100
estimative					
Possibility of subscribing to priva	te health insura	nce plans			Yes
				Nota	
Possibility of subscribing to priva Part of the population affected by				Not a	
Part of the population affected by				Not a	
Part of the population affected by				Not a	
				Not av	Yes vailable

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No	
Percentage of academic facilities among practicing EP and implant centres	Not available	
Number of medical faculties	1	
4. Pacemakers		
Number of implanting centres	1	

#### Pacemaker units implanted

	2006	2007
New implants	Not available	Not available
Replacements	Not available	Not available
Total	185	194

Specialty performing implants	
Cardiologists	100%
Surgeons	0%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 1

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

#### 6. Implantable Cardiac Defibrillator

1

#### **ICD** units implanted

2006					
4					
3					
7					
2007					
6					
5					
11					
	0	3	6	9	12
	4 3 7 2007 6	4 3 7 2007 6	4 3 7 2007 6 5 11	4       3       7       2007       6       5       11	4 3 7 2007 6 5 11

## Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	Not available	69
Centres performing catheter ablation	1	1
Mean number (ablations/centres)	Not available	69
Number of AF ablations	Not available	0

# 8. Device specific

Availability of remote monitoring of devices	1
Availability of remote monitoring of devices	

Availability of a national institution coordinating and guiding device recalls	Yes
Name of the institution:	Ministry of Health

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Source: National Working Group - National Society of Cardiology of the Former Yugoslav Republic of Macedonia

# FRANCE



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# 1. Statistics

# Age pyramid for France (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	6058571	5771667	11830238	19%
15-64	20787603	20750779	41 538 382	65%
65+	4275215	6037907	10313122	16%
Total	31121389	32 560 353	63681742	100%

## Demographic information

Population	63681742	2007
Population annual growth rate (%)	0.40%	2005
Life expectancy at birth	80.5	2004
Death rate (per 1000 population)	6.9	2004
Live births (per 1000 population)	Not available	Not available

## **Economic information**

Gross domestic product (U.S dollars - billions)	2 560.26	2007
Gross domestic product per capita	41511.154*	2007
Total expenditure on health as % of GDP	10.5	2004
General government expenditure on health as % of total expenditure on health	78.4	2004
Private expenditure on health as % of total expenditure on health	21.6	2004

## Healthcare data

Hospitals	3055	2004
Beds (per 1 000 population)	8.0	2004
Number of physicians	196000	2004
Density of physicians (per 1 000 population)	3.46	2004
Number of nurses	397 506	2004
Density of nurses (per 1 000 population)	7.24	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

France's health system is based on a national social insurance system together with elements of tax based financing (General Social Tax) and complementary voluntary health insurance. The health system is regulated by the state and the statutory health insurance funds. The state points the maximum amount for health insurance spending and amends benefits and regulation. The statutory health system has three main schemes: the general scheme that covers 84% of the population, the agricultural scheme that covers 7.2% of the population (farmers and their families) and the self employed scheme which covers 5% of the population. In 2004, a specific insurance fund was established for dependent elderly people. (Source: Highlights on health in France. WHO, 2004)

Proportion of deaths resulting from cardiovascular disease	Not available

#### Part of population publicly and privately insured

Public insurance company	100%			
Private insurance company	0%			
Private cash payment	0%			
		0	50	100
* octimativo				

\* estimative

Possibility of subscribing to private	health insurance plans

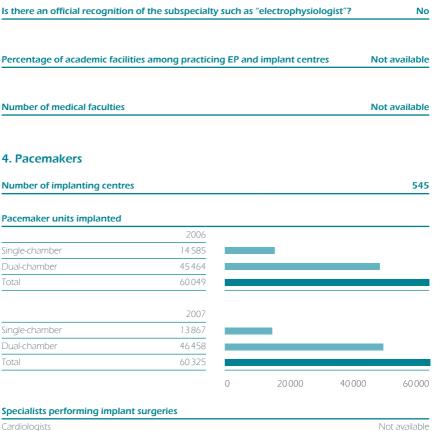
Part of the population affected b	y cardiac arrhythmias	Not available

Yes

Reimbursement for	
ICD devices	V
Pacemakers	V
CRT devices	V

4-4-4-4

# 3. Education



Calulologists	I NUL AVAIIADIE
Surgeons	Not available

# 5. Cardiac resynchronization therapy devices

### Number of implanting centres

## **CRT** units implanted



### Specialists performing implant surgeries

Cardiologists	95%
Surgeons	5%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	Not available
------------------------------	---------------

## **ICD** units implanted

	2006						
Single-chamber	2 2 7 1						
Dual-chamber	1918						
Total	4 189						
	2007						
Single-chamber	2 4 4 5						
Dual-chamber	2076						
Total	4 52 1						
		0	1 000	2000	3000	4000	5000

mon

## Specialists performing implant surgeries

Cardiologists	98%
Surgeons	2%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	17680	18223
Centres performing catheter ablation	207	207
Mean number (ablations/centres)	85	85
Number of AF ablations	Not available	Not available

# 8. Device specific

Availability of remote monitoring of devices	$\mathbf{\overline{N}}$
--	-------------------------

Availability of a national institution coordi	nating and guiding device recalls	Yes
Name of the institution:	Agence Française de Sécurité Sanitaire des Produits de	Santé

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	V

Necessity of guideline translation to national language	Yes

Source: Working Group on Arrhythmias - France.

# GEORGIA



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# 1. Statistics

# Age pyramid for Georgia (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	402 96 1	352735	755696	16%
15-64	1 496 802	1610725	3 107 527	67%
65+	307 795	459823	767618	17%
Total	2 207 558	2 4 2 3 2 8 3	4630841	100%

## **Demographic information**

Population	4630841	2007
Population annual growth rate (%)	1.20%	2005
Life expectancy at birth	73.1	2005
Death rate (per 1000 population)	22.99	2006
Live births (per 1000 population)	10.66	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	10293	2007
Gross domestic product per capita	2 355.168*	2007
Total expenditure on health as % of GDP	5.3	2004
General government expenditure on health as % of total expenditure on health	27.4	2004
Private expenditure on health as % of total expenditure on health	72.6	2004

## Healthcare data

Hospitals (per 100 000 population)	5.96	2006
Beds (per 100 000 population)	374.15	2006
Number of physicians	20 962	2003
Density of physicians (per 1 000 population)	4.09	2003
Number of nurses	17807	2003
Density of nurses (per 1 000 population)	3.47	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

Private social insurance companies (governmental), Insurance for the poor (government establishes the poverty definition criteria), Private medicine, no countrywide national health system or social security.

	om cardiovascul	al ulsease		36%	2007
Part of population publicly and p	rivately insured	•			
Public insurance company	20%				
Private insurance company	30%				
Private cash payment	50%				
		0	50		100
estimative					
Possibility of subscribing to priva	te health insura	nce plans			Yes
Part of the population affected by					
					Yes 15%
Part of the population affected by					
Part of the population affected by					

Argente

# 3. Education

Is there an official recognition of subspecialties such as "electrophysiologists"?			No	
Percentage of academic fa	ilities among practicing EP and	implant centre	S	60%
Number of medical facultie	S			2
4. Pacemakers				
T. I acciliances				
A second second fit is a state of the second secon second second sec	200			4
Number of implanting cent	ies			
Pacemaker units implanted				
Pacemaker units implanted	2006			
Pacemaker units implanted			-	
Pacemaker units implanted	2006	1	-	
Pacemaker units implanted Single-chamber Dual-chamber	2006	1	-	
	2006 165 54	1		
Pacemaker units implanted Single-chamber Dual-chamber Total	2006 165 54 219 2007	1	-	
Pacemaker units implanted Single-chamber Dual-chamber Total Single-chamber	2006 165 54 219 2007 188		-	
Pacemaker units implanted Single-chamber Dual-chamber Total	2006 165 54 219 2007		-	

Specialists performing implant surgeries		
Cardiologists	90%	
Surgeons	10%	

# 5. Cardiac resynchronization therapy devices

### Number of implanting centres

# 3

## **CRT** units implanted



### Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	15
------------------------------	----

## **ICD** units implanted

	2006			
Single-chamber	4			
Dual-chamber	0			
Total	4			
	2007			
Single-chamber	3			
Dual-chamber	0			
Total	3			
		0	2	

# Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	17	64
Centres performing catheter ablation	3	Not available
Mean number (ablations/centres)	27	Not available
Number of AF ablations	0	0

# 8. Device specific

Availability of a national institution coordinating and guiding device recalls	Yes
Name of the institution:	Ministry of Health

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European		

Source: Working Group on Arrhythmias of the Georgian College of Cardiology

# GERMANY



The EHRA White Book 2008 · 123

# 1. Statistics

## Age pyramid for Germany (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	5894724	5 5 9 0 3 7 3	11485097	14%
15-64	27811357	26790222	54601579	66%
65+	6771972	9 542 348	16314320	20%
Total	40478053	41 922 943	82 400 996	100%

## **Demographic information**

Population	82 400 996	2007
Population annual growth rate (%)	0.10%	2005
Life expectancy at birth	79.36	2004
Death rate (per 1000 population)	6.09	2006
Live births (per 1000 population)	Not available	Not available

## **Economic information**

Cross domostic product /LLS dollars _billions)	3322.15	2007
Gross domestic product (U.S dollars - billions)	5 522.15	2007
Gross domestic product per capita	40415.41	2007
Total expenditure on health as % of GDP	10.6	2004
General government expenditure on health as % of total expenditure on health	76.9	2004
Private expenditure on health as % of total expenditure on health	23.1	2004

## Healthcare data

Hospitals (per 100,000 population)	4.6	2006
Beds (per 100 000 population)	826.3	2006
Number of physicians	277 885	2003
Density of physicians (per 1 000 population)	3.37	2003
Number of nurses	801677	2003
Density of nurses (per 1 000 population)	9.72	2003

Sources: Euro WHO, IMF, U.S. Census Bureau, International

# 2. Healthcare System

In Germany, social health insurance is compulsory and there are three co-existing schemes: the statutory health insurance which covers 87% of the population (2003), the private health insurance market, which covers 10% of the population and the governmental schemes, which covers 2% of the population. (Source: Highlights on health. WHO, 2005)

Proportion of deaths resulting from cardiovascular disease			569	<u>6</u> 2007
Part of population publicly and p	rivately insured			
Public insurance company	90%			
Private insurance company	10%			
Private cash payment	0%			
		0	50	100
* estimative				
	6 - 1 161 - 1			Yes
Possibility of subscribing to priva	te health insura	nce plans		

Part of the population affected by cardiac arrhythmias	Not available
--	---------------

#### **Reimbursement for**

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	

Argente

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?			No	
Percentage of academic fac	ilities among practici	ng EP and ii	nplant centres	76%
Number of medical facultie	5			34
4. Pacemakers Number of implanting cent				1037
Number of implanting cent	105			1037
Pacemaker units implanted				
	2006			
Single-chamber	33224			
Dual-chamber	63682			
Total	96 906			
	2007			
Single-chamber	32806			
Dual-chamber	65994			
Total	98800			
		0	50 000	100000
Specialists performing impla	ant surgeries			
Cardiologists				Not available

Surgeons Not available

# 5. Cardiac resynchronization therapy devices

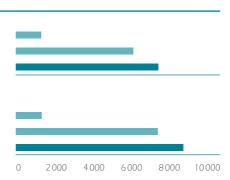
### Number of implanting centres

132° and 200"

## **CRT** units implanted

	2006
CRT pacemaker	1 234
CRT ICD	5735
Total	6 969

2007
1 264
6932
8196



\* only for CRT-P

\*\* only for CRT-D

### Specialists performing implant surgeries

Cardiologists	90%
Surgeons	10%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	360
------------------------------	-----

### **ICD** units implanted

	2006						
Single-chamber	10738						
Dual-chamber	5136						
Total	15874						
	2007						
Single-chamber	12666						
Dual-chamber	6418						
Total	19084						
		0	1 000	5000	10000	15000	2000

Argent

## Specialists performing implant surgeries

Cardiologists	30%
Surgeons	70%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	27 456	30202
Centres performing catheter ablation	250	250
Mean number (ablations/centres)	361	397
Number of AF ablations	Not available	Not available

# 8. Device specific

Availability of remote monitoring of devices	
Availability of remote monitoring of devices	

Availability of a national institution coordinatin	ng and guiding device recalls	
Name of the institution:	Federal Institute for Drugs and Medical Devices (BfAr	·M)

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	

Necessity of guideline translation to national language	Yes
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Source: Working Group on Arrhythmias - Germany, Eucomed (2005-2008), Euro WHO (2005)

# GREECE

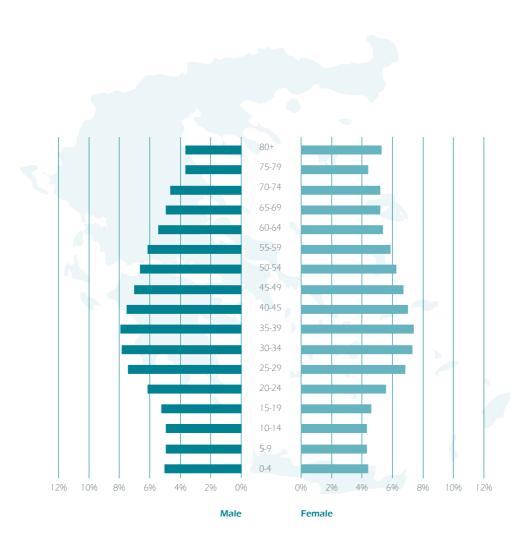


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# 1. Statistics

# Age pyramid for Greece (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	789637	742535	1 532 1 72	14%
15-64	3 565 237	3 570 630	7 135 867	67%
65+	895384	1 1 4 2 8 6 7	2038251	19%
Total	5 2 5 0 2 5 8	5 456 032	10964020	100%

## **Demographic information**

Population	10964020	2007
Population annual growth rate (%)	0.40%	2005
Life expectancy at birth	79.79	2006
Death rate (per 1000 population)	9.42	2005
Live births (per 1000 population)	10.05	2006

## **Economic information**

Gross domestic product (U.S dollars - billions)	314615*	2007
Gross domestic product per capita	28 27 3. 295*	2007
GDP growth	3.70%	2007
Total expenditure on health as % of GDP	7.9	2004
General government expenditure on health as % of total expenditure on health	52.8	2004
Private expenditure on health as % of total expenditure on health	47.2	2004

## Healthcare data

2.9	2006
489.8	2006
55 558	2005
5.1	2005
45 543	2006
4.1	2006
	489.8 55558 5.1 45543

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

The Greek healthcare system is characterised 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 thereby establishing social cohesion. (Source: Highlights in health. WHO, 2004)

100

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

Part of the population affected by cardiac arrhythmias	Not available
--	---------------

### **Reimbursement for**

ICD devices	
Pacemakers	$\checkmark$
CRT devices	

Argente

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	35%
Number of medical faculties	
4. Pacemakers	
Number of implanting centres	67

## Pacemaker units implanted

	2006					
New implants	5 585					
Replacements	1 283					
Total	6868					
	2007					
New implants	5957					
Replacements	1673					
Total	7 630					
		0	2000	4000	6000	8000

## Specialty performing implants

Cardiologists	90%
Surgeons	10%

# 5. Cardiac resynchronization therapy devices

### Number of implanting centres

## **CRT** units implanted



### Specialty performing implants

Cardiologists	99%
Surgeons	1%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	22
------------------------------	----

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	408	636

## Specialty performing implants

Cardiologists	99%
Surgeons	1%

Argent

Yes

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	Not available	1275
Centres performing catheter ablation	Not available	23
Mean number (ablations/centres)	Not available	55
Number of AF ablations	Not available	166

# 8. Device specific

ilability of remote monitoring of devices	

Availability of a national i	nstitution coordinating and guiding device recalls	Yes
Name of the institution:	Ministry of Health, Welfare and Social / National Farmacy Organiza	tion (EOF)

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language

Source: Hellenic National Statistical Service and Greek Pacemaker and ICD Registry

# HUNGARY



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# 1. Statistics

# Age pyramid for Hungary (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	785643	741 907	1 527 550	15%
15-64	3 399 926	3 4 9 8 4 0 3	6898329	69%
65+	554356	975873	1 530 229	15%
Total	4739925	5216183	9956108	100%

## **Demographic information**

Population	9956108	2007
Population annual growth rate (%)	-0.20%	2005
Life expectancy at birth	73.02	2005
Death rate (per 1000 population)	13.46	2005
Live births (per 1000 population)	9.67	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	138388*	2007
Gross domestic product per capita	13762.243*	2007
Total expenditure on health as % of GDP	7.90	2004
General government expenditure on health as % of total expenditure on health	71.6	2004
Private expenditure on health as % of total expenditure on health	28.4	2004

#### Healthcare data

Hospitals (per 100000 population)	1.79	2006
Beds (per 100000 population)	791.68	2006
Number of physicians	32877	2003
Density of physicians (per 1 000 population)	3.33	2003
Number of nurses	87 381	2003
Density of nurses (per 1 000 population)	8.85	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System

Proportion of deaths resulting from cardiovascular disease			Not available	
Part of population publicly and p	orivately insured	f.		
Public insurance company	95%			
Private insurance company	5%			
Private cash payment	0%			
		0	50	100
estimative				
Possibility of subscribing to priva	te health insura	ance plans		Yes
Part of the population affected by cardiac arrhythmias				3.1
Reimbursement for				
ICD devices				
				$\checkmark$

 $\checkmark$ 

CRT devices

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4

15

## 3. Education

Is there an official reco	gnition of the subspecialty such as "electrophysiologist"?	Yes
Official name:	Arrhythmologist and cardiac electrophy	ysiologist



### Number of medical faculties

# 4. Pacemakers

Number	of	imp	lanting	centres
Number	UI.	mp	anung	centres

#### Pacemaker units implanted

	2006						
Single-chamber	1810						
Dual-chamber	2 4 4 0						
Total	4 4 6 9						
	2007						
Single-chamber	1724						
Dual-chamber	2 286						
Total	4 288						
		0	1 000	2000	3000	4000	500

#### Specialty performing implants

Cardiologists	95%
Surgeons	5%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 12

### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Implantable Cardiac Defibrillator

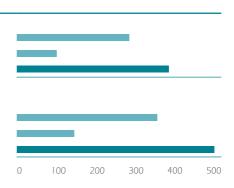
#### Number of implanting centres

12

#### **ICD** units implanted

275
215
97
372

	2007
Single-chamber	343
Dual-chamber	140
Total	483



## Specialists performing implant surgeries

Cardiologists	95%
Surgeons	5%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2683	2 37 1
Centres performing catheter ablation	12	12
Mean number (ablations/centres)	224	198
Number of AF ablations	309	237

# 8. Device specific

Availability of remote monitoring of devices
--

Availability of a national institution coordinating a	and guiding device recalls Yes
Name of the institution:	Authority for Medical Devices

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	V	

Necessity of guideline translation to national language	No

Source: Working Group of Arrhythmias and Cardiac Pacing Hungarian Society of Cardiology





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# IRELAND



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# 1. Statistics

## Age pyramid for Ireland (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	456751	426716	883467	21%
15-64	1 431 967	1 428 157	2861407	67%
65+	219553	276892	494 974	12%
Total	2 108 27 1	2 1 3 1 5 7 7	4239848	100%

### **Demographic information**

Population	4 2 3 9 8 4 8	2006
Population annual growth rate (%)	1.60%	2006
Life expectancy at birth	77.70	2005
Death rate (per 1000 population)	7.0	2004
Live births (per 1000 population)	15.3	2004

## **Economic information**

Gross domestic product (U.S dollars - billions)	258 574*	2007
Gross domestic product per capita	59924.415*	2007
Total expenditure on health as % of GDP	7.2	2004
General government expenditure on health as % of total expenditure on health	79.5	2004
Private expenditure on health as % of total expenditure on health	20.50	2004

#### Healthcare data

Hospitals	Not available	Not available
Beds (per 1 000 population)	Not available	Not available
Number of physicians	11141	2004
Density of physicians (per 1 000 population)	2.79	2004
Number of nurses	60'774	2004
Density of nurses (per 1 000 population)	15.2	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{*}$  IMF Estimative

# 2. Healthcare System

In Ireland, the health care system is based on a system of eligibility containing two groups. Group I refers to a wide range of free services and is designed for those citizens whose income is below certain level. It figures for 36% of the population. Group II refers to all remaining population and offers limited eligibility. The private sector is also well developed through insurance cover or direct payment. (Source: Highlights on health. WHO 2004)

Proportion of deaths resulting	g from cardiovascu	lar disease	3	5%	2000
Part of population publicly an Public insurance company	id privately insured	I <sup>*</sup>			
Private insurance company	47.2%				
Private cash payment	Not available				
		0	50		100
		0	50		
Possibility of subscribing to p	rivate health insura	-			Yes
Possibility of subscribing to p Part of the population affecte		ince plans			Yes 1.90%
Part of the population affecte		ince plans			
		ince plans			

 $\checkmark$ 

CRT devices

Angent

13

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?		
Offical name:	Cardiac Electrophysiolo	ogist



Number of medical faculties	Not available
Number of medical faculties	Not available

# 4. Pacemakers

## Pacemaker units implanted

	2006				
Single-chamber	1 002				
Dual-chamber	1 269				
Total	2 2 7 1				
	2007				
Single-chamber	947				
Dual-chamber	889				
Total	1836				
		0	1 000	2000	3000

### Specialty performing implants

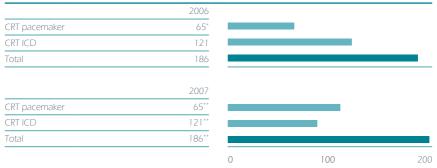
Cardiologists	100%
Surgeons	0%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

Not available

### **CRT** units implanted



\* Refers to 2005

\*\* approx.

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	12

### **ICD** units implanted

	2006				
Single-chamber	280*				
Dual-chamber	238*				
Total	518				
	2007				
Single-chamber	228				
Dual-chamber	101				
Total	329				
		0	200	400	600

\* Refers to 2005

mon

## Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	1 500*	1 600*
Centres performing catheter ablation	7	8
Mean number (ablations/centres)	214	228
Number of AF ablations	400*	400*

\* approx.

# 8. Device specific

Availability of remote monitoring of devices	☑

Availability of a national institution coordinati	ng and guiding device recalls	Yes
Name of the institution:	Irish Medicines Board Medical Devices [	Department

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	No
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Source: Irish Cardiac Society Irish Healthcare Executive - HSE

# ISRAEL



The EHRA White Book 2008 · 157

# 1. Statistics

## Age pyramid for Israel (2007)

Source: US Census Bureau



Male



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	1018229	971083	1989312	28%
15-64	2 2 4 2 9 2 8	2 183 688	4426616	62%
65+	303 289	393142	696431	10%
Total	3 564 446	3 5 4 7 9 1 3	7 1 1 2 3 5 9	100%

### **Demographic information**

Population	7 1 1 2 3 5 9	2007
Population annual growth rate (%)	2.30%	2005
Life expectancy at birth	79.73	2003
Death rate (per 1000 population)	Not available	Not available
Live births (per 1000 population)	20.77	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	161935	2007
Gross domestic product per capita	22475.074*	2007
Total expenditure on health as % of GDP	8.7	2004
General government expenditure on health as % of total expenditure on health	7	2004
Private expenditure on health as % of total expenditure on health	30	2004

#### Healthcare data

5.27	2004
596.74	2004
24 577	2003
3.82	2003
40 280	2003
6.26	2003
	10200

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. 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)

Proportion of deaths resulting from cardiovascular disease			Not available	
Part of population publicly and p Public insurance company	rivately insured			
Private insurance company	5%			
Private cash payment	0%			
		0	50	100
* estimative				

Possibility of subscribing to private health insurance plans	Yes
rossibility of subscribility to private nearth insurance plans	163

Part of the population affected by cardiac arrhythmias	Not available
--	---------------

#### **Reimbursement for**

ICD devices	
Pacemakers	$\checkmark$
CRT devices	$\checkmark$

Argente

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	<b>90</b> %
Number of medical faculties	4
4. Pacemakers	
Number of implanting centres	18

## Pacemaker units implanted

	2006				
Single-chamber	988				
Dual-chamber	1 508				
Total	2 4 9 6				
	2007				
Single-chamber	1 500				
Dual-chamber	1 050				
Total	2 550				
		0	1 000	2000	3

## Specialty performing implants

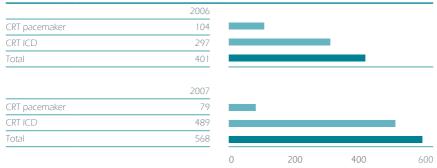
Cardiologists	95%
Surgeons	5%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 18

### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Implantable Cardiac Defibrillator

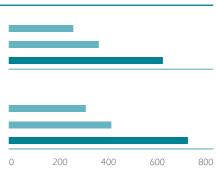
#### Number of implanting centres

17

#### **ICD** units implanted

	2006
Single-chamber	252
Dual-chamber	351
Total	603

	2007
Single-chamber	300
Dual-chamber	400
Total	700



Angent

## Specialists performing implant surgeries

Cardiologists	90%
Surgeons	10%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	900	1 640
Centres performing catheter ablation	12	12
Mean number (ablations/centres)	75	136.7
Number of AF ablations	Not available	350

## 8. Device specific

Availability of remote monitoring of devices	
Availability of remote monitoring of devices	

Availability of a national ins	titution coordinating and guiding device recalls	Yes
Name of the institution:	The Department of Medical Devices - The Pharmaceutical ac Minis	dministration, stry of Health

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	

Necessity of guideline translation to national language	Not available
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Source: Israel Group of Pacing and Electrophysiology

# ITALY



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# 1. Statistics

## Age pyramid for Italy (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	4121246	3874971	7996217	14%
15-64	19527203	19059897	38587100	66%
65+	4823244	6741172	11564416	20%
Total	28471693	29676040	58147733	100%

### **Demographic information**

Population	58 1 4 7 7 3 3	2007
Population annual growth rate (%)	0.10%	2005
Life expectancy at birth	80.38	2002
Death rate (per 1000 population)	3.17	2002
Live births (per 1000 population)	9.45	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	2104.67	2007
Gross domestic product per capita	35872.42	2007
Total expenditure on health as % of GDP	8.70	2004
General government expenditure on health as % of total expenditure on health	75.1	2004
Private expenditure on health as % of total expenditure on health	24.90	2004

#### Healthcare data

Hospitals	1410	2004
Beds (per 1 000 population)	5.0	2004
Number of physicians	339 0 98	2004
Density of physicians (per 1 000 population)	7.00	2007
Number of nurses	232 522	2004
Density of nurses (per 1 000 population)	5.44	2004

Sources: Euro WHO, IMF, U.S. Census Bureau, International

# 2. Healthcare System

The National Health System was established in 1978 financed by taxation. It aims to grant universal access to a uniform level of care throughout the country. Universal coverage has been achieved, however there are differences in health care and health expenditure between north and south. The state defines the basic benefit packages and the regions have the responsability of organising and administrating the healthcare system. Local health untis have the responsability of delivering the services. (Highlights on health. WHO 2004)

Proportion of deaths resulting from cardiovascular disease				230 000
Part of population publicly and p	privately insured	r		
Public insurance company	90%			
Private insurance company	9.5%			
Private cash payment	0.5%	1.0		
		0	50	100
* estimative				
Possibility of subscribing to priva	ate health insura	ance plans		Yes
Part of the population affected b	w cardiac arrhyt	hmins		Not available
Part of the population affected b	by caruiac arrnyi	.1111113		NOT AVAILABLE

#### Reimbursement for

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	V

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	10%
Number of medical faculties	38
4. Pacemakers	
Number of implanting centres	400

## Pacemaker units implanted

	2006				
New implants	40 000				
Replacements	15000				
Total	55000				
	2007				
New implants	43 000				
Replacements	15000				
Total	58 000				
		0	20000	40 000	60.00

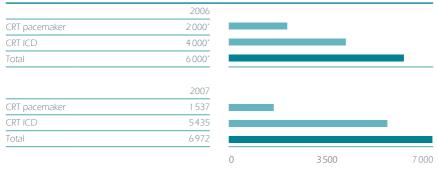
## Specialty performing implants

Cardiologists	98%
Surgeons	2%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

### **CRT** units implanted



\* approx.

#### Specialty performing implants

Cardiologists	98%
Surgeons	2%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	400
------------------------------	-----

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	13400	15200

## Specialty performing implants

Cardiologists	98%
Surgeons	2%

	2006	2007
Number of ablations performed	17977	Not available
Centres performing catheter ablation	81	Not available
Mean number (ablations/centres)	222	Not available
Number of AF ablations	5341	Not available

# 8. Device specific

Availability of remote monitoring of devices	
A contract of the month of the	

Availability of a national institution coordinating	and guiding device recalls	Yes
Name of the institution:	Ministry of Health and AIAC (Scientific /	Association)

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	$\checkmark$

Necessity of guideline translation to national language

Source: National Working Group on Arrhythmia and Cardiac Pacing - Italy

No

# LATVIA



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# 1. Statistics

## Age pyramid for Latvia (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	156539	149171	305710	13%
15-64	773135	815938	1 589 07 3	70%
65+	126650	259868	386518	17%
Total	1 056 323	1 224 977	2 281 300	100%

### **Demographic information**

Population	2 28 1 300	2007
Population annual growth rate (%)	-0.80%	2005
Life expectancy at birth	70.96	2006
Death rate (per 1000 population)	14.47	2005
Live births (per 1000 population)	9.75	2006

## **Economic information**

Gross domestic product (U.S dollars - billions)	27 341*	2007
Gross domestic product per capita	11984.761*	2007
GDP growth	8.80%	2007
Total expenditure on health as % of GDP	7.1	2004
General government expenditure on health as % of total expenditure on health	56.6	2004
Private expenditure on health as % of total expenditure on health	43.4	2004

## Healthcare data

Hospitals (per 100 000 population)	4.12	2007
Beds (per 100000 population)	767.41	2007
Number of physicians	8014	2007
Density of physicians (per 1 000 population)	3.51	2007
Number of nurses	14564	2007
Density of nurses (per 1 000 population)	6.38	2007

Sources: Euro WHO, IMF, U.S. Census Bureau, International, Ministry of Foreign Affairs Latvia \* IMF estimative

# 2. Healthcare System

National Health System

Proportion of deaths resulting fro	ting from cardiovascular disease		55.7%	
Part of population publicly and p	orivately insured	r		
Public insurance company	85%			
Private insurance company	14%			
Private cash payment	1%	1		
		0	50	100
estimative				
Part of the population affected b	y cardiac arrhyt	hmias		<b>5 - 6</b> %
Reimbursement for				
ICD devices				$\checkmark$
Pacemakers				$\checkmark$
CRT devices				

mon

2

3

## 3. Education

Is there an official recognition of the subspecialty such as	"electrophysiologist"?	Yes
Offical name:	Cardiologist - electrophy:	siologist



# 4. Pacemakers

Number	of in	nplanti	ing co	entres

## Pacemaker units implanted

	2006					
	2006					
New implants	704					
Replacements	107					
Total	811					
	2007					
New implants	810					
Replacements	285					
Total	1 095					
		0	300	600	900	12

Specialty performing implants	
Cardiologists	66.6%
Surgeons	33.3%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

## 2

### **CRT** units implanted



#### Specialty performing implants

Cardiologists	50%
Surgeons	50%

## 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

2

#### **ICD** units implanted

	2006	
Single-chamber	7	
Dual-chamber	10	
Total	17	
	2007	
Single-chamber	11	
Dual-chamber	14	
Total	25	

0

5

10

15

20

25

Angent

#### Specialists performing implant surgeries

Cardiologists	50%
Surgeons	50%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	145	215
Centres performing catheter ablation	2	2
Mean number (ablations/centres)	72.5	107.5
Number of AF ablations	42	18

## 8. Device specific

Availability of a national institution c	oordinating and guiding device recalls	Yes
Name of the institution:	Health Statistics and Medical Technologies S Medical Devices Boa	

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	$\checkmark$

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

Source: The registry of the European Working Group on Cardiac Pacing (EWGCP)

## LEBANON

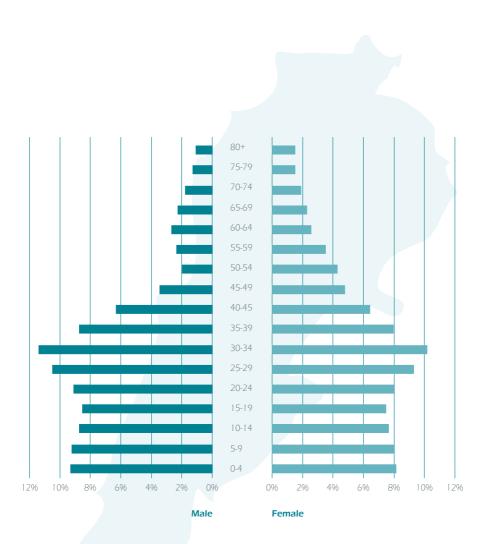


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## 1. Statistics

## Age pyramid for Lebanon (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	526 994	505 894	1 032 888	26%
15-64	1 275 02 1	1 380 1 3 1	2655152	67%
65+	128002	155899	283 90 1	7%
Total	1930017	2 04 1 9 2 4	3971941	100%

#### **Demographic information**

Population	3 97 1 94 1	2007
Population annual growth rate (%)	1.60%	2003
Life expectancy at birth	71.3	2003
Death rate (per 1000 population)	4.1	2004
Live births (per 1000 population)	Not available	Not available

#### **Economic information**

Gross domestic product (U.S dollars - billions)	24640*	2007
Gross domestic product per capita	6569.347*	2007
Total expenditure on health as % of GDP	10.2	2003
General government expenditure on health as % of total expenditure on health	29.3	2003
Private expenditure on health as % of total expenditure on health	56.2	2003

#### Healthcare data

Hospitals (per 100000 population)	Not available	Not available
Beds (per 100 000 population)	Not available	Not available
Number of physicians	Not available	Not available
Density of physicians (per 1 000 population)	2.36	2003
Number of nurses	Not available	Not available
Density of nurses (per 1 000 population)	1.32	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

National Health System

Proportion of deaths resulting fro	m cardiovascular dis	ease		Not available
Part of population publicly and p	rivately insured <sup>*</sup>			
Public insurance company	70%			
Private insurance company	25%			
Private cash payment	5%			
	0		50	100
estimative				
	te health insurance p	lans		Ye
	te health insurance p	lans		Ye
Possibility of subscribing to priva				
Possibility of subscribing to priva				
Possibility of subscribing to private Possibility of subscribing to private Possibility of subscribing to private Possibility of the population affected by				
Possibility of subscribing to privat Part of the population affected by Reimbursement for				10%
Possibility of subscribing to private Part of the population affected by Reimbursement for ICD devices Pacemakers				Ye: 10% ☑ ☑

Argente

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	3%
Number of medical faculties	6
4. Pacemakers	
Number of implanting centres	30

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	300	350

Specialty performing implants			
Cardiologists	100%		
Surgeons	0%		

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 10

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

#### 6. Implantable Cardiac Defibrillator

Number of implanting centres	10
------------------------------	----

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	120	Not available

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

Angent

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	60	90
Centres performing catheter ablation	3	3
Mean number (ablations/centres)	20	30
Number of AF ablations	0	0

## 8. Device specific

Availability of remote monitoring of devices	
, transformer in the second se	

Availability of a national institution coordinating and guiding device recalls		
Name of the institution:	Vinistry of Public Health	

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

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

Source: Lebanese Working Group on Electrophysiology

## LIBYA

There will be information in the next edition.



# LITHUANIA

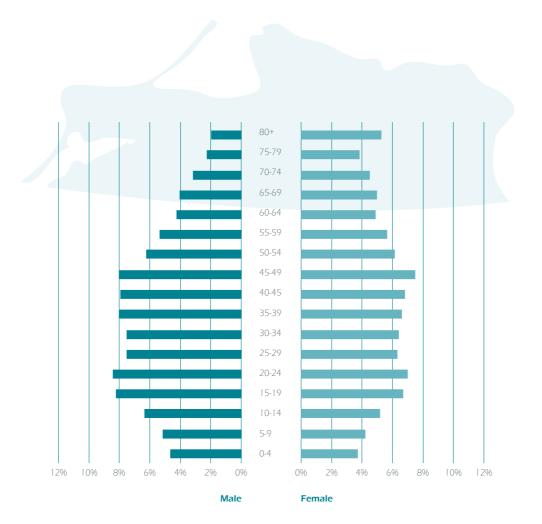


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## 1. Statistics

## Age pyramid for Lithuania (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	264668	250 997	515665	14%
15-64	1214236	1 263 198	2 477 434	69%
65+	197 498	374608	572106	16%
Total	1 676 402	1 888 803	3 565 205	100%

#### **Demographic information**

Population	3 565 205	2007
Population annual growth rate (%)	-0.60%	2005
Life expectancy at birth	71.33	2005
Death rate (per 1000 population)	12.83	2005
Live births (per 1000 population)	8.95	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	38345*	2007
Gross domestic product per capita	11354.354*	2007
Total expenditure on health as % of GDP	6.5	2004
General government expenditure on health as % of total expenditure on health	75	2004
Private expenditure on health as % of total expenditure on health	25	2004

#### Healthcare data

5.13	2006
798.86	2006
13682	2003
3.97	2003
26229	2003
7.62	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

National obligatory health insurance fund

Proportion of deaths resulting fro	om cardiovascul	ar disease	5	4.7	2007
Part of population publicly and p	rivately insured	•			
Public insurance company	100%				
Private insurance company	0%				
Private cash payment	0%				
		0	50		10
e de la companya de l					
	te health insura	nce plans			Ye
	te health insura	nce plans			Ye
Possibility of subscribing to priva					
estimative Possibility of subscribing to priva Part of the population affected b					
Possibility of subscribing to priva Part of the population affected b					
Possibility of subscribing to priva Part of the population affected b Reimbursement for					18%
Possibility of subscribing to priva					Ye: 18%

Argent

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	67%
Number of medical faculties	2
4. Pacemakers	
Number of implanting centres	3

#### Pacemaker units implanted

	2006					
Single-chamber	540					
Dual-chamber	900					
Total	1 440					
	2007					
Single-chamber	420					
Dual-chamber	1 200					
Total	1 620					
		0	500	1 000	1 500	

## Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 3

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

### 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

## 3

#### **ICD** units implanted

and the second sec					
	2006				
Single-chamber	12				
Dual-chamber	4				
Total	16				
	2007				
Single-chamber	17				
Dual-chamber	10				
Total	27				
		0	10	20	30

mon

## Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	632	580
Centres performing catheter ablation	3	3
Mean number (ablations/centres)	211	193
Number of AF ablations	32	32

## 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating and guiding device recalls		
Name of the institution:	State Health Care Accreditation Agency under Ministry of Health c Republic of Lithu	

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

Source: National Working Group – Lithuania

# LUXEMBOURG



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## 1. Statistics

## Age pyramid for Luxembourg (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	46 478	43656	90134	19%
15-64	161466	158261	319727	67%
65+	28 5 30	41831	70361	15%
Total	236 474	243748	480 222	100%

#### **Demographic information**

Population	480222	2007
Population annual growth rate (%)	1,4%	2005
Life expectancy at birth	79.71	2005
Death rate (per 1000 population)	7.86	2005
Live births (per 1000 population)	11.75	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	50 160*	2007
Gross domestic product per capita	104673.281*	2007
Total expenditure on health as % of GDP	8	2004
General government expenditure on health as % of total expenditure on health	90.4	2004
Private expenditure on health as % of total expenditure on health	9.6	2004

#### Healthcare data

Hospitals	19	2004
Beds (per 1 000 population)	6.8	2004
Number of physicians	1 206	2003
Density of physicians (per 1 000 population)	3.9	2006
Number of nurses	4151	2003
Density of nurses (per 1 000 population)	9.16	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

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

Proportion of deaths resulting	g from cardiovascu	lar disease		38.95%	2005
Part of population publicly ar	d privately insured	r			
Public insurance company	100%				
Private insurance company	58%				
Private cash payment	Not available				
		0	50		10
* estimative					
Possibility of subscribing to p	rivate health insura	ance plans			Ye
Possibility of subscribing to p	rivate health insura	ance plans			Ye
Possibility of subscribing to p Part of the population affecte				Not a	
Part of the population affecte				Not a	
Part of the population affecte Reimbursement for				Not a	vailable
				Not a	Ye: vailable

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# Arthered

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	0%
Number of medical faculties	0
4. Pacemakers	
Number of implanting centres	7

### Pacemaker units implanted

	2006					
New implants	39*					
Replacements	23*					
Total	62*					
	2007					
New implants	64					
Replacements	39					
Total	103					
		0	30	60	90	12

\* These numbers refer to only one center

#### Specialty performing implants

Cardiologists	80%
Surgeons	20%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

### 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

**ICD** units implanted

	2006				
Single-chamber	15*			l i i	
Dual-chamber	7*				
Total	30*				
	2007				
Single-chamber	22**				
Dual-chamber	9**				
Total	36**				
		0	10	20	З

\* refers to 8 additional biventr.

\*\* refers to additional 5 biventr.

1

40

# -

Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	66	80
Centres performing catheter ablation	1	1
Mean number (ablations/centres)	66	80
Number of AF ablations	0	Not available

## 8. Device specific

Availability of remote monitoring of devices	M
· · · · · · · · · · · · · · · · · · ·	

Availability of a national institution coordinating and guid	ing device recalls	Yes
Name of the institution:	Ministère de la Santé Direction de la 1	Santé

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	Yes
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Source: Institut National de Chirurgie Cardiaque et de Cardiologie Interventionnelle and Luxembourg Society of Cardiology





There will be information in the next edition.



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# MOROCCO

There will be information in the next edition.



# **NETHERLANDS**



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## 1. Statistics

## Age pyramid for Netherlands (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	1 505 931	1 436 532	2942463	18%
15-64	5683877	5 557 745	11241622	68%
65+	1015731	1 370 797	2 386 528	14%
Total	8 205 539	8365074	16570613	100%

#### **Demographic information**

Population	16570613	2007
Population annual growth rate (%)	0.50%	2005
Life expectancy at birth	79.42	2004
Death rate (per 1000 population)	8.11	2006
Live births (per 1000 population)	11.51	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	768704*	2007
Gross domestic product per capita	46 260.689*	2007
Total expenditure on health as % of GDP	9.2	2004
General government expenditure on health as % of total expenditure on health	62.4	2004
Private expenditure on health as % of total expenditure on health	37.6	2004

#### Healthcare data

1.18	2006
4.8	2004
50854	2003
3.15	2003
221783	2003
13.73	2003
	4.8 50854 3.15 221783

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

In the Netherlands the system was changed to a national healthcare system in 2006. It has a basic insurance for everyone and the possibility to add extra insurances.

Proportion of deaths resulting fr	om cardiovascu	lar disease	41	354	2007
Part of population publicly and p	orivately insured	r			
Public insurance company					
Private insurance company	28%				
Private cash payment	7%				
		0	50		10
estimative					
Possibility of subscribing to priva	te health insura	ance plans			Ye
Part of the population affected b	y cardiac arrhyt	hmias			1,9%
of total heart diseases					
Reimbursement for					

ICD devices	$\checkmark$
Pacemakers	
CRT devices	

8

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	Yes
Offical name:	Electrophysiologist



## 4. Pacemakers

Number of implanting centres	102

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	9765	Not available

Specialty performing implants	
Cardiologists	99%
Surgeons	1%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 16

#### **CRT** units implanted



\* Eucomed

#### Specialty performing implants

Cardiologists	99%
Surgeons	1%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	16
Number of implanting centres	16

#### **ICD** units implanted

2006				
Not available				
Not available				
1779				
2007				
1 260*				
1 539*				
2 7 9 9*				
	0	1 000	2000	3000
	Not available Not available 1 779 2007 1 260° 1 539°	Not available Not available 1 779 2007 1 260* 1 539* 2 799*	Not available Not available 1779 2007 1260 <sup>-</sup> 1539 <sup>-</sup> 2799 <sup>-</sup>	Not available           Not available           1779           2007           1260°           1539°           2799°

\*Eucomed

#### Specialists performing implant surgeries

Cardiologists	99%
Surgeons	1%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2 2 9 6 *	Not available
Centres performing catheter ablation	7*	Not available
Mean number (ablations/centres)	328*	Not available
Number of AF ablations	512*	Not available

\* Eucomed

## 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating	and guiding device recalls	Yes
Name of the institution:	Health Care Inspect	torate

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	

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

Source: Leiden University Medical Center, Department of Cardiology, National Working Group of arrhythmia and Eucomed

# NORWAY



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## 1. Statistics

## Age pyramid for Norway (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	450612	430126	880738	19%
15-64	1 552 473	1 507 638	3060111	66%
65+	291659	395418	687 077	15%
Total	2 294 744	2 3 3 1 8 2	4627926	100%

#### **Demographic information**

Population	4627926	2007
Population annual growth rate (%)	0.60%	2005
Life expectancy at birth	80.48	2005
Death rate (per 1000 population)	8.9	2005
Live births (per 1000 population)	12.28	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	391498	2007
Gross domestic product per capita	83922.497*	2007
Total expenditure on health as % of GDP	9.7	2004
General government expenditure on health as % of total expenditure on health	83.5	2004
Private expenditure on health as % of total expenditure on health	16.5	2004

#### Healthcare data

Hospitals (per 100 000 population)	1.51	2006
Beds (per 100 000 population)	413.37	2006
Number of physicians	14200	2003
Density of physicians (per 1 000 population)	3.13	2003
Number of nurses	67 274	2003
Density of nurses (per 1 000 population)	14.84	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International \* IMF estimative

## 2. Healthcare System

In Norway, the healthcare system is nationally organised. The hospitals have free admission. There are very few private actors.

Proportion of deaths resulting from cardiovascular disease	<b>3.2</b> %*	2005

\* of total population

Public insurance company	99%			
Private insurance company	1%	1.00		
Private cash payment	0%			
		0	50	100

Possibility of subscribing to private health insurance plans Yes

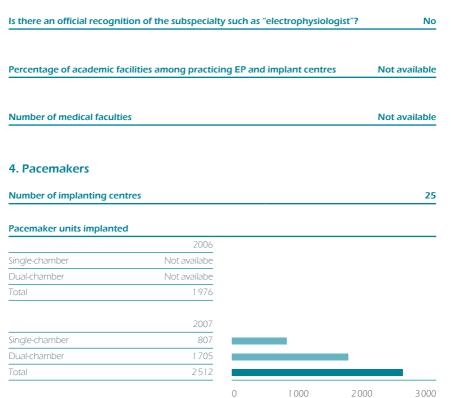
Part of the population affected by cardiac arrhythmias	Not available
--	---------------

#### **Reimbursement for**

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	$\checkmark$

-

## 3. Education



Specialists performing implant surgeries	
Cardiologists	100%
Surgeons	0%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 12

#### **CRT** units implanted



#### Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

## 6. Implantable Cardiac Defibrillator

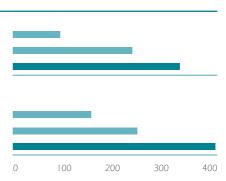
#### Number of implanting centres

12

#### **ICD** units implanted

	2006
Single-chamber	93
Dual-chamber	234
Total	327

	2007
Single-chamber	153
Dual-chamber	243
Total	396



## Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	1 1 4 6	Not available
Centres performing catheter ablation	5	Not available
Mean number (ablations/centres)	230	Not available
Number of AF ablations	294	Not available

## 8. Device specific

Availability of a national institution coordinating a	nd guiding device recalls	Yes
Name of the institution:	Norwegian Directorate	of Health

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	No
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Source: Working Group on Arrythmias - Norway and Eucomed (2005-2008)

## POLAND



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## 1. Statistics

## Age pyramid for Poland (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	3 0 7 0 3 8 8	2906121	5976509	16%
15-64	13639012	13761154	27 400 166	71%
65+	1 964 429	3 1 7 7 1 3 7	5 1 4 1 5 6 6	13%
Total	18673829	19844412	38518241	100%

#### **Demographic information**

Population	38518241	2007
Population annual growth rate (%)	0%	2005
Life expectancy at birth	75.12	2005
Death rate (per 1000 population)	9.65	2005
Live births (per 1000 population)	9.55	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	420 284	2007
Gross domestic product per capita	11,041.216*	2007
Total expenditure on health as % of GDP	6.2	2004
General government expenditure on health as % of total expenditure on health	68.6	2004
Private expenditure on health as % of total expenditure on health	31.4	2004

#### Healthcare data

Hospitals	736	2004
Beds (per 1 000 population)	4.9	2004
Number of physicians	95272	2003
Density of physicians (per 1 000 population)	3.1	2003
Number of nurses	188898	2003
Density of nurses (per 1 000 population)	4.9	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

Poland has a healthcare system (NHS Fund) based on compulsory general health insurance.

Proportion of deaths resulting from cardiovascular disease	300 per 100 000 persons <sup>*</sup>	2006
rioportion of actual resulting nom caratovascular alsease		2000

\* estimative for males only

Part of population publicly and p Public insurance company	90%*			
Private insurance company	10%**			
Private cash payment	1%***	1		
		0	50	100
* estimative				

\*\* estimative, mainly as supplementary \*\* estimative, less than 1%

Possibility of subscribing to private health insurance plans	Yes

Part of the population affected b	y cardiac arrhythmias	Not available

#### **Reimbursement for**

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	$\checkmark$

Argente

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	20%
Number of medical faculties	15
4. Pacemakers	
Number of implanting centres	86

#### Pacemaker units implanted

	2006					
Single-chamber	11000					
Dual-chamber	7 000					
Total	18000					
	2007					
Single-chamber	11550					
Dual-chamber	7 350					
Total	18900					
		0	5000	10000	15000	200

Specialty performing implants	
Cardiologists	99%*
Surgeons	1%**

or trained in cardiology
 only intraoperatively

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 48

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	95%
Surgeons	5%*

\* as second one procedure or occasion revascularisation

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	45
------------------------------	----

#### **ICD** units implanted

	2006					
Single-chamber	1 100					
Dual-chamber	250					
Total	1 350					
	2007					
Single-chamber	1 320					
Dual-chamber	275					
Total	1 595					
		0	400	800	1 200	1600

mon

#### Specialists performing implant surgeries

Cardiologists	99%
Surgeons	1%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2882	3100
Centres performing catheter ablation	29	29
Mean number (ablations/centres)	99	107
Number of AF ablations	Not available	Not available

## 8. Device specific

Availability of remote monitoring of devices	$\mathbf{\overline{\mathbf{M}}}$
Availability of remote monitoring of devices	

Availability of a nation	al institution coordinating and guiding device recalls	Yes
Name of the institution:	Urzad Rejestracji Produktow Medycznych (National Consultant for Car Office for Registration of Medicinal Product, Medical Devices and Biocida	

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	No
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Source: Polish National Registries

## PORTUGAL



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## 1. Statistics

## Age pyramid for Portugal (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	914480	837 525	1 752 005	16%
15-64	3 50 1 206	3 55 1 706	7052912	66%
65+	757 220	1 080 699	1837919	17%
Total	5172906	5 469 930	10642836	100%

#### **Demographic information**

Population	10642836	2007
Population annual growth rate (%)	0.50%	2005
Life expectancy at birth	78.31	2004
Death rate (per 1000 population)	8.23	2004
Live births (per 1000 population)	10.38	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	223 303	2007
Gross domestic product per capita	21018.83	2007
Total expenditure on health as % of GDP	9.8	2004
General government expenditure on health as % of total expenditure on health	71.6	2004
Private expenditure on health as % of total expenditure on health	28.4	2004

#### Healthcare data

Hospitals	221	2004
Beds (per 1 000 population)	4.0	2004
Number of physicians	34 4 4 0	2003
Density of physicians (per 1 000 population)	3.42	2003
Number of nurses	43860	2003
Density of nurses (per 1 000 population)	4.36	2003

Sources: Euro WHO, IMF, U.S. Census Bureau, International

## 2. 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. (Source: Highlights on health. WHO 2004)

Proportion of deaths resulting from cardiovascular disease			34%		
Part of population publicly and p	rivately insured	ľ			
Public insurance company	85%				
Private insurance company	10%				
Private cash payment	5%				
		0	50		100
* estimative					

Possibility of subscribing to private health insurance plans	Yes
· obsidiately of subscribing to produce recent insurance plans	

Part of the population affected by cardiac arrhythmias	5%
--	----

#### **Reimbursement for**

ICD devices	
Pacemakers	$\checkmark$
CRT devices	

mon

6

41

## 3. Education

Is there an official recognition of the subspecialty such as "electroph	ysiologist"?	Yes
Offical name:	Cardiac Electrophy	/siology



#### Number of medical faculties

## 4. Pacemakers

#### Pacemaker units implanted

	2006					
Single-chamber	3270					
Dual-chamber	3882					
Total	7 152					
	2007					
	2007					
Single-chamber	3411					
Dual-chamber	4 2 2 1					
Total	7632					
		0	2000	4000	6000	80

## Specialty performing implants

Cardiologists	95%
Surgeons	5%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 22

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	99%
Surgeons	1%

## 6. Implantable Cardiac Defibrillator

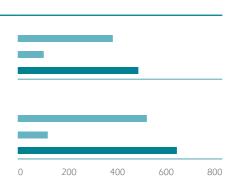
#### Number of implanting centres

19

#### **ICD** units implanted

	2006
Single-chamber	372
Dual-chamber	100
Total	472

	2007
Single-chamber	505
Dual-chamber	117
Total	622



mon

### Specialists performing implant surgeries

Cardiologists	99%
Surgeons	1%

## 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	1 360	1 480
Centres performing catheter ablation	15	15
Mean number (ablations/centres)	91	99
Number of AF ablations	296	Not available

## 8. Device specific

Availability of remote monitoring of devices
--

Availability of a nationa	I institution coordinating and guiding device recalls	Yes
Name of the institution:	Unidade de Vigilância de Produtos de Saúde (Healthcare Products Vigila IN	ince Unit) IFARMED

## 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	No
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Source: WHO, Eucomed and APAPE Portugal

# **REPUBLIC OF MOLDAVIA**

There will be information in the next edition.



# ROMANIA



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## 1. Statistics

## Age pyramid for Romania (2007)

Source: US Census Bureau



## Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	1 778 864	1 687 659	3 466 523	16%
15-64	7718125	7 7 9 1 1 0 2	15509227	70%
65+	1 337 915	1 933 197	3271112	15%
Total	10834904	11411958	22 246 862	100%

#### **Demographic information**

Population	22 246 862	2007
Population annual growth rate (%)	-0.40%	2005
Life expectancy at birth	72.69	2006
Death rate (per 1000 population)	11.96	2006
Live births (per 1000 population)	10.17	2006

#### **Economic information**

Gross domestic product (U.S dollars - billions)	165 983*	2007
Gross domestic product per capita	7 697.208*	2007
Total expenditure on health as % of GDP	5.1	2004
General government expenditure on health as % of total expenditure on health	66.1	2004
Private expenditure on health as % of total expenditure on health	33.9	2004

#### Healthcare data

Hospitals (per 100000 population)	1.94	2004
Beds (per 100 000 population)	654.29	2004
Number of physicians	42 538	2003
Density of physicians (per 1 000 population)	1.9	2003
Number of nurses	86802	2003
Density of nurses (per 1 000 population)	3.89	2003

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

## 2. Healthcare System

National Health System

Proportion of deaths resulting fro	om cardiovascu	lar disease		61%	2005
Part of population publicly and p	rivately insured	r			
Public insurance company	57%				
Private insurance company	14%				
Private cash payment	29%				
		0	50		10
estimative					
Possibility of subscribing to priva					
Part of the population affected b	y cardiac arrhyt	hmias		Not a	vailable
Poimburgement for					
Reimbursement for					V
					V V V

Argent

## 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	100%
Number of medical faculties	10
4. Pacemakers	
Number of implanting centres	17

## Pacemaker units implanted

	2006				
Single-chamber	Not available				
Dual-chamber	Not available				
Total	1995				
	2007				
Single-chamber	2007				
Dual-chamber	484				
Total	2 4 9 2				
		0	1 000	2000	3000

## Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### **CRT** units implanted



9

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

#### 6. Implantable Cardiac Defibrillator

Number of implanting centres	10
------------------------------	----

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	65	113

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

Angente

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	1 600*	1 600*
Centres performing catheter ablation	9*	9*
Mean number (ablations/centres)	178*	178*
Number of AF ablations	0*	0*

\* Reflects 2006 + 2007

#### 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordinating and guiding device recalls	
Name of the institution:	Ministry for Health and Family

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language Yes
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Source: Romanian National Working Group of Arrhythmia

## **RUSSIAN FEDERATION**

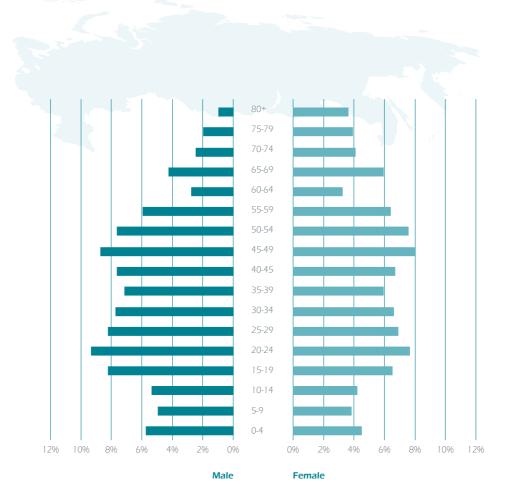


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#### 1. Statistics

#### Age pyramid for Russian Federation (2007)

Source: US Census Bureau



## -

#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	10577858	10033254	20611112	15%
15-64	48 187 807	52045102	100232909	71%
65+	6162400	13695673	19858073	14%
Total	64928065	75774029	140702094	100%

#### **Demographic information**

Population	140702094	2007
Population annual growth rate (%)	-0.30%	2005
Life expectancy at birth	65.37	2005
Death rate (per 1000 population)	16.1	2005
Live births (per 1000 population)	10.18	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	1 289.58	2007
Gross domestic product per capita	9075.052*	2007
Total expenditure on health as % of GDP	6	2004
General government expenditure on health as % of total expenditure on health	61.3	2004
Private expenditure on health as % of total expenditure on health	38.7	2004

#### Healthcare data

Hospitals (per 100000 population)	4.5	2006
Beds (per 100000 population)	965.52	2006
Number of physicians	680 200	2004
Density of physicians (per 1 000 population)	4.7	2004
Number of nurses	156 400	2004
Density of nurses (per 1 000 population)	1.10	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

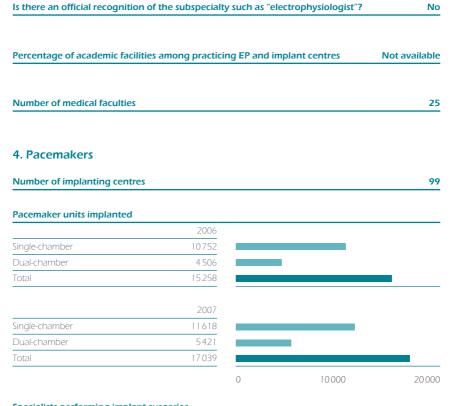
#### 2. Healthcare System

National Health System

Proportion of deaths resulting from cardiovascular disease		56.5%	2007	
Part of population publicly and p	rivately insured*			
Public insurance company	70%			
Private insurance company	25%			
Private cash payment	5%			
	0		50	100
	e health insurance p	lans		Yes
	e health insurance p	lans		Yes
Possibility of subscribing to privat				
Possibility of subscribing to privat Part of the population affected by				
Possibility of subscribing to privat				Yes 25%
Possibility of subscribing to privat Part of the population affected by Reimbursement for				
<ul> <li>estimative</li> <li>Possibility of subscribing to private</li> <li>Part of the population affected by</li> <li>Reimbursement for</li> <li>ICD devices</li> <li>Pacemakers</li> </ul>				25%

# Argente

#### **3. Education**



specialists performing implant surgeries	
Cardiologists	80%
Surgeons	20%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 17

#### **CRT** units implanted



#### Specialists performing implant surgeries

Cardiologists	80%
Surgeons	20%

#### 6. Implantable Cardiac Defibrillator

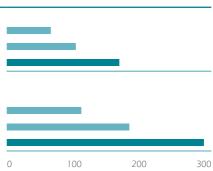
#### Number of implanting centres

39

#### **ICD** units implanted

	2006
Single-chamber	64
Dual-chamber	101
Total	165

	2007
Single-chamber	109
Dual-chamber	180
Total	289



#### Specialists performing implant surgeries

Cardiologists	80%
Surgeons	20%

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	6654	9022
Centres performing catheter ablation	53	58
Mean number (ablations/centres)	126	170
Number of AF ablations	Not available	1 426

#### 8. Device specific

Availability of remote monitoring of devices	

Availability of a national institution coordin	ating and guiding device recalls	Yes
Name of the institution:	Federal center of interventional and surgical arrhythme	ology

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	$\checkmark$
U.S. / European	$\checkmark$

Necessity of guideline translation to national language
Accessity of guideline translation to national language

Source: Russian Society of Arrhythmology

### SAN MARINO

There will be information in the next edition.







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#### 1. Statistics

#### Age pyramid for Serbia (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	702690	649922	1352611	18%
15-64	2532218	2 555 976	5088194	67%
65+	496668	662 527	1 159 195	15%
Total	3731576	3868424	7 600 000	100%

#### **Demographic information**

Population	7 600 000	2007
Population annual growth rate (%)	0.1%	2005
Life expectancy at birth	73.48	2006
Death rate (per 1000 population)	13.88	2006
Live births (per 1000 population)	9.7	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	41679	2007
Gross domestic product per capita	5 595.906*	2007
Total expenditure on health as % of GDP	8	2005
General government expenditure on health as % of total expenditure on health	Not available	Not available
Private expenditure on health as % of total expenditure on health	Not available	Not available

#### Healthcare data

Hospitals (per 100 000 population)	1.39	2006
Beds (per 100 000 population)	542.83	2006
Number of physicians	Not available	Not available
Density of physicians (per 1 000 population)	3.3	2007
Number of nurses	Not available	Not available
Density of nurses (per 1 000 population)	Not available	Not available
		_

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

#### 2. Healthcare System

National Health system

CRT devices

Public insurance company	100%			
Private insurance company	0%			
Private cash payment	0%			
		0	50	100
* estimative				
Possibility of subscribing to priva	te health insura	nce plans		Yes
Possibility of subscribing to priva	te health insura	nce plans		Yes
Possibility of subscribing to priva	te health insura	nce plans		Yes
				Yes 5%
Possibility of subscribing to priva				
Part of the population affected b				
Part of the population affected b Reimbursement for				5%

 $\checkmark$ 

Proportion of deaths resulting from cardiovascular disease 60 - 70 per 1 000 persons

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Argente

#### 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	40%
Number of medical faculties	3
4. Pacemakers	
Number of implanting centres	16

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	3 400	3800

Specialty performing implants	
Cardiologists	95%
Surgeons	5%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 5

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

#### 6. Implantable Cardiac Defibrillator

5

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	140	240

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

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#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	550	650
Centres performing catheter ablation	3	3
Mean number (ablations/centres)	183	217
Number of AF ablations	30	Not available

#### 8. Device specific

Availability of remote monitoring of devices	$\mathbf{\overline{\mathbf{M}}}$

Availability of a national institution coordinating and	guiding device recalls Yes	S
Name of the institution:	Ministry of Health of Serbia	а

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

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

Source: National Working Group of Arrhythmia of Serbia

## **SLOVAKIA**



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#### 1. Statistics

#### Age pyramid for Slovakia (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	456 105	435154	883859	16%
15-64	1913138	1919259	3861895	71%
65+	247728	414287	656518	12%
Total	2620738	2 781 535	5402273	100%

#### **Demographic information**

Population	5402273	2007
Population annual growth rate (%)	0.10%	2005
Life expectancy at birth	74.3	2005
Death rate (per 1000 population)	9.92	2005
Live births (per 1000 population)	10.1	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	74988	2007
Gross domestic product per capita	13857.472	2007
Total expenditure on health as % of GDP	7.2	2004
General government expenditure on health as % of total expenditure on health	73.8	2004
Private expenditure on health as % of total expenditure on health	26.20	2004

#### Healthcare data

Hospitals (per 100000 population)	2.67	2006
	2.07	
Beds (per 100 000 population)	681	2006
Number of physicians	17 172	2003
Density of physicians (per 1 000 population)	3.18	2003
Number of nurses	36 56 9	2003
Density of nurses (per 1 000 population)	6.77	2003

Sources: Euro WHO, IMF, U.S. Census Bureau, International

#### 2. 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. No patient financial contribution for arrhythmia devices or interventions.

Proportion of deaths resulting from cardiovascular disease	<b>53</b> %	2007

Public insurance company	70%			
Private insurance company	30%			
Private cash payment	0%			
		0	50	10

Possibility of subscribing to private health insurance plans	Yes

Part of the population affected b	/ cardiac arrhythmias	Not available
i alt of the population affected b	cardiac arrity crimas	

#### **Reimbursement for**

ICD devices	$\checkmark$
Pacemakers	V
CRT devices	V

Arter

4

14

#### 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?		Yes
Offical name:	Certified clinical activity in diagnostic and interventional electrophysi Certified clinical activity in implantation and management of p	

Percentage of academic facilities among practicing EP and implant centres	6 / 13

#### Number of medical faculties

#### 4. Pacemakers

Maximum In an	- 6	1			
Number	or	Imp	antir	ng	centres

#### Pacemaker units implanted

2006				
2000				
1 704 (1 278 + 426)*				
770 (567 + 203)*				
2514 (1880 + 634)*				
2007				
1 650 (1 286 + 364)*				
914 (744 + 170)*				
2580 (2060 + 520)*				
	0	1 000	2000	3000
	1 704 (1 278 + 426)* 770 (567 + 203)* 2 514 (1 880 + 634)* 2007 1 650 (1 286 + 364)* 914 (744 + 170)*	1704 (1278 + 426)* 770 (567 + 203)* 2514 (1880 + 634)* 2007 1650 (1286 + 364)* 914 (744 + 170)*	1704 (1278 + 426)* 770 (567 + 203)* 2514 (1880 + 634)* 2007 1650 (1286 + 364)* 914 (744 + 170)* 2580 (2060 + 520)*	1704 (1278 + 426)* 770 (567 + 203)* 2514 (1880 + 634)* 2007 1650 (1286 + 364)* 914 (744 + 170)* 2580 ( 2060 + 520 )*

\* refers to new implants and to replacements accordingly.

Specialty performing implants	
Cardiologists	44%
Surgeons	56%

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

4

#### **CRT** units implanted 2006 CRT pacemaker 40 (35+5)\* CRT ICD 38 (32+ 6)\* 78 2007 CRT pacemaker $30(30+0)^*$ CRT ICD 81 (77 + 4)\* Total 20 40 100 120 60 80

\* refers to new implants and to replacements accordingly.

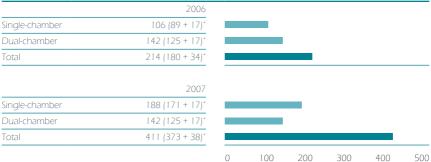
#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

#### 6. Implantable Cardiac Defibrillator

Number of implanting centres	4

#### **ICD units implanted**



\* refers to new implants and to replacements accordingly.

# Andreh

Cardiologists	90%
Surgeons	10%

#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	622	640
Centres performing catheter ablation	3	3
Mean number (ablations/centres)	207	213
Number of AF ablations	Not available	109

#### 8. Device specific

Availability of remote monitoring of devices
--

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

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	Yes
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Source: Slovak Heart Rhythm Association National WG - Slovakia The registry of the European Working Group on Cardiac Pacing (EWGCP) National registry

## **SLOVENIA**



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#### 1. Statistics

#### Age pyramid for Slovenia (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	141670	133720	275390	14%
15-64	712409	700844	1413253	70%
65+	124264	196338	320602	16%
Total	978343	1 030 902	2009245	100%

#### **Demographic information**

Population	2009245	2007
Population annual growth rate (%)	0	2005
Life expectancy at birth	78.35	2006
Death rate (per 1000 population)	9.05	2005
Live births (per 1000 population)	Not available	Not available

#### **Economic information**

Gross domestic product (U.S dollars - billions)	46 084	2007
Gross domestic product per capita	22932.70	2007
Total expenditure on health as % of GDP	9.43	2006
General government expenditure on health as % of total expenditure on health	75.6	2004
Private expenditure on health as % of total expenditure on health	24.40	2004

#### Healthcare data

Hospitals (per 100000 population)	1.44	2006
Beds (per 100000 population)	476.32	2006
Number of physicians	4475	2002
Density of physicians (per 1 000 population)	2.25	2002
Number of nurses	14327	2002
Density of nurses (per 1 000 population)	7.21	2002

Sources: Euro WHO, IMF, U.S. Census Bureau, International

#### 2. Healthcare System

Public healthcare system. National health insurance institute is an autonomous fund.

Proportion of deaths resulting fro	m cardiovascular o	lisease		36%	2006
Part of population publicly and p	ivately insured <sup>*</sup>				
Public insurance company	85%				
Private insurance company	13%				
Private cash payment	2%				
	0		50		100
	e health insurance	plans			Yes
	e health insurance	plans			Yes
Possibility of subscribing to privat				Not a	
Possibility of subscribing to privat				Not a	
Possibility of subscribing to privat Part of the population affected by Reimbursement for				Not a	vailable
estimative Possibility of subscribing to privat Part of the population affected by Reimbursement for CD devices Pacemakers				Not a	Yes vailable

Argunt

#### 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	Not available
Number of medical faculties	2
4. Pacemakers	
Number of implanting centres	2

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	1044	870

Specialty performing implants		
Cardiologists	0%	
Surgeons	100%	

#### 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 2

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	95%
Surgeons	5%

#### 6. Implantable Cardiac Defibrillator

2

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	78	87

#### Specialty performing implants

Cardiologists	25%
Surgeons	75%

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#### 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	254	262
Centres performing catheter ablation	2	2
Mean number (ablations/centres)	127	131
Number of AF ablations	51	Not available

#### 8. Device specific

Availability of a nationa	l institution coordinating and guiding device recalls	Yes
Name of the institution:	Committee / Agency for Medicinal Products and Medical Devices of	the Republic of Slovenia

#### 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European		

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

Source: Slovenian National Working Group of Arrhythmia

# **SPAIN**

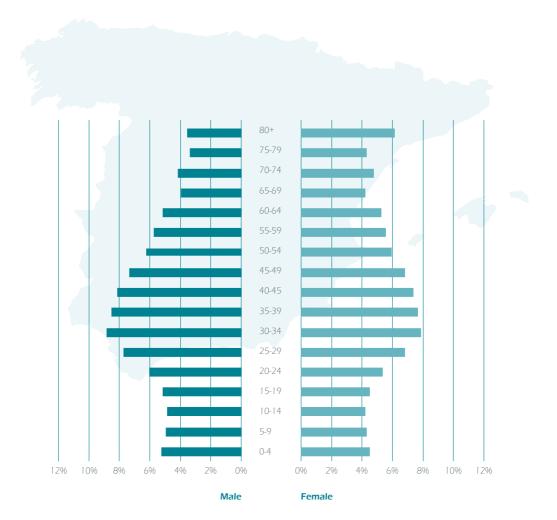


The EHRA White Book 2008 - 287

# 1. Statistics

# Age pyramid for Spain (2007)

Source: US Census Bureau



# Population by age and sex (2007)

	, ,			
Age	Male	Female	Both sexes	Percent
0-14	3 3 5 8 9 9 3	3 1 5 8 9 4 6	6517939	14%
15-64	15375496	15266458	30641954	68%
65+	3 355 380	4685463	8040843	18%
Total	22089870	23110867	45200737	100%

#### **Demographic information**

Population	45 200 7 37	2007
Population annual growth rate (%)	0.80%	2005
Life expectancy at birth	80.44	2005
Death rate (per 1000 population)	8.93	2005
Live births (per 1000 population)	10.75	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	1 438.96	2007
Gross domestic product per capita	32066.96	2007
Total expenditure on health as % of GDP	8.1	2004
General government expenditure on health as % of total expenditure on health	70.9	2004
Private expenditure on health as % of total expenditure on health	29.1	2004

#### Healthcare data

Hospitals	802	2004
Beds (per 1 000 population)	4.0	2004
Number of physicians	135300	2003
Density of physicians (per 1 000 population)	4.61	2003
Number of nurses	315200	2003
Density of nurses (per 1 000 population)	7.68	2003

Sources: Euro WHO, IMF, U.S. Census Bureau, International

# 2. Healthcare System

Spain's healthcare system is tax based and it is devolved to its 17 autonomous communities, one for each region. Private insurance companies offer complementary healthcare coverage. The number of people acquiring private insurance is increasing in some communities due to the services not included in the basic package of the public services. The autonomous communities decide how to organise and deliver health services and implement the national legislation. (Highlights on health. WHO 2004)

Proportion of deaths resulting from cardiovascular disease	26,51 per 100000 persons
--	--------------------------

90%			
7%			
3%			
	0	50	100
	7%	7%	7% 3%

Possibility of subscribing to private health insurance plans	Yes

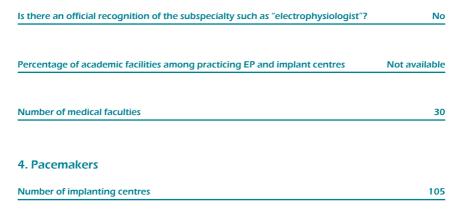
Part of the population affected b	y cardiac arrhythmias	Not available
i art of the population anceted b	y cardiac arriyarinas	

#### Reimbursement for

ICD devices	$\checkmark$
Pacemakers	
CRT devices	V

mon

# 3. Education



#### Pacemaker units implanted

	2006				
Single-chamber	13324				
Dual-chamber	15417				
Total	28741				
	2007				
Single-chamber	14111				
Dual-chamber	15979				
Total	30 0 90				
		0	10000	20 000	300

Specialty	<pre>/ performing</pre>	implants

Cardiologists	Not available
Surgeons	Not available

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 50

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	Not available
Surgeons	Not available

## 6. Implantable Cardiac Defibrillator

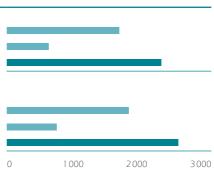
#### Number of implanting centres

89

#### **ICD** units implanted

	2006
Single-chamber	1652
Dual-chamber	615
Total	2 2 6 7

	2007
Single-chamber	1 786
Dual-chamber	731
Total	2517



# Specialists performing implant surgeries

Cardiologists	72.40%
Surgeons	24.40%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	6778	7 456
Centres performing catheter ablation	46	Not available
Mean number (ablations/centres)	147	Not available
Number of AF ablations	480	Not available

# 8. Device specific

Availability of remote monitoring of devices
--

Availability of a national institution coordinating and guiding device recalls			
5 5 1	_		
-	coordinating and guiding device recalls nisterio de Sanidad y Consumo Agencia Española de Medicament Productos Sanita		

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants	
National	
U.S. / European	$\checkmark$

Necessity of guideline translation to national language	Yes
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Sources: The registry of the European Working Group on Cardiac Pacing (EWGCP), Spanish Catheter Ablation Registry, Eucomed

# **SWEDEN**



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# 1. Statistics

# Age pyramid for Sweden (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	759488	717812	1 477 300	16%
15-64	3007899	2926220	5934119	66%
65+	707687	911982	1619669	18%
Total	4475074	4556014	9031088	100%

#### **Demographic information**

Population	9031088	2007
Population annual growth rate (%)	0.20%	2005
Life expectancy at birth	80.55	2004
Death rate (per 1000 population)	1.98	2004
Live births (per 1000 population)	11.22	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	455319	2007
Gross domestic product per capita	49654.869*	2007
Total expenditure on health as % of GDP	9.10	2004
General government expenditure on health as % of total expenditure on health	84.9	2004
Private expenditure on health as % of total expenditure on health	15.1	2004

#### Healthcare data

Hospitals	84	2004
Beds (per 1 000 population)	3.7	2004
Number of physicians	27 400	2004
Density of physicians (per 1 000 population)	3.1	2004
Number of nurses	90758	2002
Density of nurses (per 1 000 population)	10.24	2002

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

Sweden's health system is compulsory and tax based. It covers all Sweden's residents. Voluntary health insurance very limited and normally provides only supplementary coverage. The health care 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. (Source: Highlights on health. WHO 2004)

Proportion of deaths resulting fro	om cardiovascu	lar disease	42%	2006
Part of population publicly and p	rivately insured	r -		
Public insurance company	99%			
Private insurance company	1%	1.1		
Private cash payment	0%			
		0	50	100
* estimative				
	te health insura			Ye
Possibility of subscribing to privat				Yes
Possibility of subscribing to privat				Ye: 2%
Possibility of subscribing to priva Part of the population affected b				
Possibility of subscribing to privat Part of the population affected by Reimbursement for				
Possibility of subscribing to privat				2%

mon

44

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	No
Percentage of academic facilities among practicing EP and implant centres	14%
Number of medical faculties	6

# 4. Pacemakers

# Pacemaker units implanted

2006					
2006					
Single-chamber 2453					
Dual-chamber 5506					
Total 7959					
2007					
Single-chamber 2459					
Dual-chamber 5454					
Total 7913					
	0	2000	4000	6000	8000

Specialists performing implant surgeries	
Cardiologists	90%
Surgeons	10%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 12

#### **CRT** units implanted



#### Specialists performing implant surgeries

Cardiologists	95%
Surgeons	5%

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	15
Number of implanting centres	1:

#### **ICD** units implanted

	2006					
Single-chamber	133					
Dual-chamber	238					
Total	371					
	2007					
Single-chamber	228					
Dual-chamber	414					
Total	642					
		0	200	400	600	800

Arter

#### Specialists performing implant surgeries

Cardiologists	95%
Surgeons	5%

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2100	2 314
Centres performing catheter ablation	8	8
Mean number (ablations/centres)	263	289
Number of AF ablations	Not available	514

# 8. Device specific

Availability of remote monitoring of devices
--

Availability of a national institution coordinating	and guiding device recalls Yes
Name of the institution:	MPA - Medical Products Agency

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

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

Source: Arrhythmia Working Group, Swedish Society of Cardiology. Eucomed

# **SW/ITZERLAND**



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# 1. Statistics

# Age pyramid for Switzerland (2007)

Source: US Census Bureau



#### Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	630341	584167	1214508	16%
15-64	2 596 996	2 553 108	5 1 5 0 1 0 4	68%
65+	489895	700154	1 190 049	16%
Total	3717232	3837429	7 554 66 1	100%

#### **Demographic information**

Population	7 554 66 1	2007
Population annual growth rate (%)	0.40%	2005
Life expectancy at birth	81.44	2004
Death rate (per 1000 population)	5.49	2005
Live births (per 1000 population)	9.8	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	423938	2007
Gross domestic product per capita	58083.574*	2007
Total expenditure on health as % of GDP	11.50	2004
General government expenditure on health as % of total expenditure on health	58.5	2004
Private expenditure on health as % of total expenditure on health	41.5	2004

#### Healthcare data

8	2006
6.3	2004
25921	2002
3.61	2002
77 1 20	2002
10.75	2002
	25921 3.61 77120

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System

	m cardiovascula	r disease		37%	2004
Part of population publicly and p	rivately insured				
Public insurance company	26%				
Private insurance company	9%				
Private cash payment	65%				
		0	50		100
* estimative					
Possibility of subscribing to privat	te health insuran	ce plans			Yes
Possibility of subscribing to privat	te health insuran	ce plans			Yes
				Not a	Yes
Part of the population affected by				Not a	
Part of the population affected by Reimbursement for				Not a	
Possibility of subscribing to privat Part of the population affected by Reimbursement for ICD devices Pacemakers				Not a	vailable

No

# Argente

# 3. Education

Percentage of academic facilities among practicing EP and implant centres	30%
Number of medical faculties	5
4. Pacemakers	
Number of implanting centres	69

Is there an official recognition of the subspecialty such as "electrophysiologist"?

#### Pacemaker units implanted

2006						
1769*						
3274*						
5043*						
2007						
1 806*						
3 272*						
5078*						
	0	1 000	2000	3000	4000	500
	1769° 3274° 5043° 2007 1806° 3272°	1769° 3274° 5043° 2007 1806° 3272° 5078°	1769 3274 5043 2007 1806 3272 5078	1769° 3274° 5043° 2007 1806° 3272° 5078°	1769° 3274° 5043° 2007 1806° 3272° 5078°	1769° 3274° 5043° 2007 1806° 3272° 5078°

\* Eucomed

Specialty performing implants	
Cardiologists	Not available
Surgeons	Not available

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 27

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	Not available
Surgeons	Not available

## 6. Implantable Cardiac Defibrillator

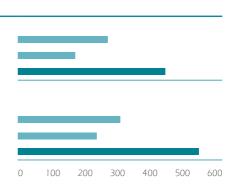
#### Number of implanting centres

25

#### **ICD** units implanted

	2006
Single-chamber	264
Dual-chamber	169
Total	433

	2007
Single-chamber	300
Dual-chamber	231
Total	531



#### Specialists performing implant surgeries

Cardiologists	Not available
Surgeons	Not available

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2 5 8 1	3123
Centres performing catheter ablation	18	18
Mean number (ablations/centres)	143	174
Number of AF ablations	Not available	829

# 8. Device specific

Availability of remote monitoring of devices 🛛 🗹
--

Availability of a national in	stitution coordinating and guiding device recalls	Yes
Name of the institution:	Swissmedic Swiss Agency for Therapeutic Pr	oducts

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

Source: Swiss Working Group for Pacing and Electrophysiology

# **SYRIA**

There will be information in the next edition.



# TUNISIA



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# 1. Statistics

# Age pyramid for Tunisia (2007)

Source: US Census Bureau



Male

# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	1 246 105	1 167 379	2413484	23%
15-64	3638062	3 595 254	7 233 316	70%
65+	345 590	391 187	736777	7%
Total	5 2 2 9 7 5 7	5153820	10383577	100%

#### **Demographic information**

Population	10 383 577	2007
Population annual growth rate (%)	1.10%	2004
Life expectancy at birth	73.4	2004
Death rate (per 1000 population)	Not available	Not available
Live births (per 1000 population)	Not available	Not available

#### **Economic information**

Gross domestic product (U.S dollars - billions)	35010*	2007
Gross domestic product per capita	3,397.630*	2007
Total expenditure on health as % of GDP	5.4	2003
General government expenditure on health as % of total expenditure on health	45.7	2003
Private expenditure on health as % of total expenditure on health	45.1	2003

#### Healthcare data

Hospitals (per 100 000 population)	1.76	2004
Beds (per 100 000 population)	Not available	Not available
Number of physicians	Not available	Not available
Density of physicians (per 1 000 population)	0.98	2004
Number of nurses	Not available	Not available
Density of nurses (per 1 000 population)	2.98	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

National Health System

Proportion of deaths resulting from cardiovascular disease				28%	2007
Part of population publicly and	privately insured	r.			
Public insurance company	60%				
Private insurance company	30%				
Private cash payment	10%				
		0	50		100
estimative					
Possibility of subscribing to prive					Yes
Part of the population affected I	by cardiac arrhyt	hmias			3%
Reimbursement for					
ICD devices					
					$\checkmark$
Pacemakers					V

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4

15

# 3. Education

Is there an official recognition of the subspecialty such	as "electrophysiologist"?	Yes
Offical name:	CEC de rythmologie et de stimulation cardia	aque



#### Number of medical faculties

# 4. Pacemakers

A factor of the second	- 6	· · · · · ·	La calebra de	
Number	οτ	Imp	iantina	centres

#### Pacemaker units implanted

	2006				
Single-chamber	450				
Dual-chamber	560				
Total	1010				
	2007				
Single-chamber	500				
Dual-chamber	700				
Total	1 200				
		0	400	800	

#### Specialty performing implants

Cardiologists	95%
Surgeons	5%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 8

7

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

## 6. Implantable Cardiac Defibrillator

#### Number of implanting centres

ICD units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	40	50

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

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# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	300	400
Centres performing catheter ablation	6	6
Mean number (ablations/centres)	50	67
Number of AF ablations	none	none

# 8. Device specific

Availability of remote monitoring of devices	V
--	---

Availability of a national institution coordinating and g	uiding device recalls Yes
Name of the institution:	Tunisia Ministry of Public Health

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

Necessity of guideline translation to national language	No

Source: Tunisian National Working Group of Arrhythmia

# TURKEY

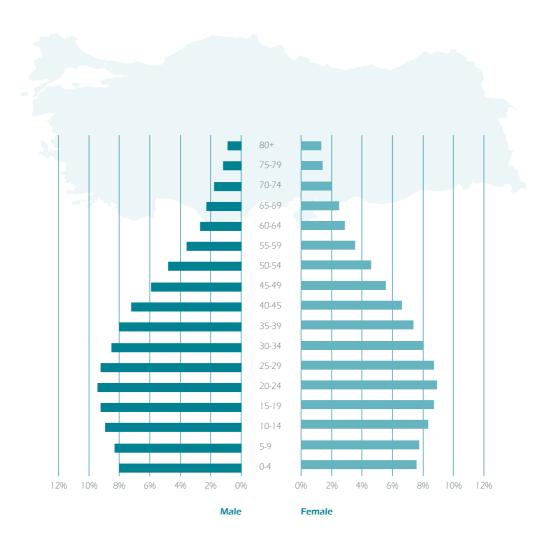


The EHRA White Book 2008 · 321

# 1. Statistics

# Age pyramid for Turkey (2007)

Source: US Census Bureau



# Population by age and sex (2007)

	<b>•</b> • • •			
Age	Male	Female	Both sexes	Percent
0-14	8937515	8608375	17 545 890	24%
15-64	25030793	24253312	49284105	69%
65+	2 307 236	2755576	5062812	7%
Total	36 27 5 5 4 4	35617263	71892807	100%

#### **Demographic information**

Population	71892807	2007
Population annual growth rate (%)	1.60%	2005
Life expectancy at birth	73	2008
Death rate (per 1000 population)	28.50	2005
Live births (per 1000 population)	18.89	2005

#### **Economic information**

Gross domestic product (U.S dollars - billions)	663419	2007
Gross domestic product per capita	9629.137	2007
Total expenditure on health as % of GDP	7.7	2006
General government expenditure on health as % of total expenditure on health	72.3	2004
Private expenditure on health as % of total expenditure on health	27.7	2004

#### Healthcare data

Hospitals (per 100000 population)	1.65	2007
Beds (per 100000 population)	269.5	2007
Number of physicians	90757	2004
Density of physicians (per 1 000 population)	1.19	2007
Number of nurses	121000	2003
Density of nurses (per 1 000 population)	1.7	2003

Sources: Euro WHO, IMF, U.S. Census Bureau, International, Turkish National Health Account Study

# 2. Healthcare System

Healthcare is provided by public, semi-public and private organisations however, there is limited coordination amongst them. Healthcare is financed by the government by tax and by premium and out of pocket payments. In 2007, a new Social Security Institution was established by a law that combined four major different social insurance organisations and reassigned structural responsibilities for health and social insurance in Turkey. (Source: Imaging Management, vol. 8 Issue 1 / 2008 February - March)

50	100
	Yes
	Not available

Reimbursement for		
ICD devices		
Pacemakers		
CRT devices		

Image: A state
 Image: A state</l

Argente

# 3. Education

Is there an official recognition of the subspecialty such as "electrophysiologist"?	
Percentage of academic facilities among practicing EP and implant centres	30%
Number of medical faculties	54
4. Pacemakers	
Number of implanting centres	120

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	5 000*	5 000*

\* approx.

# Specialty performing implants

Cardiologists	100%
Surgeons	0%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 25

#### **CRT** units implanted



\* approx.

#### Specialists performing implant surgeries

Cardiologists	100%
Surgeons	0%

# 6. Implantable Cardiac Defibrillator

Number of implanting centres	35
	55

#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	800*	900*

#### Specialty performing implants

Cardiologists	100%
Surgeons	0%

\* approx

Arguna

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	2000*	Not available
Centres performing catheter ablation	40*	Not available
Mean number (ablations/centres)	50	Not available
Number of AF ablations	30*	Not available

\* approx.

# 8. Device specific

Availability of remote monitoring of devices	

Availability of a national	institution coordinating and guiding device recalls	Yes
Name of the institution:	Ministry of Health General Directorate of the Curative Services - Biomed	dical
	Engineering - Department Market Surveillance Sec	tion

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National		
U.S. / European	$\checkmark$	

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

Source: Turkish National Working Group on Arrhythmia, The Ministry of Health of Turkey

# UKRAINE

There will be information in the next edition.



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# **UNITED KINGDOM**



The EHRA White Book 2008 · 331

# 1. Statistics

# Age pyramid for United Kingdom (2007)

Source: US Census Bureau



# Population by age and sex (2007)

Age	Male	Female	Both sexes	Percent
0-14	5349053	5095837	10444890	17%
15-64	20605031	20104313	40709344	67%
65+	4 1 2 3 4 6 4	5 4 9 8 5 4 0	9622004	16%
Total	30077548	30698690	60776238	100%

## Demographic information

Population	60776238	2007
Population annual growth rate (%)	0.30%	2005
Life expectancy at birth	79.29	2005
Death rate (per 1000 population)	9.68	2005
Live births (per 1000 population)	12	2005

## **Economic information**

Gross domestic product (U.S dollars - billions)	2772.57	2007
Gross domestic product per capita	45,574.744*	2007
Total expenditure on health as % of GDP	8.1	2004
General government expenditure on health as % of total expenditure on health	86.3	2004
Private expenditure on health as % of total expenditure on health	13.70	2004

#### Healthcare data

Hospitals	1 400	2004
Beds (per 1 000 population)	4.3	2004
Number of physicians	124631	2004
Density of physicians (per 1 000 population)	2.1	2004
Number of nurses	548730	2004
Density of nurses (per 1 000 population)	9.3	2004

Sources: Euro WHO, IMF,  $\,$  U.S. Census Bureau, International  $^{\ast}$  IMF estimative

# 2. Healthcare System

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 citiziens of other countries with which the UK has reciprocal agreements are covered under the United Kingdom NHS. Therefore, the subcription to private health insurance is very low. WHO 2004

Proportion of deaths resulting from cardiovascular disease		3,5 per 1000	2007	
Part of population publicly and p	privately insured*			
Public insurance company	85%			
Private insurance company	15%			
Private cash payment	0%			
		0	50	100
* estimative				
	ite health insurar			Ye

Part of the population affected by cardiac arrhythmias	25%
--	-----

#### **Reimbursement for**

ICD devices	$\checkmark$
Pacemakers	$\checkmark$
CRT devices	$\checkmark$

No

# Arth

# 3. Education

Percentage of academic facilities among practicing EP and implant centres	
Number of medical faculties	35
4. Pacemakers Number of implanting centres	200

Is there an official recognition of the subspecialty such as "electrophysiologist"?

#### Pacemaker units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	35100	36600

Specialty performing implants	
Cardiologists	98%
Surgeons	2%

# 5. Cardiac resynchronization therapy devices

#### Number of implanting centres

#### 53

#### **CRT** units implanted



#### Specialty performing implants

Cardiologists	99%
Surgeons	1%

## 6. Implantable Cardiac Defibrillator

Number of implanting centres	53
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#### **ICD** units implanted

	2006	2007
Single-chamber	Not available	Not available
Dual-chamber	Not available	Not available
Total	3800	3900

#### Specialty performing implants

Cardiologists	99%
Surgeons	1%

Yes

# 7. Interventional electrophysiology

	2006	2007
Number of ablations performed	6 6 0 0	7 300
Centres performing catheter ablation	38	38
Mean number (ablations/centres)	174	192
Number of AF ablations	1120	1 200

# 8. Device specific

vailability of remote monitoring of devices	

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

# 9. Guidelines

Guidelines adhered to ICD implants and pacemaker implants		
National	$\checkmark$	
U.S. / European	$\checkmark$	

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Source: British Cardiovascular Society - National Working Group

# 3. Appendix

#### 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
- · 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
- · Working Group on Cardiac Pacing and Arrhythmia Germany

#### Sources

- · Working Group on Arrhythmias of the Georgian College of Cardiology Georgia
- · Hellenic Working Group on Electrophysiology and Pacing Greece
- · Working Group of Arrhythmias Hungary
- · Working Group on Arrhythmias and Pacemaker Hungary
- · 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
- · Dutch Working Group on Cardiac Pacing Netherlands
- · Working Group on Pacing and Electrophysiology Norway
- · Heart Rhythm Division Polish Cardiac Society Poland
- Portuguese Association on Arrhythmology and Cardiac Pacing Portugal
- · Arrhythmia Working Group, Romanian Society of Cardiology Romania
- Clinical Electrophysiology, Arrhythmology and Cardiac Pacing Russian Federation

#### Sources

- · 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 Arrythmias Tunisia
- · Working Group on Arrhythmias, Electrophysiology and Pacing, Turkish Society of Cardiology Turkey
- · Heart Rhythm UK United Kingdom

#### **Additional sources**

- Armenian Ministry of Health
- European Medical Technology Industry Association (EUCOMED), Brussels, Belgium. 2005 Q1/2008
- · Greek Pacemaker and ICD registry
- Hellenic National Statistical Service
- International Monetary Fund (IMF), Washington DC, USA. http://www.imf.org
- Medical Markets Fact Book, Espicom Business Intelligence, 2004
- · Revista española de cardiología. Sociedad Española de Cardiología 2007; 60 (12): 129-1301 3

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- 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



# **European Heart Rhythm Association**

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