

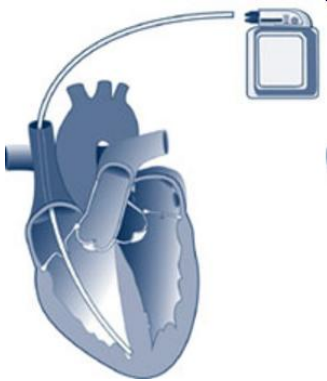
**A central registry dealing with  
the implantation of  
pacemakers to treated  
patients**

**Analysis of year 2019  
M. Taborsky  
26.08.2020**



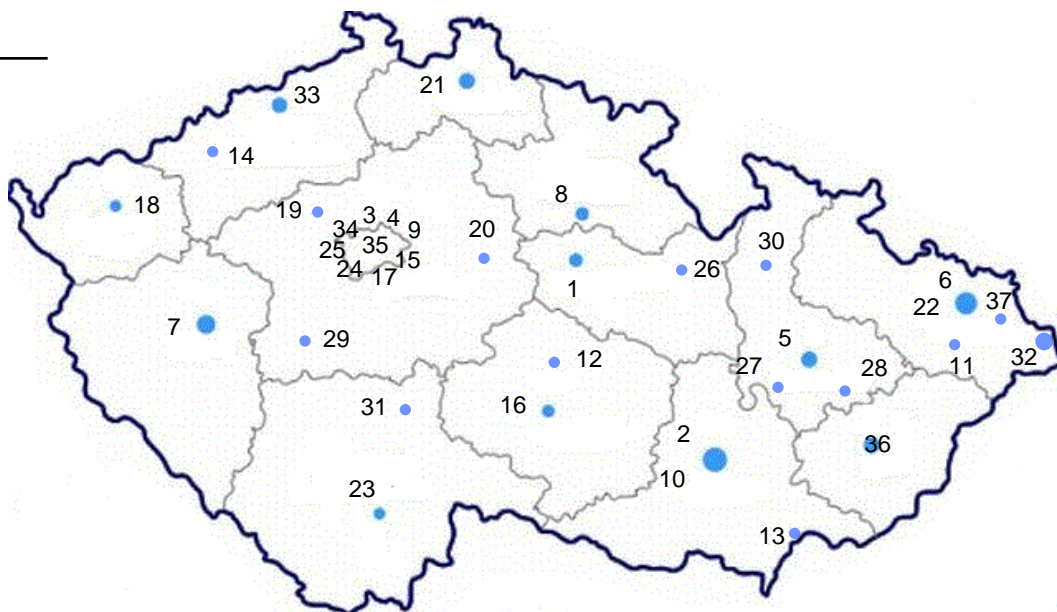
**Expert guarantor:  
prof. Miloš Táborský, MD, PhD., FESC, MBA**

# Project characteristics



# Cooperated centres

- 1 Kardiologické centrum AGEL a.s.
- 2 The University Hospital Brno – Dep. of Cardiology
- 3 The University Hospital Motol – Children´ Cardiocentre
- 4 The University Hospital Motol – Dep. of Cardiology
- 5 The University Hospital Olomouc – 1st Dep. of Medicine
- 6 The University Hospital Ostrava – Dep. of Cardiovascular Medicine
- 7 The University Hospital Plzeň – Dep. of Cardiology, arytmology
- 8 The University Hospital Hradec Králové – 1st Dep. of Internal Medicine
- 9 The University Hospital Královské Vinohrady – 3rd Dep. of Internal Medicine – Cardiology
- 10 The St. Anne's University Hospital Brno – Dep. of Cardiology
- 11 Hospital in Frýdek-Místek – Dep. of Internal Medicine
- 12 Hospital in Havlíčkův Brod – Dep. of Internal Medicine
- 13 TGM Hospital Hodonín – Centre of Cardiac Stimulation
- 14 Chomutov – Dep. of Internal Medicine
- 15 The Institute of Clinical and Experimental Medicine – Department of Cardiology
- 16 Jihlava – Dep. of Cardiology
- 17 The University Hospital Bulovka – Cardiology
- 18 Karlovy Vary – Kardiocentrum
- 19 Kladno – Dep. of Internal Medicine
- 20 Kolín – Dep. of Internal Medicine
- 21 Liberec – Cardio Centre
- 22 Ostrava City Hospital – Cardiology
- 23 Hospital in České Budějovice – Cardio Centre
- 24 Hospital of Merciful Sisters – Dep. of Internal Medicine
- 25 Hospital „Na Homolce“ – Dep. of Cardiology
- 26 Hospital in Ústí nad Orlicí – Dep. of Internal Medicine



- 27 Prostějov – Dep. of Internal Medicine
- 28 Přerov – Dep. of Internal Medicine
- 29 Příbram – Dep. of Internal Medicine
- 30 Šumperk – Dep. of Internal Medicine
- 31 Tábor – Dep. of Internal Medicine
- 32 Třinec – Cardio Centre
- 33 Ústí nad Labem – Dep. of Cardiology
- 34 ÚVN – Dep. of Cardiology
- 35 The General University Hospital in Prague – 2nd Dep. of Internal Cardiovascular Medicine
- 36 Zlín – Dep. of Internal Medicine
- 37 Havířov Hospital with Polyclinic – Dep. of Internal Medicine

# Cooperated centres – number of records

Base: All records 2019 (N = 10 320)

REPACE

Procedure type/ Centre	Primo-implantation (N = 7 824)	Re-implantation (N = 2 202)	Upgrade (N = 138)	Explantation (N = 35)	Electrode surgery (N = 113)	Other surgery (N = 8)	Total (N=10 320)
Centre 1	527	189	1	8	4	-	729
Centre 2	429	139	1	-	-	-	569
Centre 3	394	129	3	-	1	1	528
Centre 4	396	104	25	-	-	-	525
Centre 5	332	141	21	16	10	2	522
Centre 6	344	112	17	1	18	-	492
Centre 7	365	97	12	1	11	-	486
Centre 8	394	74	2	-	5	-	475
Centre 9	384	82	3	2	1	-	472
Centre 10	330	55	2	-	1	-	388
Centre 11	295	75	2	-	-	-	372
Centre 12	308	36	4	-	4	3	355
Centre 13	232	96	2	2	10	-	342
Centre 14	277	59	3	-	-	-	339
Centre 15	196	112	18	-	-	-	326
Centre 16	291	14	-	-	-	-	305
Centre 17	227	47	-	-	-	-	274
Centre 18	198	60	4	-	3	-	265
Centre 19	191	46	9	-	2	1	249
Centre 20	179	57	-	-	2	-	238
Centre 21	178	41	-	-	1	-	220
Centre 22	159	26	-	3	4	-	192
Centre 23	113	55	-	-	15	-	183
Centre 24	115	47	8	1	7	-	178
Centre 25	127	43	1	-	-	1	172
Centre 26	114	52	-	-	1	-	167
Centre 27	128	23	-	-	-	-	151
Centre 28	89	33	-	-	6	-	128
Centre 29	97	26	-	-	-	-	123
Centre 30	88	31	-	1	2	-	122
Centre 31	102	15	-	-	-	-	117
Centre 32	89	26	-	-	-	-	115
Centre 33	67	22	-	-	5	-	94
Centre 34	59	20	-	-	-	-	79
Centre 35	10	18	-	-	-	-	28

# Cooperated centres – number of records

Base: All records 2019 (N = 10 320)

REPACE

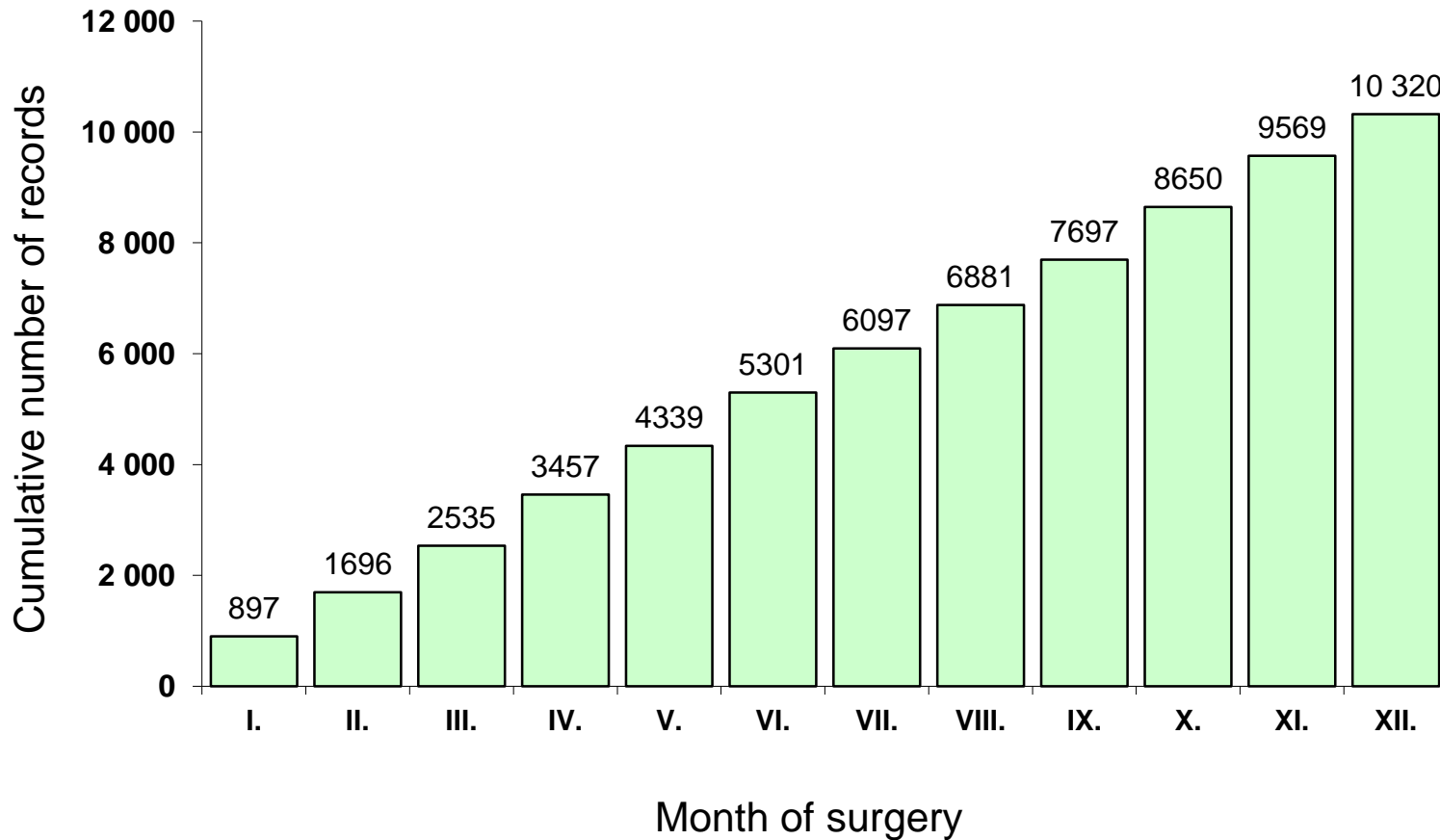
Procedure type/ Centre	Primo-implantation (N = 7 824)	Re-implantation (N = 2 202)	Upgrade (N = 138)	Explantation (N = 35)	Electrode surgery (N = 113)	Other surgery (N = 8)	Total (N=10 320)
Nemocnice Na Homolce - Kardiologické odd.	527	189	1	8	4	-	729
FN Brno - Kardiologická klinika	429	139	1	-	-	-	569
FNUSA Brno - Kardiologická klinika	394	129	3	-	1	1	528
FNHK - 1. IK	396	104	25	-	-	-	525
IKEM Praha - Kardiologická klinika	332	141	21	16	10	2	522
FNKV Praha – III.interní - kardiologická klinika	344	112	17	1	18	-	492
Liberec - Kardiocentrum	365	97	12	1	11	-	486
FN Ostrava - Kardiovaskulární odd.	394	74	2	-	5	-	475
FN Plzeň - Kardiologické odd.	384	82	3	2	1	-	472
Třinec - Podlesí - kardiocentrum	330	55	2	-	1	-	388
FN Olomouc - I. interní klinika - kardiologická	295	75	2	-	-	-	372
Zlín - Interní klinika	308	36	4	-	4	3	355
Kardiologické centrum AGEL a.s.	232	96	2	2	10	-	342
Nemocnice České Budějovice - kardiocentrum	277	59	3	-	-	-	339
VFN Praha - II.IK - Kardiologická klinika	196	112	18	-	-	-	326
Orlickoústecká nemocnice - interní odd.	291	14	-	-	-	-	305
Kardiologie na Bulovce, s.r.o.	227	47	-	-	-	-	274
Městská nemocnice Ostrava - Kardiologie	198	60	4	-	3	-	265
FN Motol - Kardiologické oddělení	191	46	9	-	2	1	249
Tábor - Interní odd.	179	57	-	-	2	-	238
ÚnL - Kardiologické odd.	178	41	-	-	1	-	220
Karlovy Vary nemocnice - Kardiocentrum	159	26	-	3	4	-	192
Kolín - Interní odd.	113	55	-	-	15	-	183
ÚVN - Kardiologické odd.	115	47	8	1	7	-	178
Jihlava - Kardiologické odd.	127	43	1	-	-	1	172
Kladno - Interní odd.	114	52	-	-	1	-	167
Přerov - Interní odd.	128	23	-	-	-	-	151
Frýdek Místek - Interní oddělení	89	33	-	-	6	-	128
Hodonín - Kardiostimul.centrum Nem. TGM p.o.	97	26	-	-	-	-	123
Prostějov - Interní odd.	88	31	-	1	2	-	122
Šumperk - Interní odd	102	15	-	-	-	-	117
Chomutov - Interní odd.	89	26	-	-	-	-	115
Příbram - Interní oddělení	67	22	-	-	5	-	94
Havlíčkův Brod - Interní oddělení	59	20	-	-	-	-	79
FN Motol - Dětské kardiocentrum	10	18	-	-	-	-	28

# Cumulative number of records in time

Base: All records 2019 (N = 10 320)

REPACE

There are **10 320** records for year 2019.

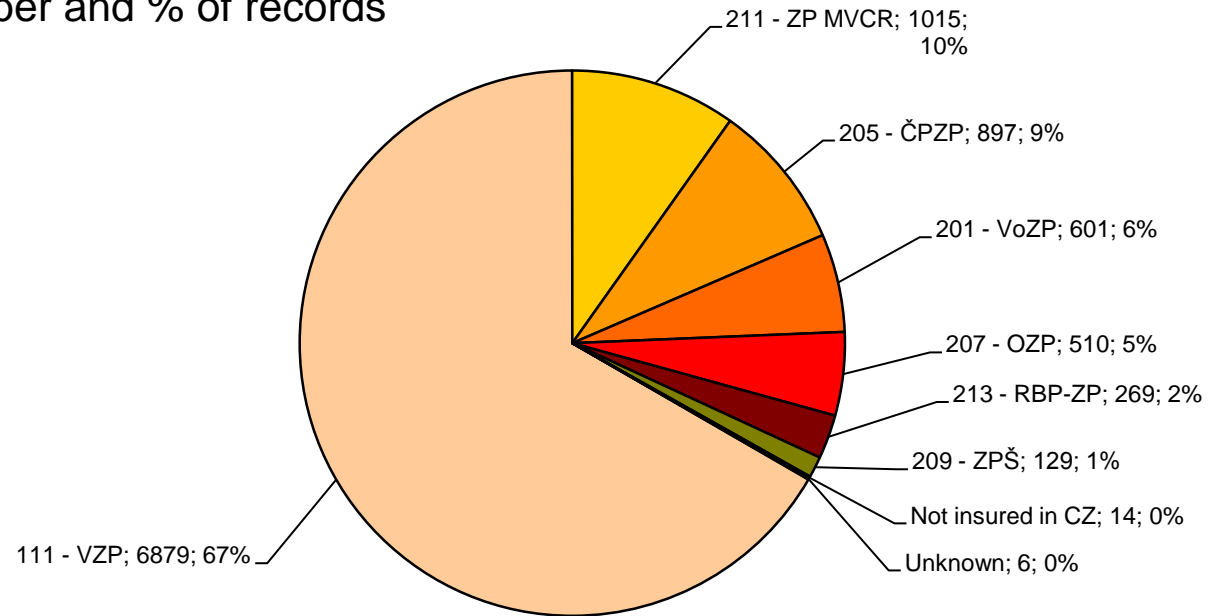


# Number of records according to insurance company

Base: All records 2019 (N = 10 320)

REPACE

Number and % of records



Insurance	N	%
111 - Všeobecná zdravotní pojišťovna	6879	66.7
211 - Zdravotní pojišťovna Ministerstva vnitra ČR	1015	9.8
205 - Česká průmyslová zdravotní pojišťovna	897	8.7
201 - Vojenská zdravotní pojišťovna	601	5.8
207 - Oborová pojišťovna zaměstnanců bank, pojišťoven a stavebnictví	510	4.9
213 - Revírní bratrská pokladna	269	2.6
209 - Zaměstnanecká pojišťovna Škoda	129	1.3
Not insured in CZ	14	0.1
Unknown	6	0.0

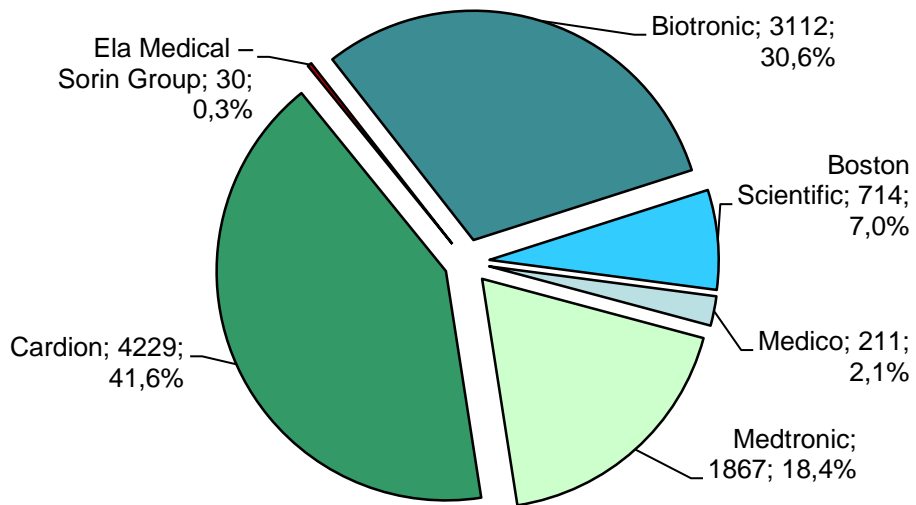
# Manufacturers market share

Base: All records 2019 (N = 10 320)

REPACE

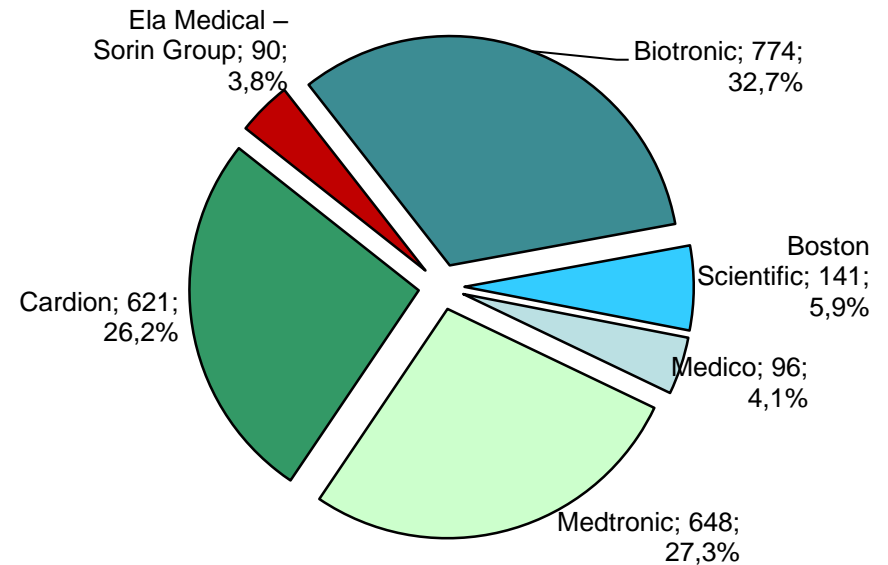
## Implanted devices manufacturer

N = 10 163



## Explanted devices manufacturer

N = 2 370





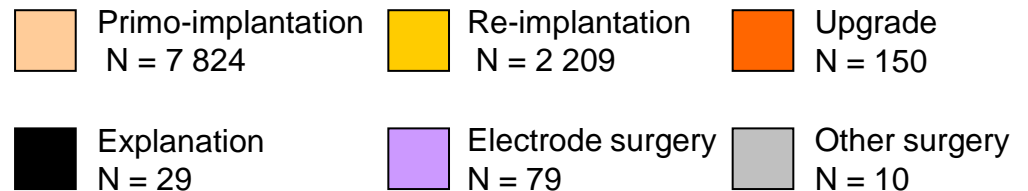
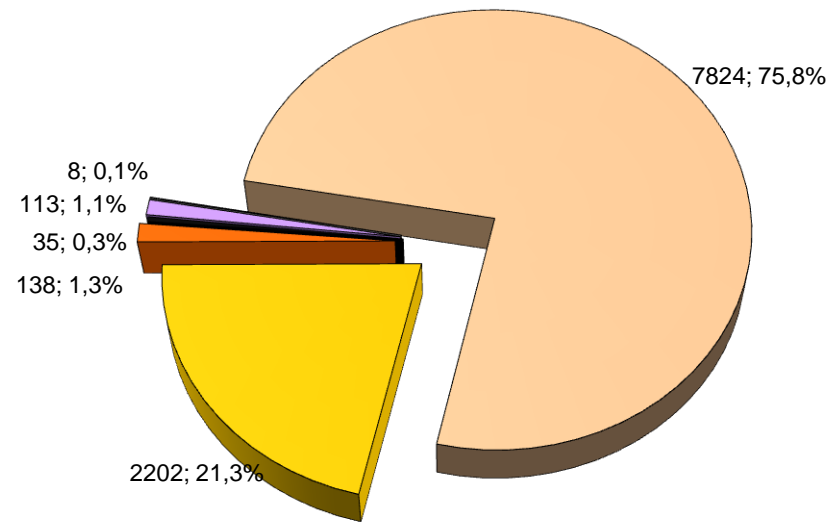
# Number of records according to procedure type

Base: All records 2019 (N = 10 320)

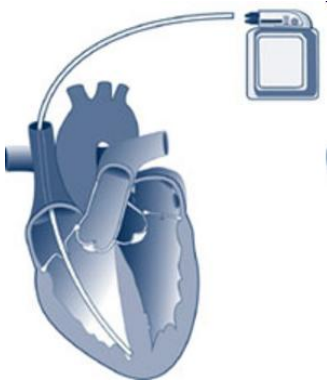
REPACE

Procedure type	N	%
<i>Primo-implantation</i>	7 824	75.8
<i>Re-implantation</i>	2 202	21.3
<i>Upgrade</i>	138	1.3
<i>Explantation</i>	35	0.3
<i>Electrode substitution</i>	67	0.6
<i>Electrode reposition</i>	29	0.3
<i>Electrode extraction</i>	17	0.2
<i>Other surgery</i>	8	0.1
<b>Total</b>	10 320	100.0

## Procedure type aggregation



**Completed records:  
Implanted devices and  
surgery  
N = 10 320**



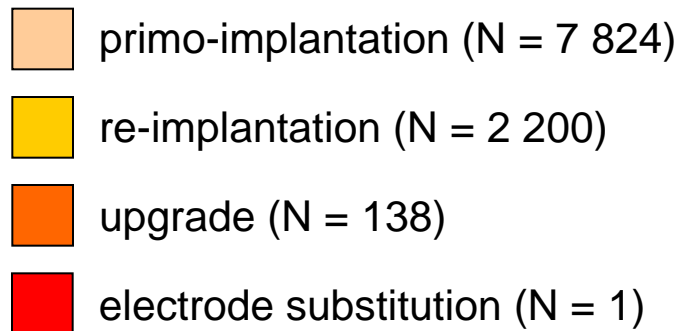
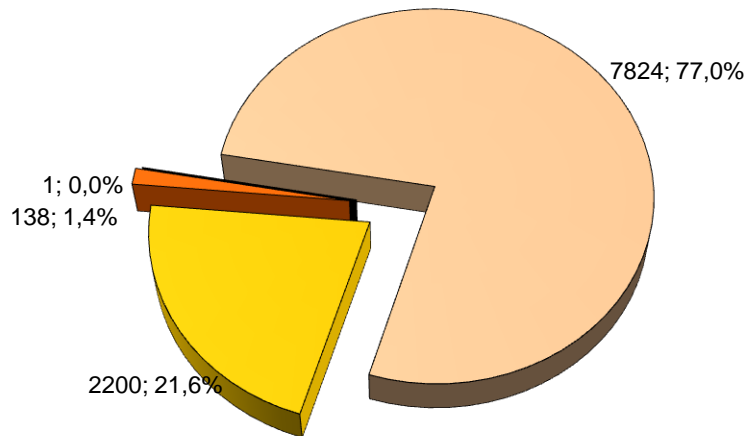
# Implanted and explanted devices – surgery type

Base: All records 2019 (N = 10 320)

REPACE

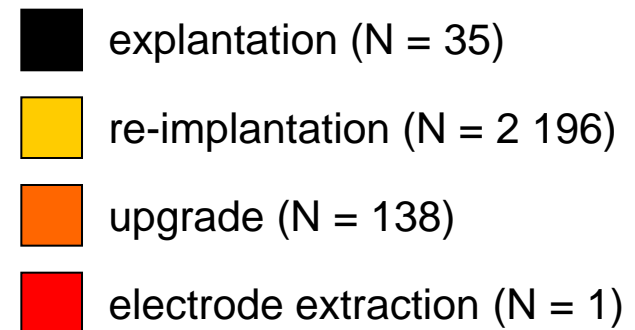
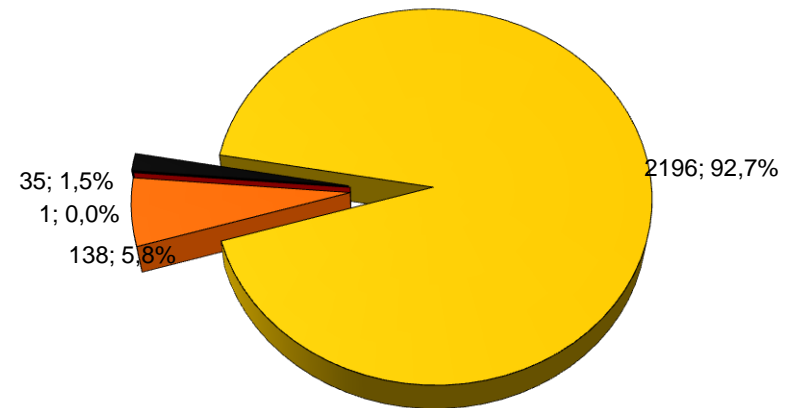
## Implanted devices

N = 10 163



## Explanted devices

N = 2 383



More than 2/3 of devices are implanted as primo-implantation. Minimal number of devices are just explanted.

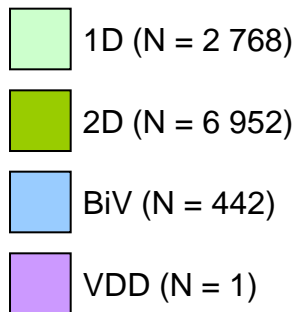
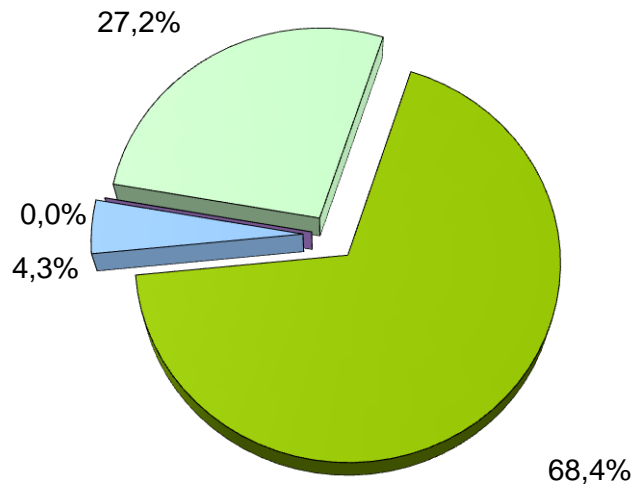
# Implanted and explanted devices – device type

Base: All records 2019 (N = 10 320)

REPACE

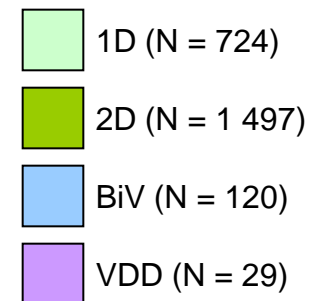
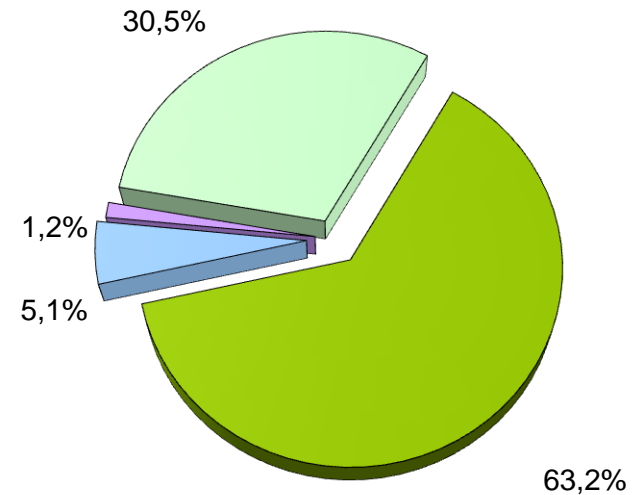
## Implanted devices

N = 10 163



## Explanted devices

N = 2 370



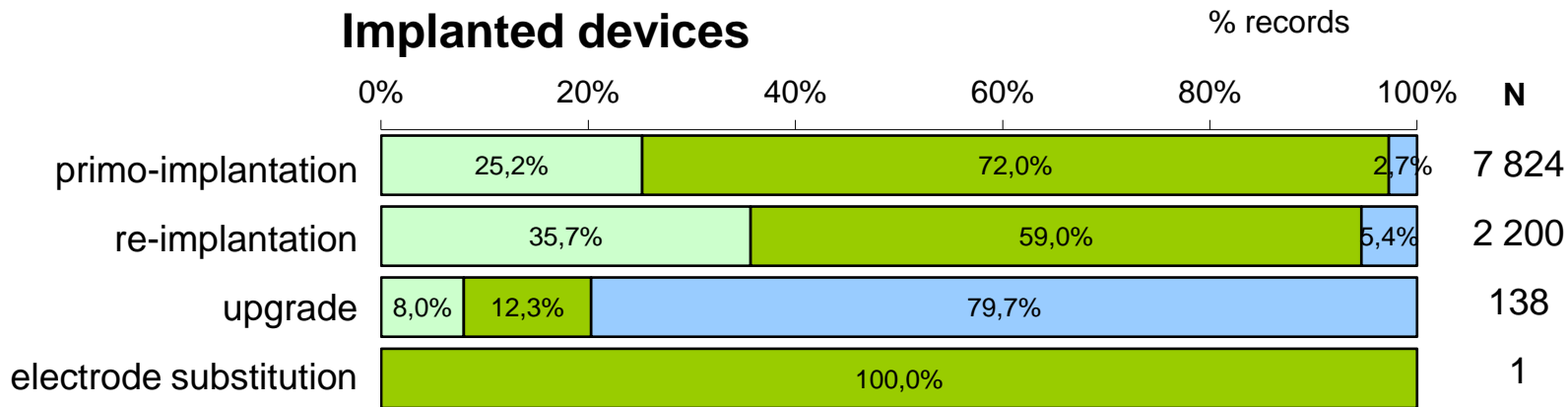
2D pacemaker is the most used device. It prevails among implanted also explanted devices.

# Device type according to surgery

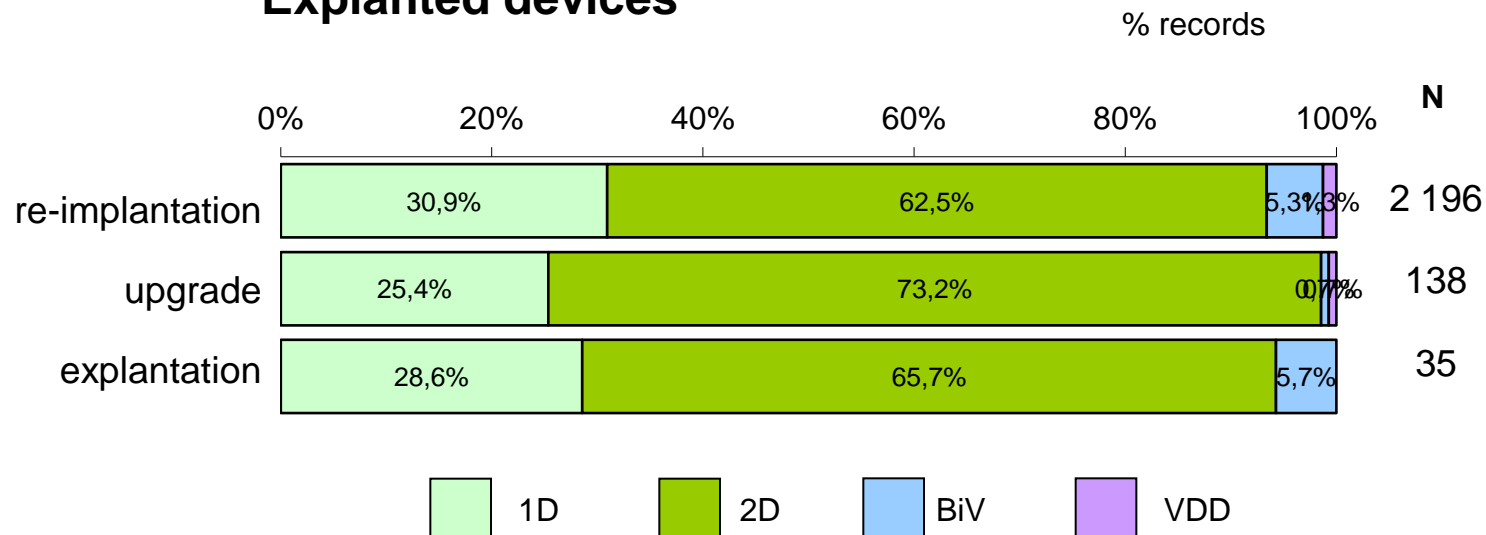
Base: All records 2019 (N = 10 320)

REPACE

## Implanted devices



## Explanted devices

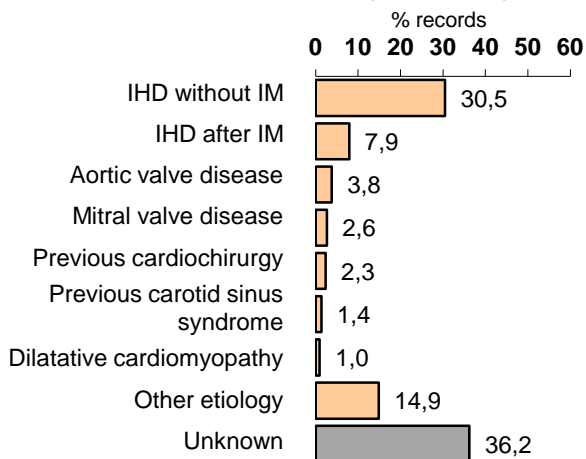


# Etiology according to surgery type

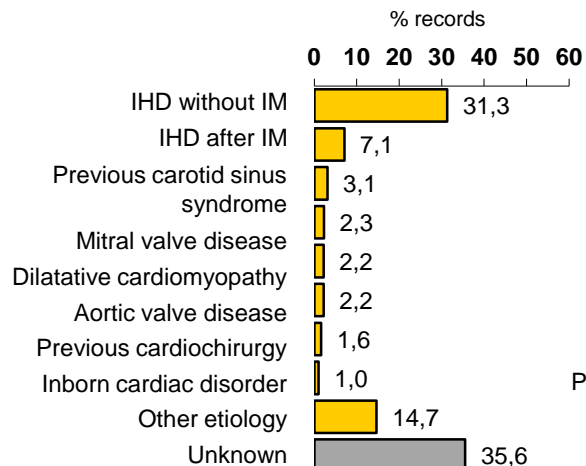
Base: All records 2019 (N = 10 320)

REPACE

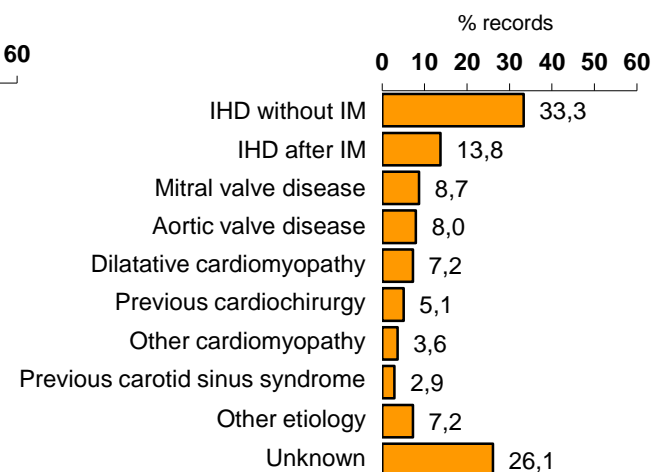
**Primo-implantation**  
(N = 7 824)



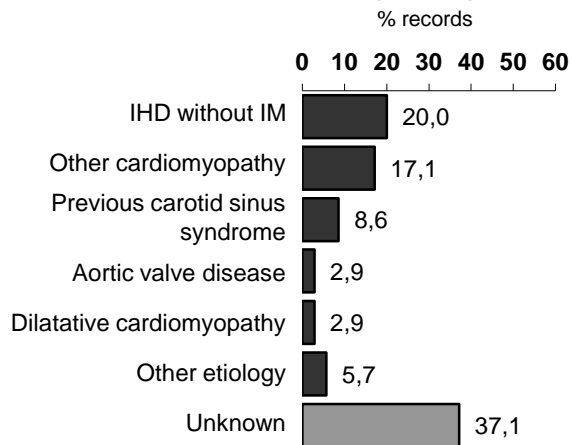
**Re-implantation**  
(N = 2 202)



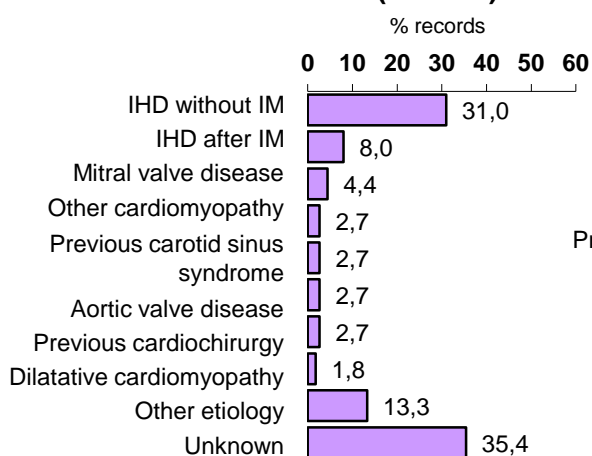
**Upgrade**  
(N = 138)



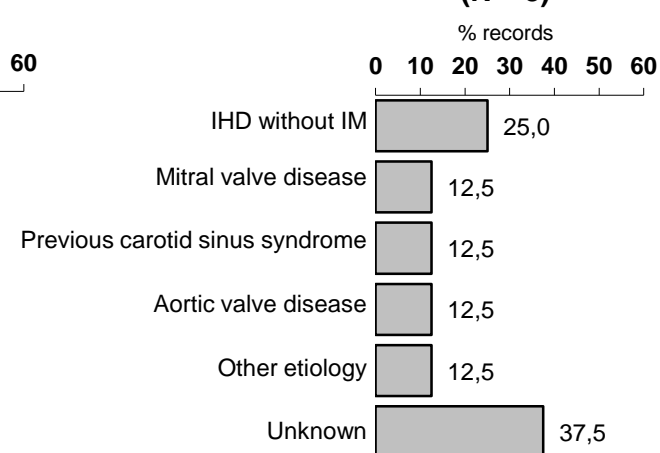
**Explantation**  
(N = 35)



**Electrode surgery**  
(N = 113)



**Other surgery**  
(N = 8)



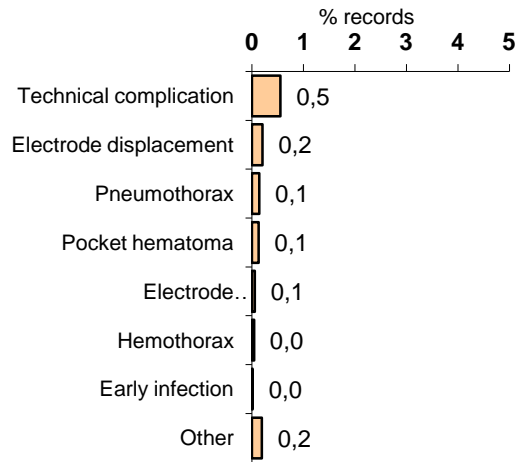
Only etiologies with incidence over 1% are visualized

# Surgery complication – according to type of surgery

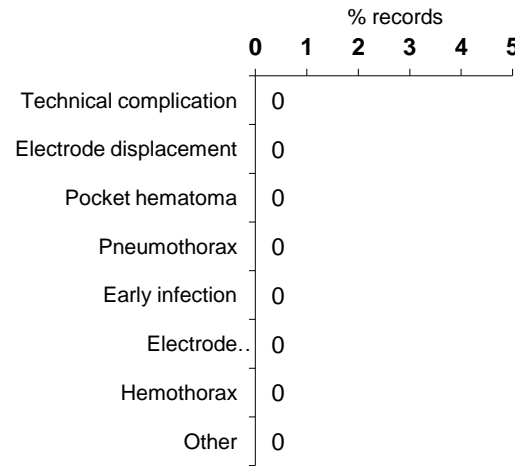
Base: All records 2019 (N = 10 320)

REPACE

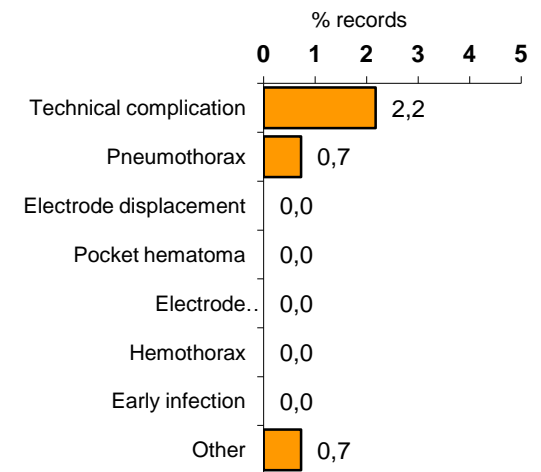
**Primo-implantation**  
(N = 7 824)



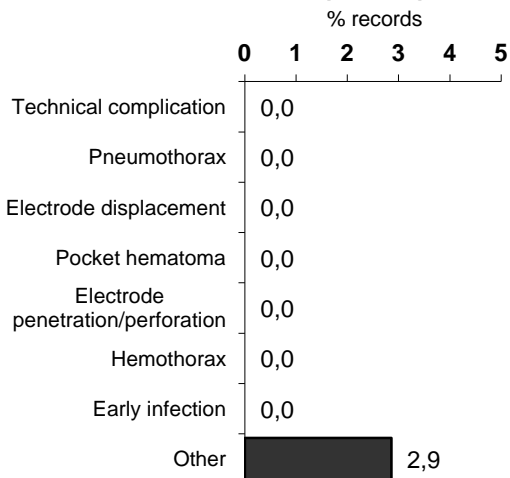
**Re-implantation**  
(N = 2 202)



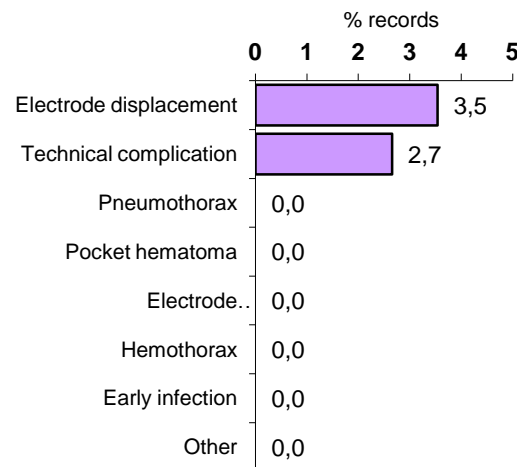
**Upgrade**  
(N = 138)



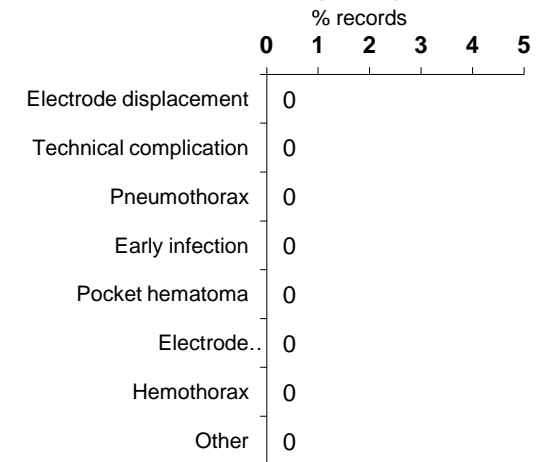
**Explantation**  
(N = 35)



**Electrode surgery**  
(N = 113)

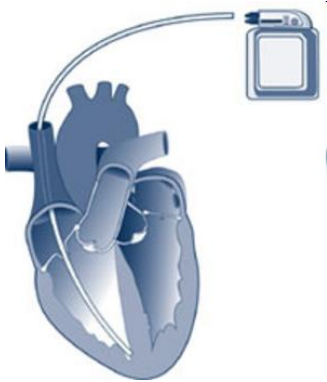


**Other surgery**  
(N = 8)



Surgery complications are quite rare. There are almost no complications during primo- or re-implantation.

**Completed records:  
enrollment characteristics  
N = 10 320**



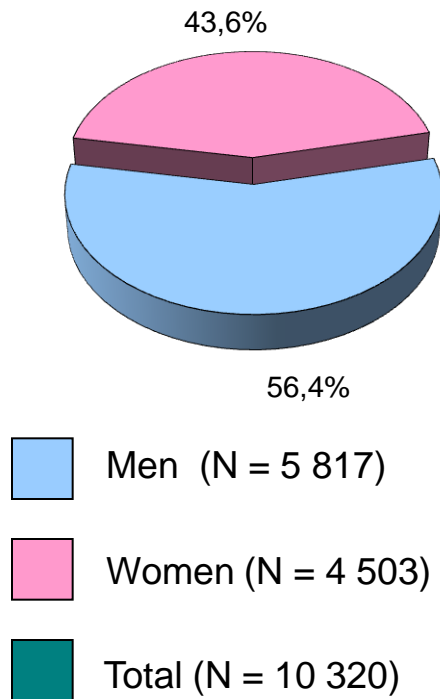


# Patients sex and age in time of surgery

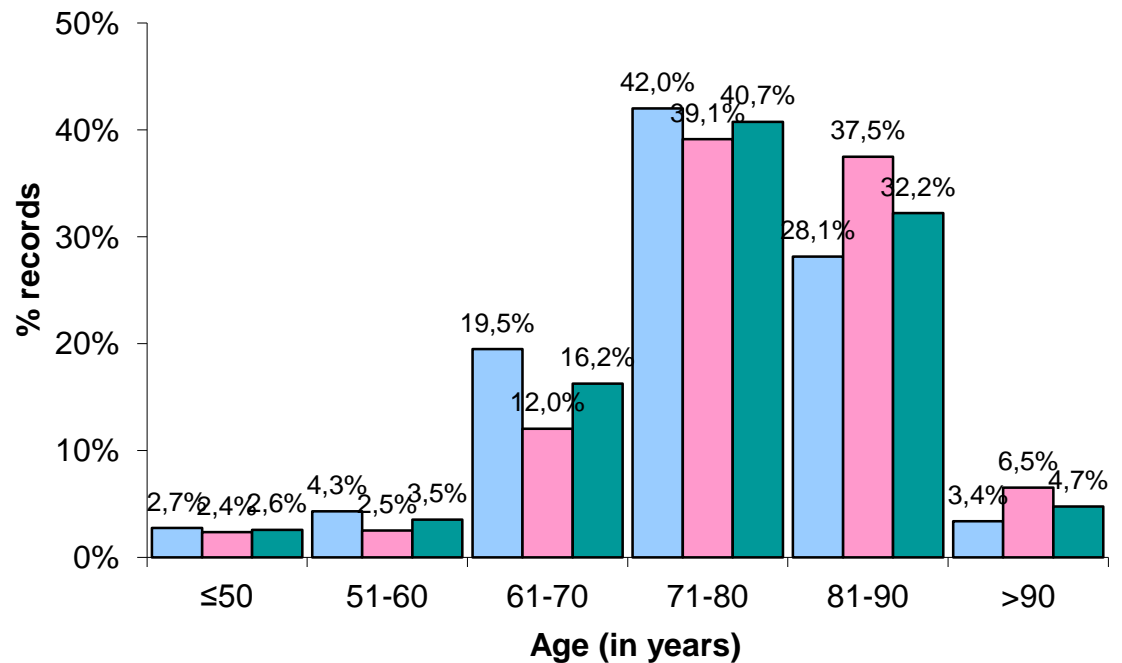
Base: All records 2019 (N = 10 320)

REPACE

## Patients according to sex



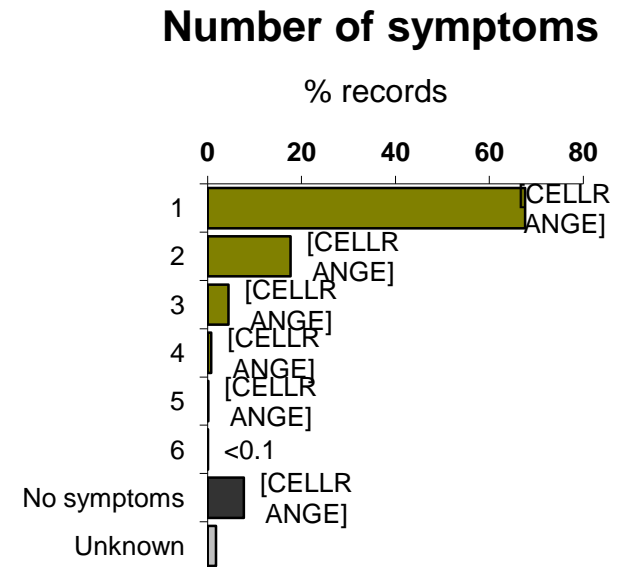
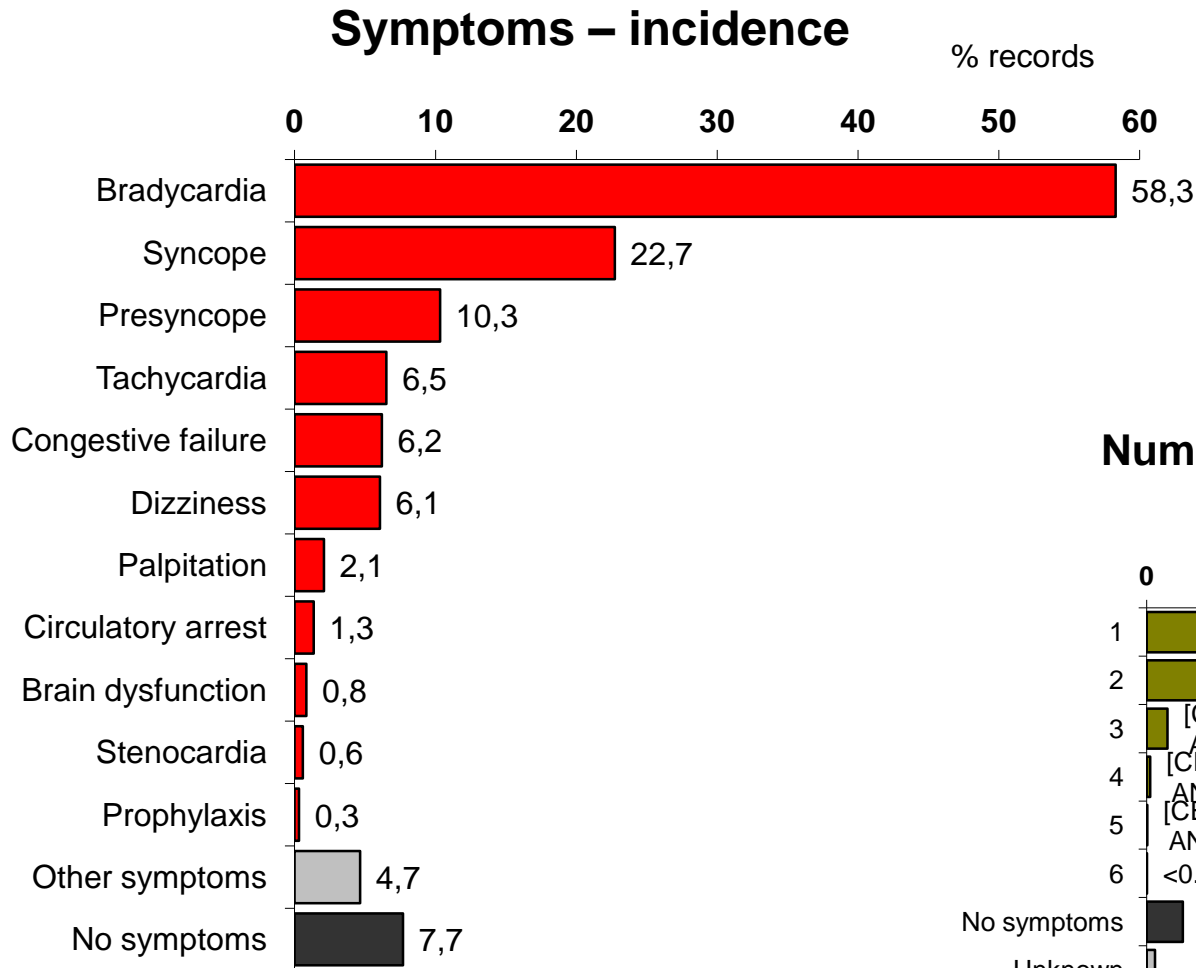
Age in time of surgery	Total	Women	Men
Mean (95% CI)	76.2 (76.0; 76.4)	77.8 (77.5; 78.1)	75.0 (74.7; 75.3)
Median (5–95% percentile)	77.0 (58.0; 90.0)	79.0 (61.0; 91.0)	76.0 (57.0; 89.0)
Minimum - Maximum	0.0 - 101.0	0.0 - 100.0	0.0 - 101.0



# Indications for implantable PM – symptoms

Base: All records 2019 (N = 10 320)

REPACE

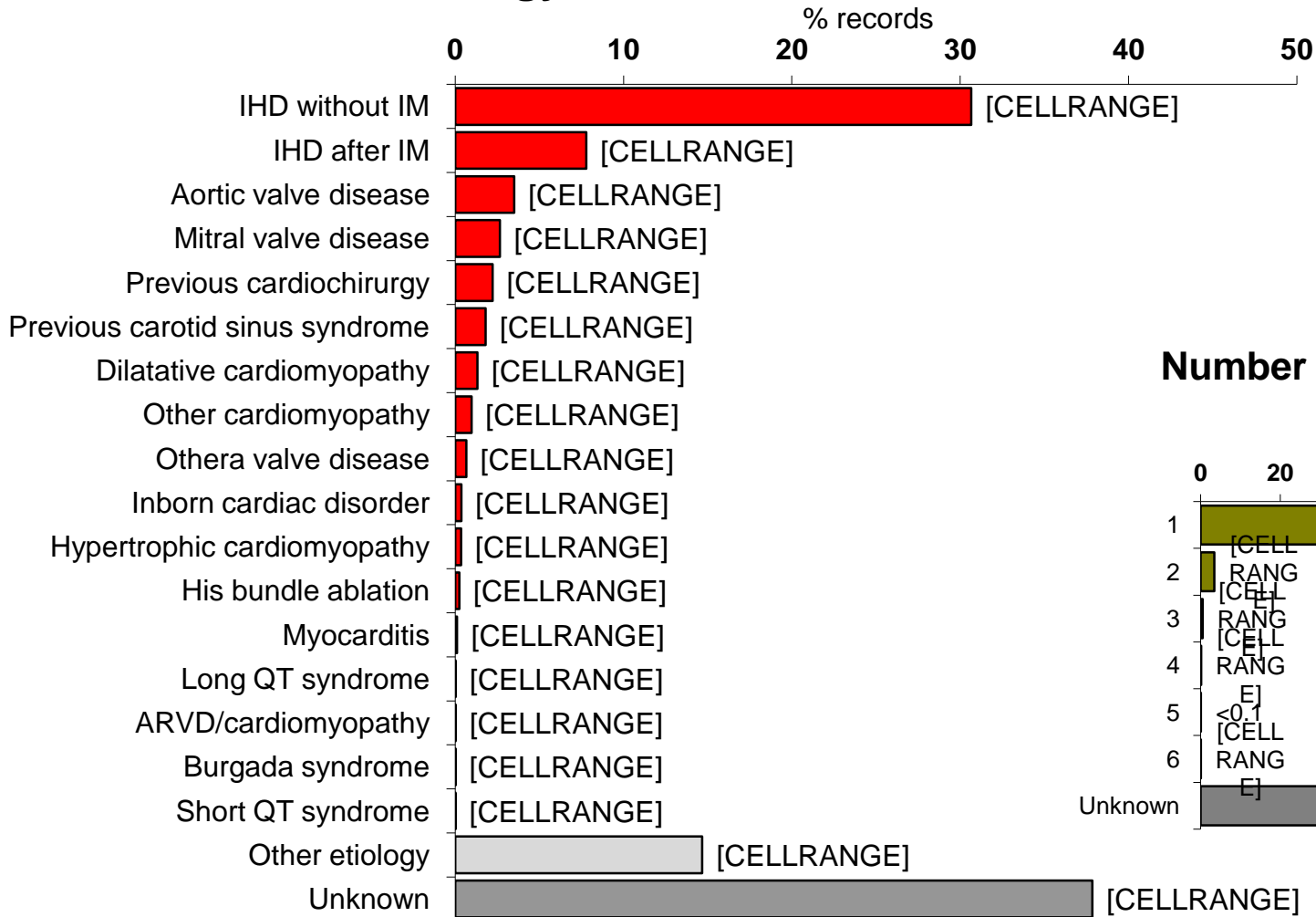


# Indications for implantable PM – etiology

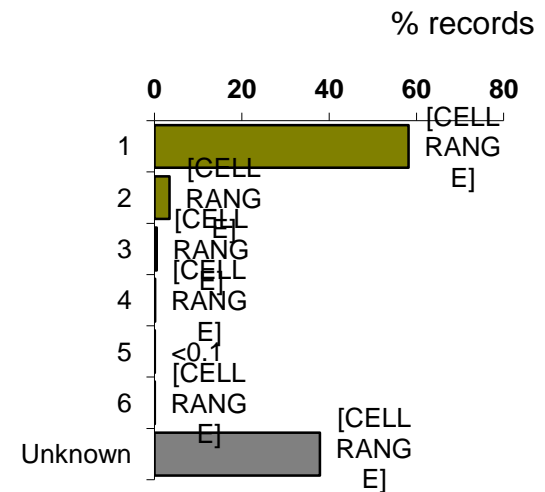
Base: All records 2019 (N = 10 320)

REPACE

## Etiology – incidence



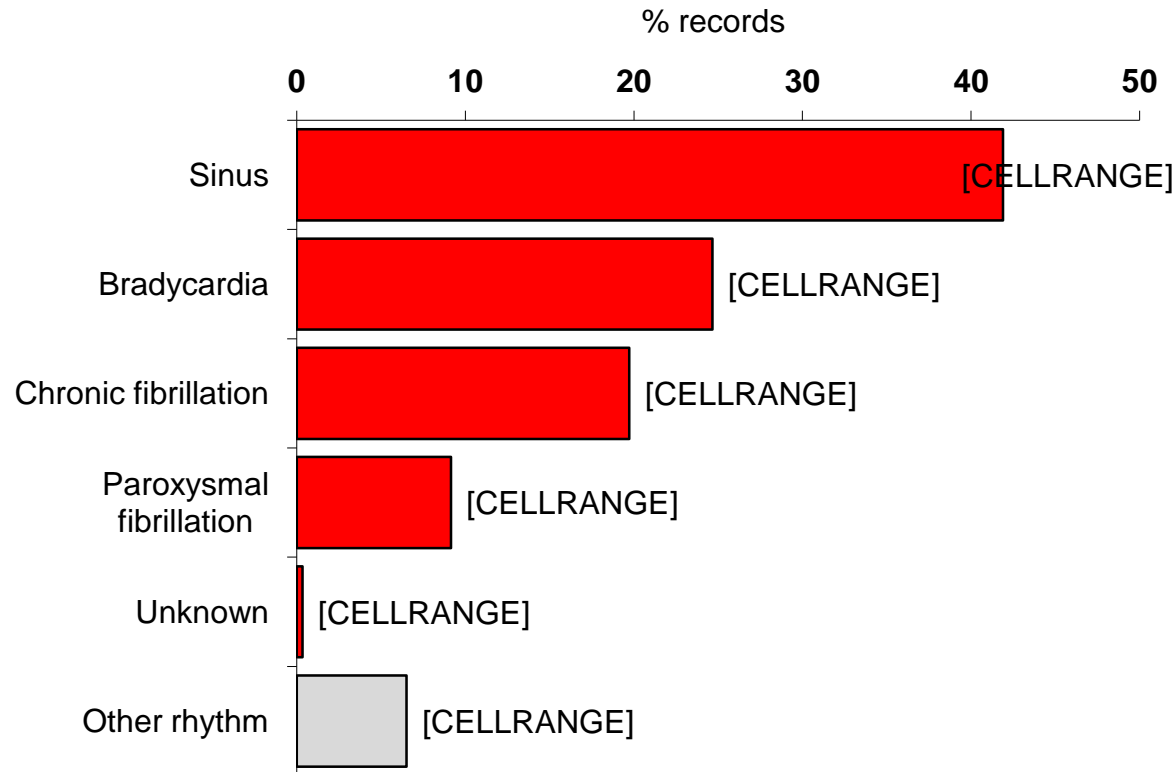
## Number of etiologies



# Indications for implantable PM – heart rhythm before surgery

Base: All records 2019 (N = 10 320)

REPACE



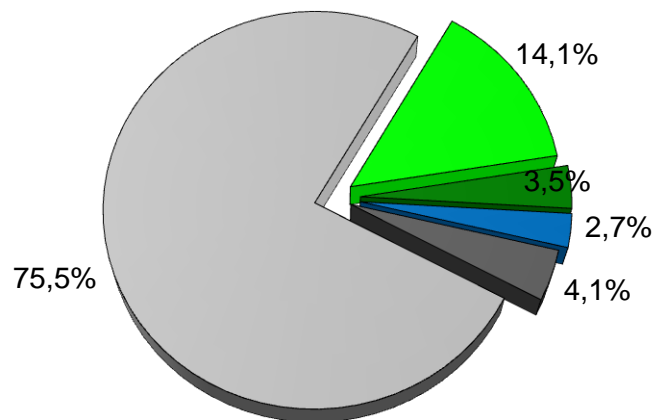
# Vessel disease – number of obstructed vessels

Base: All records 2019 (N = 10 320)

REPACE

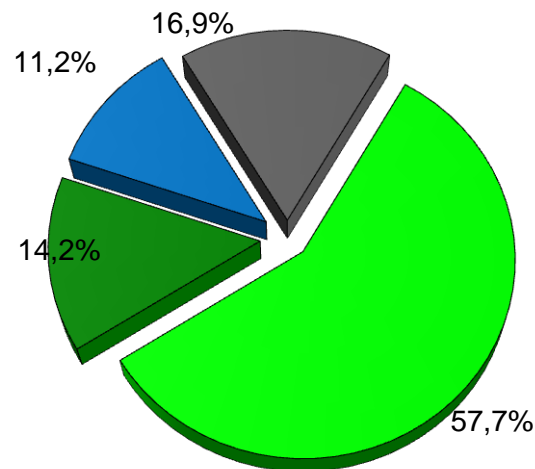
## Vessel disease (with unknown)

N = 10 320



## Vessel disease (without unknown)

N = 2 527



1VD

2VD

MVD

No vessel

Unknown

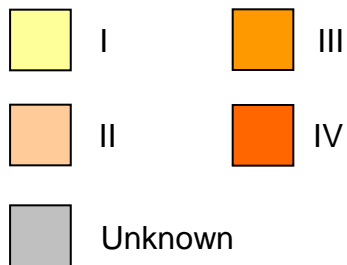
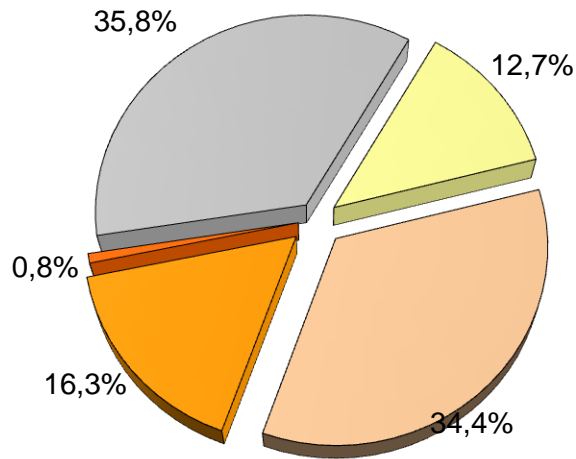
# NYHA and Ejection fraction left ventricle

Base: All records 2019 (N = 10 320)

REPACE

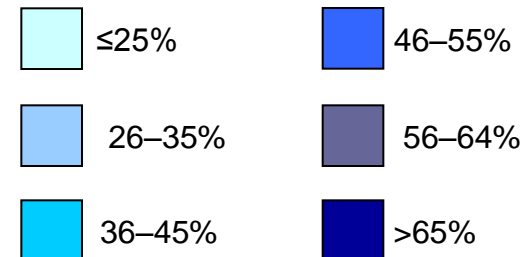
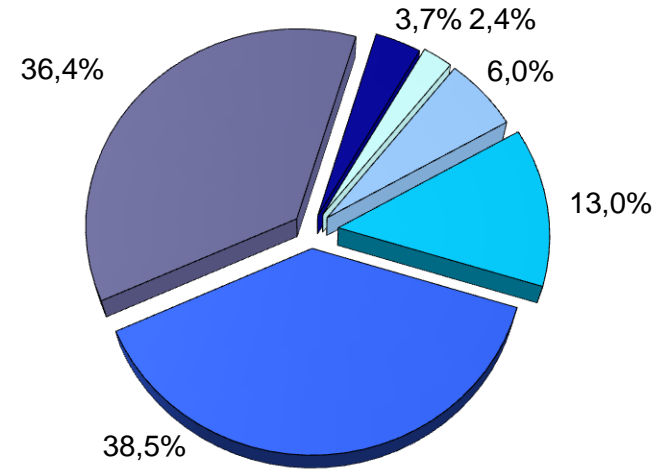
## NYHA

N = 10 320



## Ejection fraction (without unknown)

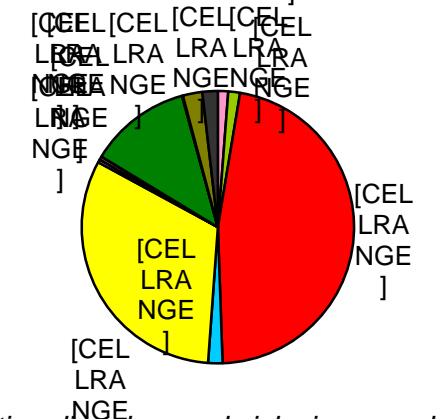
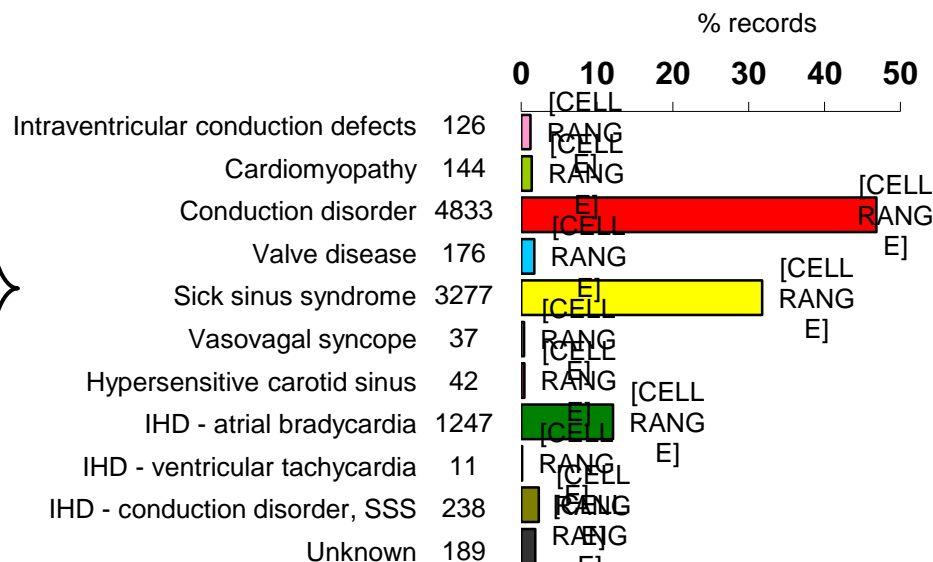
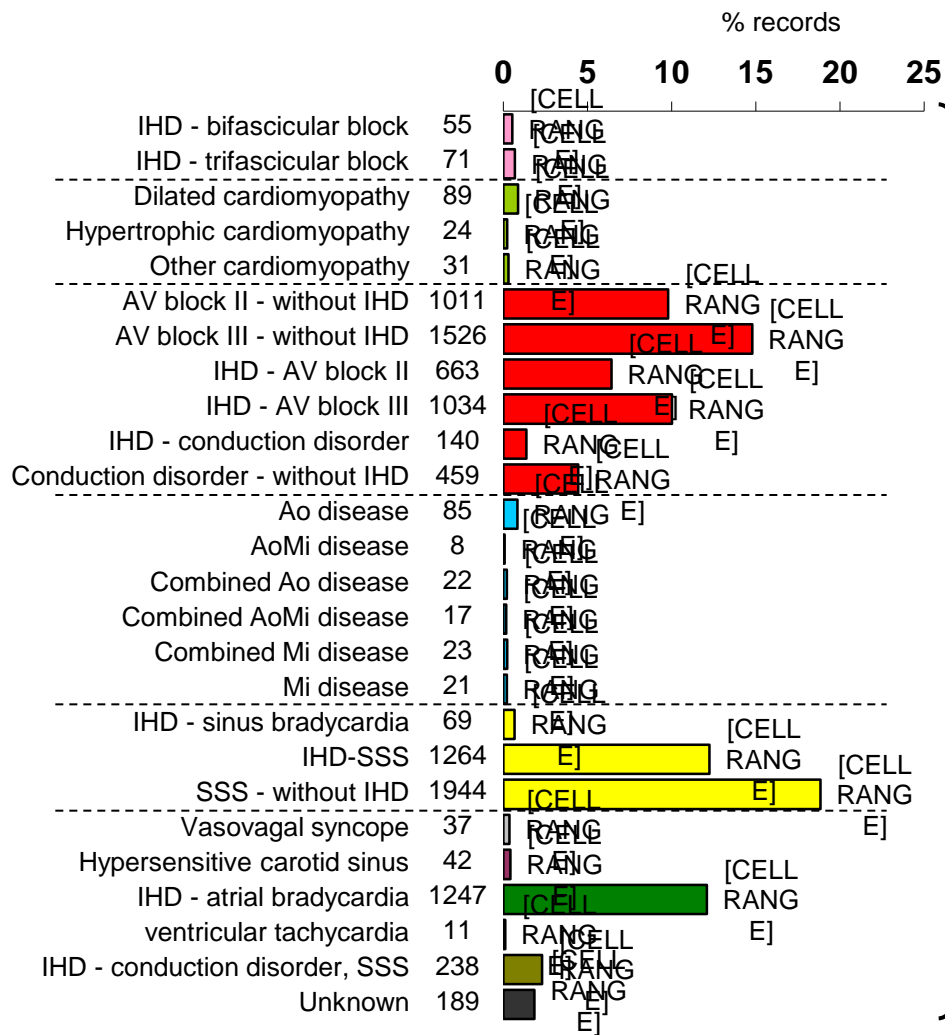
N = 2 666



# Main diagnosis

Base: All records 2019 (N = 10 320)

REPACE

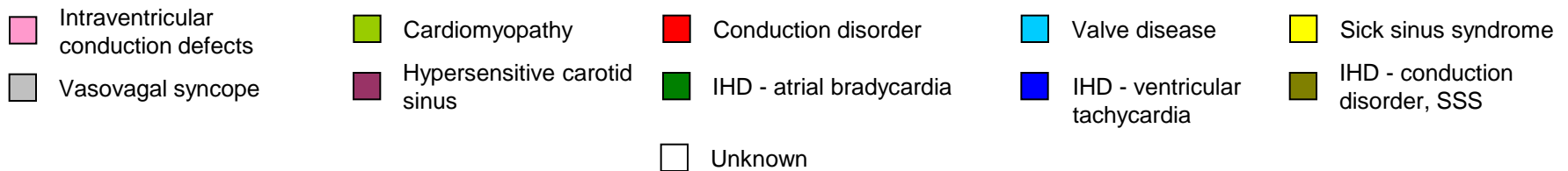
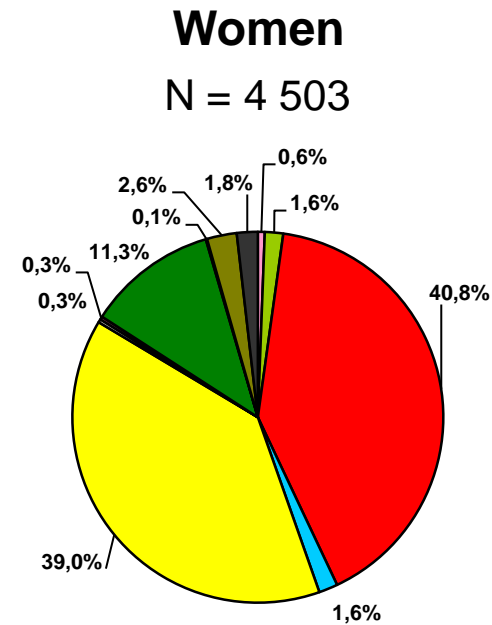
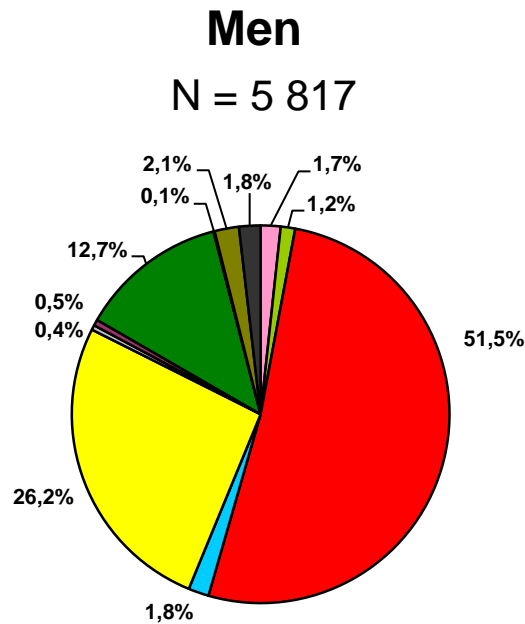


Most frequent main diagnoses are conduction disorders and sick sinus syndromes.

# Main diagnosis according to sex of patient

Base: All records 2019 (N = 10 320)

REPACE



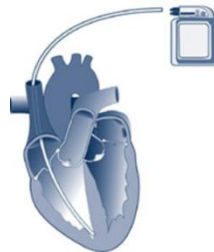
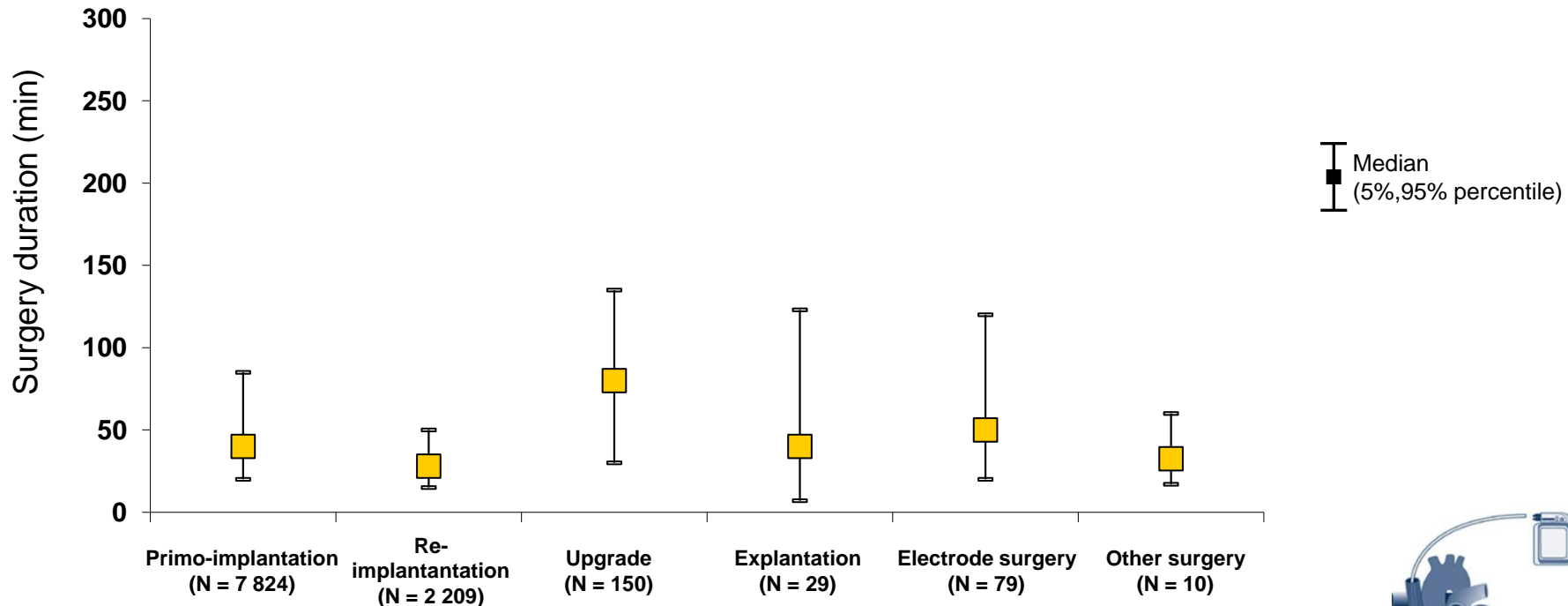


# Surgery duration – according to surgery type

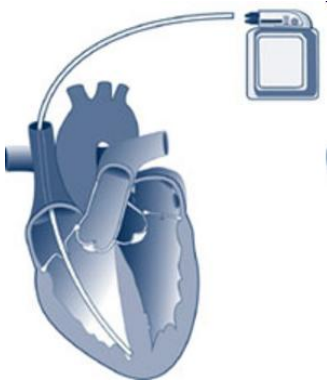
Base: All records 2019 (N = 10 320)

REPACE

Time (minutes)	Primo-implantation (N = 7 824)	Re-implantation (N = 2 202)	Upgrade (N = 138)	Explantation (N = 35)	Electrode surgery (N = 113)	Other surgery (N = 8)
5% percentile	20	15	30	7	20	17
Median	40	28	80	40	50	33
95% percentile	85	50	135	123	120	60



**Complete records:  
Population characteristics  
(without electrode surgery)  
N = 10 207**



# Number of records according to surgery type

*N = 10 207 records of surgery on device (without electrode surgery)*

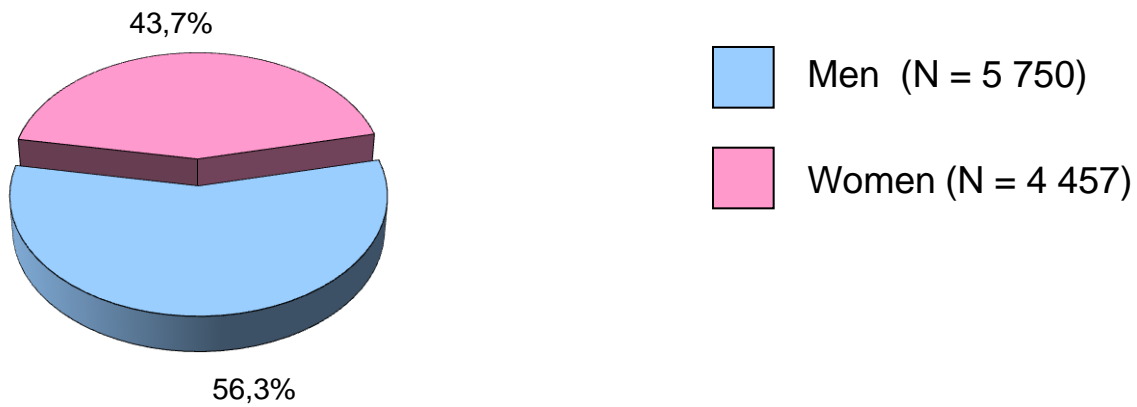
Surgery type	Complete records	
	N	%
<i>Primo-implantation</i>	7824	75.8
<i>Re-implantation</i>	2202	21.3
<i>Upgrade</i>	138	1.3
<i>Explantation</i>	35	0.3
<i>Electrode substitution</i>	67	0.6
<i>Electrode reposition</i>	29	0.3
<i>Electrode extraction</i>	17	0.2
<i>Other surgery</i>	8	0.1
<b>Total</b>	10 320	100.0

# Patients according to sex

Base: Completed records 2019 without electrode surgery (N = 10 207)

REPACE

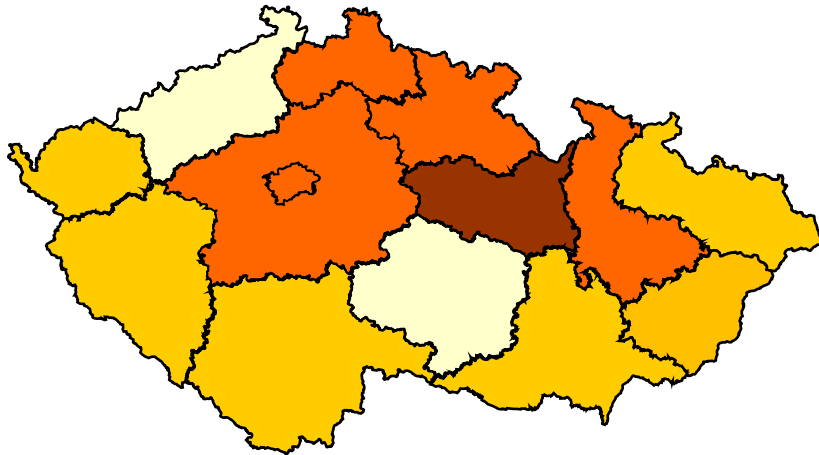
## Patient sex



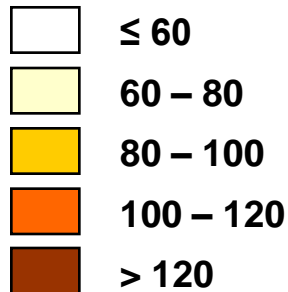
# Incidence according to patients region

Base: Completed records 2019 without electrode surgery (N = 10 207)

REPACE



**Incidence**  
(per 100 000 population per year):

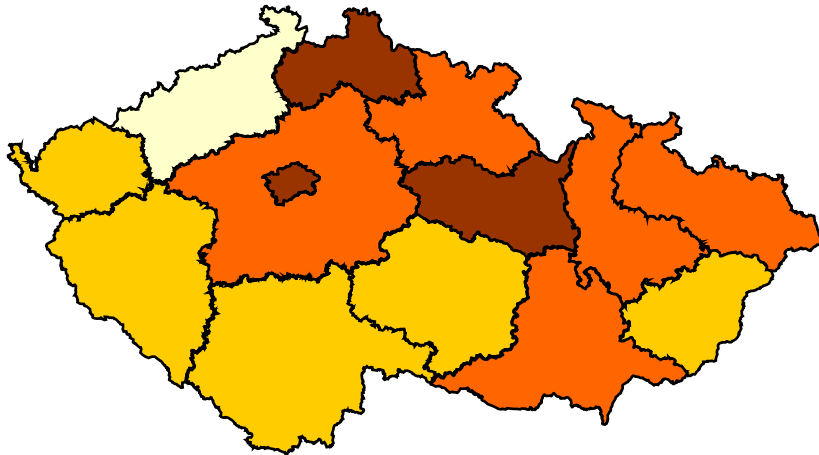


Region	Records		
	N	%	N/100 000 popul.
Pardubický	628	6.2	121
Praha hl. m.	1429	14.0	109
Olomoucký	678	6.6	107
Liberecký	466	4.6	105
Královehradecký	568	5.6	103
Středočeský	1380	13.5	100
Moravskoslezský	1188	11.6	99
Jihomoravský	1121	11.0	94
Jihočeský	558	5.5	87
Plzeňský	508	5.0	86
Zlínský	475	4.7	82
Karlovarský	239	2.3	81
Vysočina	394	3.9	77
Ústecký	533	5.2	65
Abroad / unknown	42	0.4	
<b>Total</b>	<b>10207</b>	<b>100.0</b>	

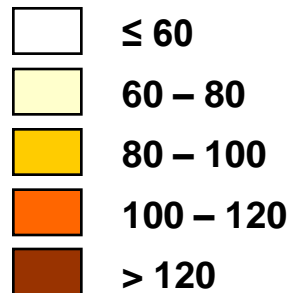
# Incidence according to patients region - men

Base: Completed records 2019 without electrode surgery - men (N = 5 570)

REPACE



**Incidence**  
(per 100 000 population per year):

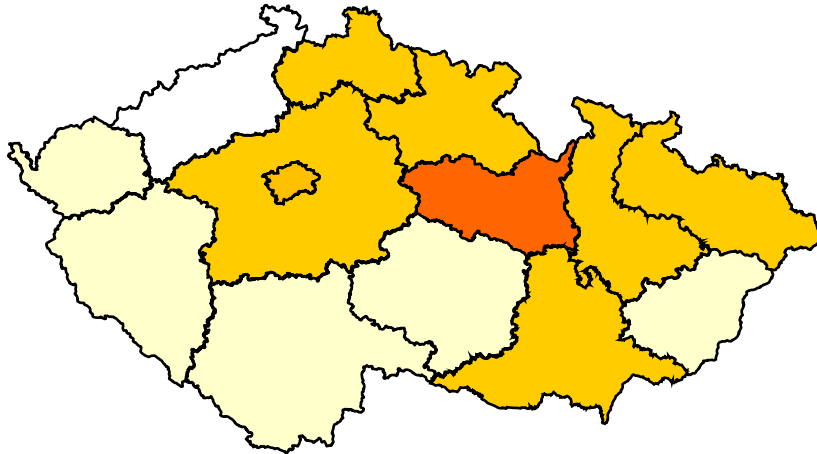


Region	Records		
	N	%	N/100 000 popul.
Pardubický	344	6.0	133
Praha hl. m.	853	14.8	133
Liberecký	270	4.7	124
Královehradecký	319	5.5	117
Olomoucký	359	6.2	116
Středočeský	777	13.5	114
Moravskoslezský	657	11.4	111
Jihomoravský	614	10.7	105
Plzeňský	286	5.0	98
Jihočeský	306	5.3	96
Zlínský	270	4.7	94
Vysočina	231	4.0	91
Karlovarský	128	2.2	88
Ústecký	309	5.4	76
Abroad / unknown	27	0.5	
<b>Total</b>	<b>5 750</b>	<b>100</b>	

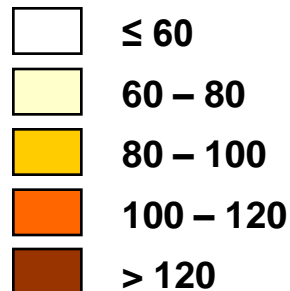
# Incidence according to patients region - women

Base: Completed records 2019 without electrode surgery - women (N = 4 457)

REPACE



**Incidence**  
(per 100 000 population per year):

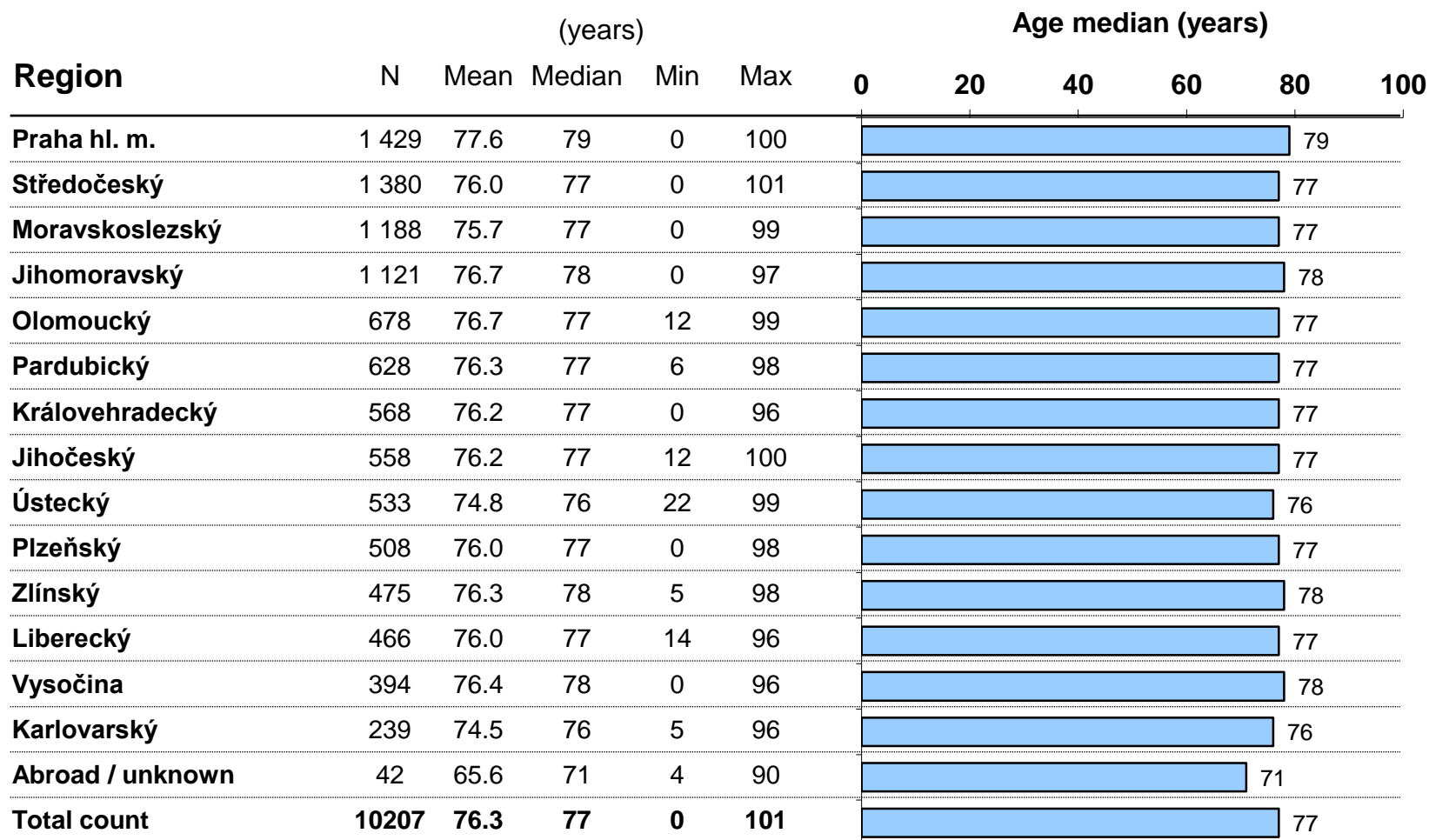


Kraj	Záznamy		
	N	%	N/100 000 obyv.
Pardubický	284	6.4	108
Olomoucký	319	7.2	99
Královehradecký	249	5.6	89
Liberecký	196	4.4	87
Moravskoslezský	531	11.9	87
Středočeský	603	13.5	87
Praha hl. m.	576	12.9	86
Jihomoravský	507	11.4	84
Jihočeský	252	5.7	77
Plzeňský	222	5.0	75
Karlovarský	111	2.5	74
Zlínský	205	4.6	69
Vysočina	163	3.7	64
Ústecký	224	5.0	54
Abroad / unknown	15	0.3	
<b>Total</b>	<b>4 457</b>	<b>100</b>	

# Patients age in time of the surgery – according to region

Base: Completed records 2019 without electrode surgery (N = 10 207)

REPACE

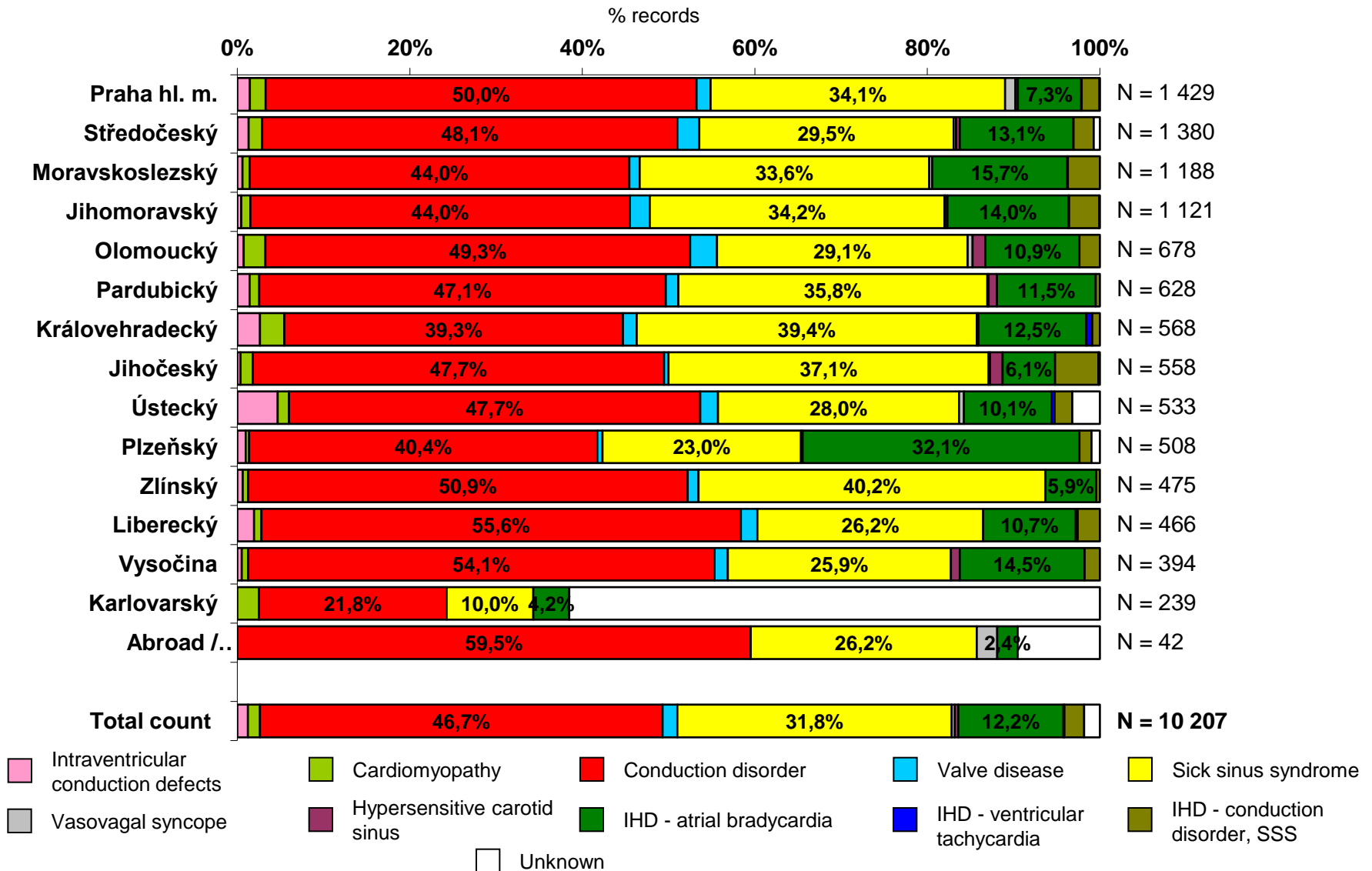




# Main diagnoses overview – according to region

Base: Completed records 2019 without electrode surgery (N = 10 207)

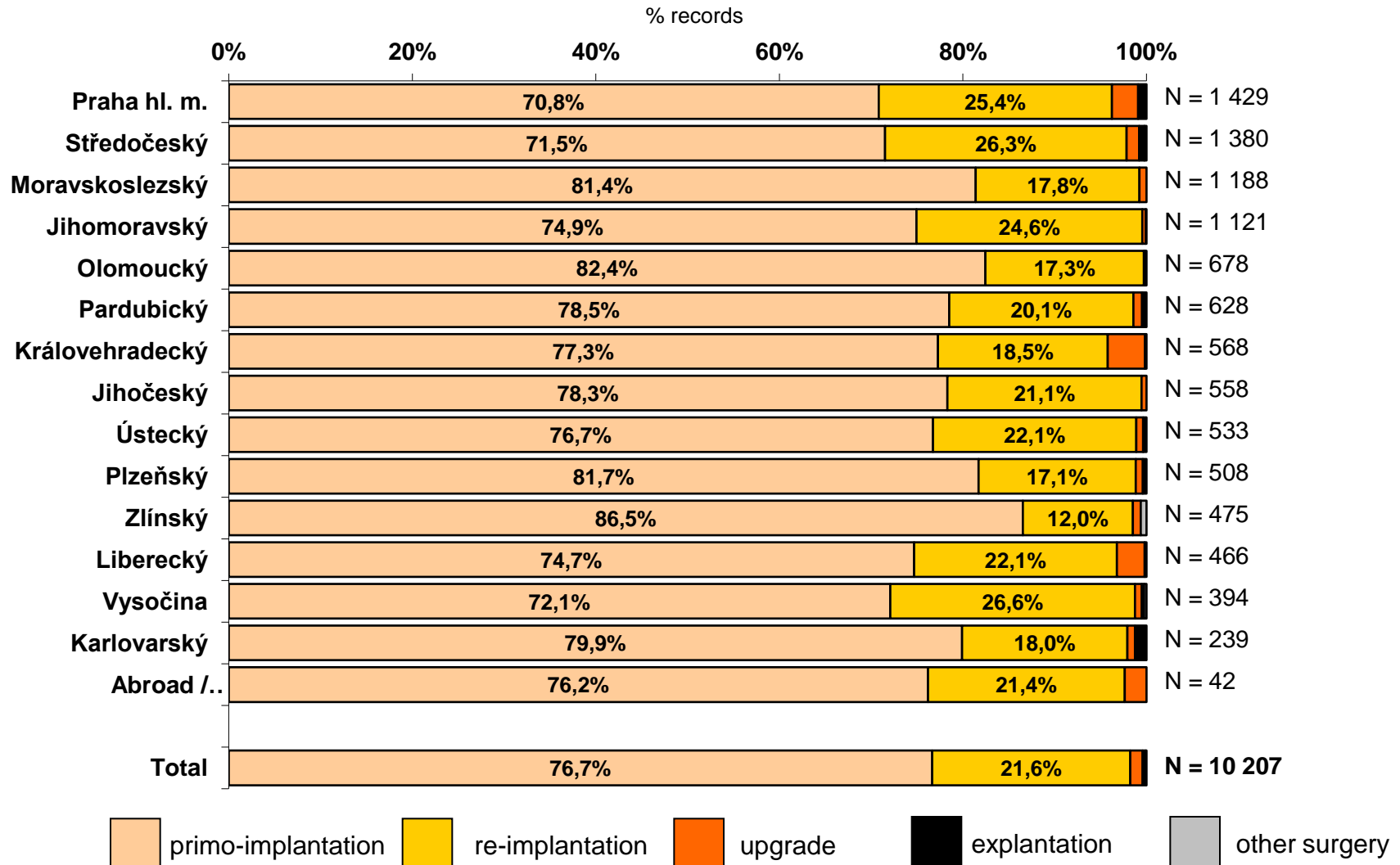
REPACE



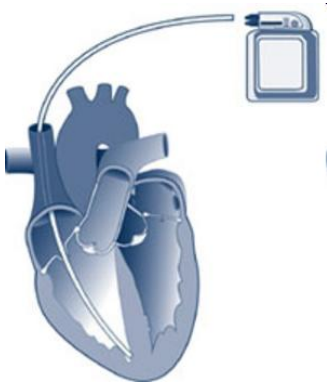
# Surgery type overview – according to region

Base: Completed records 2019 without electrode surgery (N = 10 207)

REPACE



**Complete records:  
primo-implantation  
N = 7 824**



# Primo-implantation: Number of records according to surgery type

*Primo-implantations with complete records N = 7 824*

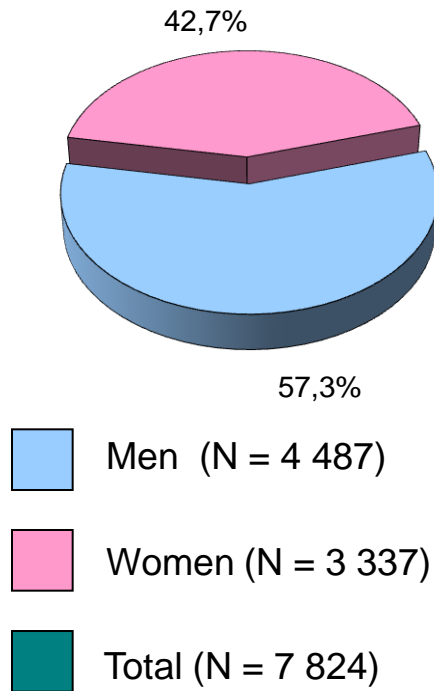
Surgery type	Complete records	
	N	%
<i>Primo-implantation</i>	<i>7824</i>	<i>75.8</i>
<i>Re-implantation</i>	2202	21.3
<i>Upgrade</i>	138	1.3
<i>Explantation</i>	35	0.3
<i>Electrode substitution</i>	67	0.6
<i>Electrode reposition</i>	29	0.3
<i>Electrode extraction</i>	17	0.2
<i>Other surgery</i>	8	0.1
<b>Total</b>	10 320	100.0

# Primo-implantation: Patients sex and age in time of surgery

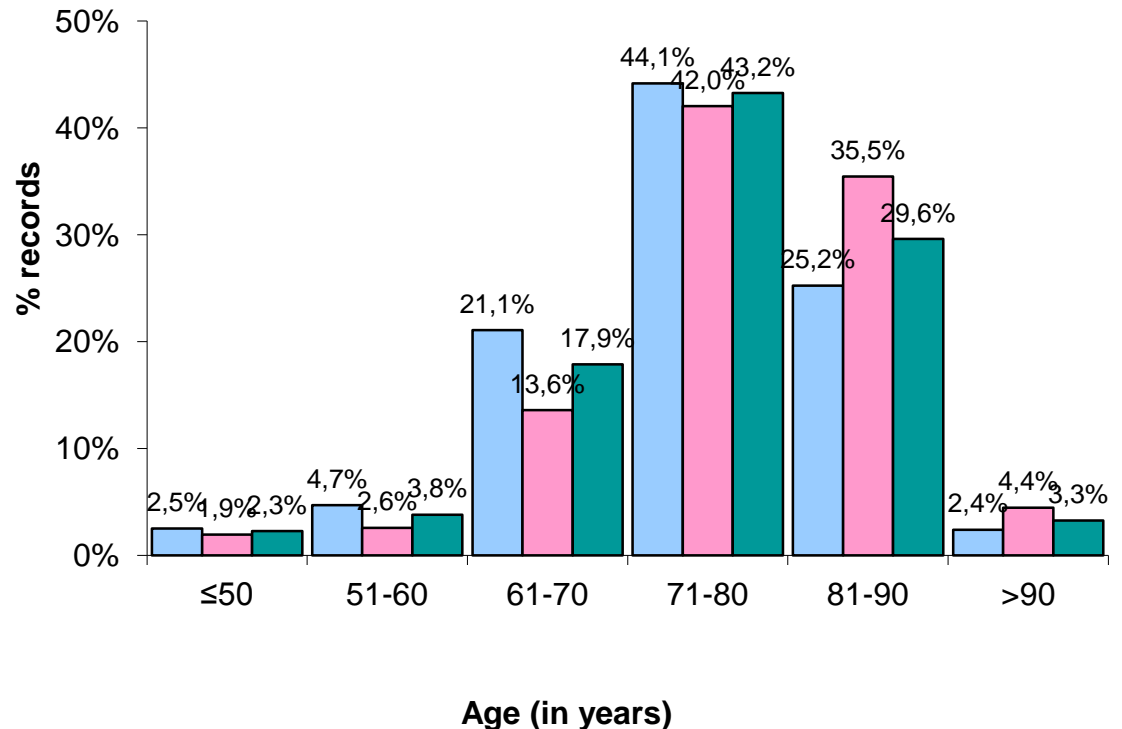
Base: Primo-implantations 2019 (N = 7 824)

REPACE

## Patients according to sex



Age in time of surgery	Total	Women	Men
Mean (95% CI)	75.6 (75.4; 75.8)	77.2 (76.9; 77.5)	74.4 (74.1; 74.7)
Median (5–95% percentile)	77.0 (59.0; 89.0)	78.0 (61.0; 90.0)	75.0 (57.0; 89.0)
Minimum - Maximum	0.0 - 99.0	0.0 - 99.0	0.0 - 97.0

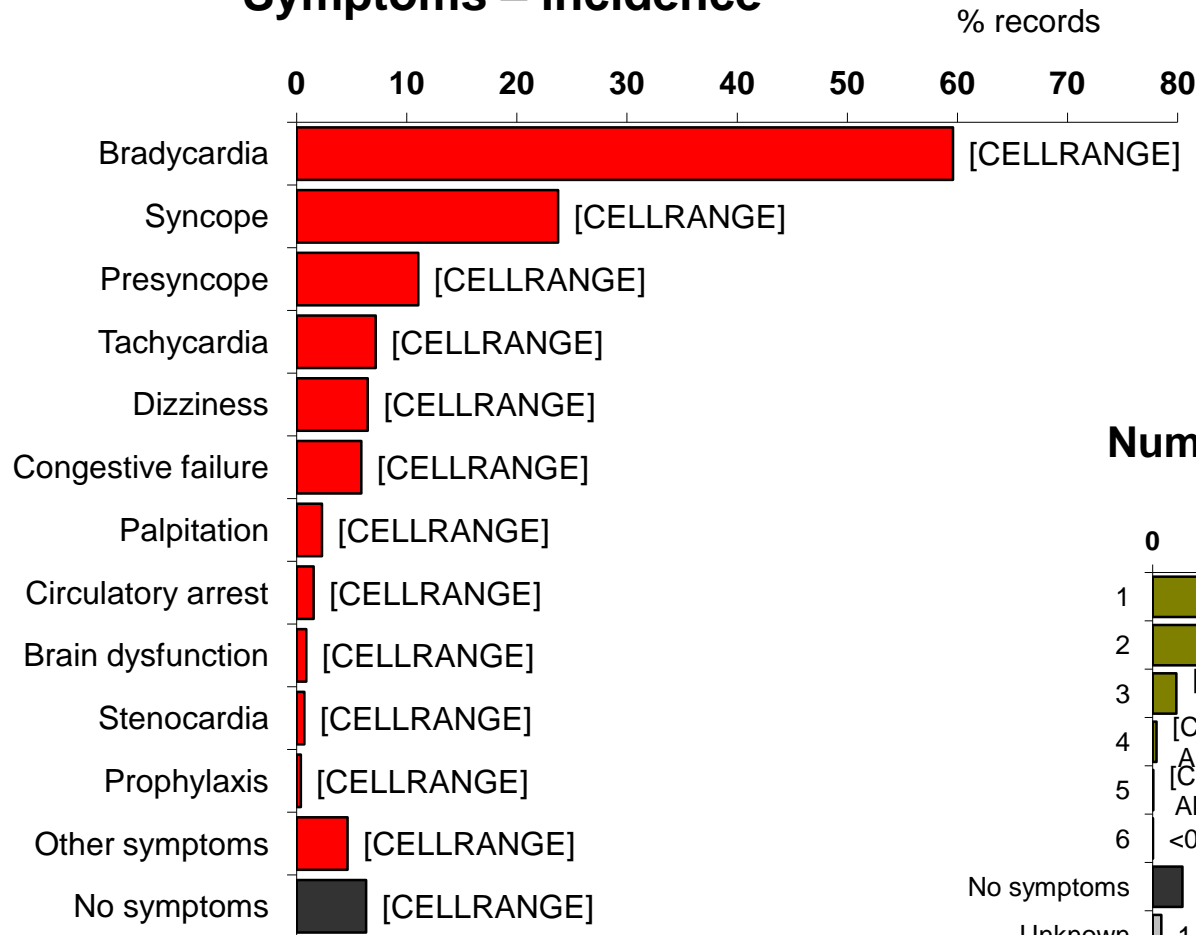


# Primo-implantation: Indications for implantable PM – symptoms

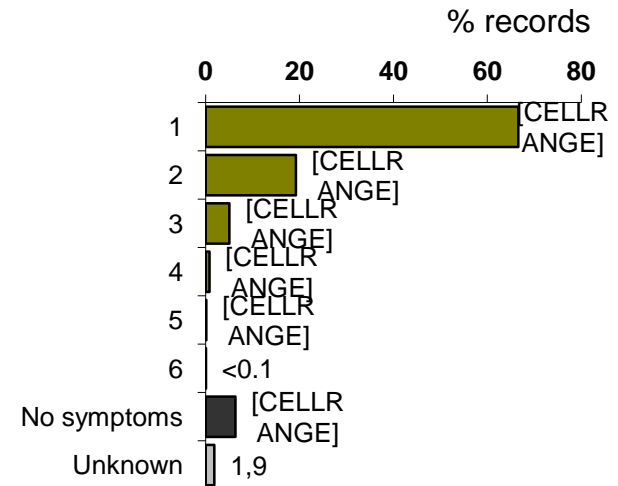
Base: Primo-implantations 2019 (N = 7 824)

REPACE

## Symptoms – incidence



## Number of symptoms

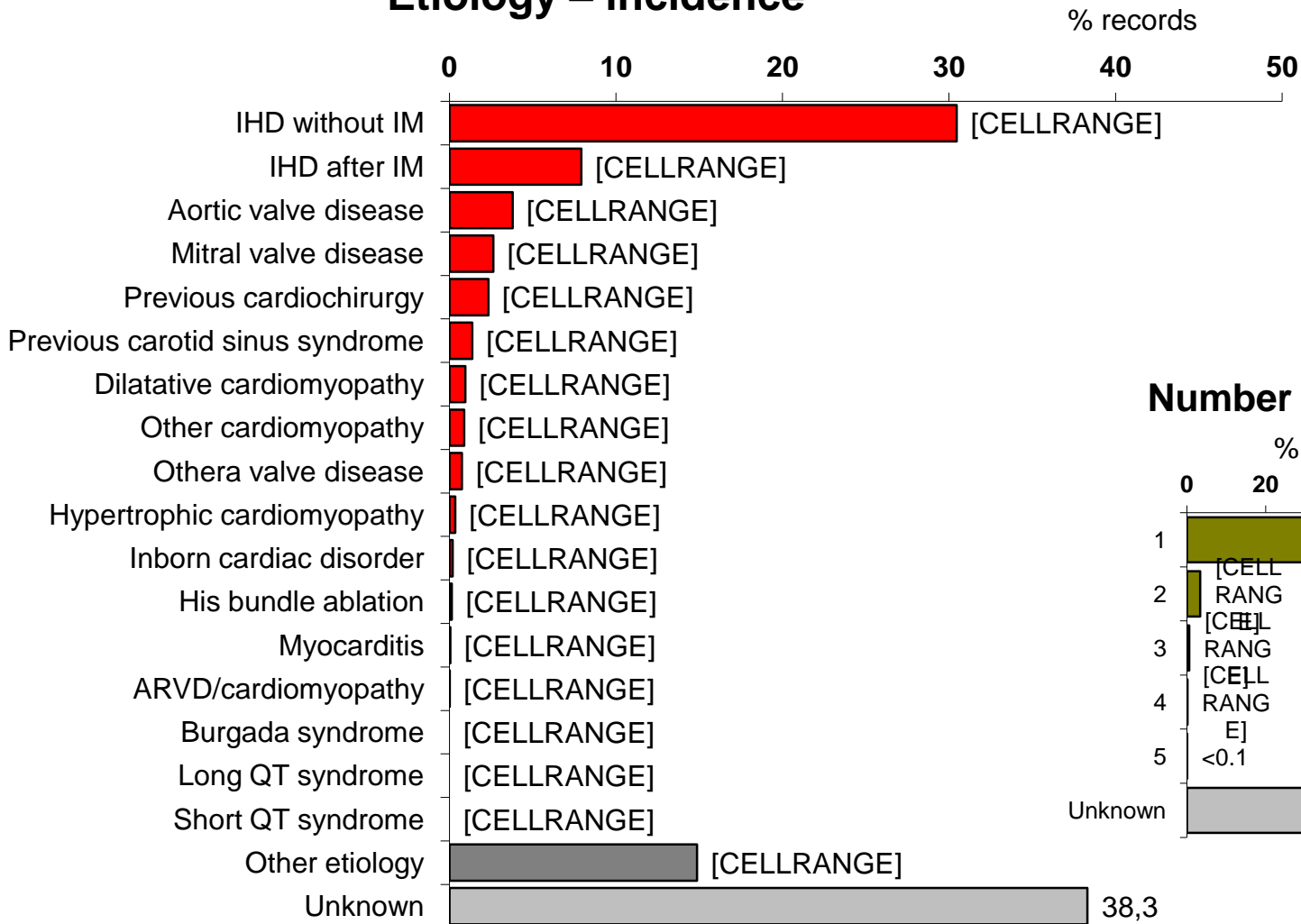


# Primo-implantation: Indications for implantable PM – etiology

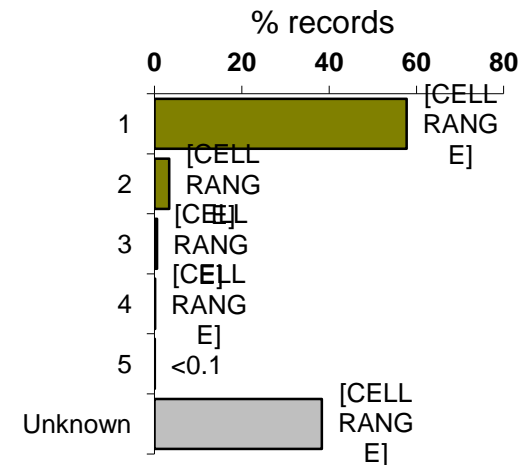
Base: Primo-implantations 2019 (N = 7 824)

REPACE

## Etiology – incidence



## Number of etiologies

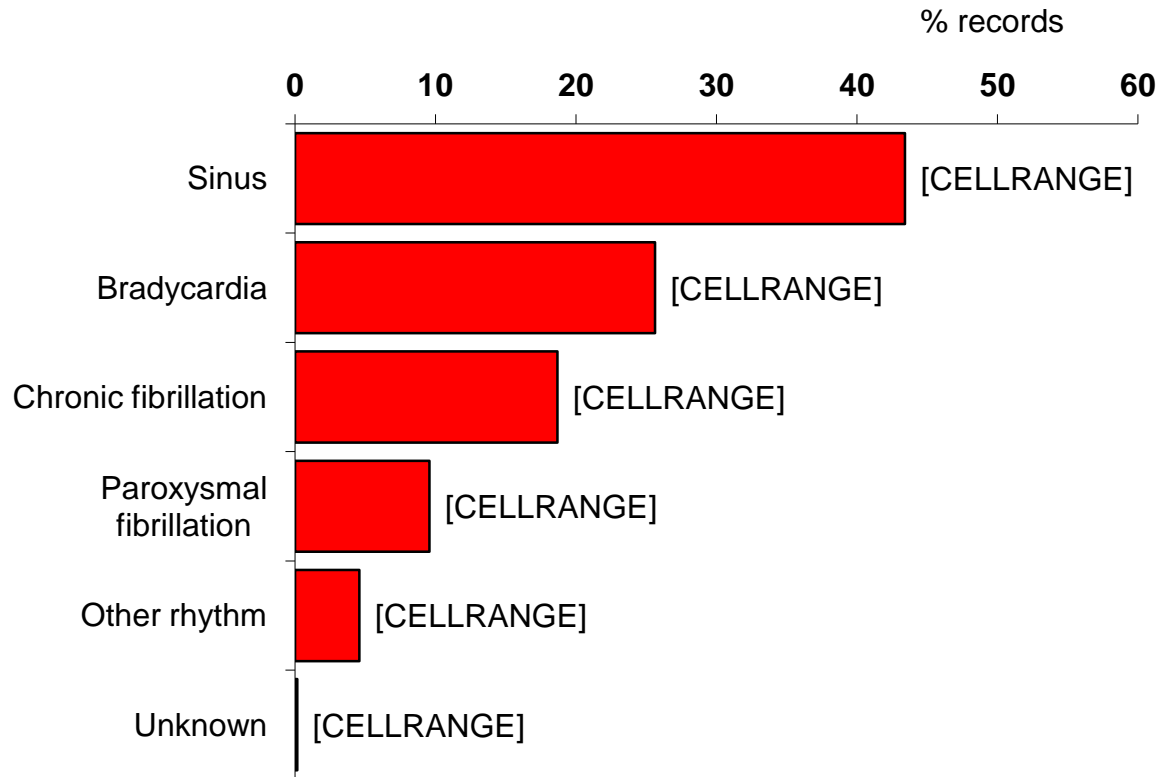


# Primo-implantation:

## Indications for implantable PM – heart rhythm before surgery

Base: *Primo-implantations 2019 (N = 7 824)*

REPACE





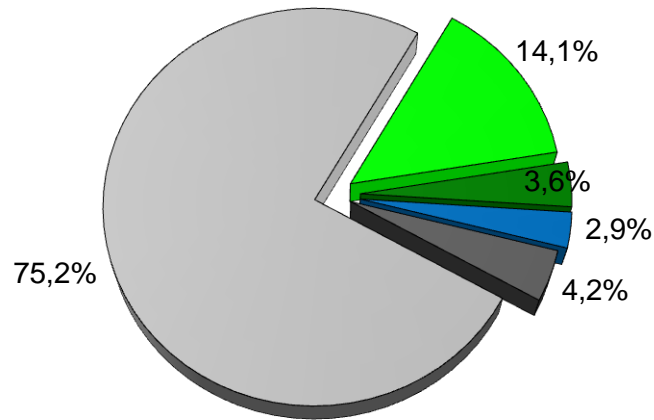
# Primo-implantation: Vessel disease – number of obstructed vessels

Base: *Primo-implantations 2019 (N = 7 824)*

REPACE

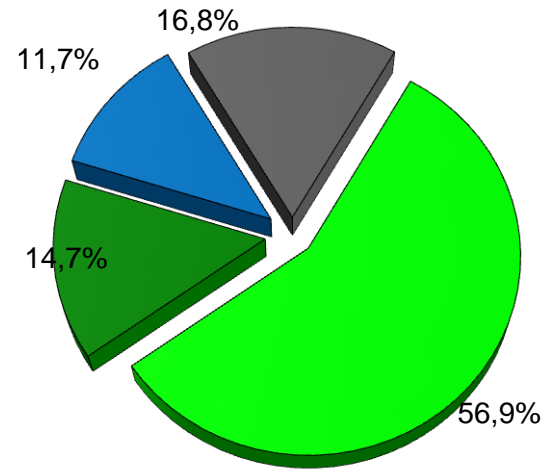
## Vessel disease (with unknown)

N = 7 824



## Vessel disease (without unknown)

N = 1 938



1VD

2VD

MVD

No vessel

Unknown

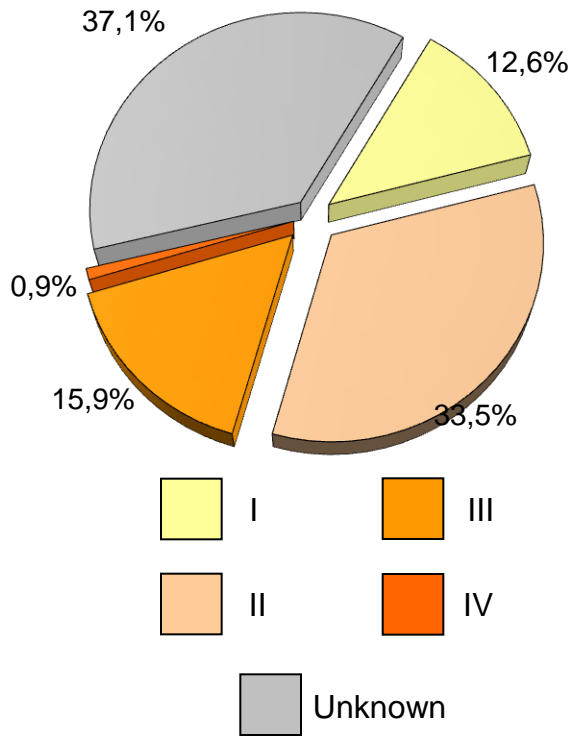
# Primo-implantation: NYHA and Ejection fraction left ventricle

Base: Primo-implantations 2019 (N = 7 824)

REPACE

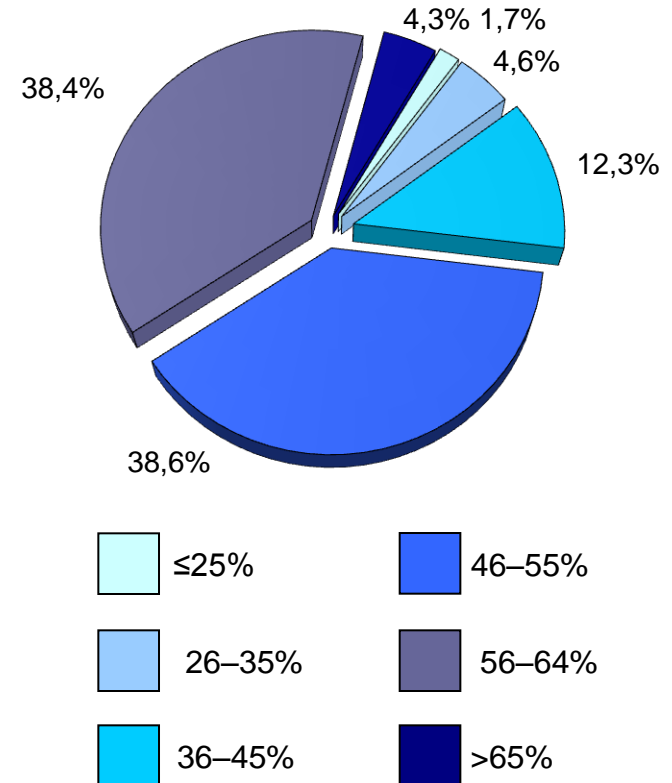
## NYHA (with unknown)

N = 7 824



## Ejection fraction (without unknown)

N = 2 138

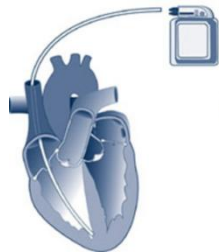
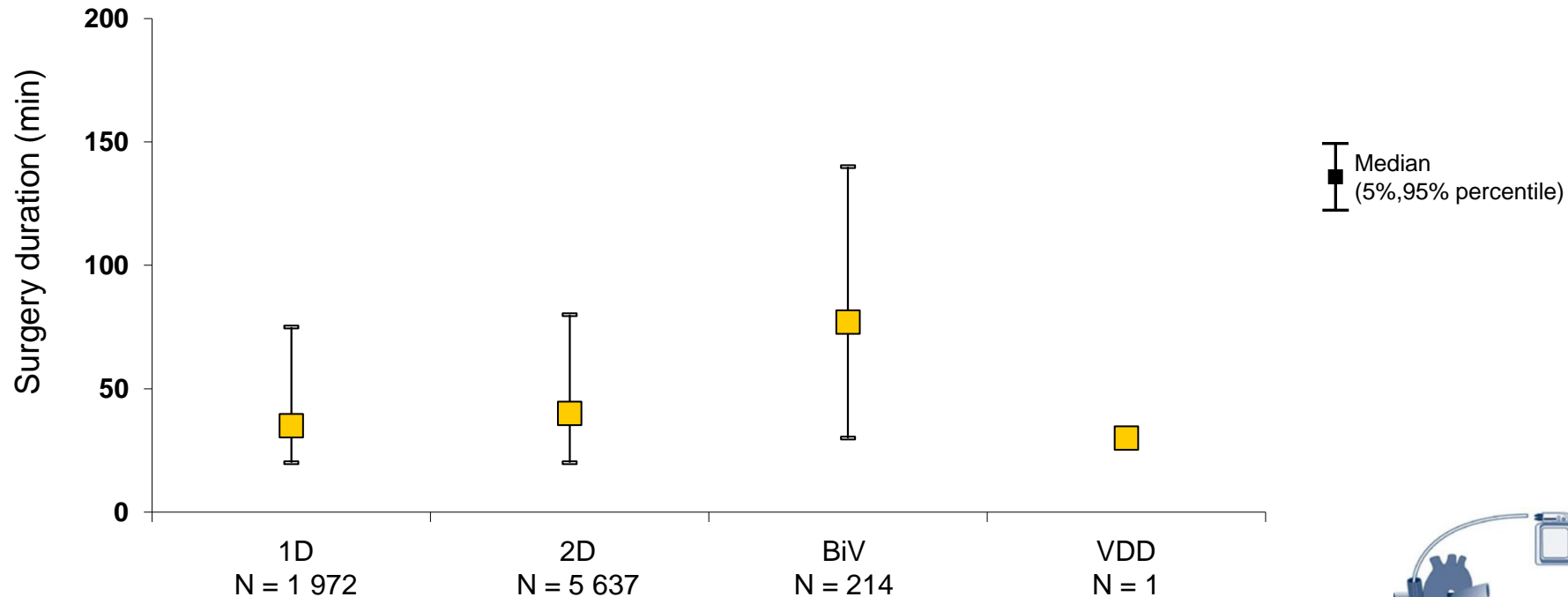


# Primo-implantation: Surgery duration – according to device type

Base: *Primo-implantations 2019 (N = 7 824)*

REPACE

Time (minutes)	1D	2D	BiV	VDD
5% percentile	20	20	30	
Median	35	40	77	30
95% percentile	75	80	140	



# Primo-implantation: Vessel disease – according to device type

Base: Primo-implantations 2019 (N = 7 824)

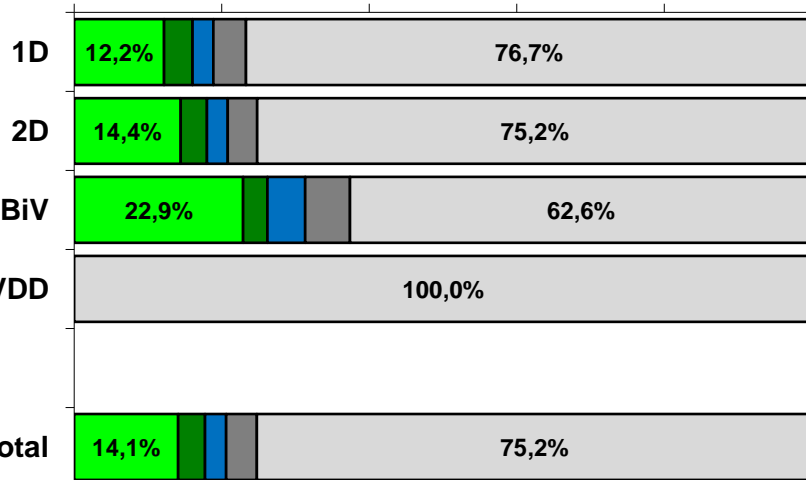
REPACE

## Vessel disease (with unknown)

N = 7 824

% records

0% 20% 40% 60% 80% 100%

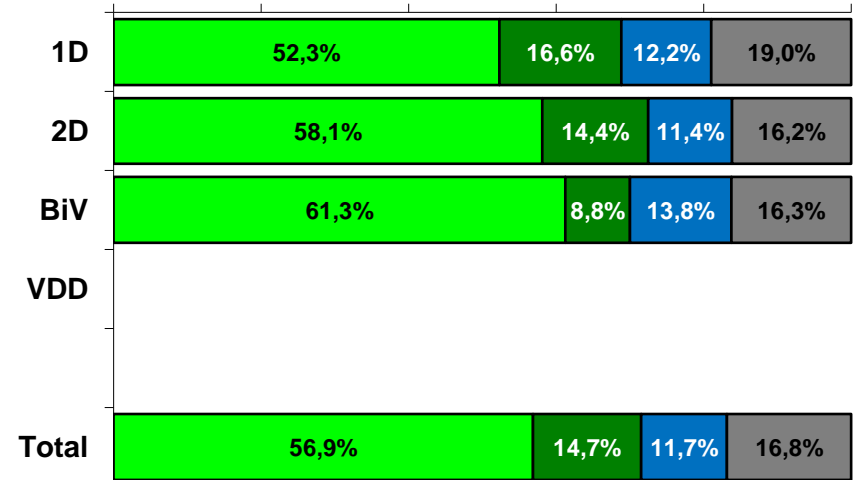


## Vessel disease (without unknown)

N = 1 938

% records

0% 20% 40% 60% 80% 100%



1VD

2VD

MVD

No vessel

Unknown

# Primo-implantation: NYHA and EF LV according to device type

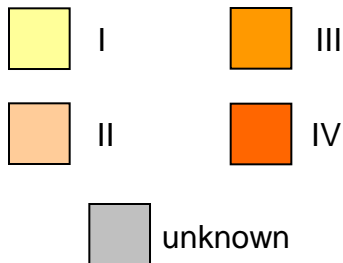
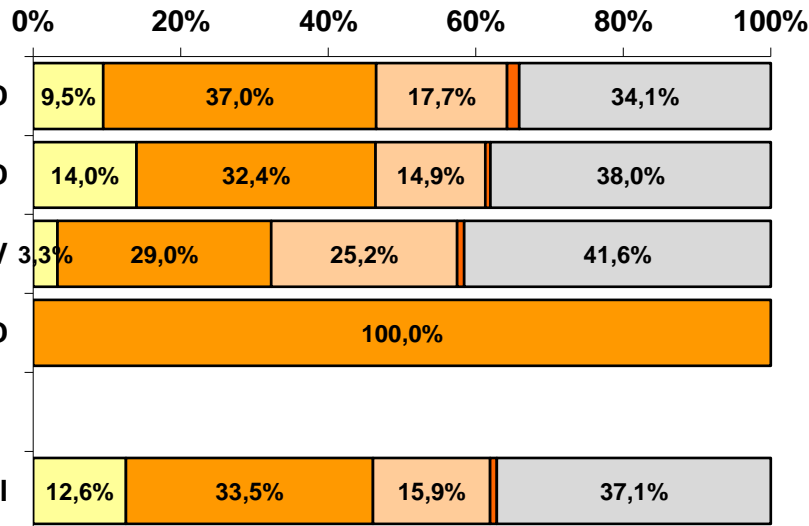
Base: Primo-implantations 2019 (N = 7 824)

REPACE

## NYHA (with unknown)

N = 7 824

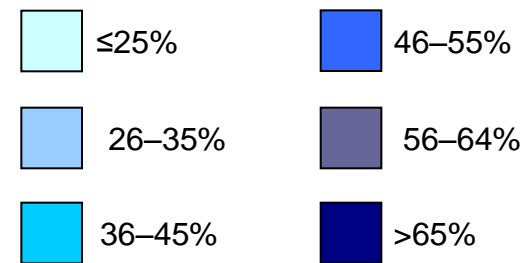
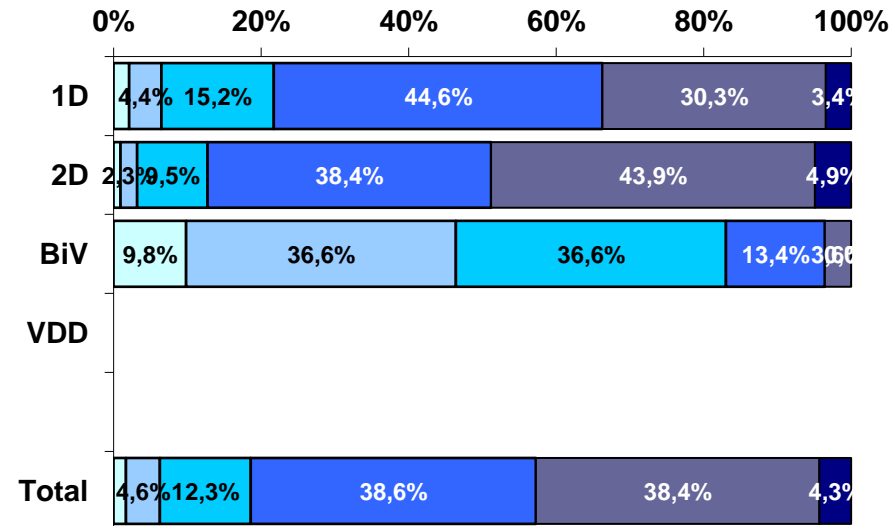
% records



## Ejection fraction (without unknown)

N = 2 138

% records



# Cooperated centres – number of implanted devices (trend)

Base: implanted devices 2019 (N = 10 168)

REPACE

	2018->2019 trend	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Centrum 1	93	717	624	548	613	541	667	642	695	679	693
Centrum 2	-8	569	577	553	573	335	541	500	461	426	464
Centrum 3	-34	526	560	470	480	485	478	473	491	480	454
Centrum 4	90	525	435	406	291	405	429	396	472	453	404
Centrum 5	14	500	486	507	479	463	436	425	403	373	427
Centrum 6	12	474	462	419	408	399	380	401	394	389	348
Centrum 7	67	473	406	376	396	413	456	403	391	365	367
Centrum 8	43	470	427	422	454	439	429	501	411	422	311
Centrum 9	5	469	464	460	518	481	427	424	303	432	467
Centrum 10	-42	387	429	400	341	348	337	358	323	362	310
Centrum 11	27	372	345	388	344	403	432	309	325	237	180
Centrum 12	36	348	312	333	277	268	294	237	243	249	236
Centrum 13	-15	339	354	343	424	407	413	409	429	428	383
Centrum 14	-16	330	346	352	291	305	310	246	270	260	272
Centrum 15	-1	326	327	321	323	344	294	287	352	372	393
Centrum 16	-1	305	306	135	289	322	329	359	313	337	316
Centrum 17	0	274	274	281	259	253	280	256	153	152	278
Centrum 18	25	262	237	273	251	218	198	211	175	187	132
Centrum 19	14	246	232	220	210	195	171	180	157	199	204
Centrum 20	3	236	233	187	214	213	218	197	192	174	144
Centrum 21	-23	219	242	232	251	244	253	222	233	200	182
Centrum 22	-24	183	207	207	219	191	221	236	189	176	200
Centrum 23	-21	171	192	173	192	171	181	157	161	148	148
Centrum 24	-35	170	205	229	243	260	220	232	237	218	212
Centrum 25	-25	168	193	194	217	207	208	247	191	211	193
Centrum 26	10	166	156	209	178	217	249	271	268	256	235
Centrum 27	2	151	149	153	135	137	130	108	109	105	115
Centrum 28	-27	123	150	150	143	147	135	151	149	147	148
Centrum 29	-10	122	132	141	141	155	135	139	145	137	126
Centrum 30	6	119	113	98	113	123	103	100	101	93	111
Centrum 31	3	117	114	106	94	75	106	90	92	98	111
Centrum 32	-7	115	122	111	117	103	80	109	106	121	117
Centrum 33	26	89	63	77	80	81	71	102	89	89	86
Centrum 34	20	79	59	72	56	61	50	86	86	66	75
Centrum 35	-9	28	37	21	32	24	24	19	25	35	26
Centrum 36	0	0	0	0	0	1	3	7	16	9	42
Centrum 37	0	0	0	0	0	0	0	8	0	0	0

# Cooperated centres – number of implanted devices (trend)

Base: implanted devices 2019 (N = 10 168)

REPACE

	2018->2019 trend	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Nemocnice Na Homolce	93	717	624	548	613	541	667	642	695	679	693
FN Brno - Kardiologická klinika	-8	569	577	553	573	335	541	500	461	426	464
FNUSA Brno - Kardiologická klinika	-34	526	560	470	480	485	478	473	491	480	454
FNHK - 1. IK	90	525	435	406	291	405	429	396	472	453	404
IKEM Praha - Kardiologická klinika	14	500	486	507	479	463	436	425	403	373	427
Liberec - Kardiocentrum	12	474	462	419	408	399	380	401	394	389	348
FNKV Praha	67	473	406	376	396	413	456	403	391	365	367
FN Ostrava - Kardiovaskulární odd.	43	470	427	422	454	439	429	501	411	422	311
FN Plzeň	5	469	464	460	518	481	427	424	303	432	467
Třinec - kardiocentrum	-42	387	429	400	341	348	337	358	323	362	310
FN Olomouc	27	372	345	388	344	403	432	309	325	237	180
Zlín - Interní klinika	36	348	312	333	277	268	294	237	243	249	236
Nemocnice České Budějovice	-15	339	354	343	424	407	413	409	429	428	383
Kardiologické centrum AGEL, s.r.o.	-16	330	346	352	291	305	310	246	270	260	272
VFN Praha	-1	326	327	321	323	344	294	287	352	372	393
Orlickoústecká nemocnice	-1	305	306	135	289	322	329	359	313	337	316
Kardiologie na Bulovce, s.r.o.	0	274	274	281	259	253	280	256	153	152	278
Městská nemocnice Ostrava	25	262	237	273	251	218	198	211	175	187	132
FN Motol - Kardiologické oddělení	14	246	232	220	210	195	171	180	157	199	204
Tábor - Interní odd.	3	236	233	187	214	213	218	197	192	174	144
ÚnL - Kardiologické odd.	-23	219	242	232	251	244	253	222	233	200	182
Karlovy Vary - Kardiocentrum	-24	183	207	207	219	191	221	236	189	176	200
Jihlava - Kardiologické odd.	-21	171	192	173	192	171	181	157	161	148	148
ÚVN - Kardiologické odd.	-35	170	205	229	243	260	220	232	237	218	212
Kolín - Interní odd.	-25	168	193	194	217	207	208	247	191	211	193
Kladno - Interní odd.	10	166	156	209	178	217	249	271	268	256	235
Přerov - Interní odd.	2	151	149	153	135	137	130	108	109	105	115
Hodonín	-27	123	150	150	143	147	135	151	149	147	148
Frydek Místek - Interní oddělení	-10	122	132	141	141	155	135	139	145	137	126
Prostějov - Interní odd.	6	119	113	98	113	123	103	100	101	93	111
Šumperk - Interní odd	3	117	114	106	94	75	106	90	92	98	111
Chomutov - Interní odd.	-7	115	122	111	117	103	80	109	106	121	117
Příbram - Interní oddělení	26	89	63	77	80	81	71	102	89	89	86
Havlíčkův Brod - Interní oddělení	20	79	59	72	56	61	50	86	86	66	75
FN Motol - Dětské kardiocentrum	-9	28	37	21	32	24	24	19	25	35	26
Nemocnice Milosrdných sester	0	0	0	0	0	1	3	7	16	9	42
NsP Havířov, p.o. - Interní oddělení	0	0	0	0	0	0	0	8	0	0	0