

# EHRA Whitebook

## 5. Pacemakers

| Pacemaker units implanted and number of implanting centres |       |       |
|------------------------------------------------------------|-------|-------|
|                                                            | 2015  | 2016  |
| Implanting centres                                         | 24    | 24    |
| <b>Total</b> Pacemaker units implanted                     | 3.918 | 5.161 |
| Thereof, Leadless Pacemaker                                | 0     | 0     |
| First implants                                             | 3.538 | 4.651 |
| Replacements                                               | 380   | 510   |
| Specialist performing implants                             |       |       |
| Cardiologists                                              | Yes   | 100%  |
| Surgeons                                                   | No    | 0%    |

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## 6. Cardiac resynchronization therapy devices

| CRT units implanted and number of implanting centres |      |      |
|------------------------------------------------------|------|------|
|                                                      | 2015 | 2016 |
| Implanting centres                                   | 12   | 12   |
| Total CRT units implanted                            | 276  | 421  |
| Thereof, CRT pacemaker                               | 156  | 238  |
| Thereof, CRT ICD                                     | 120  | 183  |
| Specialist performing implants                       |      |      |
| Cardiologists                                        | Yes  | 100% |
| Surgeons                                             | No   | 0%   |

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## 7. Implantable Cardiac Defibrillator

| ICD units implanted and number of implanting centres |            |            |
|------------------------------------------------------|------------|------------|
|                                                      | 2015       | 2016       |
| Implanting centres                                   | 16         | 15         |
| <b>Total ICD units implanted</b>                     | <b>300</b> | <b>535</b> |
| Thereof, Single chamber                              | 210        | 413        |
| Thereof, Dual chamber                                | 89         | 122        |
| Thereof, Subcutaneous ICD                            | 1          | 0          |
| First implants                                       | 257        | 466        |
| Replacements                                         | 43         | 69         |
| <b>Specialist performing implants</b>                |            |            |
| Cardiologists                                        | Yes        | 100%       |
| Surgeons                                             | No         | 0%         |

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## 8. Loop recorders

| Loop recorders implanted and number of implanting centres |      |      |
|-----------------------------------------------------------|------|------|
|                                                           | 2015 | 2016 |
| Implanting centres                                        | 2    | 3    |
| Total loop recorders implanted                            | 3    | 13   |
| Specialist performing implants                            |      |      |
| Cardiologists                                             | Yes  | 100% |
| Surgeons                                                  | No   | 0%   |

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## 9. Lead extractions

| Lead extractions procedures and and number of centers that performed lead extractions |      |      |
|---------------------------------------------------------------------------------------|------|------|
|                                                                                       | 2015 | 2016 |
| Hospitals performed lead extractions                                                  | 4    | 5    |
| Total lead extraction procedures                                                      | 15   | 31   |
| Specialist performing lead extractions                                                |      |      |
| Cardiologists                                                                         | Yes  | 100% |
| Surgeons                                                                              | No   | 0%   |

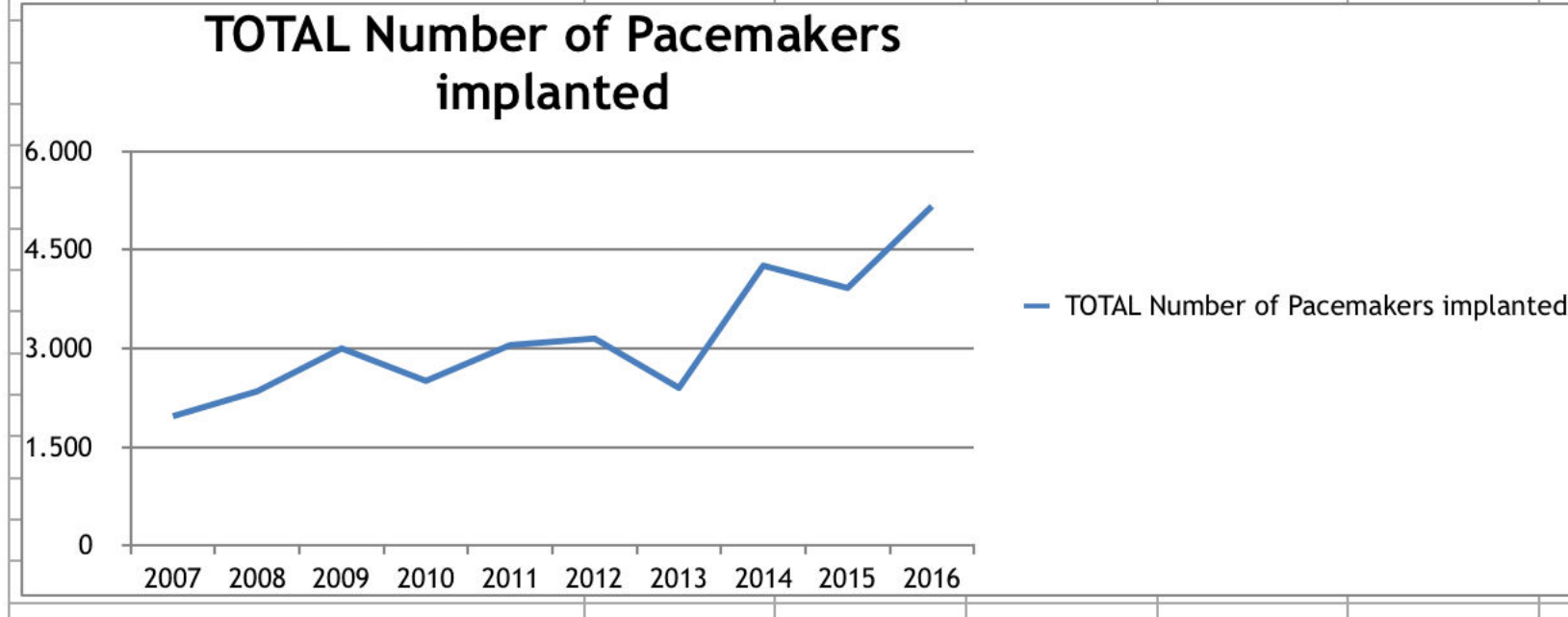
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## 11. Interventional electrophysiology

| Number of ablations performed and number of centres                            |               |               |
|--------------------------------------------------------------------------------|---------------|---------------|
|                                                                                | 2015          | 2016          |
| Number of ablation centres                                                     | 12            | 14            |
| Number of ablations performed                                                  | 1.194         | 1.180         |
| Mean number of ablations per centre                                            | 100           | 84            |
| Number of AF ablations                                                         | 132           | 227           |
| Number of ablation centres (> 50 AF ablations)                                 | 1             | 2             |
| Number of VT/VF ablations                                                      | 50            | 68            |
| Number of ablation centres (> 10 VT ablations on structural heart diseases)    | 2             | 2             |
| Number of LAA closures                                                         | not available | not available |
| Number of centres (LAA closures)                                               | not available | not available |
| Number of electrophysiologists                                                 |               |               |
| Number of electrophysiologists performed catheter ablation independently       | 18            | 22            |
| Number of physicians under training to become independent electrophysiologists | 3             | 8             |
| Availability of a national registry for interventional electrophysiology       |               | No            |

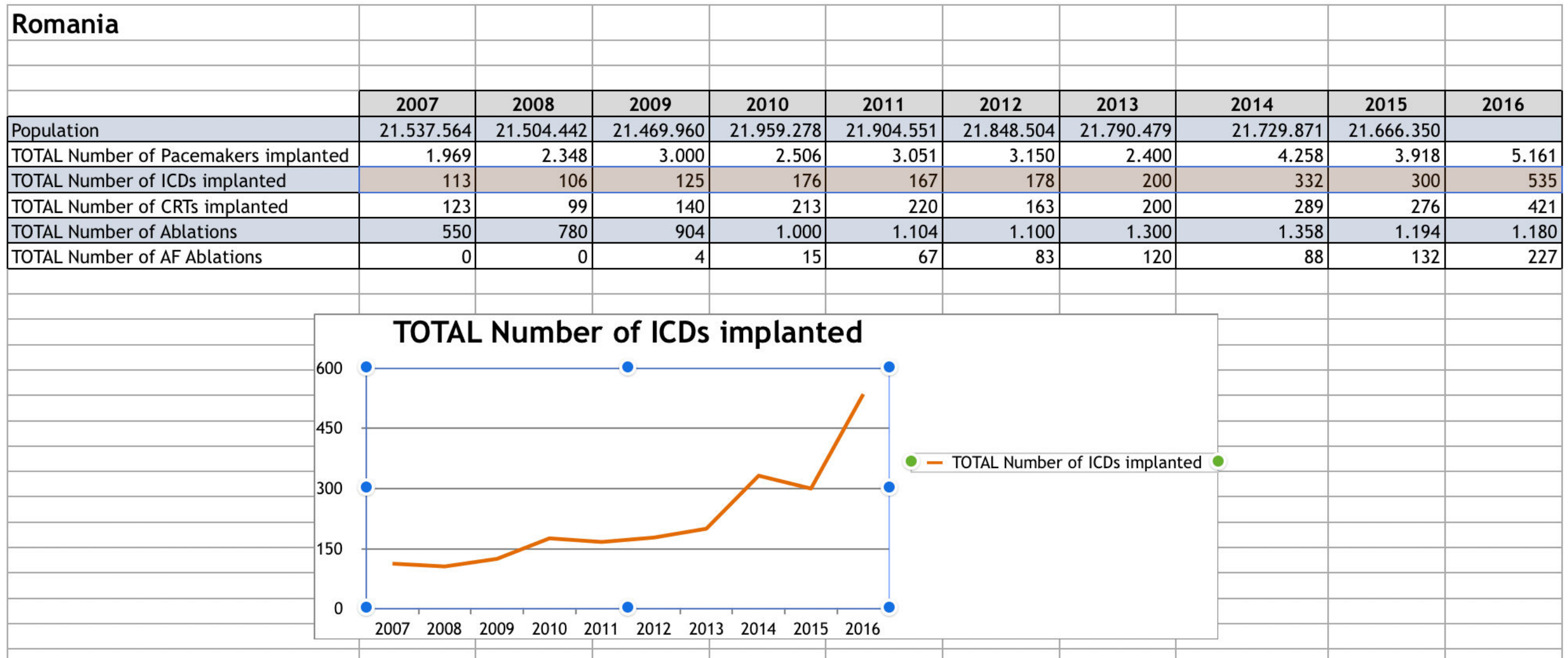
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|                                      |             |             |             |             |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Romania</b>                       |             |             |             |             |             |             |             |             |             |             |
|                                      |             |             |             |             |             |             |             |             |             |             |
|                                      |             |             |             |             |             |             |             |             |             |             |
|                                      | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
| Population                           | 21.537.564  | 21.504.442  | 21.469.960  | 21.959.278  | 21.904.551  | 21.848.504  | 21.790.479  | 21.729.871  | 21.666.350  |             |
| TOTAL Number of Pacemakers implanted | 1.969       | 2.348       | 3.000       | 2.506       | 3.051       | 3.150       | 2.400       | 4.258       | 3.918       | 5.161       |
| TOTAL Number of ICDs implanted       | 113         | 106         | 125         | 176         | 167         | 178         | 200         | 332         | 300         | 535         |
| TOTAL Number of CRTs implanted       | 123         | 99          | 140         | 213         | 220         | 163         | 200         | 289         | 276         | 421         |
| TOTAL Number of Ablations            | 550         | 780         | 904         | 1.000       | 1.104       | 1.100       | 1.300       | 1.358       | 1.194       | 1.180       |
| TOTAL Number of AF Ablations         | 0           | 0           | 4           | 15          | 67          | 83          | 120         | 88          | 132         | 227         |





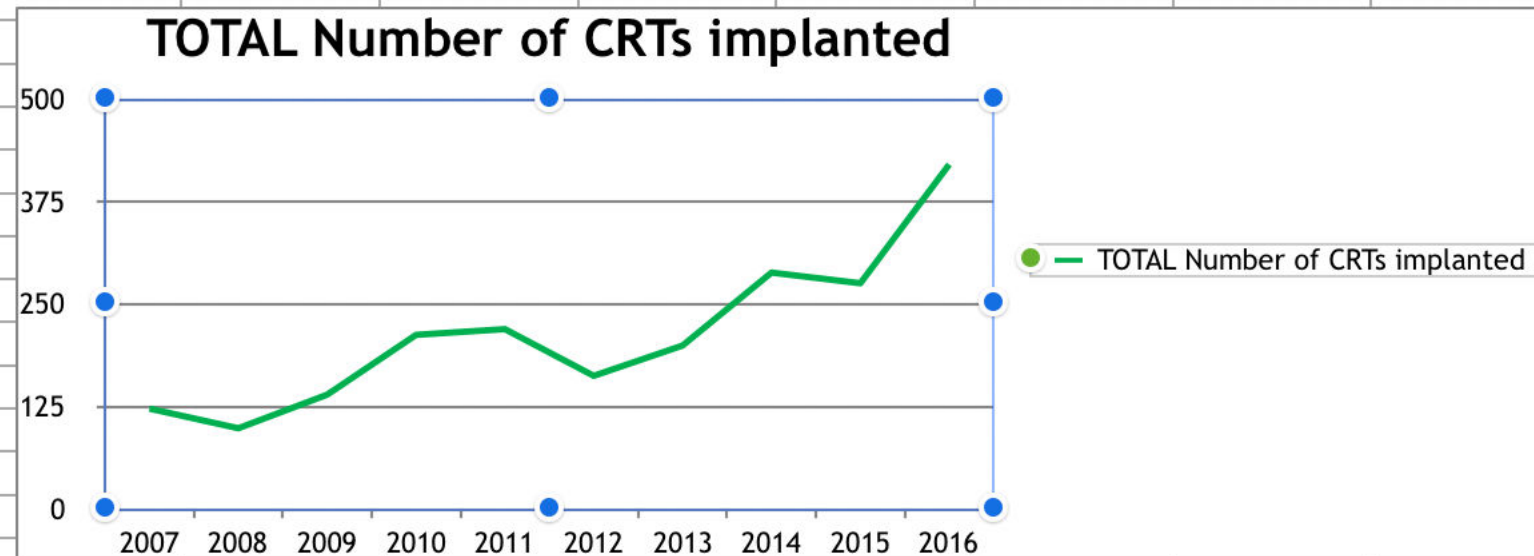
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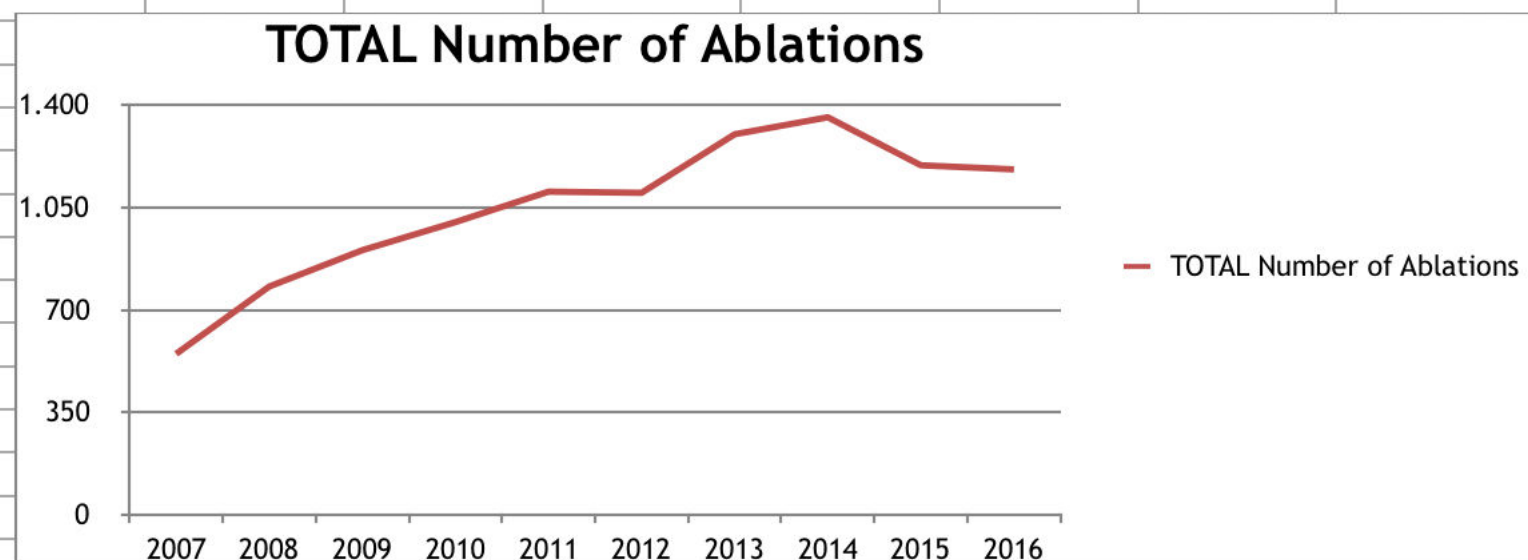
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|                                      |             |             |             |             |             |             |             |             |             |             |
|                                      |             |             |             |             |             |             |             |             |             |             |
|                                      | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
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