

# Finding your rhythm

You are exhausted, breathing is difficult. Your legs are swollen and there is fluid in your lungs. Your abdomen is bulging even though you have lost your appetite. You have an irritable cough that you cannot shake and lying down only makes matters worse. You rely on your heart to pump blood around your body but when it fails, you are in trouble.

Heart failure has a dramatic impact on people's lives. There is a strong chance you will find yourself in a hospital and even with quick action have a one in three chance of ending up dying within a year of diagnosis.

The number of people suffering heart failure is on the rise as we are living longer. It will hit one in five adults over 40 years of age during their lifetime – around 6.5 million people in Europe<sup>1</sup>. This is both a severe personal tragedy for those with failing hearts and for their families. Between 1% and 2% of health budgets are spent on heart failure, more than half of which is gobbled up by the cost of hospitalisation<sup>2</sup>. Heart failure is everyone's problem.

Thankfully, there are solutions.

One way to help your heart to pump blood around your body at the right rate is by inserting a small cardiac implantable electronic device (CIED). These life-saving devices – which include pacemakers and defibrillators<sup>3</sup>– are of particular importance for people with chronic heart failure. They deliver tiny electric pulses that help to control irregular heartbeats. In short, CIEDs keep people alive.

According to medical guidelines, patients with pacemakers should be followed up every three to 12 months and those with a cardiac defibrillator need to be checked every three to six months. This is to ensure that there are no new problems with the heart and that the device is working properly. For patients, it means regular visits to the clinic for routine check-ups and, if their symptoms worsen in between appointments, it can require emergency care.

For this follow-up too, there is now an alternative. Modern CIEDs can be monitored remotely and on a 24-hour basis. The new generation of pacemakers automatically sends information wirelessly so that doctors can securely check patients' hearts from anywhere at any time. If there is a problem, they can intervene without waiting until the next scheduled appointment – by which time the patient's condition may have worsened further. This can save lives, and definitely saves hospital resources, time and money.

Remote monitoring would have seemed like science fiction in the 20th century but in a world of smart phones and smart TVs, smarter medical devices are a natural step forward.

### Medtech: value for people

- Keeps heart failure patients alive by helping the heart to function properly
- Reduces the risk of hospital admission by detecting any issue early
- Allows patients to feel more secure as they are monitored 24/7
- Enables doctors to concentrate on patients where problems arise whilst still continuously checking all patients remotely
- Reduces time, money and inconvenience associated with routine visits to the clinic; especially relevant for those living in remote areas and elderly people

### Medtech: value for governments

- Saves lives and keeps people healthier for longer
- Gets people back to work, avoids absenteeism to attend check-ups
- Delivers health services more efficiently
- Facilitates efficient use of resources, by optimising healthcare professionals' time
- Remote monitoring, as recommended by the European Society of Cardiology<sup>4</sup>, can detect problems early, reduce the risk of costly hospitalisations and improve patients' quality-of-life
- Delivers value through innovation and supports high-quality jobs in Europe

### Medtech: value for regulators

- Better one-year and five-year survival rates with remote monitoring
- Remote monitoring of CIEDs likely to become the standard of care
- Helps to improve patient safety and patient satisfaction<sup>3</sup>
- Better patient outcome: fewer need for ICD shocks to be delivered<sup>4</sup>

### Medtech: value for payers

- Facilitates early intervention.
- Reduced hospitalisation rates and cost savings due to systematic monitoring of patients remotely<sup>7</sup>
- Fewer CIED shocks through continuous monitoring; extends lifespan of devices<sup>4</sup>
- Cost-neutrality of remote monitoring within 10 years, including all costs for the initial set up



#### NOTES

- 1) López-Sendon J. The heart failure epidemic. *Medicographia*. 2011;33:363–369. Available at: <http://www.medicographia.com/2012/02/the-heart-failure-epidemic/>. Accessed 19 November 2013.
- 2) Cowie MR. Clinical and economic burden of chronic heart failure. *Medicographia*. 2011;33:370–376.
- 3) Cardiac resynchronization therapy (CRT) pacemakers, cardiac defibrillators and CRT defibrillators.
- 4) Brignole M, Auricchio A, Baron-Esquivias G, et al. The Task Force on cardiac pacing and resynchronization therapy of the European Society of Cardiology (ESC). Developed in collaboration with the European Heart Rhythm Association (EHRA). 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy. *Europace*. 2013;15:1070–1118.
- 5) Saxon LA, Hayes DL, Gilliam FR, et al. Long-term outcome after ICD and CRT implantation and influence of remote device follow-up: the ALTITUDE survival study. *Circulation*. 2010;122(23):2359–2367.
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- 7) Arya A, Block M, Kautzner J, et al; IN-TIME investors. Influence of home monitoring on the clinical status of heart failure patients: Design and rationale of the IN-TIME study. *Eur J Heart Fail*. 2008;10(11):1143–1148.
- 8) Burri H, Sticherling C, Wright D, et al. Cost-consequence analysis of daily continuous remote monitoring of implantable cardiac defibrillator and resynchronization devices in the UK. *Europace*. 2013;15(11):1601–1608.