

Partnership for the Heart presents study

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Telemedicine helps risk patients live longer and better

Study furnishes proof that wide-scale use is possible

- ▶ Confirmation that patients receiving telemedical care have better quality of life
- ▶ Effective supplement to outpatient care
- ▶ Partnership of scientists, businesspeople, and politicians

Berlin – Using telemedical care as a supplement to standard outpatient care can significantly increase the quality of life, and in some cases even the life expectancy, of risk patients with chronic heart failure. This is the finding of a clinical study involving 710 patients – a study that has been presented in Berlin by the “Partnership for the Heart” consortium of players from the medical and technological sectors. As part of a “telemonitoring” program, certain vital parameters of these patients were recorded and evaluated by a telemedical monitoring center on a daily basis. If any irregularities were discovered, the specialist personnel contacted the patients affected or their local physician. In some cases, this rapid reaction saved lives. Over the long term as well, this form of care was effective. Over the course of the study, which was sponsored by the German Federal Ministry of Economics and Technology, mortality in a certain patient group fell by more than half. The study was also able to demonstrate that this form of remote monitoring is sufficiently mature, technically and methodically, for it to be used on a wide scale. “The issue now is to quickly translate the findings of this study into practical action throughout Germany,” said Prof. Dr. Karl Max Einhäupl, the chairman of the management board of Charité-Universitätsmedizin, who was in charge of the medical side of the study.

For more than two years, the vital data of half the study population, based in Berlin, Brandenburg, and Baden-Württemberg, were recorded daily in their familiar domestic surroundings. The data were then evaluated in the telemedical monitoring centers at the Charité Hospital in Berlin and the Robert Bosch Hospital in Stuttgart. The other half of the study population were also

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treated according to the current guidelines for heart failure treatment, but were not monitored by a telemedical center.

All the patients involved suffer from heart failure, defined as the condition in which the heart pumps less than half as efficiently as normal. This can also result in fluid congestion, a hazardous condition that can often only be treated in hospital. Within two years, telemonitoring was able to halve cardiovascular mortality in one group of risk patients, which made up roughly half the entire study population.

Study furnishes arguments for the use of telemedicine

The study design satisfies the most stringent academic standards. “This makes its findings so impressive, and explains why it has caused such a sensation in the medical world, even though its findings have only been public for a few days,” said Dr. Friedrich Köhler, who managed the Charité team involved in the project. This technology gave attendant physicians an additional possibility of closely monitoring severely ill patients, he said, without having to travel long distances to a surgery, especially in rural areas. “It is not a question of replacing physicians, but one of supporting them in their work,” Köhler said. Regular standardized survey of the patients receiving telemedical treatment showed that they perceived an improvement in quality of life. “They felt more secure, as care was better,” Einhäupl said.

“The study impressively demonstrates the potential of telemedicine,” said Dr. Siegfried Dais, deputy chairman of the Bosch board of management. This supplier of technology and services headed up the technological side of the consortium, and was responsible for system integration, ongoing operation, and the quality of the overall system. The other companies involved in Partnership for the Heart were the appliance manufacturer Aipermon GmbH & Co. KG and the e-health software provider InterComponentWare AG (ICW).

On a daily basis over the two years of the study, the patients recorded their weight and blood pressure and carried out an ECG. Their data were transmitted by mobile telephony to one of the two telemedical monitoring centers. The data were evaluated by specialist personnel. If there were any irregularities in the patients’ state of health, the specialists contacted the attendant physician or notified an emergency doctor. As a result, patients were

able to live at home longer, in their familiar domestic surroundings. “The use of mobile telemedical measuring systems allows patients to be treated better in the home. Care has been taken to ensure that the systems are easy to operate for patients, and that their medical data can be transmitted quickly, securely, and reliably,” said Dr. Thomas Schweizer, the Aipermon managing director.

Response to demographic developments

Following this successful study, the consortium now wants to work together with healthcare providers and politicians to make telemedical monitoring available to as many patients in Germany as possible. In the consortium’s view, the study proves without a shadow of a doubt that remote patient management offers benefits in the treatment of heart failure patients. The aim now, therefore, is to rapidly expand the number of areas for which this form of treatment can be used.

In other countries, telemedicine is already being used to treat diabetes and severe pulmonary conditions, as well as in rehabilitation programs following strokes. In light of demographic developments, this is especially worthy of consideration. In the years to come, the population will age more and more, and the number of people suffering from chronic conditions such as heart failure will rise accordingly. “It is here that modern IT technology of the kind used in the telemedical Partnership for the Heart can achieve efficiency gains,” said Dr. Ralf Brandner, the director of development at ICW. In the U.S., more than 120,000 patients already receive telemedical treatment. In Germany, the number is roughly 15,000. Partnership for the Heart is therefore urging the authorities to speed up the approval procedures for various syndromes, so that this innovative form of care can be recognized as a regular form of treatment. “The study demonstrates that treatment management supported by telemedicine is especially beneficial for unstable patients. It is now up to healthcare providers and politicians to take the decisions that will allow this patient group in Germany to benefit from this innovative solution quickly,” Einhäupl said.

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Charité – Universitätsmedizin Berlin:

The Charité is one of Europe's largest university hospitals. The research, teaching, and patient care provided by its 3,800 physicians and scientists is internationally renowned. More than half of the German Nobel Laureates for Medicine and Physiology come or came from the Charité, including Emil von Behring, Robert Koch, and Paul Ehrlich. The university hospital has a global reputation as an excellent teaching center. Its campus is spread over four locations, which include more than 100 clinics and institutes that are grouped into 17 Charité centers. With a staff of more than 13,000, the Charité generates annual sales revenue of roughly one billion euros, making it one of Berlin's largest employers. In 2010, the Charité is celebrating its 300th anniversary.

Additional information can be accessed at www.charite.de

The Robert Bosch Hospital is an endowed hospital that can trace its beginnings to a private initiative of Robert Bosch in 1936. The body responsible for the hospital, which opened at its present site in 1973, is the Robert Bosch Stiftung. Together with the hospital management committees, this foundation determines the direction that medicine, treatment, and care will take. The Stiftung makes medical research possible and, on a case by case basis, finances innovative investments that are not covered by other funds.

Since 1978, the Robert Bosch Hospital has been one of the teaching hospitals of the University of Tübingen. With more than 880 beds, the hospital and its two associated clinics – the Klinik Schillerhöhe in Gerlingen and the Klinik Charlottenhaus in Stuttgart – care for more than 38,000 inpatients every year. Some 2,000 staff ensure that patients feel individually looked after. Additional information can be accessed at www.rbk.de

The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, some 275,000 associates generated sales of 38.2 billion euros in fiscal 2009. The Bosch Group comprises Robert Bosch GmbH and its more than 300 subsidiaries and regional companies in over 60 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for growth. Each year, Bosch spends more than 3.5 billion euros for research and development, and applies for some 3,800 patents worldwide. With all its products and services, Bosch enhances the quality of life by providing solutions which are both innovative and beneficial.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as “Workshop for Precision Mechanics and Electrical Engineering.” The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information can be accessed at www.bosch.com.

Aipermon GmbH & Co. KG, based in Munich, Germany, is a manufacturer of telemedical systems. It supplies complete telemonitoring systems for the remote transmission of medical data from the home. These systems are used in many studies of the care of chronically ill patients, in intervention measures focusing on movement and prevention, and increasingly also in medical intervention. Aipermon also developed the AiperSunny activity sensors and the AiperMotion 440™ energy balance coach. These sensors are used in programs for diabetics and the obese, as well as in health promotion programs.

Additional information can be accessed at www.bosch.com.

About InterComponentWare:

InterComponentWare AG (ICW) is an internationally leading e-health specialist, with offices in Germany, Austria, Switzerland, and the United States. ICW supplies compatible e-health infrastructure solutions and applications for the providers of health services and their patients. The technologies supplied by ICW allow institutions to expand their existing IT infrastructure, to network with diverse systems, and to save patient data in a secure environment. ICW has already successfully installed its solutions in Europe and North America.

Additional information can be accessed at www.icw.de