Using telemedicine to increase life expectancy

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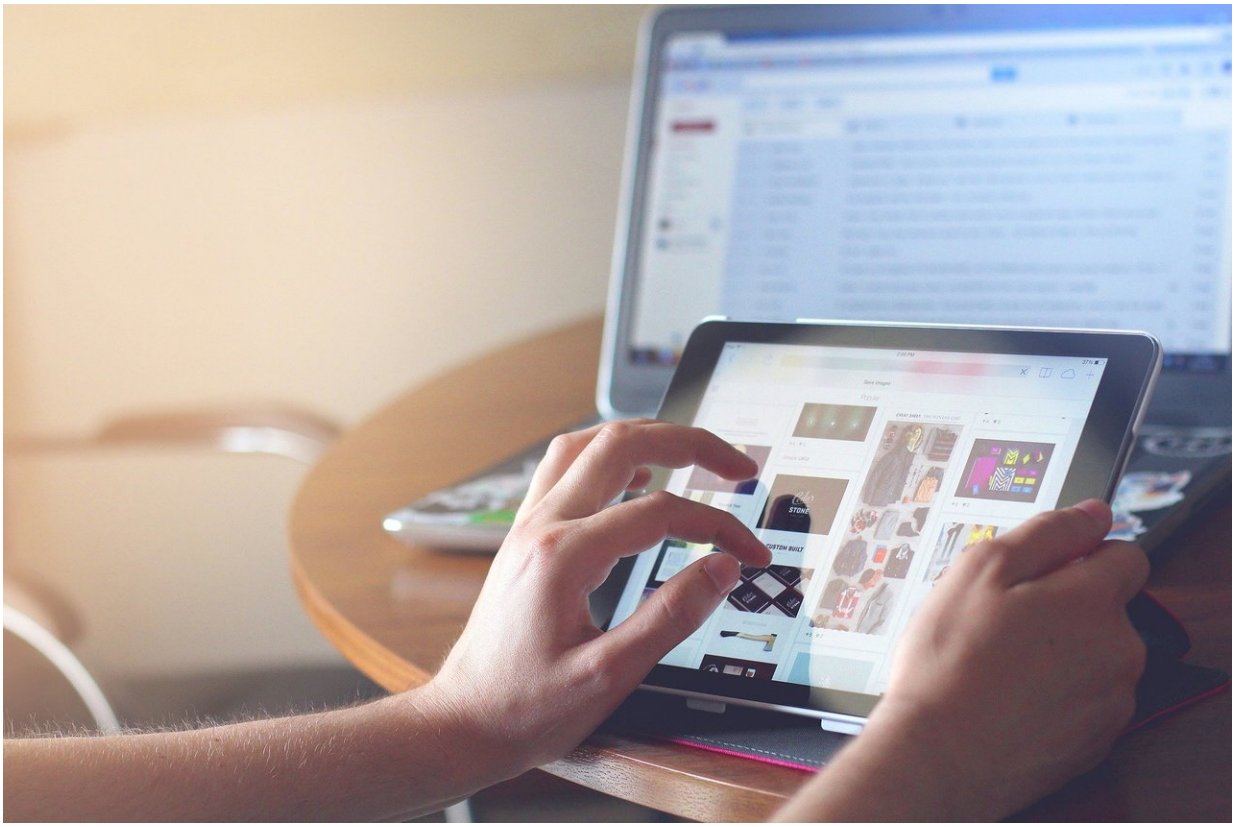

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Telemedical interventional management reduces hospitalisations and prolongs the life of patients with heart failure. Researchers from Charité - Universitätsmedizin Berlin have shown that these findings apply equally to patients in rural and in metropolitan settings. Results from this research have been published in *The Lancet*.

As part of a research and development project titled 'Health Region of the Future North Brandenburg—Fontane', Prof. Dr. Friedrich Köhler and his team of researchers from Charité's Centre for Cardiovascular Telemedicine conducted a trial involving 1,538 patients with chronic heart failure. Half of the patients enrolled in the trial received a remote patient management intervention in addition to usual care; the other half received usual care only. The study was conducted nationwide in collaboration with 113 cardiology care providers and 87 general practitioners.

Patients in the remote patient management group received four measuring devices: one ECG monitoring unit with finger clip to measure oxygen saturation, a blood pressure monitor, scales to measure body weight, and a tablet computer to record self-reported health status data. Using the tablet computer, all patient data were transferred automatically to Charité's Telemedical Centre, where a team of doctors and nurses was available 24/7 to review the transmitted data. A deterioration in values led to the initiation of specific measures, such as changing the patient's medication, recommending an outpatient visit or inpatient treatment. The primary aims of the study were the avoidance of unplanned hospitalisations for cardiovascular reasons, the continuation of treatment outside the hospital setting for as long as possible, and an increase in life expectancy. Other study aims included an increase in patient quality of life and enabling patients to self-manage their own care. A further study objective was to test whether remote patient management might be able to compensate deficits in health care coverage between rural and urban areas.

According to the results of the study, patients in the telemedical intervention group spent fewer days in hospital due to unplanned hospitalizations for heart failure than patients in the control group—namely, a mean of 3.8 days per year compared with a mean of 5.6 days per year in the control group. Therefore, based on the one-year

study period, patients assigned to remote patient management lost significantly fewer days due to unplanned hospitalizations for cardiovascular reasons or death than patients in the control group (17.8 days vs 24.2 days). All-cause mortality for patients assigned to remote patient management was also significantly lower than for patients in the control group. Over the course of a year, the death rate among patients in the usual care group was approximately 11 out of every 100 patients (11.3 per 100 person-years of follow-up), compared with approximately 8 patients (7.8 per 100 person-years of follow-up) in the group assigned to remote patient management.

"The trial was able to show that the use of telemedicine can increase life expectancy," explains Prof. Köhler. This finding applied irrespective of whether patients lived in rural areas with inadequate health care infrastructure or in metropolitan areas. This means that, in addition to improving the overall quality of health care provision, telemedicine is suitable for use as a compensatory strategy to offset regional differences in health care provision between rural and urban areas.

"As a next step, we would like to evaluate our data from a health economics perspective and identify where telemedicine might be able to deliver cost savings for our health care system," says Prof. Köhler. He adds: "One year after the end of our study, we will also be evaluating whether telemedical interventional management has a lasting effect on disease progress even after the intervention has finished."

More information: Friedrich Koehler et al, Efficacy of telemedical interventional management in patients with heart failure (TIM-HF2): a randomised, controlled, parallel-group, unmasked trial, *The Lancet* (2018). DOI: 10.1016/S0140-6736(18)31880-4

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