Media Release

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University of Haifa leads a new international computerized medical systems research project, funded by the EU, with total budget of €7 million

Ben-Gurion University of the Negev is the chief technological partner

The project's main goal is to enable patients who require monitoring to receive real-time monitoring and decision support in their home environment, delivered to their mobile phones or accessed via web browsers, and to assist medical teams in providing treatment via the computerized system, thereby minimizing the need to hospitalize patients for monitoring sessions

The University of Haifa has launched an international and wide-range research project aimed at developing a computerized system that will enable patients who need to be monitored and their healthcare providers to receive updates and medical advice in real time outside clinically-controlled environments . This project will ultimately minimize the need to arrive at the hospital for monitoring sessions. The EU has granted about €6 million over the course of four years to fund the project, which prevailed sixty other proposals that were submitted.

"Most of the technological components of the system already exist, but until now they have not been integrated and personalized for patient context and use. In this project we will be integrating and extending the systems and ensuring that the final product will indeed improve patients' quality of life and lower the doctors' work load," said Prof. Mor Peleg, Head of the Department of Information Systems at the University of Haifa and scientific coordinator for the project.

Collaborating in this international research project, given the name "MOBIGUIDE", are partners from five different countries. The Israeli partners working along with Prof. Peleg and Dr. Pnina Soffer of the University of Haifa are Prof. Eddy Karnieli of Rambam Medical Center, Prof. Yuval Shahar and his team from the Medical Informatics Research Center at Ben-Gurion University of the Negev, and innovation management company Beacon Tech. Collaborating with the Israeli team are medical, technological, and academic experts from the Netherlands, Italy, Austria and Spain.

The project's aim is to provide patients who require monitoring to lead their normal lives while receiving continuous monitoring and decision support relating to various aspects of their condition, such as sugar level, heart rate and blood pressure. At first stage, the system will be implemented in Italy with patients suffering from abnormal heart rate and in Spain with patients suffering from pregnancy complications such as diabetes and elevated blood pressure. The decision-support recommendations will be communicated to the patient's mobile phones or could be accessed over the Internet via the patient's or doctor's personal computers. The medical data will be automatically collected via portable devices worn by the patients, using a technology developed by research collaborators in the Netherlands. The computerized system, part of which will be supported by the patients' mobile phones and part on cloud systems, will enable the patients and their doctors to make informed decisions on whether the individual patient can continue conducting routine daily activities or requires a hospital visit. The patient data will be analyzed in real time and treatment recommendations sent to patients and their doctors using a technology infrastructure that has been developed by Prof. Shahar's team at Ben-Gurion University.

Over the past decade, the Medical Informatics Research Center at Ben-Gurion University, headed by Prof. Shahar and staffed by experienced researchers, most of whom are graduate students, has developed a unique technology that is serving as the backbone for the MOBIGUIDE project. It provides tools that enable computerized representation of medical knowledge and tools for analysis and interpretation of medical knowledge relating to patients with chronic illnesses over time, and more. All of these tools have undergone stringent testing over the past few years at medical research centers in Israel and the United States that are collaborating with the research being conducted at the Medical Informatics Research Center. These and other applications, such as links to European medical databases, will form the core functioning of the MOBIGUIDE system.

According to Prof. Peleg, the system will provide advice that is specific to more than just the patient's medical data: with the help of a technology being developed by the University of Haifa with European research collaborators, the system will know the patients' socio-economic status, family status and even if they are abroad at the time of monitoring. "The system aims to adapt treatment to the personal and not just clinical state of the patient. As such, for example, the system would provide different recommendations for a person living alone and a person who has the help of family members. In this system, the patient's data integrated from the hospital's medical records, the monitoring devices, and the decision-support system, will belong to the patient and not to the medical institution who generated it. In this way, the patient will be able to arrive at the closest hospital and grant access to her data to the local physicians who would be able to retrieve her medical data via the Internet," explained Prof. Peleg.

Ben-Gurion University's technology transfer company, BGN Technologies, has recently established MediLogos, implementing time-dependent advanced data analysis technologies and computer-assisted monitoring and treatment for patients with chronic illness, technologies that have been developed at Ben-Gurion's Medical Informatics Research Center.

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