OPTIMI

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Online Predictive Tools for Intervention in Mental Illness (OPTIMI)

From 2010-01-01 to 2012-12-31

Project details

| Total cost: | EUR 5 149 074 |
| Topic(s): | ICT-2009.5.1 - Personal Health Systems |
| EU contribution: | EUR 3 760 598 |
| Call for proposal: | FP7-ICT-2009-4 |
| Coordinated in: | Spain |
| Funding scheme: | CP - Collaborative project (generic) |

Objective

Mental health care represents over a third of the cost of health care to all EU nations. However little is being done to develop effective systems for Prevention of the onset of the illnesses or to provide easier Diagnosis with a view to better determine the effects of treatment. OPTIMI will change this by developing tools to perform Prediction through early identification of the onset of an illness by monitoring poor coping behaviour. It is based on the hypothesis that the central issue and starting point of longer term mental illness depends on the individual's capacity and ability to cope with stress. OPTIMI will first identify the occurrence of high stress in the individual on a daily basis. Then it will determine the ongoing effect of stress on the individual by studying the behaviour pattern over a longer period. Finally it will also make estimates of the base line changes in the person's state of mind using symptomatic measurements that closely link depression with cognitive, motor and verbal behaviour. We will use wearable and domestic appliances and identification will be based on noting when stress occurs, at a fine time resolution using ECG and Cortisol, and daily using the Electronic Diary. The effects on behaviour will be identified using EEG, Voice analysis, Physical Activity analysis and the Electronic Diary. Finally specific markers of depression will be checked using EEG, Voice analysis and Physical Activity. The smart sensors will be enhanced with a knowledge based rule system to interpret the data and provide a diagnostic tool for both pharmacological and CBT based preventative and intervening treatments. We will then augment two existing CCBT systems to use these tools in real time to optimise the treatment cycle. We will conduct two phases of trials with volunteers who come from high risk situations (such as mothers caring for a disabled child, recession unemployed and critical final examinations) both phases being held in total in 5 countries.

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Subjects

Electronics and Microelectronics - Healthcare delivery/services - Information Processing and Information Systems - Medicine and Health

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