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Conference Abstract

## Improving therapeutic success through personalised mobile health tools

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### Abstract

**Introduction:** Treatment adherence is key to managing chronic illness effectively. Digital and mobile health solutions can play an important role in this, and the number of such solutions available on online platforms is growing on an almost daily basis. At the same time, there are neither standardised evaluations of these tools by health professionals nor reliable performance indicators for the best user experience. Patients might therefore download one or several applications that do not correspond to their needs. As a result, they could possibly give up on using a potentially valuable tool.

**Aims and Objectives:** In order to address the issues of evaluation and personalisation, Yagram, a digital health start-up, aims at developing an integrated software solution that provides users with personalised incentives encouraging long-term use. Consisting of a mobile application, a software-as-a-service (SaaS) platform and a reward engine, the solution targets users for whom treatment adherence is crucial (applicable fields are e.g. HIV/AIDS, cancer, diabetes, epilepsy, hypertension etc.). Based on an analysis of the user profile, the solution also encourages patients to adopt (or maintain) a healthy lifestyle, in addition to providing a tool for effective communication between patients and medical staff.

**Results:** In collaboration with the Saint Pierre University Hospital in Brussels, a national and international reference centre for treating patients with HIV, Yagram is currently conducting an R&D project with the aim of developing a prototype for a mobile health solution.

Members of a discussion group for HIV positive adolescents at the Saint Pierre University Hospital selected five functions to be featured on the prototype's front end, including (i) a function reminding the patient of taking his or her medication, (ii) a function visualising treatment adherence, (iii) a social networking function for members of the same discussion group, (iv) a function for logging side effects likely to stem from medication, (v) a function enabling the user to submit logged information to medical staff.

A front-end prototype of the solution is scheduled to become available by September 2014, enabling the developers to test their hypotheses on the functioning of the reward engine. By December 2014, a navigable back end as well as a SaaS platform are going to be added, paving the way for in-depth testing of the integrated solution with members of the discussion group.

**Conclusions:** Both market research and our pilot project at the Saint Pierre University Hospital suggest that many patients with chronic conditions are interested in using mobile health solutions in order to manage their illness more effectively. Yagram is working to respond to this emerging trend by developing an integrated digital health solution. Built around a personalised reward engine, the solution aims at encouraging long-term treatment adherence and the adoption of a

healthy lifestyle among its users. In addition to these concrete health benefits for the patient, future versions of the solution may see broader fields of application, e.g. in pharmaceutical research.

## **Keywords**

**mobile health; treatment adherence; gamification; chronic conditions; HIV**

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