Mobile Health Systems for Bipolar Disorder:
The Relevance of Non-Functional Requirements in MONARCA Project

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ABSTRACT

This paper presents a series of challenges for developing mobile health solutions for mental health as a result of MONARCA project three-year activities. The lessons learnt on the design, development and evaluation of a mobile health system for supporting the treatment of bipolar disorder. The findings presented here are the result of over 3 years of activity within the MONARCA EU project. The challenges listed and detailed in this paper may be used in future research as a starting point for identifying important non-functional requirements involved in mobile health provisioning that are fundamental for the successful implementation of mobile health services in real life contexts.

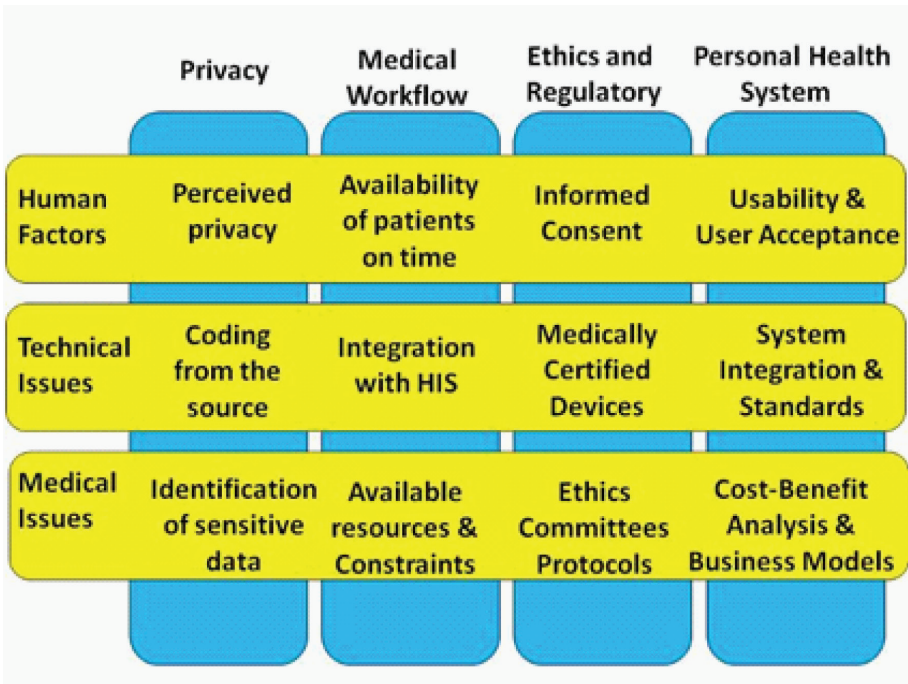*Keywords: Bipolar Disorder, Component, Lessons Learnt, Mental Health, Personal Health Systems*

INTRODUCTION

When designing mobile health systems the focal point of research is frequently concentrated on the design of innovative developments for improving the practice of healthcare and increase of wellbeing with a strong focus on functional requirements. On this regard, the aspects related to definition of non-functional requirements of mobile health provisioning are often underestimated or left as a secondary item to take into consideration by researchers. However only through a thorough consideration of potential implications on design of non-functional requirements, the mobile health innovations can find an opportunity to transform into sustainable solutions that can be applied in real life contexts. These kinds of requirements comprise all the practical aspects of healthcare provisioning that are necessary to implement mobile health services ranging from human factors to important medical and technological issues.

In this paper we introduce the experiences learnt in MONARCA project for developing a mobile monitoring system for better handling the treatment of bipolar disorder and the challenges found related to its implementation in a real life context. The main contribution of this paper focus not only on the innovative mobile health solution proposed by MONARCA but also on the technological and clinical aspects that were necessary for conducting multidisciplinary research in the context of such project and on other non-functional requirements that are key in the development of technological solutions for the design, development and evaluation of mobile health systems. Such requirements include aspects related to technology, human factors, medical practice, regulatory aspects and other practical issues that are identified in this paper as key challenges in the development of future mobile personal health systems and services (See Figure 1).

Figure 1. Relevant aspects in multidisciplinary IT-based clinical research

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