

Title: Towards supporting community healthcare through the use of information communication technology: a cloud-based proposition

Name: Sarah Catherine Jordan

Abstract

Community healthcare forms the bedrock of the Irish healthcare system since it is estimated that 90-95% of Irish health and social service needs care can be delivered in the community (Health Service Executive 2008). Thus, improving services within community healthcare has been identified as an appropriate future direction for the Irish healthcare system (Department of Health and Children 2012). Currently, there is no national architecture to support the needs of patients and healthcare professionals within this sector.

Chronic obstructive pulmonary disease (COPD) is a chronic lung disease. The COPD outreach programme, which is part of the HSE's COPD clinical care programme, is a new, evolving programme and is currently and primarily paper-based. It is thought to be a suitable candidate to investigate whether enterprise cloud service architecture (ECSA) could be utilised to support patients and healthcare professionals through the electronic delivery of that programme. ECSA is a hybrid of service-orientated architecture and cloud computing.

The qualitative research carried out investigated this proposal through a series of semi-structured interviews with stakeholders from which information technology requirements were elicited and themes obtained. From these requirements, an enterprise architecture was designed, a cloud computing platform was selected and some elements of the architecture were implemented. A small evaluation was carried out. The solution consisted of two elements: delivery of new functionality to support health record generation by healthcare professionals at point of care and creation of interfaces to allow interoperability with existing systems. The research principally focused on the first element; namely, development of a cloud-based application to deliver new functionality. A number of themes emerged during the research study, including the provision of connected community healthcare, the importance of involving patients in their own care and the importance of data security.

The results indicated that there is potential to complete the specification and implementation of the ECSA designed for use with the COPD outreach programme. Feedback from the evaluation was generally positive, although the evaluation sample size was small. Concerns exist with respect to data security. Additionally for the solution to be fully functional, it would need to interoperate with existing systems.

Although the results of the research are specific to COPD, there is potential to apply the ideas developed as part of this research to other areas in chronic disease management within community healthcare.