Chapter 11
Informatics and Socio–Technical Challenges when Designing Solutions for Integrated eCare

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ABSTRACT

The central role of eHealth to enable the successful implementation of integrated care is commonly acknowledged today. This is easier said than done. To provide correct, understandable, and timely information at the point of need and to facilitate communication and decision support for a network of actors with different prerequisites and needs are some of the big challenges of integrated care. This book chapter focuses on the specific challenges related to informatics and socio-technical issues when designing solutions for integrated eCare. Methods for requirements elicitation, evaluation, and system development using user-centred design in collaborative environments involving a variety of stakeholders are presented. Case studies in homecare of older patients, in the care of stroke patients, and regarding citizen eHealth services in general illustrate the application of these methods. Possible solutions and pitfalls are discussed based on the experiences drawn from the case studies. To address the main informatics and socio-technical challenges in integrated eCare, namely informatics-supported collaborative work and to provide coordinated continuity for the patient, top-down activities such as health informatics standardisation, and bottom-up activities resulting in the definition of concrete patient journey descriptions, interaction points, information needs (that can be transformed into standardised data sets), as well as visualisation and interaction patterns need to go hand in hand.

INTRODUCTION

Healthcare is moving away from episodic treatment of acute health issues to provision of coordinated services, aiming for continuity of care for those with chronic conditions and other long-term care needs (Epping-Jordan et al., 2004; Wagner et al., 2005; Strandberg-Larsen et al., 2007). Yet, current care provision processes remain to a large extent organization focused, which leads to fragmented care and a lack of continuity – care is provided through an aggregation of potentially incoherent, uncoordinated and interfering processes (Bodenheimer, 2008; Reid & Wagner, 2008; Smith et al., 2005). This is particularly problematic in the care of patients with chronic, sometimes multiple, conditions who require care from many care provider organizations. In parallel with this shift in focus from a care provider perspective, the roles of patients and family care givers, or informal care givers, are also changing - a topic we will return to later in this chapter.

Demographic Changes

A major influence on the increased focus on integrated care is demographic changes such as population aging and migration. Population ageing in Europe has been a reality for decades and represents a key demographic challenge over the next fifty years with large implications for healthcare and socioeconomic systems (Lanzieri, 2011a). Population ageing is usually measured by four different indicators:

- The median age,
- The proportion of persons aged 65 and over,
- The proportion of persons aged 80 and over (the 'oldest-old') and
- The old age dependency ratio (OADR[1]).

For Europe, all indicators show increasing trends. The average median age is projected to grow continuously from 39.8 years in 2010 to 47.2 years in 2060. However, the absolute growth has slowed down since the year 2000 and is expected to continue to do so due to migration (Lanzieri, 2011b). The ageing process differs throughout Europe. In some countries, population ageing has already passed its peak speed, in others the process may speed up in the years to come. In general, we can see a movement from North to West, followed by South to East. The Nordic countries have already reached their peak regarding the median age, for example. On average the proportion of persons aged 65 years and over continues to grow until the end of the next decade, before decelerating. The OADR is expected to follow the same route with some years of delay and the oldest-old will still continue to increase exponentially for the decades to come (Lanzieri, 2011a).

Medical and Technological Advances

At the same time medical and technological advances lead to better diagnosis and treatment options and the health conditions of the elderly may be expected to continue improving. As a result the overall incidence of most leading diseases will grow proportionally to the increasing number of older people, whereas their prevalence will remain unchanged (Marschollek et al., 2008).

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