



Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Willingness to pay for telecare programmes to support independent living: Results from a contingent valuation study

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ARTICLE INFO

Article history:

Received 18 April 2014

Received in revised form

22 October 2014

Accepted 4 November 2014

Available online 5 November 2014

Keywords:

Ireland

Willingness to pay (WTP)

Contingent valuation

Community care

Telecare

Older people

ABSTRACT

An ageing population provokes an economic interest in the resource allocation questions posed by long-term care and critically, the development of sustainable community-based health and social care models that support independent living. This paper explores Irish citizens preferences and willingness to pay (WTP) for a range of community-based care programmes, including different telecare programmes that support older people to continue living at home. The paper reports on a cross-sectional multi-good contingent valuation survey conducted between April and September 2009 with three representative samples of the Irish population ($N = 1214$) to identify rankings and preferences for different community care programmes including: family care programme, a state-provided care programme and three different telecare programmes. The survey design permits the identification of strength, direction and relative preferences of different forms of community care provision. We also investigate convergent validity between ranking and willingness to pay results. We find that while people place significant value on formal state care provision and on telecare programmes, willingness to pay (WTP) estimates continue to highlight the importance of family care, which remains the strongest preference of the Irish population for the provision of community-based care for older people in the country. Respondents weakened their ranking preferences in the WTP exercise. However, both the direction of ranking and WTP estimates confirm the importance of family care. While all telecare programmes generated some economic value, telecare associated with social connection had much stronger support than telecare used to support physical or cognitive care needs. This paper offers unique information on societal values for different forms of community care provision, and in particular, the direction of preferences for technology-based approaches.

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1. Introduction

Across developed countries, there is growing interest in efficient resource allocation in regard to health and social care for older people driven by changing demographics, social change, global fiscal constraints and supply-side changes in the form of new technologies (Rostgaard et al., 2012). At an individual level, the broad preferences of the older population lie fundamentally with sustained independent living in the community with sufficient health and social care supports to do so (Eurobarometer, 2007; Williams et al., 2005). The role of new technologies has come to the fore in recent years, particularly as public budget constraints continue to impact on the ability of governments to meet ever-

increasing health and social care needs through existing care structures and standard approaches to care provision.

In Ireland, the health and social care system is predominantly funded by general taxation which supports the provision of state-provided health and social care services. However, severe fiscal constraints, coupled with a funding bias towards residential-based care for older people, has resulted in an under-developed and fragmented provision of health and social care services, particularly in the community sector (Mercer, 2002; Rostgaard et al., 2012; Timonen and McMenamin, 2002). As a result, community-based health and social care provision for older people is a complex mix of public (state provided), private (out of pocket payment) and informal family care provision. Changing demographics, dispersed families and rising emigration rates has raised further concerns for the sustainability of long-term care systems of care that are predominantly reliant on the unpaid labour of families (Timonen and McMenamin, 2002). Thus, there is growing interest in the potential of telecare (which we define as the remote monitoring, support

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and assistance with health and social care needs facilitated by information communication technologies (ICT), for example falls monitoring), telehealth (remote monitoring, diagnostic and clinical support services, for example vital signs monitoring) and various sensory-based technologies.

While the socio-economic implications of an ageing population is a major factor in the development of new health technologies, so too is the recent surge in the availability of technology based-products, e.g. internet and broadband, (Magnusson et al., 2004). At a European level, strategies including the Digital Agenda for Europe and the eHealth Action Plan 2012–2020 have emphasised the role of technology in active healthy ageing policy and practice in Europe (European Commission, 2013). In this regard, the European Commission (2007) highlighted the potential of new technologies for increasing the opportunities of self-care, service innovation and efficient delivery of health and social care services across the European Union (EU).

Yet, outside of a number of pilot studies in Ireland, technology for independent living remains relatively underdeveloped and the technology-based services that do exist (such as pendant alarms) are typically not linked in with mainstream health care services (Cullen et al., 2009). The availability of technological innovations is necessary but not sufficient for their use in the care of older people in Ireland; new organisational models of care provision are required to maximise the potential of ICT in health and social care provision (European Commission, 2013). Moreover, the use of telecare in the care of older people requires public support and government investment for integration into the wider health and social care system. This raises fundamental resource allocation questions whereby investment in telecare-based supports creates opportunity costs in terms of other health care interventions foregone. There is, however, a lack of research on the societal value of telecare solutions for the needs of older people and, in particular, on how citizens value technology-based programmes relative to other interventions in the community.

The question is how to capture the preferences of citizens for various types of interventions to address the health and social care needs of older people in Ireland. Given the welfare mix of public, private and informal care provision, conventional markets do not exist for community care and therefore, the latter does not command a typical market price. In order to capture a meaningful measurement of community care and its societal value, we use a contingent valuation methodology in this paper to establish the value citizens place on three types of community-based care programmes, namely family care, standard statutory care provision and various telecare interventions. The contingent valuation method also permitted the provision of programme descriptions as opposed to detailed changes in attribute levels, which were unavailable for the telecare programmes at the time of the study.

The contingent valuation methodology (CVM), which has theoretical foundations in welfare economics, uses hypothetical, payment-based scenarios posed to individuals to estimate the monetary valuation of benefits (Boyle, 2003; Drummond et al., 2005). Potentially, the values elicited from citizens through CVM could be used to inform public policy and resource allocation management decisions (Mitchell and Carson, 1989; Portney, 1994). However, the use of willingness to pay (WTP) to establish relative priorities across health care is ongoing (Olsen and Donaldson, 1998), and the theoretical and methodological issues associated with the use of WTP in health care arising from the European Commission project ('EuroWill'), carried out across six European countries (Donaldson, 1999; Shackley and Donaldson, 2002; Ryan et al., 2004) are still being debated. This paper should be seen as a contribution to that methodological debate, albeit focused on an under-researched area within community care, namely the value of telecare interventions for older people.

In particular, there are two contexts in which the WTP method may be useful for health care decision-makers; to estimate benefit associated with a single intervention; and to compare the relative values of alternative programmes when several programmes are competing for the same resources within a fixed health care budget (Donaldson, 1999; Olsen et al., 2005). This paper is concerned with the latter context in that it uses WTP methodology to elicit public preferences for telecare-based interventions that are in competition with standard programme options for the care of older people in the country. We asked survey respondents to consider a family carer financial support programme; a programme of state support services and three telecare programmes targeting different care needs.

While the case for and against the use of applied WTP—studies in health care has been well documented across a range of methodological issues (Smith, 2003; Ryan et al., 2004), a recurring issue is whether there is consistency between respondents explicit rankings of alternative programmes and their implicit rankings derived from WTP-values. The latter is an issue of convergent validity and has been used to cast doubt on the usefulness of WTP estimates as an aid to decision-makers in making choices over alternative programmes (Olsen et al., 2005). The data available for this paper allows us to test for convergent validity in Ireland in relation to preferences for three different types of telecare programmes relative to family care and state-provided care. While the existing evidence seems to suggest that respondents in Ireland perform better than in most other European countries in terms of consistency of explicit and implicit WTP-based rankings (Olsen et al., 2005) it will be interesting to see if that result holds for the current more expanded data set.

2. Methods

We conducted a cross-sectional contingent valuation survey with 1,214 respondents in a representative sample of the Irish population between April and September 2009. Ethical approval was obtained under the Technology Research for Independent Living (TRIL) programme provided by St James Hospital/AMNCH Research Ethics Committee. Respondents completed the survey through a 30 min face to face interview with a trained interviewer from a survey company hired to collect the data. Respondents were selected to participate using a stratified random sampling strategy covering 150 sampling points (or District Electoral Divisions), which were randomly selected from 3,440 legally defined Electoral Divisions (ED) in the Irish state. These points were drawn in proportion to the population of adults aged 16 years upwards. The data was weighted in terms of gender, age, social class (defined by occupation and employment status) and region to ensure that it was nationally representative. Information was also collected from respondents on their current experience of informal care provision, their self-reported likelihood of providing informal care in the future and their self-reported likelihood of needing long-term care in the future. Socio-demographic information was also collected on respondents.

2.1. Scenario design

Criticisms of CVM arise primarily from two key aspects namely reliability and validity (Boyle, 2003; Carson, 2004; Donaldson et al., 2006; Klose, 1999; Mitchell and Carson, 1989; Portney, 1994; Smith, 2003; Venkatachalam, 2004). There is also strong evidence that careful survey design can mitigate some of the issues in relation to reliability and validity (Arrow et al., 1993; Boyle, 2003; Carson and Mitchell, 2002; Carson et al., 2001; Donaldson et al., 2006; Mitchell and Carson, 1989; Portney, 1994). Considerable attention was paid

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