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Dutch long-term care use in an ageing population

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ABSTRACT

As in many Western countries, the population in the Netherlands is ageing, leading to increasing use of long-term care. A debate has risen on the tenability of the publicly funded system of this type of care. In this paper we show the upward effect of the ageing of the Dutch population on care use will be mitigated by the downward effect of improving health and increasing education levels. Even so, long-term care will continue to grow in the coming years. According to our calculations, care use will increase by an average of 1.6% annually in the period 2014–2030. This increase stems from the demographic effects of increasing population size (+0.4%) and ageing (+1.6%), partly offset by a decreasing uptake rate (the rate of care use per demographic group; −0.5%). The decrease of the uptake rate is mainly driven by the expectation that the elderly population will be better educated and have fewer physical disabilities. Future expenditure does not only depend on care use, but also on price levels. Extrapolating recent developments, prices are expected to increase. This may lead to an increase of expenditure by 3.5% annually in real terms.

Introduction[1]

In the Netherlands, as in other Western countries, there is an ongoing debate about the sustainability of government expenditure in the long term. Often, this discussion is related to the expected ageing of the population. Public expenditure on long-term care is an important issue in this discussion. In the Netherlands this expenditure accounts for about 5% of GDP, which is similar to the Nordic countries but higher than in most Southern European countries (OECD, 2013). In particular expenditure on residential care is high in the Netherlands; expenditure on home care is just below the European average (Verbeek-Oudijk et al., 2014). There is a general belief that the ageing of the population will lead to massive use of long-term care, and that expenditure will rocket (Van Ewijk et al., 2013). As a consequence, measures are being taken to control care use, for example by restricting access to publicly financed care provisions.

The question addressed in this paper is how fast the use of long-term care will grow in the period 2014–2030. In particular, we look into the suggestion that care use grows proportional to the number of elderly people. We decompose the changes in publicly funded care use and expenditure into the changes in various factors. Having an insight into the factors that determine the use of care and the developments in those factors over time will be of help in the public debate about cutting expenditure. The analyses are based on a forecasting model for care use, using micro-simulation techniques. A similar method is used by Woittiez et al. (2009) but here we both update and extend the analysis.

Long-term care in the Netherlands

As in many countries, the Netherlands has a system of publicly funded provisions for persons whose health status does not enable them to lead a fully self-sufficient life. The data describe the situation before 2015.[2] In this period eligibility for long-term care was evaluated by experts from the Centre for Needs Assessment (Centrum Indicatiestelling Zorg, CIZ in Dutch) or municipal indication organizations. The assessments were based on criteria including health status, impairments and the presence of household members who can provide some care. The provision of care was arranged by the regional 'care office' (zorgkantoor in Dutch). The client paid a relatively small co-payment or out-of-pocket price for the care received, the amount of which is based on household income and

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[2] Until 2015 public expenditure on long-term care was funded through the Exceptional Medical Expenses Act (Algemene Wet Bijzondere Ziektekosten, AWBZ in Dutch) and the Social Support Act (Wet Maatschappelijke Ondersteuning, WMO in Dutch). From 2015 onwards, it is funded under a new Long-Term Care Act (WLZ in Dutch) in combination with a new Social Support Act and the Health Insurance Act (ZVW in Dutch).

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household composition. More details on the organisation of Dutch long-term care can be found in Mot (2012) for example.

This paper focusses on publicly funded long-term care. This consists of household care, nursing and personal care and support, both at home and in a residential setting (homes for the elderly and nursing homes).[3] These types of care take up about two-thirds of long-term care expenditure and three-quarters of long-term care users (Statistics Netherlands, 2016a,b). Home care consists of help with household tasks, personal hygiene and/or nursing care, provided to people in their own home. Residential care provides residential services and care to people who are not able to live independently. It is provided in residential care homes for the elderly or, when treatment is required, in nursing homes. Even though long-term care is used mainly by elderly, about 10% of care users are under 65. Therefore we include the 30–64 years olds.

In 2014, the baseline year of our analysis, there were 10.9 million people aged over 30 years in the Netherlands, of whom 27% were over 65. Over 920,000 individuals, or 8.5% of the population aged over 30, used some form of publicly funded long-term care (Table 1). Of these care users 78% used public home care, and 22% were in residential care. The associated public expenditure amounted to 12.7 billion euro. Since residential care is more expensive than home care, the expenditure ratios differ from the use ratios: of the expenditure, 32% was taken up by home care and 68% by residential care.

Table 1
Users of and expenditure on Dutch long-term care, 2014 (population aged over 30).

	Users		Expenditure	
	× 1000	% Of public care	× Billion euro	% Of public care
Home care	721	78	4.1	32
Residential care	201	22	8.6	68
Total public care	923	100	12.7	100

Source: Statistics Netherlands (2016a,b), National Health Care Institute (2016); SCP treatment.

Method and data

Forecasting care use

Care use

We present a forecasting model for public care use, i.e. the number of public care users. Eggink et al. (2015) explain the forecasting method in detail (see also Jonker et al., 2007). The model is based on data at the level of individuals. We model the relationship between the relevant population characteristics and use of care per individual (the explanatory model). Then, we assess trends in the population characteristics for the years to come. These trends are used in a so-called population model, that mimics the composition of the population at different points in time[4]. Using the combination of the relationship (explanatory model) and the trends (population model), we forecast future public care use. In fact we employ a static micro-simulation model (see for instance Baroni and Richiardi, 2007; Spielauer, 2002). This method has been used before to forecast the use of long-term care in the Netherlands (see e.g. Eggink et al., 2009, 2015; Jonker et al., 2007; Timmermans and Woittiez, 2004). See also Hancock et al. (2003) for an application of this type of method to forecast the expenditure of long-term care in the United Kingdom. Eggink et al. (2015) describe the method extensively.

The model works as follows: if relatively many people in a certain group in the population use care (compared to other groups), an increasing proportion of the group will lead to increasing use of public care. This holds for elderly for example, but we go into some more depth by combining several population characteristics. In the forecast we do not take into account changes in government policy and individual preferences, since future policy and future preferences of care users are highly uncertain. Furthermore, we assume that the supply of care (whether it is public, informal or privately paid care) will grow in line with our forecast of care use. Of course a shortage of supply of informal care will increase demand for formal care and vice versa. Explicit modelling of supply would require a forecast of the labour market, government policy on formal care and of the presence, willingness and ability of informal caregivers, and their interactions. This is beyond the scope of this paper. We note that Sadiraj et al. (2009) forecasted that demand for informal care in the Netherlands will grow, but will not exceed supply substantially.

The explanatory model

Following Andersen and Newman (1973), Andersen and Newman (2005) and Babitsch et al. (2012) we explain the use of public home care and residential care by including three types of determinants: predisposing factors (such as age and sex), enabling factors (such as education and marital status) and factors on illness level (chronic diseases and disabilities).[5] The explanatory model is estimated on a combined pair of surveys: the Amenities and Services Utilisation Survey 2007/2008 (AVO2007/2008) on people living at home[6] and the Older Persons in Institutions Survey (OII2008) on users of residential care[7]. When combined and weighted properly, these data provide a representative dataset on the Dutch population in 2007/2008, with 10,768 observations on over 30 year olds. The combined dataset contains self-reported information on the use of care and personal characteristics such as age, education and health status.

For the explanatory model, we use a weighted version of the combined dataset, since the residents of homes are relatively oversampled by a factor 10. The relationship between public care use and characteristics of the population is modelled using a multinomial logit model. The model distinguishes between the use of publicly funded home care and residential care. As public care is the focus of this paper, the 'no public care' category includes non-public care: thus no care at all, informal care or privately paid care.[8] This will not hamper the analysis since earlier research indicates that the trend in the use of informal care is closer to the trend of no-care than to the trend of public care (Eggink et al., 2012, Table 7.2). The explanatory model yields the probability of using

[3] We do not take into account the (home) care that is used for only a short period, for instance for revalidation purposes.

[4] In practice the population model weights the dataset to be representative for the composition of the population at each point in time.

[5] In an earlier version of the model we include the household income as an explanatory variable. However, since we cannot predict the future incomes with any precision, we cannot include income in the forecasting model. Therefore we do not include income here. This does not lead to differences in significant effects of the other variables in the explanatory model.

[6] This is a household survey with personal questionnaires for individual household members. The dataset contains 9207 individuals in the relevant age category (30+) with complete information. This means that approximately one in 1100 of the Dutch population living at home are included in the sample. Use of home care during last year is among the items. This also goes for chronic diseases, for at least six months during last year.

[7] This is a personal survey, for persons of 55 years and older living in residential care, since only 2% of the people in these homes are under the age of 55 (Statistics Netherlands, 2016b). If persons were unable to answer the questionnaire, the answers were given by a family member and a staff member. This sample contains 1561 observations on permanent residents aged 55 years or older with complete information. Here the sample includes approximately one in 110 residents of these homes.

[8] Earlier studies indicate that distinguishing between the different forms of no public care does not change the model predictions substantially.