Adult Social Care Workforce Analysis in England: A System Dynamics Approach

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ABSTRACT

Changes in demographic and regulations in social care in England are expected to alter the social care landscape and increase pressure on people working in the adult social care sector, especially those who deliver direct care services. While significant work has been done to understand the demand side of the adult social care system, work on the supply side is considerably limited and analysis has been dominated by methods such as macro- and micro-simulation. This paper demonstrates that system dynamics modelling can be used to understand the dynamics of the social care workforce who deliver direct care services in the formal sector, specifically, to identify the main feedback loops that govern the dynamics of the system, to identify sensitive and influential factors, and to show non-linearity in the system. Therefore, system dynamics should play a more important role in the analysis of adult social care system.

Keywords: Care Workers, Simulation, Social Care, System Archetype, System Dynamics, Workforce

INTRODUCTION

For the first time in history, the number of people over 65 in England is greater than those under 16 (Department of Health, 2009). This significant change in demographic poses a real challenge to providing quality social care for this population. In 2007/08, there were around 1.75 million adults using social care services and this number was expected to rise significantly (Department of Health, 2009). It is estimated that by 2026, 1.7 million more adults in England will use social care services (Care Quality Commission, 2010). Regulations since 2000, like the Care Standards Act, have been instituted to ensure that this burgeoning population receives good quality of care. A number of reforms in social care have been created in response to the current socio-economic situation. One of these reforms is the personalization agenda, in which care users will have more choices and control over their care. These regulations and reforms are expected to dramatically alter the social care landscape and to put increasing pressure on people working in the adult social care sector, especially those who deliver direct care services (i.e., help care users to perform the

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everyday activities such as getting out of bed, getting dressed and into work, choosing what and when to eat, getting out of the house, etc).

Simulation Modelling in Social Care Supply and Demand

Adult social care in England is a complex system involving a number of stakeholders and it interacts with other complex systems such as the National Healthcare Service and the UK Border Agency. Hence, Operational Research (OR) techniques, such as simulation, can play a significant role in helping policymakers understand the dynamics of the system and deliver better policies. The literature shows that significant simulation modelling work has been carried out to understand the demand side of the adult social care system, i.e., the care users. The literature also shows that this work has been dominated by the micro-simulation modelling paradigm. This type of simulation inspects each individual at each simulation time point, in which one or more random sampling processes are performed to determine the state of each individual at the next simulation time point. At one extreme, the sampling process requires simple random sampling. At another extreme, it may require a complex regression model. Depending on the data availability, some studies may need to aggregate the micro-units in a micro-simulation model into aggregate units. This variation is often called macro-simulation modelling.

The following relatively recent examples provide an overview of the applications of simulation modelling to gain an understanding of the demand side of the social care sector. Lagergren (2007) has developed the ASIM III, a micro-simulation tool, to understand the impact of factors such as positive health development among the elderly on the future demand for care. Morris (2003) shows five interesting case studies to demonstrate the important role of micro-simulation modelling in adult social care policy analysis. Three of the case studies analyse the effect of various factors and preventive actions on the future demand for care. Zuttion et al. (2007) use a macro-simulation model to project the demand for care in an Italian region. Macro-simulation modelling is also used in Wittenberg et al. (2008) to project the demand for care in England. It is possible to combine macro- and micro-simulation models as shown by Hancock et al. (2003). They combine a macro-simulation model and a micro-simulation model to project how the future costs of long-term social care can be divided between public and private resources under different scenarios. These examples show the dominance of the micro- and macro-simulation modelling approach in social care analysis, one of the key public policies in many countries. This is probably not surprising given the extensive use of micro- and macro-simulation modelling in public institutions and public policy in general (Mitton et al., 2000). This is not to say that system dynamics has never been used in the social care sector (Redpath, 2007).

A good policy in the social care sector should also take into account the dynamics of the workforce who deliver social care services, especially the most labour-intensive of these, i.e., the direct care services. On searching papers using the keywords ‘social care’ (and similar terms such as: ‘aged care’), ‘workforce’ (and similar terms such as ‘carer’ and ‘manpower’), and ‘simulation,’ the lack of simulation modelling work in this area is evident. Cangiano et al. (2009) use a micro-simulation model to project the future demand for social care workers in the context of the role of migrant care workers. Eborall and Griffiths (2008) provide extensive information about the state of the adult social care workforce in England. In one of the sections in their report, they use a macro-simulation model to estimate the required size of the adult social care workforce. The application of micro- or macro-simulation in estimating the size of the social care workforce is appropriate. However, a micro- or macro-simulation model tends not to include various feedback forces in the adult social care system explicitly in the model. They also tend not to take into account qualitative factors such as job satisfaction and attractiveness,
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