

# Modelling Dementia Care and the Support of Informal Carers in Tower Hamlets



## Project Description

This study has been undertaken to provide an introduction to the potential applications of system dynamics for Tower Hamlets Council (THC). After a period of initial meetings and discussions with employees at the Council, it was decided that the prominent issue of dementia and dementia care would be the focus of the study.

Local authorities such as THC are experiencing a period of austerity under the current Government and this is expected to continue. Coupled with these spending cuts, Adult Social Care services are facing increasing challenges from the ageing population. With age being the biggest risk factor, the number of people living with dementia is on the rise, which will place great pressure on the services provided by THC.

More so than ever, the Council must ensure that the services and support that they offer to people with dementia are cost-effective and have maximum impact. Informal carers within the borough provide the majority of care and support for people with dementia and it is vital that these carers continue to be supported in the future.

System dynamics has been recognised as a method to analyse 'whole' systems and inform strategic debate. By modelling the system as a whole, a greater understanding can be developed of the consequences that actions in one area may have on other areas of the system.

Its potential use for dementia care has been recognised in recent years as projects have been undertaken at the county councils of East Midlands and Surrey, with positive results. While this study is concerned with dementia care, the methodology is not limited to this area and it could provide benefit to many operations within THC.

By Stuart Maxwell, MSc Operational Research, University of Southampton

## Methodology

The study began with a period of interviews and meetings with employees from Adult Social Care and Public Health at the council and the NHS Dementia Care Team regarding the dementia care system. This process was required to develop an understanding of the system; how people with dementia move around the system and the influences that internal and external factors have upon these movements.

From this, it was possible to produce a representation of the dementia care system using the Vensim software; this is shown in a simplified form in Figure 1. To produce a model ready for simulation purposes, it was required to obtain data from THC and UK national sources regarding the initial values of people in each box or 'stock' and the 'flows' or movement of people between stocks.

Due to time restrictions of the study it was not

possible to assimilate all of the desired information in the finest detail, so estimations drawn from the knowledge of employees consulted in this study were used.

A variable 'Informal carer ability' was included within the model to capture the benefits that informal carers have on people with dementia. This variable influences the rate at which the health of those with dementia deteriorates to a point at which they can no longer be supported within their own home and they must move into a care home.

Once this model was fully developed, three policy interventions were explored: increasing the information & advice available to carers; charging for home care support; and capacity restrictions on the NHS Diagnostic Memory Clinic. These interventions could then be simulated to analyse their impact over a 15 year time horizon.

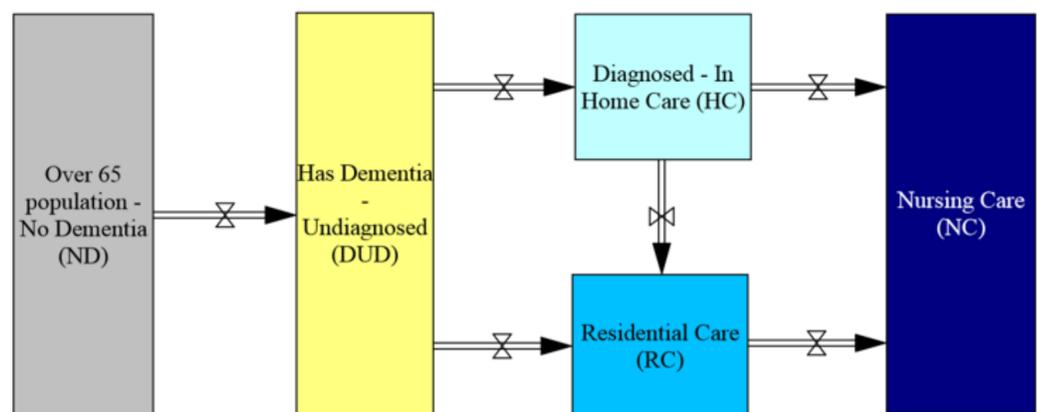


Figure 1: Dementia Care Model (simplified view)

## Results

Secondly, the issue of charging for home-care packages is examined. With Tower Hamlets (TH) being the only local authority in the UK that does not charge residents for home care support packages, it is possible that this will become a topic of discussion in the next few years. The impact on dementia care expenditure of charging residents a percentage of their home care packages is shown in Figure 2, based on July 2015 care package prices.

As expected, charging residents will reduce the annual expenditure of the council on dementia care. However this may cause the demand for placements in care homes to increase. It was not possible within this study but other factors will have to be considered before concluding whether charging would be beneficial to the council and its residents.

The final intervention was chosen to highlight the pressure that TH' NHS Diagnostic Memory Clinic (DMC) are experiencing at present and would continue to do so in the future. The diagnosis rate for TH is currently estimated to be 61.2% which is a relatively high rate for the UK; that is to say that of people suspected to have dementia within the borough, 61.2% have a diagnosis.

Figure 3 shows how this diagnosis rate is projected to change if the assessment capacity of the NHS DMC is not expanded over the next 15 years. The cost of increasing the capacity of the Clinic in order to maintain the current diagnosis rate is unknown.

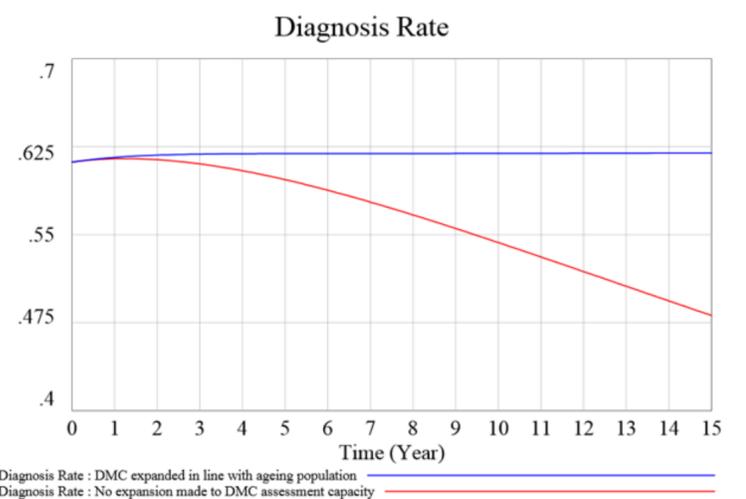


Figure 3: Diagnosis Rate projection, based on no change to current Clinic capacity

## Total expenditure per year

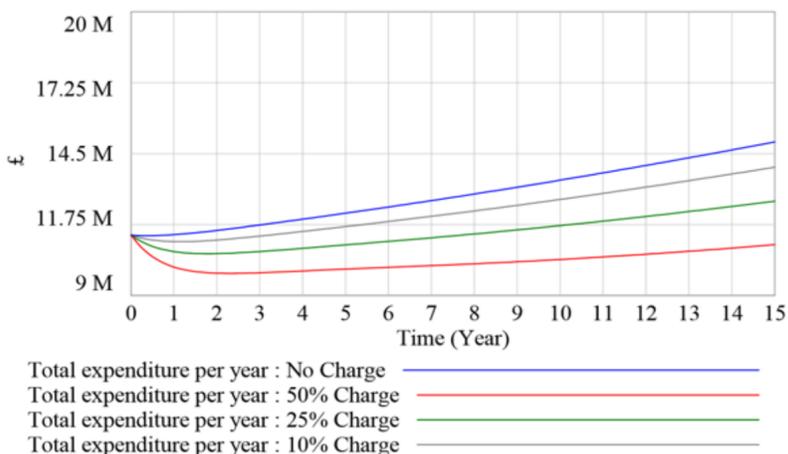


Figure 2: Charging for Home Care: Projected Social Care Expenditure

With thanks to Tower Hamlets Council supervisor, Philip Price; University supervisors, Dr Brian Dangerfield and Sally Brailsford; and everyone at Tower Hamlets Council.

## Conclusions

The approach can be utilised to develop a greater understanding of the nuances inherent in the dynamics of a public health system and to inform strategic policy decisions.

Fuller development of a whole system model such as this has the potential to inform savings for THC which could run to hundreds of thousands of pounds in social care expenditure.

There are two main ways forward: it might be possible for another Masters student to continue from the research presented in this study next summer. Access to necessary data and information could be provided to allow a model to be developed that includes a greater degree of the influencing factors in the dementia care system.

Alternatively, like other councils (East

Midlands and Surrey County Councils), external consultants could be contracted to undertake this dementia study, although on a greater scale and with increased detail. Obviously this will come at a cost, but previous studies from Symmetric SD Ltd have shown the potential savings.

System dynamics has potential uses in areas other than dementia so having an internal consultant within the Council experienced with the methodology is recommended. Utilisation of system dynamics could be developed internally and ultimately integrated in the management of a number of spheres of council activities, beginning, say, with public health and social care.

Subsequently the Council could contemplate the aspiration of a whole systems model embracing a much wider set of its activities.