

Modelling Health and Social Care in Nottinghamshire

As part of **Nottingham North and East CCG's** on-going programme of reviewing and improving services, it is sometimes necessary to change the way services are organised and delivered. Often, because the changes have never been tried before, there is little information available to suggest how these changes should be put into practice.

One solution is to run pilots to test changes to services. While this is a useful approach, it can be costly, time-consuming, and disruptive to implement on a large scale. Another option is to use specially designed software to model services in a way that represents real life. We can then make changes to the model to see what the effects of making the same changes in the real world might be. Nottingham North and East CCG has been working alongside partner organisations including **Newark and Sherwood CCG, Rushcliffe CCG, and Nottinghamshire County Council** to do this using a piece of modelling software called **Scenario Generator**, produced by **Simul8 Corporation** for use in health-care.

A joint **Nottinghamshire Health and Social Care modelling team** from across these organisations recently took part in an event organised by **The Organisational Research Society**, held at Loughborough University. The event was an opportunity for individuals and organisations to showcase their use of modelling in various real-life situations. Posters were produced and exhibited, and the participants gave short presentations explaining their projects. Prizes were awarded based on the strength these posters and presentations; the joint Nottinghamshire modelling team won **second prize**.

The four posters on the following pages were the joint team's submission to this event. They explain the overall concept of the modelling approach used, as well as looking at three case studies in more detail.

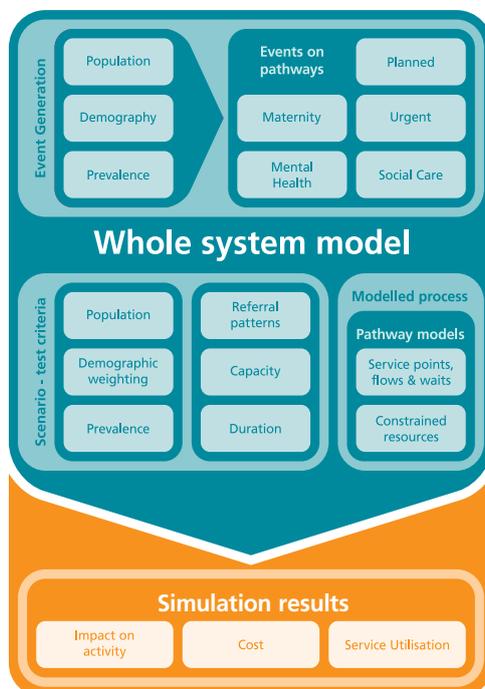
Modelling Health and Social Care in Nottinghamshire

Aim

To establish the value of a modelling approach to health and social care planning

Objectives

- Understand the consequences and risks of proposals to deliver a shift from acute hospital care to community care.
- Understand future service capacity requirements across the whole Health and Social Care community in Nottinghamshire.
- Undertake strategic planning in health and social care for lower priority projects.
- Understand financial implications and effects across organisations to support the development of alternative models.
- Support the achievement of QIPP (Quality, Innovation, Productivity and Prevention) targets across the Health community.
- Ensure the sustainability of this approach by embedding this way of working into the commissioning cycle, including opportunity for joint commissioning.
- Increase the number of competent scenario generator analysts.



▲ Discrete event simulation, using



Project

Manager:

Janet Baker

Key organisations

working in partnership:


Newark and Sherwood
Clinical Commissioning Group


Nottingham North and East
Clinical Commissioning Group


Rushcliffe
Clinical Commissioning Group

Individual projects

1 Assessment Beds

To consider options for establishing a city/county joint assessment centre to build on the current assessment beds model.

Newark Review

To assess the impact of downgrading an A&E facility to a minor injuries unit.

Rushcliffe Diabetes

To assess the impact of changes in diabetes prevalence and increased hospital discharges on community services.

Lings Bar Hospital

To look at the impact of changes to length of stay on the required bed capacity.

Handy Persons Assessment Service

To consider different delivery and funding models for HPAS.

Spinal Pathway

To model the spinal pathway from the community into secondary care, and to assess the impact of changes to the pathway with a view to reducing the waiting times for spinal surgery.

2 Mental Health Rehabilitation

To address issues with the patient flow through the pathway, and to inform commissioning decisions regarding intermediate care beds, services and interventions.

3 Integrated Health and Social Care

To assess the impact of changes in activity on community health and social care services, and to assess required capacity in the light of team reorganisation to provide an integrated service.

Walk in Centres

To investigate the impact of two Walk in Centres, and options for different models of service delivery.



Assessment Beds

Purpose

The Assessment Beds service is based in residential homes for older people. The purpose is to provide dedicated places for older people who:

- have recently been admitted to hospital
- have been identified as medically fit enough to be discharged from hospital
- have identified needs for ongoing social care support (e.g. help with personal care, help with domestic tasks)
- at the time of discharge are unable to return home, so are at risk of being admitted into long term residential or nursing home care

It is not always appropriate to make decisions about an individual's long term care needs while in hospital; however, a high proportion of older people are placed into long term residential or nursing care from hospital. Assessment beds offer an alternative to this practice by providing short-term residential care with recuperation, assessment and reablement, with the aim of diverting people from long-term care.

Positives

- The scenario data requirements have prompted us to seek and use data that was either not previously available, or was not being used as effectively as it might be.
- We are starting to see how different parts of the health and social care system link together.



- We will be able to see how changes in service models, populations and referral rates between services affect the properties associated with the various steps along the way.

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Scenario Generator maps the care pathways that lead to this service in the south of the county. The model includes two acute hospitals and one rehabilitation hospital, from which patients are discharged, via the hospital Social Work teams, into the assessment beds. The care pathway currently ends at the various destinations to which people are discharged from an assessment bed. This section of the pathway is pictured right.

The pathway is run with a base population of people aged over 65 who are registered with GPs in the south of the county.

Information about the various steps along the pathways is being entered in to Scenario Generator. This includes information about:

- referral rates to linked services
- waiting times
- costs
- capacities
- resources

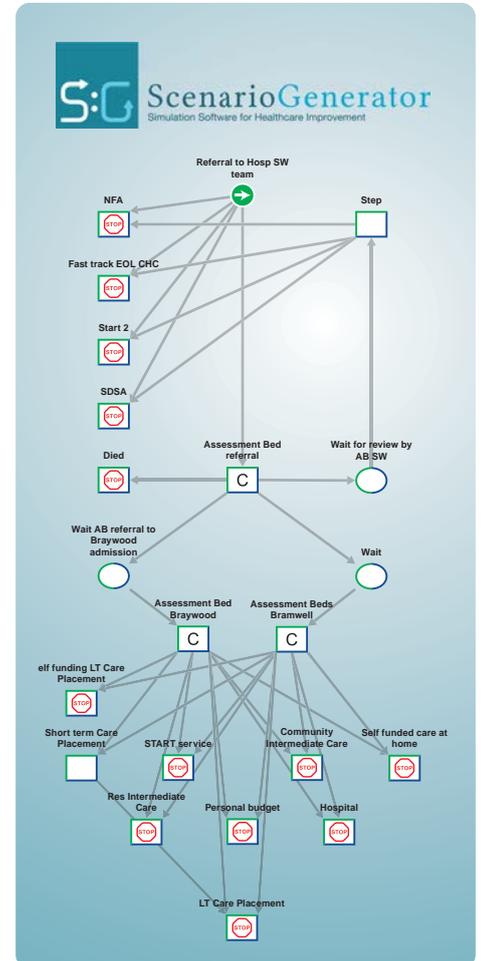
Negatives/challenges

- Getting to grips with the format in which data should be entered into the scenario in order to get out the information that we want.

Next steps

We are still in the early stages of creating scenarios that involve social care services and we are learning about the potential and limitations of the system as we go along.

Our scenarios are currently fairly simple and focus on isolated parts of the health and social care system. As we carry out further work we will be able to link up more parts of what is a complex and extended system.



- Getting the right balance between describing larger scale strategic scenarios and smaller scale operational scenarios.

As we do so we should be able to carry out increasingly sophisticated modelling exercises that allow us to see more comprehensively the links between different parts of the system and the impact that various changes may have.

We should also develop a better understanding of the information required to keep our scenarios up to date and relevant.

Modelled with

Project lead:
Malcolm Potter



Mental Health Rehabilitation

Purpose

A review was conducted in 2011 of all rehabilitation mental health beds in Nottinghamshire. The review found that there were several blockages in the pathway, and the needs of patients were not being met. For example, patients with continuing

care needs had been placed for years in rehabilitation beds without being reviewed.

The CCGs are using Scenario Generator to model the current pathway. We will then use it to model interventions and capacity

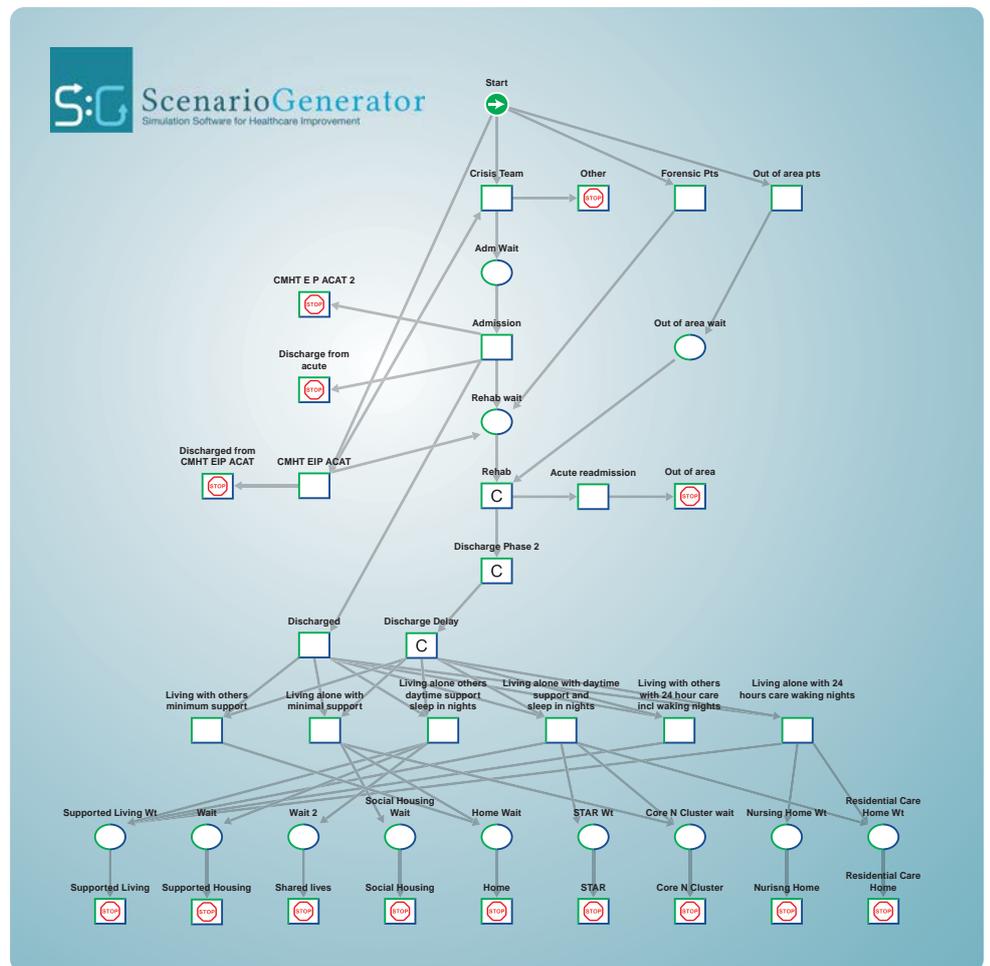
to create a smoother and more effective pathway for patients. We will also use Scenario Generator to inform commissioning of the correct number of beds and the step down services or interventions that are needed.

Positives

- Scenario Generator allows active engagement of all stakeholders.
- Scenario Generator is visual - it allows all parties involved to see the full pathway.
- Scenario Generator is Health based.
- Scenario Generator has built-in data such as prevalence.
- Scenario Generator allows more accurate modelling of capacity and interventions.
- Scenario Generator is a basis of evidence for change.

Negatives/challenges

- Scenario Generator is data hungry.
- Getting information from secondary organisations has proved difficult.
- Problems with data quality.
- Engaging all stakeholders in the process has proved difficult.



Next Steps

- Input data.
- Balance the model against data.
- Test the model.
- Run scenarios using various options of interventions and different capacity.
- Review.

Integrated Health and Social Care

Purpose

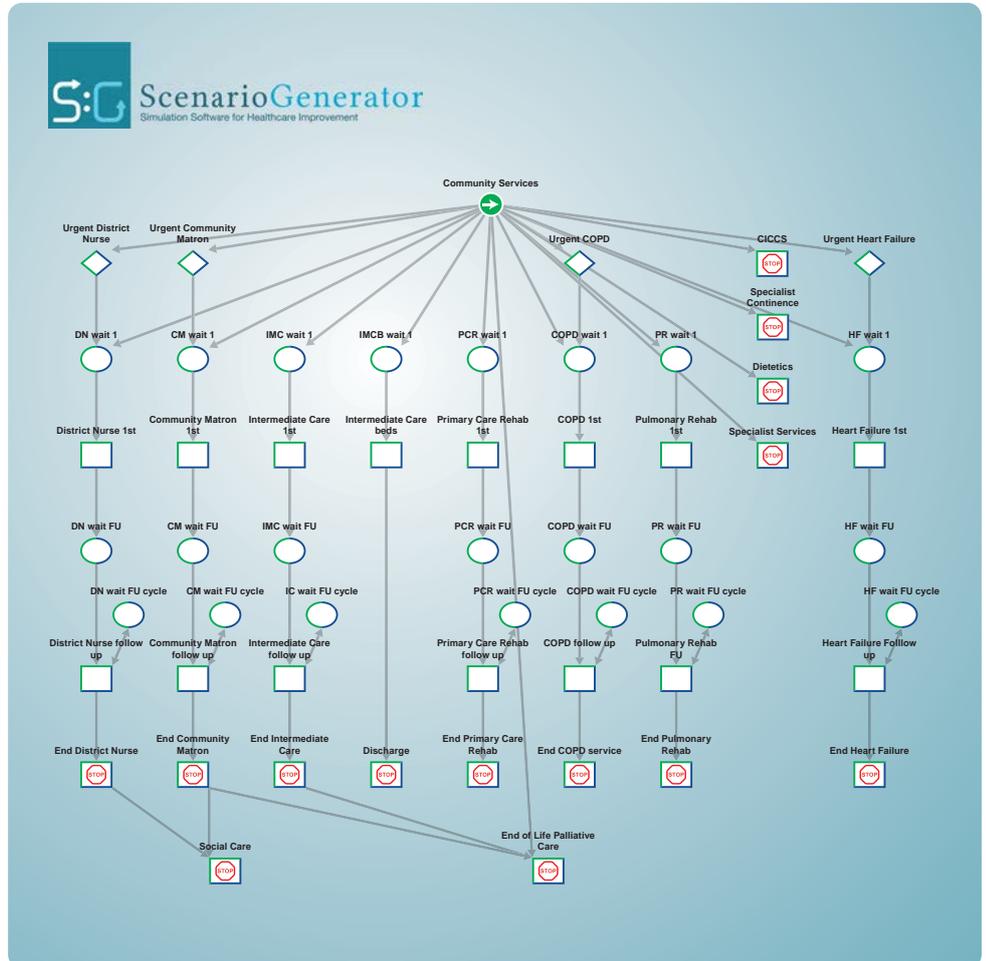
The organisation of Community Services provided within Nottingham North and East CCG is currently going through significant changes. A new Integrated Health and Social Care (IHSC) team model is being established, with a Single Point of Access, in the place of a number of separate teams. There is also a plan to divert around 5% of activity at A&E away from the hospital setting and into the community. This will impact upon the newly-reorganised IHSC team.

The aims of the model are to test:

- potential outcomes from the current situation, given a growing and ageing population
- effects of a diversion of activity away from A&E and into a community setting
- implications of the implementation of the integrated team structure
- all the above issues in combination

So far, we have created a Community Services pathway in Scenario Generator, and made amendments to the generic pathways that feed this new pathway.

An early version of the model has already been used to demonstrate the potential effects of diverting activity away from A&E.



Positives

- The process has led to engagement between Provider and Commissioner organisations.
- The process is helping to identify issues such as the quality of data from the Provider organisation.



- Scenario Generator has the potential to help to communicate messages about changing service requirements clearly and compellingly.

Negatives/challenges

- The data quality issues have made the process of setting up the model representing the current "as is" state of the service quite challenging.
- Maintaining engagement across all levels within different organisations can be a challenge.

Next steps

- The "as is" model will be completed, and team capacities and waits within the Community Services pathway will be added.
- The effects of a changing population will be tested.
- The effects of diversion of activity to a Community setting will be tested.
- The Community Service pathway will be re-modelled to better reflect the post-integration situation, and the results will be compared with the pre-IHSC model.