

Modelling optimal pathways



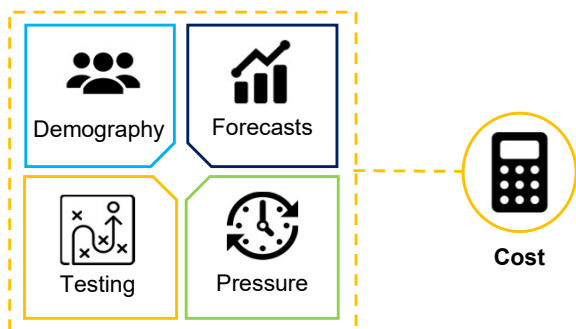
Modelling mental health capacity & demand to maximise efficiency

The increasing pressure on Trust and ICS budgets and how we can help:

Mental health trusts and ICSs have demanding cost improvement targets to achieve post Covid -19. This comes at a time when bed and community service pressures continue, demand continues to increase and capacity constrains - both staff and service related - are evident. Our unique mental health capacity and demand modelling approach will aid your ability to make informed bed and resourcing decisions.

Our approach to capacity, demand and flow modelling is based on strong client engagement - and on our unique simulation modelling tool **Sim:pathy**. We provide clients with a bespoke model which allows them to 'dry-run' **service scenarios** so that they can make the best strategic decisions about future service configurations.

Our method ensures that the full range of variation in real patient flows is captured, and that the future model allows for detailed variances between patient cohorts and service types. We start by identifying how patients currently move through 'the system' - where they are referred from, and where they are discharged to, and we determine the probability of each of these events within local services. We then provide scenarios of change with you to assess their impact on services together with the effects of whole system impacts. The outcomes are highly detailed, and can be for a single provider or providers within an ICS, typically including:



- the effects of demographic change;
- for every service line future demand forecasts;
- a 'do nothing' baseline without service change;
- an agreed range of future service and performance scenarios;
- for every scenario, a robust forecast of its effect on bed usage, community provision, out of area placements and capacity pressures;
- the implications on workforce and finances;
- the effects of scenarios in combination, not just singly; and
- an agreed plan for the way forward.

Simulation modelling:

Simulation modelling allows individual Trusts or ICSs to investigate the impact of changes to service models or care pathways. Blockages in the healthcare economy or issues of capacity and demand can be predicted ahead of time and different scenarios can be tried in order to optimise pathways between flow, quality and cost. To create the model:

- **real data** is gathered on **real patients** currently using your local services or who have used your local services in the past;
- a **base model** is produced showing how the healthcare economy works at the moment;
- during the simulation, patients are seen by services, enter waiting lists and move between services and care clusters;
- the results of the simulation can be reviewed to identify any potential problems with the current system;
- **'what if' scenarios** can be tested within the model and the results reviewed; and
- an optimised system can be seen with its implications for beds, community services and finance.



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HEALTH & SOCIAL CARE CONSULTING

“ *discrete event modelling is necessary to gather insights based upon real, not imaginary data. The outcomes you get are evidence-based and have helped us to remove the guess-work of the past* ”

Sim:pathy

Sim:pathy is our own mental health *discrete event simulation modelling tool*, designed for integrated use across health and social care systems. It has both inpatient and community elements. **Sim:pathy** is based on several years' design and development initially in mental health care. **Sim:pathy** is now used across all sectors, in health and social care, to help with complex pathway redesign modelling.

Our modelling approach has been used to support clients with their capacity, demand and patient flow requirements for many years. **Sim:pathy** enables the evidence-based strategic service redesign of caseload carrying services. Discrete event principles help clients to:

1. **manage flows of individual people through a range of differing services;**
2. **gather sufficient data about those people to enable flow behaviours to be modelled probabilistically; and**
3. **tackle strategic questions, such as the balance of investment between differing services, organisational bottlenecks, the role and function of specific services and staffing structures.**

Solid strategic decision making....

Our work will leave you with:

- a sustainable and deliverable service model;
- a detailed, clearly structured, and evidenced understanding of the nature and volume of services which you should offer;
- a process which has engaged a wide variety of people, and therefore prepared an excellent base for subsequent implementation; and
- a clear service and financial plan about the required service and resource changes needed moving forward.

Why traditional NHS approaches often fail?

More traditional approaches employed by the NHS can fail and this is often because the following assumptions are made:

- length of stay, referral rates, patterns of flow of each cohort of patients are the only average characteristics used;
- patients flow at a uniform rate around the system;
- patient populations are treated as 'fluid' through a system and no 'peaks or troughs' in demand are experienced; and
- a healthcare economy that meets demand 'on average' will fail 50% of the time.

Our experienced intelligent approaches have helped our clients to implement optimal pathways, year after year...



- **Managing flow through services and reducing bottlenecks**
- **Improving patient outcomes**
- **Making strategic decisions for safer, more effective services**
- **Balancing investment and increasing cost-efficiency**
- **Planning staffing and resources**

About the work we do

Niche is proud to be a values driven consultancy and we have over 30 years' experience in mental health flow-modelling, demand and capacity reviews and evaluation, as specialist health-economic advisors. We have developed substantial expertise in the field of simulation modelling, with an unrivalled combination of both technical skills, and understanding of the ways in which health and social care services actually work in practice. **No other consultancy approaches modelling and analytics with quite the same levels of pragmatism as Niche.** Examples of our recent modelling projects include:

- an ICS wide assessment of the impacts of the pandemic on mental health system performance and future service needs;
- provider collaborative assessments of future mental health capacity and demand needs;
- projects in London for Guy's and St Thomas' NHS Foundation Trust (with South London and Maudsley), co-addressing Emergency Department flows;
- projects in Nottinghamshire, Dorset, Hertfordshire, Norfolk, Suffolk, Birmingham, and Pennine Care, in each case examining strategic change across services;
- a county-wide review of the acute pathway in Cumbria, as part of local success regime work;
- planning for future capacity, demand and service changes in CAMHS in two major systems; and
- reviews of IAPT services in South West London, Essex, Dudley and Walsall and Sussex.

insight
integrity
impact



Tom McCarthy - Partner

Tom has a career in health economics and demand/capacity modelling spanning nearly 30 years. He has unparalleled experience in delivering pathway solutions for clients all over the country, particularly within the Mental Health Trust and Commissioning Sector.