

Mobilising Operational Research: Exploring Modelling as a Tool for Evidence-Based Change in Healthcare

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BACKGROUND

- Operational research (OR) seeks to aid decision-making and problem-solving in healthcare
- Greater understanding is needed of whether and how OR influences decision-making
- We explored the role and impact of quantitative OR on healthcare decision-making in two projects

METHODS

- Qualitative approach using semi-structured interviews with modellers and NHS staff (N= 30) and analysis of documents across the two projects at early and later stages of each
- We explored (a) what the modelling process entails (b) participants' expectations and experiences of OR (c) the impact for the NHS following each project

EMERGING THEMES

PROJECT 1: PILOT PROGRAMME TO DEVELOP OR CAPACITY IN THE NHS

PROJECT 2: DEVELOPMENT OF A TRIAGE TOOL FOR DEMENTIA ASSESSMENT

'...we got a very robust model, ...pointed to what the solutions might be. That then translated into a discussion with commissioners and then some investment in solving those problems

Intelligent and constructive dialogue around the problem

'...you want less inaccuracy and more capacity and you can't have both... we iterated between clinical reality and the modelling in that kind of way and it was very helpful to guide the discussion'

'I could bring it up on the screen and they can see a simplistic flow diagram of their department...they can see where the queues build up,...So, they can see that it matches to the reality and the numbers behind it'

Shared decision-making and reduction in 'silo thinking'

'We've had conversations for over a year now but always with a lot of caveats as to uncertainty...what the modelling did was allow us to start having those clinical conversations about how we might actually change the service...'

'I think modelling as a whole is recognised more now within my organisation as something that we should be doing when it comes to implementing change.'

Systems perspective to understand the impact on healthcare

'...[modelling] allows us to then think through the volume of referrals that we're actually going to be possibly turning back...and give an idea to GPs ... they might have dementia but we might have falsely reassured them.'

'...doing the rigour, doing the detail of the problem, really, really kind of helped with identifying solutions.'

Rigour of analysis and meaningful presentation of local evidence

'One had a vague sense that half the referrals probably don't have dementia. But quite how many of them ought to be seen anyway and how many are borderline was totally impossible to conjure...modelling has given us a much more concrete idea about what we're actually talking about.'

REFLECTIONS

- Our findings highlight the importance of the co-production of local knowledge between modellers and healthcare. This supports a social change brokering framework where modellers are seen as capacity builders.
- We found that our participants' experiences indicate that OR can be used in a social and relational process to embed, and build, a culture of evidence-based decision-making. This is most effective when the work is valued by Executive leads and NHS staff.
- Further work is needed to extend the evidence-base on how OR can be used most effectively to improve decision-making, become sustainable, and further involve patients and the public in the modelling process.