

Embedding System Dynamics modelling into healthcare strategic planning – a case study: the Kent Advancing Applied Analytics Community of Practice

Speakers:

- **Kate Doughty, Darzi Fellow, Kent County Council.**
- **Mark Gilbert, Senior Commissioner, Kent County Council**
- **Jo Tonkin, Public Health Specialist, Kent County Council**

Contributors:

- **Peter Lacey, Director, Whole Systems Partnership.**
- **Mark Gregson, Consultant, Whole Systems Partnership**

Sustainability and transformation plans (STPs) started to be developed in 2016/7 with the goal of building NHS services around local areas rather than institutions. The Kent & Medway STP footprint is a £3.6 billion health and care economy, covering a population of 1.8 million and made up of hundreds of health and care providers commissioned by a few commissioning organisations each covering specific geographical footprints.

To date, a number of internal & external partners have carried out demand and capacity planning in support of the STP using varying methodologies and assumptions. With the help of a fund from the Health Foundation's Advancing Applied Analytics programme, we have developed a Community of Practice (CoP) in Kent which focuses on the use of System Dynamics (SD) modelling locally as the bridge between STP strategic challenges and the contribution that analytics can make.

By establishing this CoP over 18 months our aim was to oversee the development, validation and use of a set of models (using SD methodology) to underpin a consistent dynamic approach towards STP demand and capacity planning using locally linked data (from the Kent Integrated Dataset) to generate robust assumptions for model design and development.

The talk will describe the approach to embedding a system dynamics approach into strategic planning arrangements in this large health and care economy. Some of the modelling tools developed by participants in the CoP will also be shared.

Kate Doughty is a Darzi Fellow at Kent County Council, where she is spending a year running a "Community of Practice" to embed simulation modelling (specifically Systems Dynamics) into local decision making and planning. Within this she is undertaking her own project to predict the demand for intensive care beds and workforce in the region using local data. Prior to that she had been working as a doctor for five years and was training in anaesthetics.

Jo Tonkin is a Public Health Specialist at Kent County Council.

Mark Gilbert is a Senior Commissioner at Kent County Council. He is responsible for commissioning a range of services for vulnerable children and young people in Kent and has previously held other commissioning roles in Public Health. Before this, Mark worked in the business development and performance teams for a substance misuse and mental health charity. Mark has also worked at the

Department of Health and held other roles within Kent County Council including strategic procurement, the youth offending service and the drug and alcohol action team.

Mark Gregson is Paramedic Specialist by background, and was introduced to System Dynamics in healthcare when on his Darzi Fellowship in the public health department in Kent 2017. Following his fellowship he joined the Whole Systems Partnership, and has been developing his skills in modelling and simulation in healthcare.

Peter Lacey is Director and founder of the Whole Systems partnership, a strategic consultancy that has worked in health and care for the last twenty years. WSP uses System Dynamics as a key tool in its consultancy, seeking to embed it in a wider engagement approach that builds partnership working and strengthens relationships in complex change programmes.