

The Peninsula Collaboration for Health Operational Research & Development

Visualising and forecasting ophthalmology outpatient activity in North Devon

Summary:

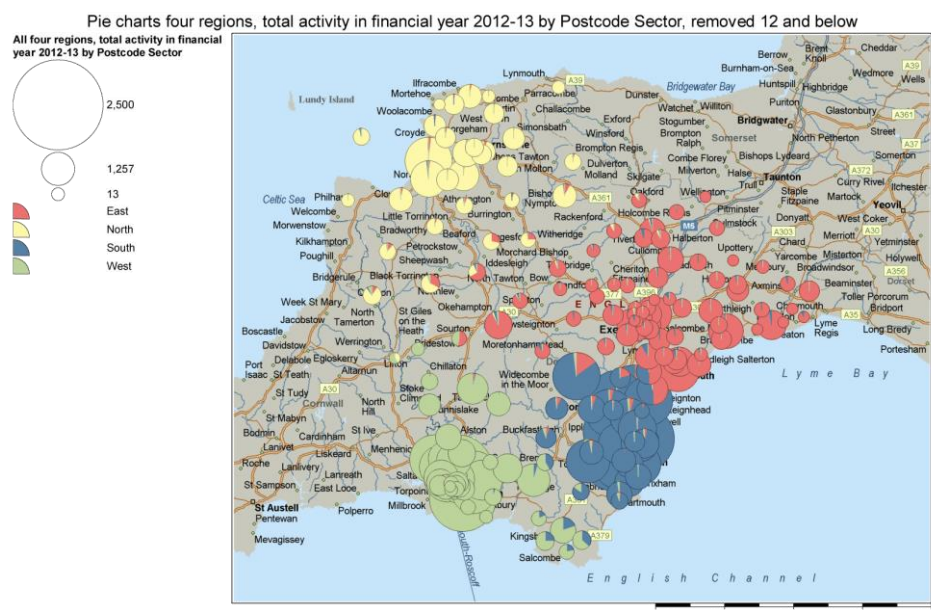
A detailed analysis was conducted to visualise and predict future use of ophthalmology outpatient services provided by North Devon District Hospital (NDDH). Current clinic workload was visualised using geographic mapping techniques, while forecasting models were used to predict activity up to five years into the future. Outputs were used as the basis for debating where community based services, such as Virtual Clinics, should be located in the future.

Context:

As the population ages the demand for elective ophthalmology services has seen substantial and continual growth. An innovative method to provide sufficient clinical capacity to meet this demand is to operate *virtual clinics*. Here, screening is conducted in the community by a technician and results are reviewed remotely by an ophthalmologist at a later date. In the context of a wider study to understand where such clinics might be best located, PenCHORD collaborated with NDDH clinicians and relevant commissioners to visualise current activity geographically and predict activity up to five years in the future. PenCHORD's commercial partner Selective Analytics was also heavily involved in the work. The project took place in the second half of 2013.

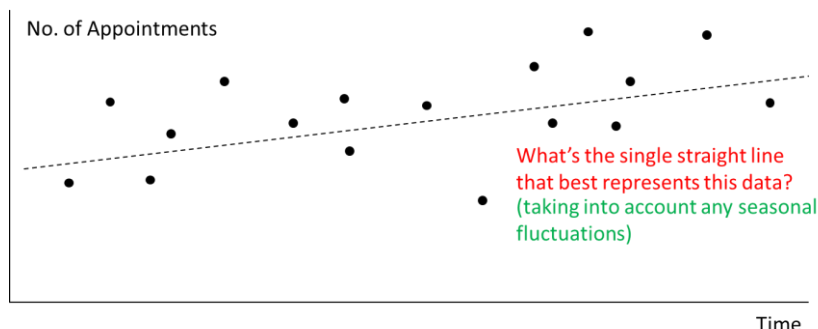
Method (1):

We assembled and analysed a large anonymous dataset using data routinely collected by the clinical commissioning group and NDDH. This data was visualised using bubble/pie and shaded maps.



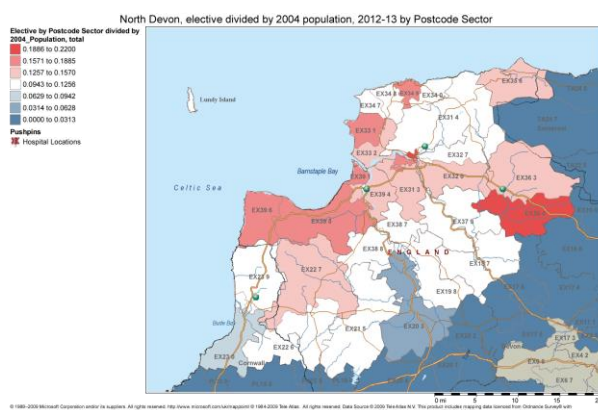
Method (2):

Forecasting of future activity was conducted using a seasonalised linear regression analysis extrapolated up to 2018.

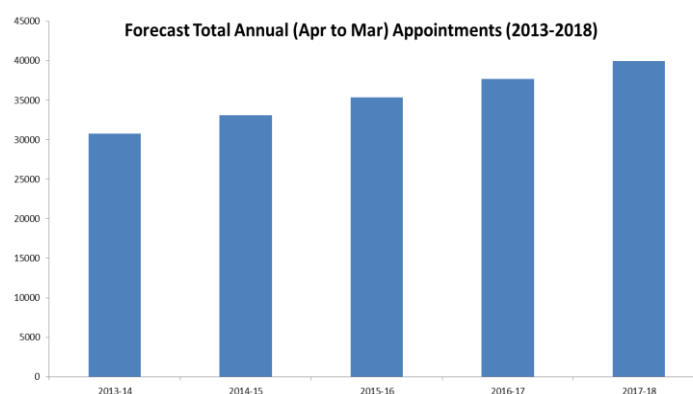


Outputs:

Mapping was used to visualise demand both across Devon and within North Devon only. Across Devon the visualisation was useful to explore which patients were travelling out of North Devon to attend clinics at different trusts. Within Devon the visualisation was useful to explore which acute or community hospital patients attended and where the majority of patients were located. This provided valuable insight into good candidate sites for virtual clinics.



Shaded map of North Devon ophthalmology activity



Predicted yearly increase in ophthalmology activity

The forecasting model predicts the trust will experience a 7% annual increase in ophthalmology activity. By 2018 this will lead to an extra ten thousand episodes of care compared to the current financial year. Much of this increase is explained by an increase in activity in age related macular degeneration services.

Implementation:

Outputs from the project were used by NDDH as the basis for discussions on where community based services, such as Virtual Clinics, should be located in the future.

Contact and more information:

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