Predicting the effect of closing a hospital

Derbyshire PCT were moving services from one hospital to another. They, and Nottingham PCT, needed to know the likely impact on patient attendance at various hospitals in Derbyshire and Nottinghamshire.

The MapPlace team analysed previous patient attendance figures in different categories. Certain useful characteristics in the data were highlighted and two scenarios developed to predict the likely changes in patient attendance.

> "I have been extremely impressed by the level of commitment, support and knowledge (both of our circumstances and the optimum modelling techniques) displayed by the Selective Analytics team and we would certainly use them again on similar projects."
>
> David Arrowsmith, Head of Information, Derbyshire County Primary Care Trust
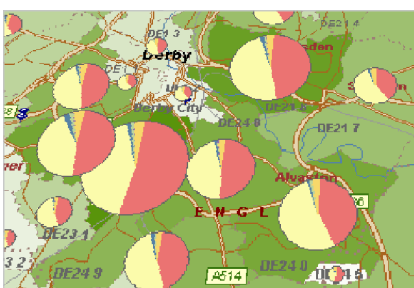
Stages in the project

- The initial phase analysed approx. ¾ m. patient attendance figures and 18 data maps were produced (examples below).
- From this data two scenarios were developed with clearly defined assumptions and graphs (example below middle).
- These two scenarios were then used to predict possible changes in patient attendance patterns.
- Our team attended a meeting with all interested parties from the two PCTs to discuss our findings and any implications.

The Client's requirements

Derbyshire PCT was moving services from one hospital in Derby to another newer hospital on the other side of Derby. This change extended the distance some patients had to travel and there was a possibility that some Derbyshire registered patents on the edge of the county would migrate to the nearby Nottinghamshire hospitals.

It was therefore imperative that the two PCTs had properly researched figures for the likely effect on patient attendance figures. From the resulting figures they could develop a plan on how demand might change at each hospital.

The actions taken

The first stage was the analysis of the situation. We used our own GIS system to display GeoData maps of ¾ million past patient attendance figures, which helped visualise the data and spot trends and groupings.

This phase in itself produced a number of useful statistics, such as showing that while ambulance arrivals at A&E were in the minority they accounted for the majority of admissions, thus suggesting that ambulance procedures were important to consider in the predictions.

From this analysis phase we developed two scenarios that we thought were appropriate to the situation. These were agreed and using our GIS system we used existing data to generate two predictions of possible attendance figures.
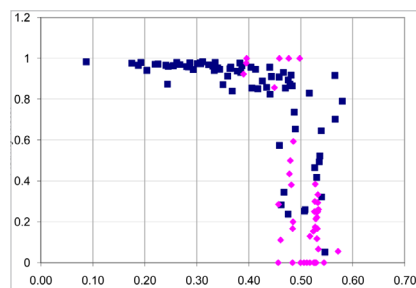
Finally the findings were presented at a meeting where all interested parties were present. A range of data maps and graphs were used to show the results and how they were arrived at.

The benefits to the client

The main benefit to the client was that an independent and academically strong team took on the task of working out what the likely effect of the change might be.

Also, through the use of GIS tools, the results could be viewed in map form to aid understanding. A final report of 12 pages included a one page summary and clear articulation of the assumptions made.

The end result was that the each of the Assistant Directors of Commissioning and Performance for the two PCTs used these findings to decide on a course of action before the services were moved.

Examples of items produced during this project
GeoMap (left) of the existing patient activity. Graph (right) showing the data used to develop an assumption.

Would you like us to help you with a healthcare situation that involves geographic location, patient activity or capacity planning?

Contact us today for a free, no-obligation meeting to discuss your specific requirements.