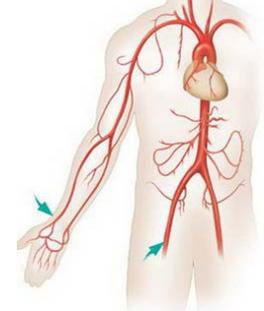


100 Ways of Using Data to Make Lives Better

A series from The Farr Institute of Health Informatics Research showcasing the UK's most significant examples of using data in research

Reducing inequalities in the treatment of coronary heart disease. This research project was able to identify significant differences in the take up of a more modern, safer method of delivering a common procedure to unblock arteries and improve blood flow.



Principal Investigator: Prof Mamas Mamas, Keele University

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Discovery Science
Case Study 23

The Challenge:

Percutaneous coronary intervention (PCI) is a procedure where stents are placed within the heart to open up arteries and improve blood flow. This non-surgical practice can be delivered either by inserting a catheter into a patient's leg (the transfemoral route) or the wrist (the transradial route).

Performing PCI via the wrist requires doctors to use a more modern technique than traditional access via the leg and appears to be safer and less invasive. Although evidence suggests that patient outcomes are improved if PCI is delivered via the wrist, this technique has not been uniformly adopted across the UK. This lack of acceptance could indicate inequalities in the way that care is delivered and received.

The Research:

The research team was a partnership between The University of Manchester's Health eResearch Centre and Keele University. Using de-identified data (with personal information removed) supplied by the British Cardiovascular Intervention Society, the team were able to analyse the records of 448,853 PCI procedures undertaken between 2005 and 2012.

By geographically mapping these data, informaticians were able to further drill down into the available data and identify where take-up of the more modern method (access via the wrist) varied the most.

The Results:

Analysis of the data showed current practice had changed over time for the benefit of patients. Between 2005 and 2012 performing PCI via the wrist rapidly increased from 14% to 58%, the research calculated that this change contributed to an estimated 450 lives saved over the seven year study window.

By geographically mapping the data the researchers were able to identify the south east of England as the region with the lowest uptake of PCI delivery via the wrist. The team also found an additional 264 lives could have been saved if this method were more frequently adopted.

These findings built upon previously published research by the team which showed that performing PCI via the wrist is associated with a 30% reduction in the risk of mortality in high risk groups undergoing this procedure.

The Impact:

The wrist (transradial route) has become the dominant PCI approach in the UK with wide variation in different parts of the country.

This research has identified aspects of existing health and care procedures that could be improved and demonstrates how knowledge and data can be translated into improvements in patient care.

For more information visit: bit.ly/pciresearch

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