A case study framework for design and evaluation of a national project to improve prehospital care of acute myocardial infarction and stroke

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Background

Cardiovascular disease (CVD) affects 1.8% of the population annually, 0.9% with stroke and 0.8% with coronary heart disease. People suffering from CVD often present acutely to ambulance services with symptoms of acute myocardial infarction (AMI) or stroke. Early and effective treatment prevents death, improves long term health and reduces future disability.

Objective

Our aim is to develop a rational approach for informing the design and evaluation of a national project for improving care bundles for prehospital care of AMI and stroke: the Ambulance Services Cardiovascular Quality Initiative (ASCQI), the first national improvement project for prehospital care.

Methods

We will use a multiple case study methodology (Yin, 2002). An evaluation logic model was developed to define inputs (in terms of resources for planning, implementation and evaluation), outputs (in terms of intended changes in healthcare processes) and longer-term outcomes (in terms of health and wider benefits or harms), whether intended or incidental and in the short, medium or long term.

Results

We present below an evaluation logic model for the project. This shows the analytical techniques which we will use to explain how and why the project achieves its outcomes. These include time series analyses to show changes in care bundles for AMI and stroke; pattern matching to show which intervention or combination of interventions led to which patterns of change; cross case syntheses to compare and contrast approaches taken by different ambulance services and the effects of these; and explanation building to inform an explanatory logic model to show how and why the project achieved the outputs, outcomes or consequences that it did. The model will be useful in determining the types of data that will need to be collected during the course of the project to develop a data matrix and to triangulate data to develop the explanatory model.

Conclusion

The case study approach will enable us to evaluate the impact of this collaborative project in constituent ambulance services as well as the initiative as a whole. It will enable us to show whether and to what extent the project has had an impact, but also how and why this has happened.

Reference: Yin, R. K. (2002) 'Case Study Research, Design and Methods', 3rd edition. Newbury Park, Sage Publications.