

The effect of a national ambulance Quality Improvement Collaborative on performance in care bundles for acute myocardial infarction and stroke

A Niroshan Siriwardena^{1,2}, Deborah Shaw², Nadya Essam², Fiona Togher¹, Zowie davy¹, Anne Spaight², Michael Dewey³ on behalf of the ASCQI Core Group

1 University of Lincoln, 2 East Midlands Ambulance Service NHS Trust, 3 Freelance Statistician

Background

National ambulance service indicators showed considerable variation in care for acute myocardial infarction (AMI) and stroke.[†] We aimed to improve reliability of pre-hospital care processes for AMI and stroke using a Quality Improvement Collaborative (QIC). The QIC involved educating ambulance staff in Quality Improvement (QI) methods, and the use of plan-do-study-act cycles (PDSA) to implement changes. Ambulance staff were provided with feedback on the effect of the PDSA cycles and the QIC provided an environment to share successful strategies within and across services to improve care bundles for AMI and stroke.

Objective

Our aim was to improve reliability of pre-hospital care processes for myocardial infarction and stroke using a national Quality Improvement Collaborative (QIC): the Ambulance Services Cardiovascular Quality Initiative (ASCQI), the first national improvement project for prehospital care.

Methods

We analysed change over time using logistic regression with three predictor variables: time (measured in weeks), sex, and age, to measure the effect of the national QIC on delivery of pre-hospital care bundles for AMI (aspirin, glyceryl trinitrate, pain assessment and analgesia) and stroke (face-arm-speech-test, blood pressure, blood glucose). The coefficient for time and its standard error were then extracted from each fit and plotted using forest plots.

Results

There were statistically significant improvements in nine (of 12) participating trusts for the AMI care bundle (OR 2.06, 95% CI 1.88 to 2.07) and nine (of 12) for the stroke care bundle (OR 2.84, 95% CI 2.45 to 3.30). Eleven of 12 trusts showed a significant improvement in either the AMI or stroke care bundle, and seven (of 12) showed significant improvements for both AMI and stroke. Overall performance for the care bundle for AMI increased nationally in England from 43 to 79 percent and for stroke from 83 to 96 percent.

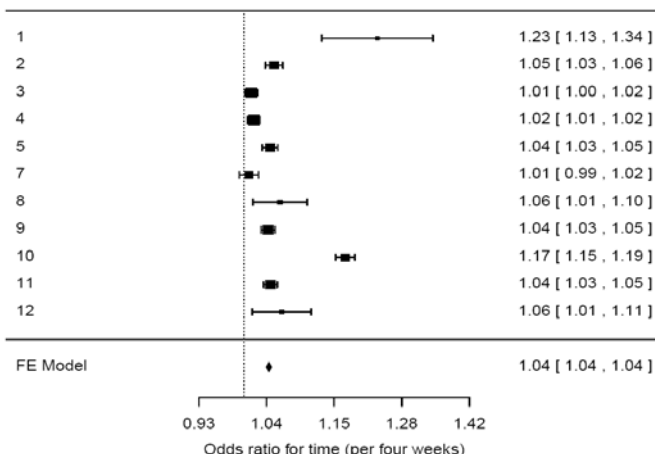
Limitations

Our analysis was limited by lack of a comparison group.

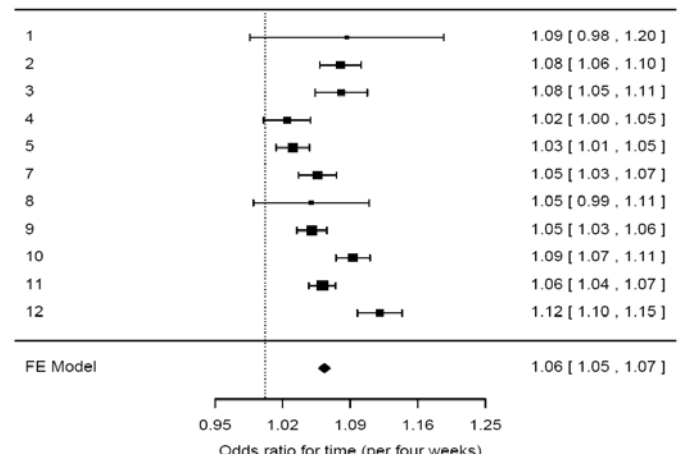
Conclusion and recommendations

Implementing care bundles as part of a national QIC led to significant improvements care for AMI and stroke provided by English ambulance services. We are using a multisite comparative case study to explain why and how the QIC changed care.

AMI Care Bundle



Stroke Care Bundle



1 GWAS 2 WMAS 3 SCAS 4 LAS 5 YAS 6 SEC 7 NEAS 8 EEAS 9 SWAS 10 NWS 11 EMAS 12 IOW

†Reference: