JOINING THE DOTS

Measuring the effects of a national quality improvement collaborative in ambulance services

The Health Foundation
Inspiring Improvement

Authors:
D Shaw[1] N Essam[1] K Wood[2]
A Spaight[1] F Togher[3] S Black[4]
G Virdi[5] AN Siriwardena[1, 3]

1. East Midlands Ambulance Service
2. Isle of Wight Ambulance Service
3. University of Lincoln
4. South Western Ambulance Service
5. London Ambulance Service

Context

We undertook a national collaborative to improve cardiovascular care for heart attack and stroke by frontline clinicians in 12 English Ambulance Services.

Problem

Cardiovascular disease is the commonest cause of death in the UK. Early, effective treatment reduces death rates, improves long-term outcomes and reduces future disability. Ambulance clinicians, working to national evidence-based guidelines for Acute Myocardial Infarction(AMI) and stroke, should deliver specific aspects of care but are unreliable at delivering whole bundles of care[1].

We measured care using national ambulance Clinical Performance Indicators (CPIs) including care bundles[2].

Care bundle for AMI	Care bundle for stroke
Administration of Aspirin	Recording of Face Arm Speech (FAS) test
Administration of GTN	Recording of blood glucose level
Administration of analgesia (morphine and/or Entonox)	Recording of blood pressure
Pain scores recorded pre and post treatment	

Our main aim was to produce a sustainable improvement in care bundle delivery nationally for AMI from 57.4% (range 33.3% – 80%) to 70% and for stroke from 85.2% (range 53.5% – 98.1%) to 90% within two years.

Intervention

Ambulance Services developed and shared learning through a national Quality Improvement (QI) Collaborative. QI Fellows were appointed in each service and formed QI teams. They used QI methods to identify barriers and facilitators, for example through process mapping to redesign care and testing new processes for delivering care bundles using plan-do-study-act cycles.

Strategy for change

We developed and trialled interventions locally though the Quality Improvement Collaborative. The effects of interventions were measured using annotated control charts. Successful interventions were shared through QI network and an online repository and spread more widely within and between trusts.

Measurement of improvement and effects of change

Statistical Process Control (SPC) methods were utilised to measure the effectiveness and sustainability of interventions.

Within 18 months of the project start we were able to demonstrate improvements in the care bundle for AMI (mean 66.9%) and Stroke (mean 92.0%) with significant improvements in some but not all trusts.

Lessons learnt

Barriers in service reconfiguration caused delays in starting collaboratives or trialling interventions; this highlighted the importance of ensuring corporate bodies clearly understood the scale and purpose of the collaboratives.

Data collection took longer than expected and resources for this were stretched, particularly in Trusts without electronic systems.

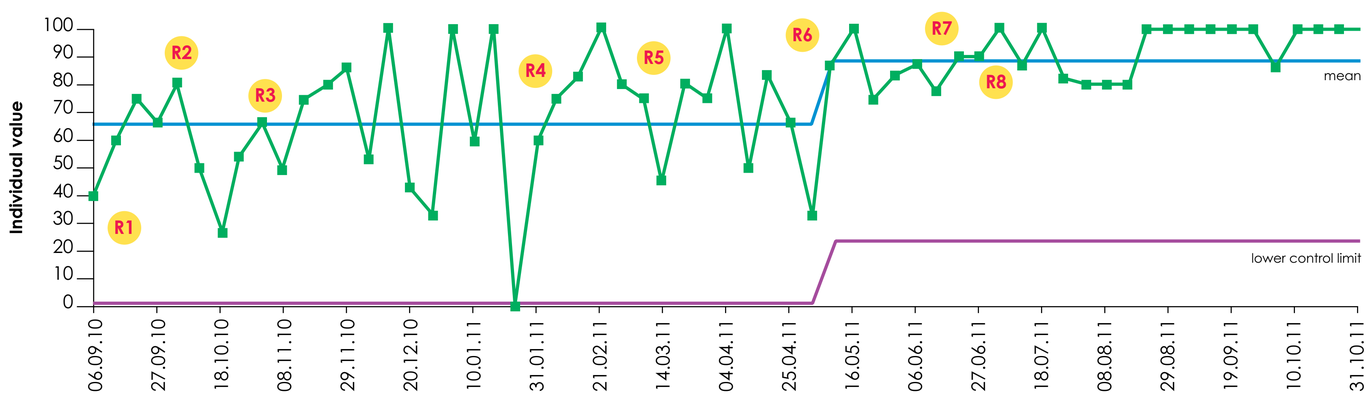
Large scale collaboratives require clarity about roles and expectations from the outset.

Annotated control charts proved invaluable in monitoring the effects of interventions and their sustainability.

Message for others

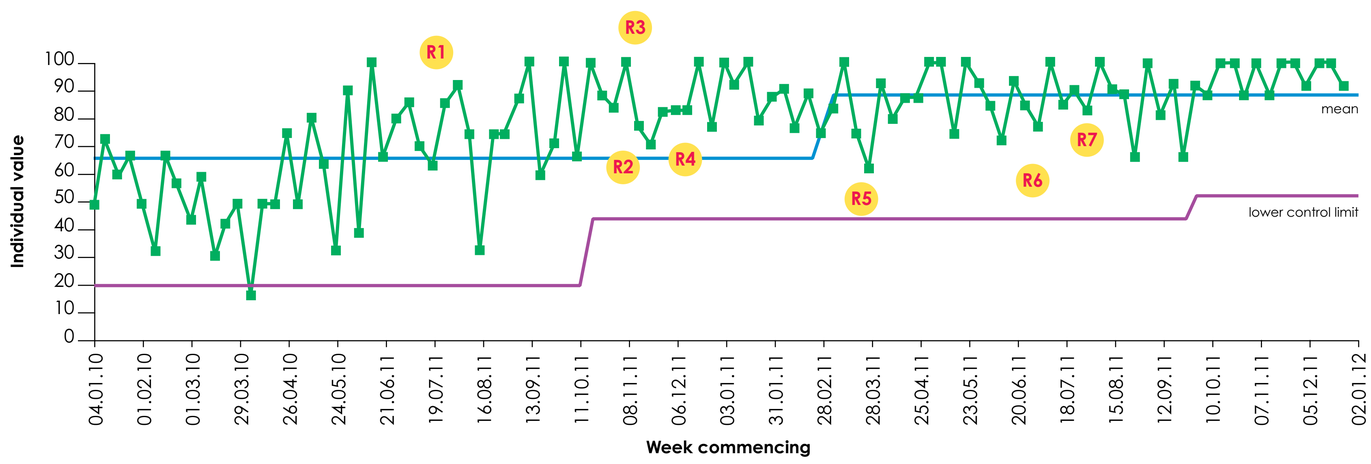
Annotated control charts were a powerful tool for determining whether and to what extent interventions led to improvements in care and helped spread successful interventions on a national scale.

Trust 1 – % received care bundle for AMI



Ref	Date	Annotation on chart
R1	Sept 10	Publicity campaign for ASCQI commences; Clinical Performance Indicators (CPIs) included in mandatory education programmes
R2	Oct 10	Quality Improvement Fellow appointed
R3	Nov 10	Regular meetings/ASCQI workshops start
R4	Feb 11	'CPI Friday' starts
R5	Mar 11	CPI non-compliance sector feedback
R6	May 11	CPI aide memoirs introduced
R7	23 June 11	STEMI workshops commence
R8	July 11	CTL PCR audit launching

Trust 12 – % received care bundle for stroke



Ref	Date	Annotation on chart
R1	July 10	Ongoing ASCQI publicity campaign commenced; collaborative recruitment starts
R2	26 Oct 10	Electronic PRFs introduced
R3	Nov 10	Educational interventions aimed at improving documentation commence
R4	29 Nov 10	Clinical support officers introduced
R5	Mar 11	Education and feedback around care bundles, stroke assessment and record completion introduced
R6	8 Jul 11	Implementation of new stroke guidelines: pre-alert to be given including Rosier, FAST, ETA and request for on call stroke team to meet crew at A&E
R7	1 Aug 11	CPI aide memoirs introduced

East Midlands Ambulance Service NHS Trust

NARSG National Ambulance Research Steering Group

University of Lincoln

1. Siriwardena AN, Shaw D, Donohoe R, Black S, Stephenson J. Development and pilot of clinical performance indicators for English ambulance services. *Emerg Med J* 2010; 27: 327-331.
2. Shaw D, Siriwardena AN, Report on National Ambulance Service Clinical Performance Indicators. 2010. Nottingham, East Midlands Ambulance Service.