Prehospital quality improvement: past, present and future

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Supporting improvement

Adapted from Siriwardena et al Emerg Med J 2010;27:324-326
National Ambulance Service Clinical Quality Group
Research priorities

Development of emergency medical services (EMS) performance measures other than response times for use in performance management, audit and research

Clinical performance indicators

- Cardiac arrest
- STEMI
- Stroke
- Asthma
- Diabetes
Measurement: data sanity

Balesracci D. Data sanity: a quantum leap to unprecedented results. MGMA 2009.
Improvement: systems

Gawande A. Reith lectures 2014 The future of medicine. Lecture 2 The century of the system.
Acute Myocardial Infarction

- M1 Aspirin
- M2 GTN
- M3 Two pain scores
- M4 Morphine given
- M5 Analgesia (morphine or Entonox) given
- Care bundle = M1+M2+M3+M5
Care bundles for AMI M1+M2+M5+M5

MC (Pilot) Care Bundle for STEMI (M1+M2+M3+M5)

Mean 42.51%
Ambulance Services Cardiovascular Quality Initiative (ASCQI)

- To improve delivery of AMI care bundle from baseline (43%) to at least 70% within 2 years
- To improve care delivery of stroke care bundle from baseline (83%) to > 90% within 2 years
- To increase diffusion of quality improvement (QI) methods to front line ambulance staff
Stroke

- S1 FAST assessment recorded
- S2 Blood glucose recorded
- S3 Blood pressure (SBP+DBP) recorded
- Care bundle = S1+S2+S3
How we made improvements?

- Focus groups & interviews (with practitioners and patients)
- Process mapping & critical-to-quality (CTQ)
- Plan-Do-Study-Act (PDSA) cycles
- Data collection, analysis and feedback using statistical process control (SPC)
UK Quality Outcomes Framework

Gillam S, Siriwardena AN (eds) The Quality and Outcomes Framework, Radcliffe, Oxford 2010
Small tests of change

% Rec'd Care Bundle for AMI

Special Cause Flag

Wk Commencing

Individual Value

ASCQI Collaborative recruitment
STEMI Workshop
STEMI Workshop
STEMI Aide memories
STEMI Clinical Feedback*
CPI e-Bulletin
CPI Checklist*

* Sent to CQM
# AMI care bundle

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Odds ratio for time (per four weeks)

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

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

- Significant improvements in 10 (of 12) participating trusts for the AMI care bundle and eight (of 12) for the stroke care bundle.
- Eleven of 12 trusts showed a significant improvement in either the AMI or stroke care bundle.
- Six out of twelve 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.
Current/future improvement studies

- Outcome measures: Turner, Coster, Nicholl, Snooks, O’Cathain, Campbell, Brazier, Togher
- Falls/technology: Snooks, Porter
- Stroke: Price
- Hypoglycaemia: Khunti
- Cardiac arrest: Perkins
Research leading to improvement

- Cardiac arrest: Chamberlain, Fothergill, Benger
- Stroke: Bath, Wilson, Quinn
- Myocardial infarction: Quinn
- Epilepsy: Dixon
- Falls: Snooks
- Experience measures: Togher
- ......
Lessons

- Know yourself – be good at accurately assessing against others
- Delay gratification – there’s no quick fix
- Don’t aim to be the best – aim to be the best at improving
- Avoid contingent rewards – provide resources for improvement, not pay for performance
Thanks

- CaHRU team: Viet-Hai Phung, Fiona Togher, Zahid Asghar
- EMAS Research Team: Anne Spaight, Debbie Shaw, Mohammad Iqbal, Rob Spaight, Stacey Knowles
- PhOEBE and VAN teams: Janette Turner, John Nichol, Alicia O’Cathain, Rachel O’Hara at ScHARR
- Swansea University Prof Helen Snooks
- Leicester University: Kamlesh Khunti
- Nottingham University: Philip Bath
- EMS999 Research Forum
Thank you for listening!