

Introducing ASCQI:
The 'Ambulance Service Cardiovascular Quality Initiative' Project.

How do **we** as **clinicians** improve care for Acute Myocardial Infarction (AMI) and Stroke patients?

The East of England Ambulance Service has joined 11 other ambulance services in a national project, ASCQI, which aims to improve the delivery of pre-hospital care for cardiovascular disease, focusing on AMI and Strokes. This project involves staff working on frontline vehicles, identifying good practice, areas for improvement and testing new ideas.

The project has identified 'care bundles' for each condition. These are a group of treatments that as a minimum each patient should receive.

AMI Care Bundle:

- Aspirin
- Glyceryl trinitrate
- Analgesia (Morphine and/or Entonox)
- Pain score recorded pre- and post- treatment

Stroke Care Bundle:

- Blood pressure recorded
- Blood glucose test
- Face-Arm-Speech-Test (FAST)

Whilst we are extremely good at providing some of these aspects of care, it is important that every patient receives the entire 'care bundle' for optimal treatment and this is documented (along with any valid exceptions) on patient care records.

The project aims to improve the delivery of AMI and Stroke 'care bundles' at both local and national levels.

Care Bundle Compliance Data				
	Acute Myocardial Infarction		Stroke	
	National	EEAST	National	EEAST
Nov. 2011	43%	62%	83%	88%
<i>April 2012 target</i>	≥ 90%	95%	≥ 90%	95%

Rationale for Care Bundles

It is established that delivery of complete care bundles improves patient outcome.

AMI Care Bundle:

Why do we give Aspirin (300mg)?

Aspirin acts to irreversibly inhibit the enzyme cyclo-oxygenase (COX) - 1 which is responsible for the conversion of arachidonic acid to prostaglandins and thromboxane A2. This results in the inhibition of platelet aggregation.



When taken daily by unstable angina patients, low dose aspirin can decrease incidence of AMI by up to 50%. A single 300mg dose will completely inhibit thromboxane A2 production, and therefore platelet aggregation, to reduce mortality and re-infarction rates in AMI patients.

Why do we administer Glyceryl trinitrate (GTN)?

GTN is metabolised to nitric oxide which causes relaxation of vascular smooth muscle cells. This results in blood vessel dilation and promotes blood flow to reduce cardiac pre- and after-load.



GTN is administered sublingually because it undergoes high first pass metabolism and must avoid the liver.

Why and which Analgesia?



The gold standard of analgesia for AMI is Morphine, however, Entonox may be used whilst cannulating and preparing Morphine or if cannulation fails.

Morphine is a strong opioid acting on the central nervous system via mu, kappa and delta receptors. It is an effective analgesic for most acute and chronic pain.



As it causes both depression and excitation of physiological functions, Morphine is used as an analgesic, anxiolytic, and vasodilator for AMI patients. By decreasing blood pressure and heart rate, Morphine also acts to reduce cardiac pre-load.

Regarding Entonox, in addition to its analgesic effects, it too has been shown to have benefits for the cardiovascular system – it has been shown to produce a fall in

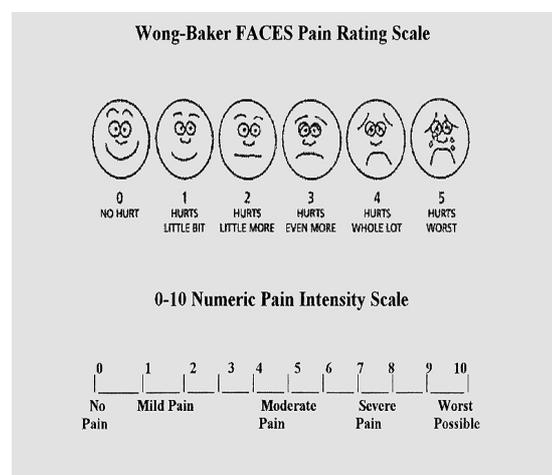
cardiac output and stroke volume, therefore, reducing the heart's demand for oxygen.

Why is Pain Scoring important?

There are various different methods of assessing pain – they range from verbal rating scores to visual analogue scales, for example, the Wong Baker Faces Scale.

Pre- and post- analgesia scores should be recorded on patient care records to determine the effectiveness and appropriateness of the treatment.

Whilst pain is subjective a patient should receive appropriate and adequate analgesia. Pain scores give an objective way of recording the severity of pain.



Stroke Care Bundle:

Why take a blood pressure measurement?

Systolic blood pressure is the best predictor of cardiovascular events: High blood pressure in acute ischaemic strokes is associated with increased dependency and mortality.



Recording blood pressure measurements provides the first picture of the physiological state of the patient.

Why take a blood glucose measurement?

As hypoglycaemia can present with stroke-like symptoms, for example, decreased GCS and hemiparesis, it is important to exclude this as the cause of presenting symptoms.

Normalisation of blood glucose within the first 48hrs of a stroke is associated with improved patient outcome.



Face-arm-speech-test (FAST)

FAST is an evidence-based and validated rapid stroke recognition tool for use in the pre-hospital setting.

It has a high sensitivity and is effective in detecting approx. 80% of acute strokes.

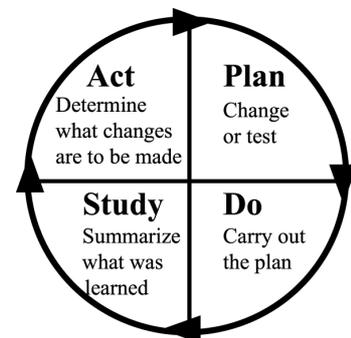
Swift transfer of stroke patients to hospital for further assessment and treatment are essential for improving stroke outcomes; this is recognised in the National Stroke Strategy.



How do we implement Quality Improvement (QI) techniques in the Ambulance Service?

Methods of improving clinical quality include use of the plan-study-act (PDSA) cycle.

Initially changes are implemented in a small area (for ASCQI this is 2 ambulance stations in Essex). Then, if found effective, these changes are implemented across a larger area, that is, the whole of EEAST.



Other QI techniques include the use of interviews and surveys, process maps and feedback using annotated statistical process control charts to understand the gaps in care, the barriers to improvement and how to address these.

For further information about ASCQI please contact:
Dave Francis, Quality Improvement Paramedic.
Tel: 07850 206262
E-mail: dave.francis@eastamb.nhs.uk