



**Primary Percutaneous Coronary Intervention for ST Elevation Myocardial Infarction
Position statement for Facilities and Emergency Medical Staffing July 2016**

MacCarthy PA, Blackman DJ, Hildick-Smith D, Banning AP

on behalf of the British Cardiovascular Intervention Society

Background

NHS England announced the creation of 23 Urgent and Emergency Care Networks in the Spring of 2016. As part of the NHS Planning Guidance, Commissioners and Providers are required to compose 'Sustainability and Transformation plans' to describe how patients will access emergency specialist services. Emergency care for STEMI heart attack and quality standards for 7 day services concerning Consultant input and access to diagnostics are prioritised.

Simultaneously the British Cardiovascular Society is preparing a report on Out of Hours Cardiovascular Care for Hospital In-patients. This document is a statement prepared by Officers of the British Cardiovascular Intervention Society (BCIS) to inform these discussions. It has been approved by BCIS Council on July 7th 2016.

Introduction

Considerable developments have occurred during the last ten years in provision of emergency Primary Percutaneous Coronary Intervention (PPCI) for treatment of patients with ST elevation myocardial infarction. 24/7 PPCI is nationally established with comprehensive coverage in most areas. However there are considerable variations in the way in which PPCI services are delivered. Workforce planning for a sustainable PPCI service is not uniform and there is variability in the frequency of medical on call, compensatory rest, remuneration, General Cardiology cover, CCU cover, and the need for cover in base hospital when covering the PPCI site.

For Doctors and Allied Health Professionals (AHPs), being on-call for PPCI is different to many forms of on-call. There is an expectation of the immediacy of the expected response and a difference in the intensity/acuity of the work. In some areas, current Consultant work patterns are not sustainable and consolidation of services to create new solutions will be necessary.

This document presents statements pertaining to UK sites providing PPCI. It recognises that an element of heterogeneity of service is required to suit varying geographical challenges. This will allow optimisation of access with shorter transfer times. However when planning emergency transfer strategies, Urgent and Emergency Care Networks should ensure direct ambulance

transfer of patients with suspected STEMI to a designated Interventional Centre(s) capable of delivering appropriate invasive investigation 24/7. This document aims to standardise crucial staffing elements of Network/Institutional provision of care allowing optimisation of emergency care for these critically ill patients.

1. Institutional Facilities for PPCI:

Key Recommendations

- **All PPCI centres should provide a STEMI service 24 hours a day, 7 days a week, year-round.**
- **All PPCI centres should have a minimum of two adjacent cardiac catheterisation laboratories.**
- **All PPCI centres should undertake a minimum of 150 PPCI cases per year unless there is extreme geographical isolation to justify a lower volume service.**
- **Services should be configured to achieve “call-to-balloon time” of <150 minutes in $\geq 75\%$ of patients (excluding cardiogenic shock and out-of-hospital arrest).**
- **Optimal performance of the in-hospital service can be measured by a “door-to-balloon” time < 60 minutes in $\geq 75\%$ of patients (excluding cardiogenic shock and out-of-hospital arrest).**

- 1.1 Centres should have a specified emergency telephone line for communication with the Ambulance and ECG telemetry facility. Ideally an immediately adjacent dedicated catheter lab entrance should be available for ambulances, which precludes the use of the main Accident and Emergency entrance.
- 1.2 Full resuscitation facilities including a defibrillator, intra-aortic balloon counter-pulsation and an anaesthetic machine should be readily available within the catheterisation laboratories undertaking PPCI. There should be access to non invasive positive pressure ventilation (CPAP) and external cardiac massage support (Lucas/Autopulse). Immediate availability of transvenous and external cardiac pacing is essential.
- 1.3 A Catheter lab “crash team” should include a senior Anaesthetist. This team should have sufficient flexibility in their duties to remain within the catheter lab and allow the revascularisation procedure to be completed.
- 1.4 For those PPCI sites without on-site cardiac or vascular surgery, written and annually reviewed joint protocols should be in place to allow *immediate* Ambulance transfer if required.

- 1.5 If PPCI centres are consistently performing <150 cases/year, annual review with Commissioners should consider whether local transfer times would support coalescing with adjacent sites and may improve patient outcomes.

2 Staffing Standards

2.1 Primary PCI rotas:

Key Recommendations

- **The maximum frequency of on-call rota for any individual should not be more frequent than 1:6**
- **A Consultant Interventional Cardiologists rota will include:-**
One half-day of compensatory rest for each full day of consecutive on-call in lower volume centres (<400 PPCI procedures per year)
One full day of compensatory rest for each full day of consecutive on-call in higher volume centres (≥400 PPCI procedures per year)

2.2 Primary PCI operators

Key Recommendations

- **All Interventional Cardiologists should participate in an agreed 24/7 PPCI rota**
 - **All Interventional Cardiologists should undertake a minimum of 20 PPCI procedures per year**
- 2.3 It is recognised that these patients are amongst the most challenging patients and that familiarity with team working is essential. The minimum staff for a PPCI case is a Consultant Interventional Cardiologist and at least 4 other individuals, including at least 3 AHPs of whom 2 should be able to administer IV drugs.
- 2.4 AHPs should have a period of supervision before being on-call and fulfil a competency-based training scheme within their hospital. A minimum of an Intermediate Life Support certificate, and ideally an Advanced Life Support certificate, should be held by all members of the Cath Lab team providing emergency care and all should be versed in emergencies within the Cath Lab.
- 2.5 All members of the Cath Lab team should be familiar with the local IRMER rules and guidelines for radiation protection.

- 2.6 Consultant participation in the PPCI rota should include mandatory compensatory rest that is commensurate with the intensity and duration of the on-call work and this should be fully recognised in individual job plans.
- 2.7 PPCI rotas should recognise the potential contributions of each Consultant operator – this should be determined locally and may not always necessitate overnight work.