Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

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Launch of the Acute Coronary Syndromes Programme: Briefing for NAS Staff

The National ACS Programme Optimal Reperfusion Strategy will go live in NAS West on October 1st. The following is a briefing document for all staff to explain this change and its impact on how prehospital emergency care is delivered to patients with Acute Coronary Syndromes (ACS).

How will this change the way NAS treat patients with ACS?
From October 1st, all patients with ST Elevation Myocardial Infarction (STEMI) should be considered for direct transfer to a Primary Percutaneous Coronary Intervention (PPCI) Centre. Any patient with confirmed STEMI on ECG and an appropriate clinical history, that is within a 90 minute transport time of a PPCI centre must be brought to a PPCI centre. All other ACS patients (eg unstable angina, non-ST elevation MI etc) should be brought to the nearest acute hospital in the usual manner.

What hospitals are PPCI centres?
University Hospital Galway will provide this service on a 24/7 basis. Mid-Western Regional Hospital Limerick will provide the service 0900-1700 Monday to Friday. It is hoped that the PPCI service in Limerick will extend these hours in the future.
(Other PPCI centres (Cork University Hospital, Waterford Regional Hospital, St Vincents University Hospital, St James Hospital and Mater Misericordiae University Hospital) will commence offering this service shortly.)

What NAS areas does this affect?
Anywhere within 90 minutes transport time **by land or air** of UHG (24/7) or MWRH Limerick (9-5 Mon-Fri). This includes all NAS West, and some parts of the former Midlands. Mid-West crews should transport patients to Galway outside of the MWRH Limerick PPCI centre opening hours if within 90 minutes transport time.

Does this mean we will be bypassing our local Emergency Departments?
Yes. If the patient has a STEMI, they will do better if they go directly to a primary PCI, even if this means bypassing a local ED. Outcomes for STEMI patients with PPCI are much better than from thrombolysis.

What is the procedure once a STEMI is identified?
Once a STEMI patient **is identified** and transport to PPCI centre **is less than 90 minutes,** the crew should immediately initiate transport to the PPCI centre.
While en route, the attending Paramedic /Advanced Paramedic should contact the cardiology physician on-call (Specialist Registrar or Consultant) on a direct freephone

Medical Directorate, National Ambulance Service, Health Service Executive, Regional Ambulance Communications Centre, Dooradoyle, Limerick.
T: 061-482461 F: 061-482588

number. This number diverts to a mobile phone carried by the cardiology physician, allowing the clinician caring for the patient (paramedic/AP) to communicate directly with the clinician who will manage the patient on arrival at hospital. **This phone call is to advise of the patients arrival and ETA. It is not requesting permission to bring the patient to the PPCI centre. All the PPCI centres will operate a no refusal policy.**
The phone number is

- 1800 74 2222.

This will connect you to a menu system through which you select the hospital you are transporting to. The number will connect you to a mobile phone carried by the receiving on call cardiologist. The number is a freephone number and can be dialled from your phone at no cost to you.

What if I cannot get through on this number?
You should continue to transport the patient to the PPCI Centre. Request Ambulance Control to attempt to make contact on your behalf.

What should I advise ambulance control?
Once a STEMI is identified, immediately initiate transport and then advise Control that the patient is a "Code STEMI". Control will tag the call as a Code STEMI.

Should I request an AP?
If there is no AP on the call, there may be merit in requesting AP assistance. However, ALS will not be required in many STEMIs. The decision to request an AP should be made on a case by case basis. **The overriding principle is that transport to the PPCI centre should not be delayed awaiting arrival of an AP.** It may be possible to rendezvous with an AP en route.

When does the clock start?
The 90 minutes begins when the 12 lead ECG is acquired and a STEMI is recognised, not at onset of chest pain which may have been ongoing prior to the ECG. Effectively this means that when the crew arrive on scene and make a diagnosis of STEMI, the crew should initiate Code STEMI procedures if a PPCI centre is within 90 minutes transport time by land or air.

How should I treat the patient while en route?
Treat the patient as per CPGs.

What about clopidogrel?
Advanced paramedics should administer clopidogrel as per CPG. If clopidogrel is indicated, and there is no AP on the call, the cardiology physician will direct the paramedic to administer clopidogrel. The ACS CPG is in the process of being updated by PHECC. In the interim the Medical Directorate will issue a Clinical Directive allowing paramedics to administer clopidogrel under direct instruction of a cardiology physician.

When I arrive, where does the patient go to?
Most of the patients will bypass the Emergency Department and go direct to the Cath Lab for immediate PCI. Some patients may be assessed on arrival in the ED by cardiology staff. The cardiology physician will advise where he/she will meet the crew during the phone call made whilst en route.

How long will I be at the PPCI centre?
NAS and the ACS programme have agreed that all crews will be turned around within 20 minutes of arrival, to allow the crew return to it's operational area. **If you are delayed beyond 20 minutes you should contact Ambulance Control.**

Will I have to wait to bring the patient back to a hospital in my operational area?
No. If the patient requires repatriation this will be dealt with by Control as a separate journey. Once you have handed your patient over at the PPCI centre you should immediately return to your operational area.

Do I need to transmit an ECG to the PPCI centre?
If ECG transmission infrastructure already exists (eg Galway/Mayo/Roscommon), you should transmit an ECG if the cardiology physician requests it during the telephone conversation. If ECG transmission capability is not available to you (eg Clare/Limerick), the PPCI centre will still accept the patient.

Will I get in trouble if I bring a patient to PPCI centre and it turns out the patient does not have a STEMI?
No. International experience is that STEMI-direct-to-PPCI-centre programmes have a 15-20% false positive rate (ie 15-20% of patients turn out not to be suitable for the cath lab). Whilst we will aim to get it right every time, we anticipate a minority of patients transported directly to PPCI centres will not require immediate PCI.

What if I identify a STEMI patient but my transport time is greater than 90 minutes?
First, consider Emergency Aeromedical Service support. The EAS helicopter will get many of these patients to a PPCI centre very rapidly, and well within the 90 minute window. Contact your Regional Control Centre and request EAS.
If EAS is not available (eg after dark), the patient should be transported to the nearest ED for consideration for thrombolysis. Prehospital thrombolysis (PHT) may be available, either by PHT trained AP (Mid-West), or GP (eg Donegal GP thrombolysis scheme).

What should I do if the patient deteriorates en route?
If the patient suffers a cardiac arrest, the patient should be resuscitated in the usual manner and the ambulance should divert to the nearest ED (this may be the ED in the PPCI centre). If other complications develop (eg hypotension, pulmonary oedema, tachy- or brady-arryhthmias), the crew should continue to transport to the PPCI centre. The sicker the patient, the greater the long term survival with primary PCI as compared to thrombolysis.

Why are we doing this?
STEMI patients that receive PPCI live longer than those that receive thrombolysis. One recent study showed a mortality rate for STEMI patients treated with PPCI of 5.3% versus 7.9% in those patients thrombolysed-in other words almost one third more patients survived if treated with PPCI[1]. There are many other studies-all show significant advantages for patients if treated with PPCI rather than thrombolysis.

[1] High-risk patients with ST-elevation myocardial infarction derive greatest absolute benefit from primarypercutaneous coronary intervention: results from the Primary Coronary Angioplasty Trialist versus thrombolysis (PCAT)-2 collaboration. *De Boer et al. American Heart Journal* **March 2011. 161(3):500-507.e1**

The European Society of Cardiology recommend "*The pre-hospital management of STEMI patients must be based on regional networks designed to deliver reperfusion therapy expeditiously and effectively, with efforts made to make primary PCI available to as many patients as possible".* ESC STEMI Guidelines 2012.

NAS staff have a critical role in getting as many patients as possible with STEMI to PPCI centres, in line with European guidelines, ultimately benefiting the patient by increasing the survival rate from STEMI.

Dr Cathal O'Donnell
Medical Director
National Ambulance Service.

Prof Kieran Daly
National Clinical Lead
Acute Coronary Syndromes Programme.

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NAS STEMI Access Protocol - Summary

1. CODE STEMI Patient in the Field:

- STEMI present
- symptom onset of any duration
- estimated transport time to PPCI centre <90 minutes
- **Proceed directly to PPCI centre**

Once decision made to initiate transport to PPCI centre

- Inform Ambulance Control of **CODE STEMI** status
- Contact receiving PPCI centre via direct phone line of **CODE STEMI** status, with appropriate patient clinical history. This call is to alert receiving Centre and will not result in crew being diverted to another facility
- Request AP if not on the call already
- If requested by PPCI Centre and technically possible, transmit 12 lead ECG. Failure of transmission will not result in crew being diverted to another facility.
- PPCI centre will advise crew to transport patient to either:
    - Cardiac Catheterisation Laboratory (Cath Lab), or;
    - Emergency Department
- Handover of patient to receiving Cardiology Team at PPCI centre should be completed within 20 minutes of arrival - crew should then immediately return to operational area.
- If handover exceeds 20 minutes crew should notify Ambulance Control whom will then contact PPCI Centre to request crew release.

2. CODE STEMI patient in ED of non-PPCI hospital

- Ambulance Control to allocate Dispatch Code 33-C-04 and allocate nearest available emergency ambulance
- In most cases, ED will not be providing medical or nursing escort

Refer to NAS SOP *Appropriate Hospital Access for STEMI Patients NASCG017* for further information.

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