



## **An Evaluation of the Nurse Led Mobile Coronary Care Service at the Tyrone County Hospital and the Erne Hospital - Summary Report**

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**HSC** Western Health  
and Social Care Trust



An Evaluation of the Nurse-Led Mobile  
Coronary Care Service based at the  
Tyrone County Hospital and the Erne Hospital

Research Report  
June 2007

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## **Introduction**

The Institute of Nursing Research at the University of Ulster was commissioned by the Western Health and Social Services Board to undertake an evaluation of the nurse-led mobile coronary care service at the Tyrone County and Erne Hospitals. The study was undertaken from June to December 2005.

## **Background**

There have been considerable developments in nursing over the last number of years these have included nurses taking on aspects of care which were previously the remit of other professionals. The mobile coronary care unit (MCCU) service has been operational from the Tyrone County and Erne Hospitals for many years. However a combination of the pressures on medical working practices and funding and the highly experienced and qualified nurses working on the coronary care unit resulted in the out of hours MCCU service becoming nurse-led.

Thrombolysis involves the intravenous administration of drugs that dissolve the clot formation in the coronary artery, which causes myocardial infarction and thus allows the reperfusion of the affected area of cardiac muscle. This treatment is most effective when it is administered at the earliest opportunity and hence 'call to needle' times are of sixty minutes or less is recommended, which is that the patient receives thrombolysis within sixty minutes of calling for professional help. However it has considerable potential side effects and risk factors. The provision of thrombolytic therapy forms a fundamental part of

the treatment and care provided by the MCCU, which covers a large rural geographical area.

### **Aim of the Study**

The aim of this project was to evaluate the nurse-led mobile coronary care service in Sperrin Lakeland Health and Social Services Trust, and to identify and make recommendations for its improvement.

### **Objectives of the Study**

1. To undertake research interviews with a range of key professionals and members of the public regarding the service;
2. To identify opportunities for improvements to the service;
3. To identify implications for policy and practice;
4. To compare results with the findings of studies carried out on other mobile services including paramedic services;
5. To make recommendations for further development of the service;
6. To compile a research report for presentation to Sperrin Lakeland Health and Social Services Trust, the Western Health and Social Services Board and other key stakeholders.

## **Methodology**

Quantitative data relating to the nurse-led MCCU services are collected on a routine basis by those working in the nurse-led service in both hospitals were analysed. This data relates to the time period August 2003 to August 2005.

To enhance the quantitative data and to address the research aims, a total of 37 research qualitative interviews were undertaken. These focused on three main categories;

- Ten members of the public attended by the service;
- Twenty-seven key professionals;
- Seven local public servants.

## **Summary of Key Quantitative Findings**

- The nurse-led MCCU service represents a considerable proportion of the total MCCU calls with 69% (n=145) of the calls being nurse-led between 2003-2005.
- The proportion of patients attended by the MCCU and considered appropriate for thrombolysis over the two-year period was 7% (n=29).
- During this period the nurses travelled to the patients via ambulance in 91% (n=260) and via taxi in 9% (n=25) of calls.
- The total call to needle times for all the patients who had received thrombolysis was under 60 minutes.



## **Summary of Key Qualitative Findings**

- The nurses working in the nurse-led MCCU are considered to be appropriate providers of this service;
- The nurses occupy a dual role working as senior nurses in the coronary care unit and in the nurse-led service;
- The nurses are very experienced and have high levels of skills and training; this is supplemented by working within well developed evidence based protocols;
- The nurse-led service developed in response to changes in medical working practice and as a driver for service development this is an area of concern to some participants – particularly elected representatives;
- The public response to the nurse-led service has been very positive, though a number of the patients were unaware of the service's existence prior to being treated by the nurses;
- The relationship between the nurses and other professionals has been well established and teamwork between is valued and effective;
- Issues remain about the means by which the nurses travel to the patients, the use of taxis by the service was an area of concern for many participants;
- The development of the nurse-led service has raised the profile of the individual nurses and raised the profile of the service and nursing in general locally, nationally and internationally.

## **Discussion**

Thrombolysis is most effective at preserving optimal cardiac muscle function when it is given as soon as is safely possible following the onset of the symptoms and determination of the correct diagnosis. Previous studies have identified that many patients are excluded from potential treatment due to excessive delay (Dracup et al., 2003). However, thrombolytic therapy has a number of potentially serious side effects. Therefore, there has been considerable discussion as to how best to ensure that patients are given thrombolysis in as short as possible time frame but also in a way that ensures patient safety. These considerations are particularly relevant for the more rural geographical areas where the time taken for a patient to reach a hospital may be a factor.

The impact of nurse-led or nurse-initiated thrombolysis within the hospital setting has been investigated previously (Jones, 2005; Qasim et al., 2005; Smallwood, 2004). However, pre-hospital care throughout the UK is generally provided by the ambulance service or by GPs; within Northern Ireland the MCCU is predominantly medically-led. Therefore, this study was designed to evaluate a unique nurse-led mobile coronary care service in rural Sperrin Lakeland Trust. This service operates between 5pm and 9am weekdays and 24-hours over weekends and public holidays and provides a lead and associate nurse who can attend and treat patients with cardiac active drugs and initiate thrombolysis.

Following detailed semi-structured interviews with relevant professionals, patients and local public servants a number of issues arose which are appropriate for further discussion and recommendations.

## **Recommendations**

- Further consideration should be given to the means of transporting the nurse-led mobile coronary care service to the patients.
- Data should be collected on the time taken from the initial call to either the GP or NIAS to the time of thrombolysis to ascertain the accurate total 'call to needle time' for MCCU thrombolysis.
- Communication about the service should be enhanced among NIAS, GPs and the MCCU team.
- Few of the patients interviewed were aware of the service before being treated. Therefore, greater publicity for the service should be available for the local population;
- The issue of self referral should be considered for some patients;
- Guidance may need to be provided for those (GPs, NIAS) who are calling the service out to ensure that it is used optimally.
- Consideration should be given to means of utilising the skills and knowledge of the nurses for teaching of junior medical staff and nurses.
- There should be succession planning so that new nurses are involved in providing the service.
- There needs to be further debate about the provision of pre hospital coronary care possible development of paramedic or GP initiated thrombolysis.

- The possibility of NIAS staff taking on this role in the future should be explored, especially where the geographical location of the patient would entail long delays in the arrival of the MCCU. This could reduce greatly door to needle and call to needle times, thus reducing mortality and morbidity. The need to wait for another 30 minutes for MCCU nurses to arrive could have implications for such patients
- Some respondents commented that the MCCU is suspended when the hospital has no acute beds. With a total of 289 calls over the two years, the service is undoubtedly being used. Therefore, for a rural community in need of coronary care this issue of suspension has to be resolved.
- Consideration should be given to renaming the service 'Nurse initiated' as opposed to 'Nurse led'
- All nurses involved in the service should participate in regular training programmes.
- The MCCU protocols must be updated on a regular basis or when new evidence becomes available.
- Local GPs who are currently not using the service should be informed of the benefits for their patients.

## **Conclusions**

This study evaluated a nurse-led mobile coronary care service from the perspective of the relevant professionals, patients and public servants. Overwhelmingly, the nurses providing the service were commended for their professionalism, experience, knowledge and skills. However, there were a number of issues that merit consideration and review. These include: monitoring the 'call to needle times', the mode of transportation to the call scene, whether NIAS personnel should offer the service, the GP referral process, protocol updating and the suspension of the service when no beds are available.

Questions are also raised about the relatively small number of calls for which thrombolysis is administered, However, it must also be noted that this is not the sole treatment provided by the nurse-led service. The personnel involved and the Trust and the Board should be proud of a service that has such cross community and cross professional support. Nonetheless, further discussion around the issues raised is recommended to ensure the best possible MCCU service is offered to the local population.

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