

NHS Wales Enhanced Care Service

To support Reconfiguration of Services
& Centralisation of Trauma Care in Wales

INITIAL PROPOSAL

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September 2012

Summary & Recommendations

This document outlines how an Enhanced Care Service would operate in Wales. It is an initial proposal, with a detailed business case to follow.

The NHS Wales Enhanced Care Service will provide life saving critical care interventions and safe transfer of the right patient to the right place at the right time. It will be of primary benefit to patients.

It will support reconfiguration of services and centralisation of trauma care, whilst ensuring patient safety and outcome is improved. Without Enhanced Care these processes will be compromised.

This will be a physician led, physician delivered service providing on-scene and in-transit critical care to the population of Wales. Doctor led services can reduce mortality in major trauma by a third, as they have ability to perform advanced skills and complex decision making.

The NCEPOD and NHS clinical advisory committee on trauma networks support the development of Enhanced Care Services.

Significant cost savings will be made for the Ambulance Service, Emergency Departments and Critical Care Units in Wales.

Enhanced Care will reduce secondary transfers and will provide MERIT capability.

Provision of Enhanced Care will help attract consultants and trainees into currently resource depleted specialties in Wales.

6 Enhanced Care Teams will operate 24/7 across Wales. Each team will consist of pre-hospital trained critical care doctors and skilled assistants, supported by a comprehensive clinical governance framework.

There will be a command & control centre providing accurate tasking and dispatch of teams.

Real cases where Enhanced Care saved lives...

(Patient names changed for anonymity)

CASE ONE

Mathew Richards was involved in a near fatal road traffic accident in 2012. His journey from the roadside to recovery demonstrates the necessity for timely, focussed, high-quality care of highly complex patients. In the early hours of one morning, Mathew Richards was involved in a collision between his car and a heavy goods vehicle. Mathew had injuries to his head, chest, pelvis and lower limbs. He was unconscious and his windpipe became blocked. On scene information passed to a special operations desk at ambulance control allowed timely mobilisation of an enhanced care team, to support the ambulance crews already *en route*.

On arrival the enhanced care team, consisting of a pre-hospital trained doctor and skilled assistant, administered immediate critical care interventions to save Mathew's life. Mathew was given powerful drugs to allow a breathing tube to be placed in his windpipe, followed by a hole in his chest to relieve a punctured lung. Instead of being taken to the nearest hospital, the doctor escorted Mathew directly to the regional trauma centre where he could benefit from specialist service not available in a district general hospital. This prevented unnecessary and potentially fatal delays in Mathew receiving specialised surgical care. Mathew has made a full recovery and is planning to return to work soon. Had Mathew not received this level of advanced medical care he would have died at the roadside.

CASE TWO

In 2011 the enhanced care team went to help Jayne Harris when she developed septicaemia following a total hip replacement in a district general hospital (with no overnight critical care cover). A nurse practitioner noticed that Jayne had become very drowsy and her blood pressure and oxygen levels were very low. Whilst the team were *en route*, an enhanced care consultant talked the nurse through key life saving interventions via a telemedicine link, to optimise Jayne's condition.

The enhanced care team placed a tube in Jayne's windpipe to help improve her oxygen levels and commenced strong medication to improve her blood pressure. She was then transferred to an Intensive Care Unit and following 7 days on a ventilator has made a full recovery. Had the enhanced care team not been involved, Jayne may not have survived.

What is Enhanced Care?

Provision of life saving critical care interventions.

Safe transfer of the right patient to the right place at the right time.

Enhanced care provides on-scene and in-transit care for critically ill and injured adults and children to a level not previously available outside hospital in the UK. This includes the movement of patients from pre-hospital scenes directly to appropriate hospitals and the rapid movement of patients from the emergency departments (ED's) of Welsh district general hospitals to the major centres (inc. trauma centres) when required.

Why Enhanced Care is urgently required in Wales

To support reconfiguration of services and centralisation of trauma care, whilst ensuring patient safety and outcome is improved.

The reconfiguration of acute hospital services has already started and discussions are underway to develop a trauma network in Wales. The delivery of critical care in district general hospitals will become limited. Critically ill patients will be transferred over longer distances than ever before, requiring stabilisation prior to transfer to major centres. Careful pre-hospital decision making will be needed to ensure major centres are not overwhelmed. Through the utility of enhanced care, the reconfiguration of services and development of a trauma network can proceed successfully; whilst ensuring patient safety and outcome is not compromised. Enhanced care will help eradicate the inequalities in access to definitive care that currently exist across Wales.

What will the Enhanced Care Service do?

A physician led, physician delivered service providing on-scene and in-transit critical care to the population of Wales.

Enhanced care teams will have 3 major roles:

- Respond to both traumatic and medical emergencies at the scene. Provide critical care by intercepting patients *en route* to major centres and retrieve patients from peripheral ED's.
- Stabilisation and retrieval of critically ill inpatients from district general hospitals (with no critical care resources) to major centres.
- Provide a coordinated and predictable response to major incidents and mass casualty events (MERIT capability).

Due the requirement of advanced skills and complex decision making, the enhanced care service must be physician led and physician delivered. It will require doctors trained and experienced in pre-hospital hospital critical care. This will ensure that the highest possible standard of care is delivered to critically ill or injured patients in Wales.

Is there a national case for change?

In 2007 a National Confidential Enquiry into Patient Outcome and Death (NCEPOD) stated that:¹

'The current structure of pre-hospital management is insufficient to meet the needs of the severely injured patient.'

'Patients with severe head injury require early definitive airway control and rapid delivery to a centre with onsite neurosurgical service. This implies regional planning of trauma services, including pre-hospital physician involvement, and reconfiguration of services.'

NCEPOD have repeatedly demonstrated a failure in the quality of care for adults and children with life threatening medical or traumatic illness outside of hospital.^{1,2} Deficits in pre-hospital care results in significant downstream issues for receiving hospitals; increasing ED and critical care workload and critical care bed days.³ NCEPOD also documented that 18% of severely head injured patients arrived in hospital with a blocked windpipe and 42% arrived in hospital with inadequate oxygen levels.¹ Patients receiving this standard of pre-hospital care had twice the chance of dying compared to patients receiving higher standard care.

In 2010 a NHS clinical advisory group was formed and a report was published supporting the development of regional major trauma networks.⁴ It recommended that:

'Enhanced care teams should be available 24/7 to provide care to the major trauma patients.'

This recommendation was based on international evidence of a 2 to 3 times increased survival advantage for severely injured patients treated by physician based pre-hospital critical care teams operating within an organised system of care.⁵⁻¹³

Furthermore an improvement in Welsh trauma death rates as a result of an enhanced care service can be calculated using national data:

With a population of 4 million people in Wales; a reduction in one third of trauma deaths from enhanced care would be expected to produce 128 additional survivors from major trauma per year.

What is the evidence for an Enhanced Care Service?

Over the last few years, several NHS authorities have commissioned the development of enhanced care services, including Scotland, West Midlands and Wessex. The population of Wessex is 2 million, with a mix of rural and urban areas similar to Wales. In 2010 the charity BASICS Hampshire ran a 3-month trial to assess the effect of formal enhanced care provision. They ran 2 weekend car shifts with a critical care doctor and paramedic or nurse. The results are summarised below:³

- 441 requests made by the ambulance service for an enhanced care response in 3 months.
- 123 responses were made by the enhanced care team.
- One third of patients seen by the enhanced care team were not conveyed to hospital. A projected saving of £123,000 per year to the ambulance service and £58,000 per year to ED's.
- Based on requests a total projection of 1232 critically ill or injured patients per year could benefit from enhanced care.
- The mean time to definitive airway management was reduced by 75%, with no patients delivered to the ED with an unprotected airway or oxygen levels <95%.
- 38% of critically ill or injured patients treated by the enhanced care team were taken to definitive care, none required secondary transfer afterwards.
- Reduction in intensive care bed days. A saving of 2 days providing an annual saving of £3.2m within Hampshire alone.

There is evidence that an enhanced care service will benefit patients requiring inter-hospital transfer. The NHS clinical advisory groups report for regional trauma networks states that:⁴

'Trauma patients who are being transferred from a trauma unit to a major trauma centre in the early stages of treatment may be unstable and the same skill set should be available on the transfer team as the Enhanced Care Team who attend an incident.'

Mortality in the specialist transport team treated group is 1.5 to 2 times lower than in the ad-hoc arrangement group for adults and children.^{14,15}

Within Wales the time to transfer patients with life threatening head injuries requiring neurosurgery is mainly attributed to delays in organising inter-hospital transfer. Enhanced care teams could carry out emergency transfers of patients from Welsh ED's to Cardiff. This model of care has been successful for 20 years in New South Wales, Australia where there is a highly developed emergency response system for the treatment and transport of seriously ill and injured patients integrating pre-hospital and inter-hospital care.¹⁶ This would also prevent regular out of hour's depletion of key district general clinicians and would be expected to

reduce patient mortality.

In 2012 the Department of Health published a guidance outlining the need for Major Emergency Response Incident Teams (MERIT) to respond to major incidents or mass casualty events.¹⁷ MERIT would consist of one or more experienced doctors supported by other clinicians, providing advanced airway procedures, surgical interventions and clinical decision making over and above current levels of the ambulance service. A national survey of MERIT availability showed Wales to have no 24/7 critical care capable MERIT, demonstrating that Wales will struggle to deploy critical care support to major incidents.¹⁸

Therefore the Enhanced Care Service would provide a solution to MERIT requirements in Wales, as has been adopted in several strategic health authorities in the UK.

Collaboration with the Welsh Ambulance Service NHS Trust (WAST) will be key

Although the Enhanced Care Service will be a separate organisation to WAST, successful management of patients will require a collaborative effort. The main benefits to WAST will be:

- **Reduced secondary and inter-ICU transfers, releasing more ambulances to respond to 999 calls and meet more response times. Cost savings as highlighted above.**
- **Increased discharge at scene with fewer patients conveyed to hospital and releasing more ambulances. Assisting crews with decisions outside standard paramedic practice (e.g. cardiac arrest management).**
- **Allow WAST to concentrate efforts on developing advanced practitioner roles and admission avoidance strategies.**
- **Education of WAST crews at scene when working alongside WAST on patient management.**

How will the Enhanced Care Service be delivered?

The Enhanced Care Service will not recognise boundaries and will operate across the 7 Health Boards of Wales. The service will be delivered as follows:

1. NHS funded service, physician led and physician delivered.
2. It is envisaged that there will be 6 teams across Wales working 24/7. One unit around Cardiff/Newport, one between Swansea/Carmarthen and one in Bangor. 3 further units would be strategically located across Wales.
3. The enhanced care model will rely predominantly on road vehicles; specialised 4WD ambulances in order to provide resilience in adverse weather.
4. It is accepted that a helicopter response can be rapid, but is often unreliable due to various factors (weather, cost, maintenance, pilot discretion). The use

of night Helicopter Emergency Medical Services (HEMS) is not widely practiced in the UK due to the density of built up areas. A helicopter response cannot be relied upon as the only mode of transport of enhanced care teams. That said collaboration and use of air ambulances in Wales will be necessary to provide wider availability of this service.

5. Clinical care will be provided doctors (consultants or senior registrars) sourced from Emergency Medicine, Anaesthetics and Critical Care already equipped with a full repertoire of critical care skills, but with the ability to apply these in pre-hospital and in unfamiliar environments.
6. Doctors working for the service would have to be appropriately job planned.
7. Assistance will be provided by paramedics, ICU nurses, ED nurses and ODP's with extended skills in assisting with procedures. This approach will ensure maximum safety for patients.
8. There is a requirement for a national command and control centre to ensure the correct resource is sent to the correct incident. It is recognised that accurate tasking and dispatch requires medical involvement, as has been demonstrated by London HEMS.¹⁹ This centre will screen 999 emergency calls and will be manned by paramedics working for the Enhanced Care Service supported by a 'top cover' consultant. This centre will also become the control hub for any major incidents in Wales.
9. A "top cover" consultant will be available 24/7 to:
 - Provide support to the command and control centre for additional help and advice.
 - Liaise with peripheral units on management of patients prior to arrival of enhanced care team via a telemedicine link.
 - Support enhanced care teams in clinical decision making, authorise certain procedures (e.g. airway management) and provide advice on patient disposition.

The proposed structure of the Enhanced Care Service is shown on page 9. Details of individual roles and responsibilities will be provided in the business case.

How will training be provided?

Doctors will be carefully selected and it is expected that they will already have extensive critical care skills and knowledge. An accelerated training programme will allow doctors to apply these skills in pre-hospital and unfamiliar environments. This will be followed by a period of direct mentoring and "sign off." The Enhanced Care Service will also fully support the development of Pre-Hospital Emergency Medicine (PHEM) as a sub-specialty in Wales. Skilled assistants will go through an internal programme to develop their competencies followed by training in dispatch, 'blue light' response and operational activity. Details of training will be provided in the business case. Training will also open up avenues for pre-hospital research in Wales.

Clinical Governance

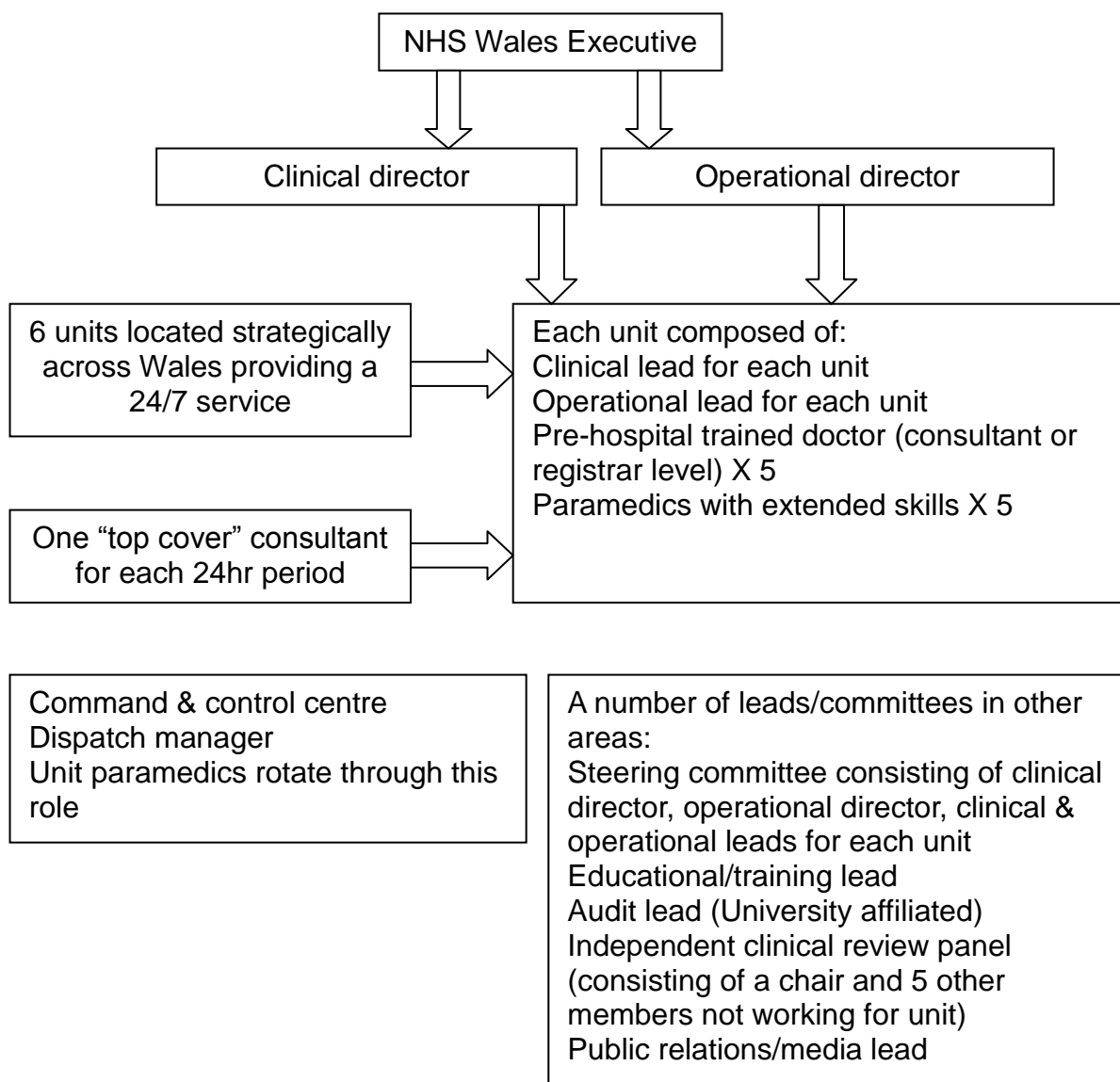
The clinical governance framework will include provision of "top cover" consultants as described above, implementation of standard operating procedures (with robust

audit standards) and development of a steering committee and independent clinical review panel.

Funding

Funding will become available from savings from reconfiguration coupled with the savings described above and funding available through provision of MERIT. A detailed outline of this will be provided in the business case.

What will the structure of the Enhanced Care Service look like?



Summary

The provision of an NHS Wales Enhanced Service, which is physician led and physician delivered will be essential to support reconfiguration of services and the centralisation of trauma care. It will primarily improve patient care and save lives across Wales.

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