

# EMRTS Cymru

Emergency Medical Retrieval & Transfer Service



## EMRTS Cymru Overview

(Published 07/04/16)



ELUSEN AMBIWLANS AWYR CYMRU  
WALES AIR AMBULANCE CHARITY



GIG  
CYMRU  
NHS  
WALES



Ariennir gan  
Lywodraeth Cymru  
Funded by  
Welsh Government

# EMRTS Cymru

Emergency Medical Retrieval & Transfer Service

## Who are we?

The Emergency Medical Retrieval and Transfer Service (EMRTS Cymru) is an exciting new service that provides consultant-delivered pre-hospital critical care across Wales. It was launched in April 2015 and is a partnership between the Wales Air Ambulance Charity, NHS Wales and the Welsh Government.

## What do we do?

Services offered include:

- Pre-hospital critical care for all age groups (i.e. any intervention/decision that is carried outside standard paramedic practice).
- Undertaking time-critical, life or limb-threatening adult and paediatric transfers from peripheral centres (inc. Emergency Departments, Medical Assessment Units, Minor Injury Units) requiring specialist intervention at the receiving hospital.

In addition, we provide an enhancement of neonatal and maternal pre-hospital critical care (both for home deliveries and deliveries in free-standing midwifery-led units. This includes:

- transferring neonatal teams to distant time-critical cases by air.
- Supporting midwife units and home deliveries by stabilising neonates and women with life-threatening problems and transferring them to a consultant-led delivery unit.

Finally, the service provides a multitude of roles at major incident or mass-casualty events and, for the first time in Wales, a strategic medical advisor (Top Cover Consultant) is available 24/7.



## Contents

Who are we?	1
What do we do?	1
Our Aims	2
EMRTS Cymru Summary (24/04/15 – 31/10/15)	3
Service Innovations	6
Case Studies	7



## Our Aims

- To give the people of Wales equity of access to pre-hospital emergency treatment and specialist care.
- To improve a patient's chances of survival and long-term recovery through early pre-hospital intervention.
- To benefit hospitals by ensuring patients are taken directly to the appropriate specialist care centre, avoiding costly secondary transfers.
- To assist consultant and critical care practitioner recruitment into Wales.
- To increase healthcare practitioners' medical knowledge and experience through interaction with the Service and the educational opportunities it will bring.

### EMRTS Mission Statement

***“To provide advanced decision-making and critical care for life or limb-threatening emergencies that require transfer for time-critical specialist treatment at an appropriate facility”***





## EMRTS Cymru Summary (27/04/15 – 31/10/15)

The information below summarises the specification and breadth of clinical work undertaken since EMRTS Cymru launched in April 2015. It has been a successful start to this new innovative service with many lives being saved and outcomes already improving for many critically ill and injured patients in Wales. Pertinently, EMRTS Cymru is helping to maintain current services and is supporting the development networks (such as those involved in trauma). The full extent of the Service's benefits will be realised in the post-introduction service evaluation to be released in the autumn of 2016.

### Key Statistics

634 patients treated  
(3.4 patients per day)

87% attended by Wales Air  
Ambulance Charity  
Helicopters

13% attended by EMRTS  
Rapid Response Vehicles

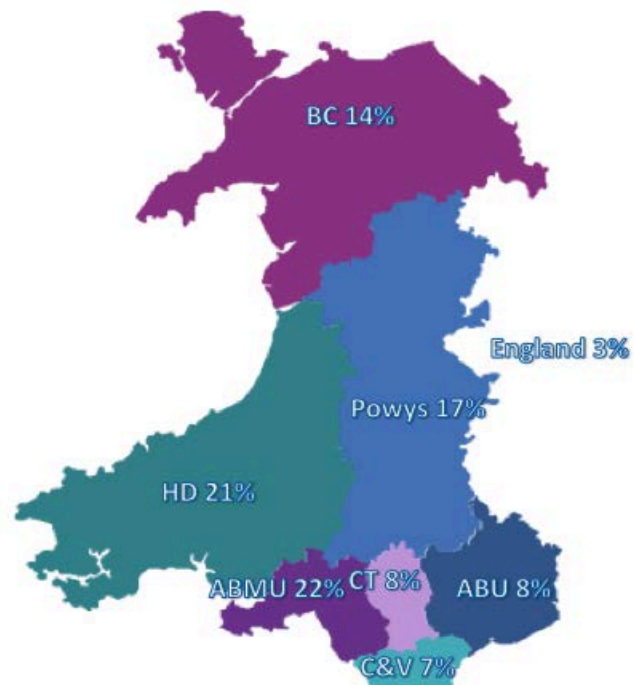
The peak time of day for calls  
- 15:00hrs

Response by helicopter took  
an average of 22 minutes

Response by car took an  
average of 19 minutes

## Demographics

Incidents across the whole of Wales have been attended, with an expected high density of activity in the South. This is demonstrated below.



The majority of patients attended were male (65%), with a median age of 46. The age range of patients seen was from pre-term baby to 93 years of age.

## Missions By Heath Board

The following table indicates the primary missions and secondary transfers undertaken within each health board region between 27/04/15 and 31/10/15. In addition to the figures below there were six neonatal/maternity missions during this period.

Local Health Board	Primary Missions	Secondary Transfers
Betsi Cadwaladr	77	12
Powys	106	1
Hywel Dda	118	14
Abertawe Bro Morgannwg	129	10
Cwm Taf	50	0
Cardiff and Vale	43	0
Aneurin Bevan	41	8
England	17	2

### Definitions

#### **Primary Missions**

Pre-hospital emergency treatment of a patient at the scene of an incident. This often results in a transfer to a hospital or specialist centre.

#### **Secondary Transfers**

The time-critical transfer of patients between healthcare facilities (e.g. between district general hospitals and specialist centres).

## Medical Interventions

The majority of the work carried out can be broadly classified into half medical and half trauma.

Following a response, the critical care team spent an average of 42 minutes on scene, carrying out a full range of critical care interventions traditionally only delivered routinely in a hospital environment and outside of normal paramedic practice.

Of these interventions, emergency anaesthetics (RSI- Rapid Sequence Induction of Anaesthesia) were delivered 82 times and blood-product transfusions 21 times. These include components of blood such as red blood cells and plasma.

Of those patients attended, 70% were transferred to hospital by EMRTS Cymru from the scene of the incident. The remaining patients were either transported to hospital by the Welsh Ambulance Service or left in the community.

Trauma - Road Incident	22.9%
Cardiac Arrest	16.9%
Trauma - Falls	11.8%
Trauma - Other	11.8%
Medical - Heart	7.4%
Secondary Transfer	7.4%
Medical - Unconscious	6.6%
Medical - Other	5.7%
Medical - Fitting	2.5%
Trauma - Assault	2.1%
Trauma - Burns	2.1%
Medical - Breathing Problems	1.9%
Neonatal / Maternity	0.9%

### Key Statistics

EMRTS Cymru average transfer time – 20 minutes

27% transferred to Morriston Hospital

21% transferred to University Hospital of Wales

The remainder were transferred to District General Hospitals or English NHS providers

## Service Innovations



- EMRTS Cymru is the first service in the UK to carry three different blood and clotting systems on board its helicopters/vehicles.
- The Service has introduced a customised phone app offering intelligence about hospital services and giving guidance on a range of medical procedures.
- The Service carries the latest in diagnostic equipment including portable blood testing devices and an ultrasound scanner. These ensure patients receive the highest level of care outside of the hospital environment.
- The Service will soon be using an advanced incubator system, in the air and on the road, which offers the same level of care provided in specialist hospitals.
- The Service is looking to introduce another UK-first innovation. The 'Bridge System' will allow medical equipment to be attached to the patient stretcher. This will ensure close proximity to the patient and make the most efficient use of space when in transit.
- All of the consultants who work with EMRTS Cymru already hold permanent contracts within the NHS in Wales and England. In the majority of cases, their EMRTS sessions are done in addition to their standard NHS sessions so hospitals are not being denuded of consultant cover.
- EMRTS Cymru will be contributing data to the Swansea University Anonymised Data Linkage (SAIL) databank. This world-class anonymous data linkage system securely brings together the widest possible array of routinely collected data for research, development and evaluation. It will facilitate continuous quality improvement of the service.
- There has been international interest in the service with colleagues from Northern Ireland, the Republic of Ireland and New Zealand exploring the feasibility of a leading service like EMRTS Cymru. There has also been interest from America relating to the medical innovations used by the service.



## Case Studies

The following cases illustrate the value of the services delivered. The details have been anonymised. The majority of the work carried out can be broadly classified into half medical and half trauma.

### Case Study 1

The following two separate cases illustrate the importance of the Service in remote parts of Mid and North Wales, where distance to definitive specialist care is large. The cases refer to two children, around ten years of age, involved in serious accidents. One had fallen from a bike and the other was involved in a road accident as the occupant of a family car. Both had significant head injuries and were attended by EMRTS Cymru. One was attended by road (RRV) and the other by Wales Air Ambulance Charity helicopter. Both received emergency anaesthetics and were transferred directly to specialist care in Alder-Hay, Liverpool. The case attended by road was due to poor weather, demonstrating the value of the road fleet. Both children have been discharged home with favorable neurological outcomes. They both bypassed local hospitals to specialist care.

### Case Study 2

A woman in her twenties from South Wales collided with a tree after leaving a section of rural road and became trapped on the side of a valley. She was suspended by her seatbelt and crushed by the steering wheel before being released by the fire and rescue service. EMRTS flew to the scene and were able to prepare for a series of critical care interventions whilst she was being cut out of the wreckage. She was in a life-threatening condition, unconscious with a serious head injury, liver laceration and collapsed lung. The team was able to deliver an emergency blood and plasma transfusion, an anaesthetic, and surgery at the scene to treat the punctured lung. She was flown to specialist care in University Hospital of Wales, followed by a period of sedation and ventilation on the intensive care unit. She has now made a full recovery and is back at work.





## Case Studies

### Case Study 3

One of the unexpected survivors treated by the Service is a gentleman in his sixties working on a waste management site in Mid Wales. He was crushed by a digger and lost a significant amount of blood. He suffered a cardiac arrest and required the full range of critical care interventions including tourniquets (a mechanical device used for the temporary control of the circulation of blood), blood and plasma transfusions, surgery to his chest, anaesthesia and advanced drugs. He was stabilised and flown to the Royal Stoke Hospital where he underwent urgent surgery and stayed on the intensive care unit. He is now doing well. This kind of resuscitation for patients and survival from traumatic cardiac arrest was unheard of in Wales before the introduction of EMRTS Cymru.

### Case Study 4

EMRTS Cymru was called to Neath Port Talbot Hospital to reports of an unconscious male who had presented to the minor injury unit. The critical care team were taken to the hospital by air and, following a rapid assessment, a decision to anaesthetise and secure the airway was made, along with point of care blood tests and monitoring. The patient was then transferred, by road, to Morriston Hospital for further tests and intensive care. This case illustrates the role of the team providing emergency response to health care facilities without resident anaesthetic and intensive care.



## Case Studies

### Case Study 5

A neonate was born pre-term in a residential address in Treorchy. Identification of the case by a Critical Care Practitioner on the Air Support Desk allowed the team to attend the scene by air, carrying specialist equipment, within 30 minutes. On arrival the baby had been delivered and advanced interventions were instigated in liaison with CHANTS (Cymru Inter Hospital Acute Neonatal Transfer Service). A decision was then made to bypass the nearest maternity unit and take the neonate to the appropriate Neonatal Intensive Care Unit in The Royal Gwent Hospital. This prevented a secondary transfer and the consequent delay to definitive care. There has been a favorable clinical outcome in this case with positive feedback from the receiving centre.

### Case Study 6

The final cases illustrate the ability of EMRTS Cymru to provide additional support to health boards in order to facilitate complex time-critical transfers. Both cases were cardiac patients, one in North Wales and one in South Wales, who required urgent transfer to tertiary care in English hospitals.

In the first case a lady with a rare Cardiomyopathy (chronic heart muscle disease) required a transfer from Wrexham to Liverpool and was taken by air in a timely fashion.

The second case involved a young lady who, following a heart attack, was in profound cardiogenic shock (where the heart has been damaged to the point where it is unable to supply enough blood to the organs of the body). She had an aortic balloon pump *in situ*, in Morriston Hospital, and required urgent transfer for further surgery in Birmingham. The transfer was carried out, uneventfully, by road in a Welsh Ambulance Service vehicle with an EMRTS Cymru consultant and a perfusionist (a specialised healthcare professional who uses a heart-lung machine during cardiac surgery) from Morriston Hospital.

# EMRTS Cymru

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Transfer Service

[emrts@wales.nhs.uk](mailto:emrts@wales.nhs.uk)

[www.emrts.wales.nhs.uk](http://www.emrts.wales.nhs.uk)

0300 300 0057

@EmrtsWales



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