PURPOSE OF REPORT:

This paper sets out an overview of current Automated External Defibrillator provision across the Greater Manchester area, and work of the Community Engagement and Resuscitation Department within the North West Ambulance Service NHS Trust and there to increase the survival rates from a person suffering an out of hospital cardiac arrest.

RECOMMENDATIONS:

The GM Joint Health Scrutiny Committee is asked to:

- Support this ongoing work
- Allow for increased awareness to be created through partnership working

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Each year in the UK more than 30,000 people suffer an out of hospital cardiac arrest (OHCA), with less than one in ten of them surviving. During 2016-17 North West Ambulance Service (NWAS) treated 3,838 cases of OHCA across the North West, of these patients 65.2% received bystander Cardio Pulmonary Resuscitation (CPR) of which 9.07% survived, with the combined use of CPR and Automated External Defibrillation (AED) the survival rate was increased to 20.97%. (Figures from NWAS Clinical Governance Department).

Public Health England (PHE) states cardiovascular disease (CVD) is one of the major causes of death in the under 75s in England. PHE publishes health profile data for all areas within England. One of the health indicators reported on is ‘age-standardised rate of mortality from all cardiovascular diseases (including heart disease and stroke) in persons less than 75 years of age per 100,000 population’. The figures show that areas within Greater Manchester have worse under 75 year mortality rates than the rest of England with Central Manchester being the worst. Though there have been huge improvements over the past decades in terms of better treatment for CVD and improvements in lifestyle, to ensure that there continues to be a reduction in the rate of premature mortality from CVD, there needs to be concerted action in both prevention and treatment. (Health Promotion and Prevention as per NWAS shift to the left)

The Resuscitation Council (UK) recently published ‘Resuscitation to Recovery’ which is a national framework to improve the care of people who suffer an OHCA in England and suggests that if the survival rate could be increased to between 10 and 11%, each year more than 1000 lives could be saved.

The ‘Cardiovascular Outcomes Strategy - Improving outcomes for people with or at risk of cardiovascular disease’ published in 2013 by the Department of Health, highlighted that many more lives could be saved through early recognition of cardiac arrest, application of cardiopulmonary resuscitation (CPR) and improved access to and use of automated external defibrillator (AED).

In the North West over 65% of cardiac arrest victims receive bystander CPR and therefore, the importance of greater awareness and confidence in performing early CPR and the use of a defibrillator are key to improving survival rates. The wider availability and visibility of AEDs could also save additional lives. AEDs are life-saving items of equipment, which when used along with CPR, can enhance the chances of surviving a cardiac arrest.
Chain of Survival

To give a person the best chances of survival a system/community approach needs to be considered and adopted. The Chain of Survival is an internationally recognised concept that captures and summarises the essential components of successful resuscitation:

![Chain of Survival Diagram]

Early Recognition & Advice

Of an OHCA (Out of Hospital Cardiac Arrest) is vital and by making the public more aware of these signs then early life saving treatment can be started. Advice can be sought through the 999 system where instructions can be given to the layperson.

Early CPR

This buys time and keeps the main parts of the body oxygenated while further help is on its way, Cardio Pulmonary Resuscitation (CPR) is vital for a potential successful outcome and can be delivered by lay people with no medical experience. Each year NWAS trains in excess of over 30000 in these skill, but more can be done with links to community groups and organisations and the utilisation of cascade training. Campaigns have been done by the Trust and this continues.

Early Defibrillation

Automated External Defibrillator’s (AED’s) are electrical devices that analyse the heart rhythm of someone in cardiac arrest and, if appropriate, will deliver an electric shock to try and restore a normal heart rhythm. They are specifically designed to be used by members of the public as well as first responders. AEDs that are placed in public areas and are clearly signposted and are referred to as Community Public Access Defibrillators (CPADs). Public Access Defibrillators are generally placed within premises such as public buildings; gyms; shopping centres; transport hubs etc..... and are referred to as PAD’s. Improving the availability of CPADs across Greater Manchester will only be of use to members of the community if they are aware of their locations. It is therefore essential that these CPAD’s are mapped with the NWAS Emergency Operations Centre (EOC) so that their call handlers can provide callers with information on the location of the nearest defibrillator that is available for use if they are within a 200metre radius of the incident. It is important...
that a member of the public who contacts 999 in the event of a cardiac arrest has early access to a defibrillator; for this reason NWAS hold a register of PAD and CPAD locations throughout Greater Manchester and are able to advise the caller upon the location of their nearest PAD or CPAD.

**Advanced & Post Resuscitation Care**

To increase survival rates from OHCAs it is vital that steps are taken to ensure that constant improvement in patient care takes place and that these improvements are recorded and measured. The early intervention of advance post resuscitation care and taking patients to definitive places of care will only further enhance this.

Currently within the Greater Manchester Area, NWAS NHS Trust has a dedicated team entitled the Community Engagement & Resuscitation department. This consists of a Community Engagement & Resuscitation manager, two Community Resuscitation Development Offices and one Community Resuscitation Training Officer. It is their responsibility to lead and develop pathways and links with all communities and organisations to embed the core concept of the ‘Chain of Survival’.

We currently have 250 known CPAD (see Appendix 1 for locations) and 1930 PAD locations (see Appendix 2 for locations), this is drawn from data we have within our Emergency Operational Control centres (EoC’s). NWAS have a module on their Computer Aided Dispatch (CAD) system within the EoC that will identify the nearest known defibrillator within a 200mtr radius of the call. This module can also distinguish between days of the week and opening/closing times. The sharing of this information is done for life saving reasons only.

We have been able to gather this by working with communities and organisations, we endeavour to engage communities prior to placement to ensure they meet minimum standards and are placed strategically to ensure best access and do not overlap other CPAD’s. They can be registered via an online digital system to ensure all correct information is collated, along with a guardianship role to ensure they are regularly checked to ensure they are present and working correctly. Work has been established and progressing with the Greater Manchester Health & Social Care Partnership to enhance this and will continue.

Along with known AED locations we have a proactive group Community First Responders (CFR’s) these are members of the community who are trained in life saving skills and carry equipment issued by NWAS and respond to certain life threatening emergencies prior to the statutory crews arriving. They are not a replacement for any NWAS service but a member of the community, who can respond within a 3 mile radius under normal road conditions to initiate care and support. Concentration over the coming months will centre on...
supplementing existing CFR team and new teams to ensure we cover as many communities as possible within the Greater Manchester area.

**Appendix 3** illustrates the geographic profile of these responds across the Greater Manchester area.

NWAS NHS Trust has also integrated a smart phone activation app into the Eco environment; this is called ‘Good SAM’. Over 500 members of the Trust have this available to them when they are off duty and we are able to inform them of a known/potential cardiac arrest within a 500-metre radius allowing for early CPR to be administered and further increase the chances of survival. We feel this can further expand through working with organisations.

Further engagement across all partners within the Greater Manchester area, to allow knowledge to be shared to enhance further difference this training and devices can make to the survival of people suffering an Out of Hospital Cardiac Arrest.
Appendix 1: CPAD locations
Appendix 2: PAD locations
Appendix 3: CFR team locations