

Item No. 11.	Classification: Open	Date: 10 July 2017	Meeting Name: Health and Wellbeing Board
Report title:		Defibrillators (AEDs) in Schools	
Wards or groups affected:		All	
From:		Kevin Fenton, Director of Health & Wellbeing	

RECOMMENDATIONS

1. The board is requested to:
 - a) Note the evidence review (paras 12 - 19) relating to automated defibrillators (AEDs)
 - b) Consider encouraging schools in particular secondary schools to take part in the British Heart Foundation "Restart a heart" campaign and support cardiopulmonary resuscitation (CPR) awareness and training.

EXECUTIVE SUMMARY

2. The Department for Education (DfE) recently issued guidance on the introduction of automated external defibrillators (AEDs) on school premises. While the guidance states that schools should consider installation of an AED the guidance does not make a recommendation that they should do so.
3. Automated external defibrillators are already widely distributed in Southwark in areas where a high footfall is expected, or where higher risk physical activities are undertaken regularly. This includes major underground and railway stations, large offices and commercial buildings and sports clubs and leisure centres.
4. Our review identified that the incidence of out-of-hospital cardiac arrests (OHCAs) in children and adolescents is very low and less than 1% of these cases occur in the school setting. It would be difficult to place AEDs in school locations that are externally accessible at all times; therefore they are unlikely to be available for use by anyone outside school hours and outside school premises (i.e. not a public access defibrillator). At a minimum cost in excess of £65,000 the value for money on a population basis provided by this intervention is low.
5. However increasing knowledge and skills through schools around cardiopulmonary resuscitation (CPR) and the use of AEDs could be of substantial benefit and would impact more widely across Southwark and across London. This is recommended by the British Heart Foundation.

BACKGROUND INFORMATION

6. The Department for Education recently published guidance on the use of

automated external defibrillators (AEDs) in schools¹.

7. In Southwark, there are 108 state maintained schools with 42,000 children. This includes 5 nurseries, 74 primary schools, 18 secondary schools, 2 hospital schools and 7 special schools, 1 all-through school and 1 pupil referral unit (correct as of January 2017).

Automated External Defibrillators (AEDs)

8. An AED is a machine used to give an electric shock to a person when their heart stops beating normally (sometimes referred to as cardiac arrest). In approximately 20% of out-of-hospital cardiac arrests (whether adults or children), defibrillation is beneficial to restore normal heart rhythm. In the remainder of cases the defibrillator will not be of benefit. However cardiopulmonary resuscitation (CPR, sometimes referred to as heart massage) is always a vital first step in the chain of survival following cardiac arrest.
9. Modern AEDs are inexpensive, simple to operate and safe for users. The AED will analyse the individual's heart rhythm and apply a shock to restart it, or advise that CPR should be continued. They can be used for both adults and children (over the age of 12 months).
10. Public access defibrillators (PADs) are already available at numerous locations across Southwark where a high footfall is expected, including major underground and railway stations, large offices and commercial buildings (Southwark Council included) and sports clubs and leisure centres. London Ambulance Service (LAS) has a record of most of these PADs and provide a training and accreditation scheme to support their use and maintenance.

Policy context

11. The Department for Education's statutory guidance on supporting pupils at school with medical conditions advises schools to consider purchasing a defibrillator as part of their first-aid equipment but stops short of recommending that they do so². In June 2017, further guidance was published for schools, providing an overview of the various issues they may consider when installing and maintaining AEDs on their premises. The information provided is not definitive as decisions relating to the purchase and installation of AEDs are entirely for schools to determine.

EVIDENCE REVIEW

Out-of-hospital cardiac arrests

12. There are approximately 60,000 out of hospital cardiac arrests (OHCA) per year in the UK. Approximately 80% of these occur at home and 20% in public spaces.
13. Only about 2-3% of OHCA's occur in children and adolescents. The annual incidence is approximately 8–10 cases per 100,000 children. Of these, only a small proportion will take place in the school environment: probably less than

¹ DfE (2017) Automated external defibrillators (AEDs): A guide for schools

² DfE (2015) Supporting pupils at school with medical conditions: Statutory guidance for governing bodies of maintained schools and proprietors of academies in England

0.5%.

Cost effectiveness of AEDs

14. A previous feasibility study on PADs by Southwark Public Health in 2015 found that most of the evidence on cost-effectiveness of PAD programmes is based on regional or national scale and takes into account larger numbers of people treated across different sites. One peer reviewed paper found that if placed in the right location (i.e. those that have high numbers of people and are likely to have high incidences of cardiac arrests) defibrillators can be cost effective compared to other life-saving interventions. Another paper found that provision of more widespread public access defibrillation to sites with lower incidence of cardiac arrest is unlikely to be cost-effective. Schools would be considered locations that have lower footfall and with lower incidence of cardiac arrest.
15. Initial costs: There are different types of defibrillators that can be purchased. At the time of writing the cost for one type of DfE recommended defibrillator is approximately £514.64 (£617.57 incl. VAT), however this does not include the cost of installing a high visibility cabinet.
16. Future costs: Defibrillators should have two sets of pads, and these need to be changed every 2 years. Pads cost approximately £20 a set. The battery lasts for approximately four to five years, and cost around £150 to replace.
17. The AEDs are designed to be usable without specific training, however there may be barriers if those in the school are not confident in accessing or applying the equipment. The London Ambulance Service provides a training and accreditation scheme to this end.

KEY ISSUES FOR CONSIDERATION

Benefits

18. Defibrillation is an essential life-saving step in the chain of survival following some types of cardiac arrest; AEDs are simple to operate and safe for users.
19. Defibrillators need people to be able to access and operate them. Therefore, having AEDs in schools may promote first aid / CPR training in schools, giving rise to additional benefits in terms of public health messages and providing a concrete and visible sign of health across the borough.

Issues

20. It would be difficult to place AEDs in schools in locations that are externally accessible at all times; therefore they are unlikely to be available for use by anyone outside school hours and outside school premises (i.e. not a public access defibrillator). This limits their potential value.
21. Each AED costs approximately £620 (excluding replacement consumables); total initial cost for all state maintained schools in Southwark to have one defibrillator is therefore £65,100 (excluding future costs), not including installation or associated training costs (see Paragraphs 13 – 16).

22. Southwark is an inner city borough and all schools are readily accessible by emergency vehicles and paramedics within a short period of time. All schools also have a first aider who is trained in CPR and will therefore be able to start on the chain of survival following cardiac arrest, with or without the presence of an AED on the school premises.
23. Cardiac arrest that may be treated by out-of-hospital defibrillation in children and young people is very rare. Therefore, the cost-effectiveness of placing defibrillators in every school on a population health basis is poor.
24. However CPR is valuable in almost all cases of out-of-hospital cardiac arrest and schools provide opportunities for us to promote health and life-saving skills. Training for CPR and PAD use would be of value both in the secondary school setting and in the wider Southwark and London context.
25. The British Heart Foundation is encouraging schools to register to take part in their "Restart a heart " campaign (16th October 2017). Schools can apply for a training kit from:

<https://www.bhf.org.uk/heart-health/how-to-save-a-life/cpr-kits/cpr-training-for-schools>

BACKGROUND PAPERS

Background papers	Held at	Contact
None		

APPENDICES

No.	Title
None	

AUDIT TRAIL

Lead Officer	Kevin Fenton, Director of Health and Wellbeing	
Report Author	Suzanne Tang, Specialty Registrar in Public Health Medicine	
Version	Final	
Dated	4 July 2017	
Key Decision?	No	
CONSULTATION WITH OTHER OFFICERS / DIRECTORATES / CABINET MEMBER		
Officer Title	Comments Sought	Comments Included
Director of Law and Democracy	No	-
Strategic Director of Finance and Governance	No	-
Cabinet Member	No	-
Date final report sent to Constitutional Team	4 July 2017	