PS ITEM #1
October 25, 2012

Worksession

MEMORANDUM

October 23, 2012

TO: Public Safety Committee

FROM: Amanda Mihill, Legislative Attorney

SUBJECT: **Worksession:** Bill 26-12, Swimming Pools - Defibrillators

Bill 26-12, Swimming Pools - Defibrillators, sponsored by Councilmembers Leventhal, Riemer, Rice, Navarro, Andrews, Elrich and Floreen, was introduced on September 11, 2012. A public hearing was held on October 16 at which 2 speakers testified in support of Bill 26-12 (see testimony on ©13).

Bill 26-12 would require certain swimming pools to have an automated external defibrillator available on the premises. See ©7 for a memorandum from the sponsors explaining the purpose behind Bill 26-12.

Background

State Law The Maryland Pubic Access Automated External Defibrillator Program,[1] which is administered by the Maryland Institute for Emergency Medical Services Systems (MIEMSS) requires facilities with AEDs to meet certain state requirements and be certified by the State EMS Board (see law on ©17). This law provides facilities that are in compliance with the law immunity from civil liability for an act or omissions in the provision of AEDs. Additionally, the state law provides individuals who use AEDs with protection from civil liability if the person is acting in good faith to a victim, the assistance is provided in a reasonably prudent manner, and the AED is provided without fee. As the letter from MIEMSS notes, swimming pools that are affected by the bill would be required to comply with this statute (©16).[2]

MIEMSS Report In 2007, the Generally Assembly passed, and the Governor signed, Senate Bill 742, Swimming Pools – Automated External Defibrillator Programs – Study. SB 742 required MIEMSS to study whether automated external defibrillators should be provided on-site at swimming pools in the State, including which pools should be required to provide AEDs, whether AED-trained individuals should be required on-site, and the safety of AEDs at pools.

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[1] Maryland Code, *Education* Article, §13-517.

[2] The MIEMSS AED application packet can be found at: http://www.miemss.org/home/LinkClick.aspx?fileticket=WkD2fi2ZtPY%3D&tabid=85&mid=495.

Additionally, SB 742 required MIEMSS to recommend other locations that AEDs should be required. The report (on ©22) concludes:

- The effectiveness of defibrillation in a given public access program is directly related to the percentage of cardiac arrests that are witnessed and how often and how quickly the rescuers are able to obtain, correctly apply, and activate the AED.
- The cost-effectiveness of a public access program is related to several factors, including the likelihood of a cardiac arrest occurring at the location and the likelihood that the victim will survive.
- Requiring AEDs at every pool was not supported in the 2007 report.
- Voluntary placement of AEDs at pools, especially larger ones, as well as participation in public access programs should be encouraged.

Action in other jurisdictions Both Anne Arundel and Queen Anne's counties have enacted laws to require public and semi-public pools to have an AED on-site.

Fiscal/Economic Impact Statements The Fiscal and Economic Impact Statements are attached on ©8. According to Executive Staff's analysis, all pools that the County owns or operates currently have AEDs on-site. If Bill 26-12 is enacted, the Department of Health and Human Services (DHHS), which currently inspects and licenses pools in the County, estimates that 70 hours per year would be required for ongoing inspections (and additional staff time during the first year of implementation for education and training activities). DHHS can absorb these additional duties with existing staff, but notes that it may reduce the ability to complete other inspections.

Executive staff estimates that Bill 26-12 will have a modest economic effect on the owners/operators of affected pools. Costs that will be incurred include the defibrillator, cost of replacing certain parts (batteries, pads), and training. Executive staff estimates that the cost to affected pools that do not currently have defibrillators on-site will be approximately $2,200.

Issues for Committee Discussion

Which agency should enforce Bill 26-12? As introduced, the County Fire and Rescue Service would enforce Bill 26-12 (FRS enforces the defibrillator requirement in health club facilities). DHHS currently inspects and licenses all pools (other than pools associated with a single family detached house). The Fiscal Impact Statement assumes DHHS will enforce the bill. **Council staff recommendation:** require DHHS to enforce Bill 26-12.

Councilmember Leventhal amendment A proponent of Bill 26-12, Ms. Debbie Neagle-Freed, tragically lost her son, Connor Freed, due to drowning and cardiac arrest at a community pool (©13). Ms. Neagle-Freed strongly feels that if an AED was available for use, it could have saved Connor's life and now advocates for pools to have an AED on-site. Councilmember Leventhal intends to offer an amendment to title the law, "Connor's Law."

This packet contains:	Circle #
Bill 26-12	1
Legislative Request Report	6
Sponsor memorandum	7
Fiscal and Economic Impact Statements	8
Testimony	13
MIEMSS cover letter correspondence	16
State law	17
MIEMSS Report	22
Leventhal amendment	41

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Bill No. 26-12
Concerning: Swimming Pools – Defibrillators
Revised: 9/5/2012 Draft No. 1
Introduced: September 11, 2012
Expires: March 11, 2014
Enacted:
Executive:
Effective:
Sunset Date:
Ch. ____, Laws of Mont. Co. ____

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

By: Councilmembers Leventhal, Riemer, Rice, Navarro, Andrews, Elrich and Floreen

AN ACT to:

(1) require certain swimming pools to have an automated external defibrillator available on the premises under certain circumstances; and
(2) generally amend the law concerning swimming pools.

By amending
Montgomery County Code
Chapter 51, Swimming Pools
Section 51-1

By adding
Chapter 51, Swimming Pools
Section 51-16A

Boldface	*Heading or defined term.*
Underlining	*Added to existing law by original bill.*
[Single boldface brackets]	*Deleted from existing law by original bill.*
Double underlining	*Added by amendment.*
[[Double boldface brackets]]	*Deleted from existing law or the bill by amendment.*
* * *	*Existing law unaffected by bill.*

The County Council for Montgomery County, Maryland approves the following Act:

Sec. 1. Chapter 51 is amended by amending Section 51-1 and adding Section 51-19A:

51-1. Definitions.

In this Chapter, the following words have the following meanings:

[(a)] *Approving authority*[: The] means the Director of the Department of Health and Human Services or the Director's designee.

Automated external defibrillator means a portable electronic device that provides an electric shock to the heart in order to reestablish normal contraction rhythms in a heart having dangerous arrhythmia or that is in cardiac arrest.

[(b)] *Automatic pool cover*[: A] means a mechanical device that completely covers the swimming pool surface automatically when activated, and meets the requirements of a power safety cover established by the American Society for Testing and Materials.

[(c)] *Lifeguard*[: A] means a person who:

(1) is at least 15 years old; and

(2) has a valid lifeguard certificate from the American Red Cross, the Young Men's Christian Association, or a comparable program approved by the Director of the Department of Health and Human Services.

[(d)] *Owner*[: Any] means any person, cooperative, association, partnership, firm, corporation, public agency, or authorized agent of any of them, excluding a pool management company, under whose authority a swimming pool or private spa is being constructed, remodeled, reconstructed, or operated. For the purposes of serving notices of violation of this chapter, the person present at the swimming pool or private spa and charged with its operation is an agent of the owner.

[(e)] *Pool management company*[: Any] means any person, cooperative, association, partnership, firm, or corporation, excluding a pool operator, who is responsible by contract or other agreement with the owner of a public swimming pool for the operation of the public swimming pool, including [but not limited to one or more of the following]:

[(i) Assuring] (1) assuring compliance with all operating standards set forth in this Chapter and all rules and regulations promulgated hereunder;

[(ii) Providing] (2) providing for the physical maintenance, supplies, and personnel as required by this Chapter and all rules and regulations promulgated hereunder; and

[(iii) Obtaining] (3) obtaining all necessary permits and licenses.

[(f)] *Pool operator*[: Any] means any person in possession of a valid county pool operator's license who is in the immediate control of the operation of a public swimming pool.

[(g)] *Private spa*[: Any] means any outdoor bathing structure that is:

(1) a self-contained unit in which all control, water heating, and water circulating equipment is an integral part of the unit;

(2) built on the grounds of a single-family private residence;

(3) used solely by the owner, immediate family, tenants, and guests; and

(4) not used for swimming, diving, or wading.

[(h)] *Private swimming pool*[: Any] means any swimming pool that is:

(1) built on the grounds of a single-family private residence; and

(2) used solely by the owner, immediate family, tenants, and guests.

[(i)] *Public spa*[: Any] means any public swimming pool that is:

[(i) Intended] (1) intended for public recreational and therapeutic uses other than swimming, diving, or wading; and

[(ii) Is] (2) is not drained, cleaned, or refilled for each user.

[(j)] *Public swimming pool*[: A] means a swimming pool, except a private swimming pool, which is intended to be used collectively by numbers of persons for swimming, diving, wading, or recreational bathing.

[(k)] *Spa guard*[: An] means an individual currently certified in cardiopulmonary resuscitation (CPR).

[(l)] *Swimming pool*[: Any] means any artificial structure, basin, chamber, or tank, except a private spa, either above or below ground, which is used or intended to be used for the primary purpose of swimming, diving, wading, or recreational bathing. Swimming pool includes all appurtenant equipment, structures, and facilities located within a common enclosure. A unit used in conjunction with the private practice of a physician or physical therapist is not a swimming pool.

51-16A. Defibrillators.

(a) Every public swimming pool must have available at all times when the pool is open at least one automated external defibrillator in good working order and at least one staff member who is trained in its use.

(b) (1) This Section is not intended to impose any civil liability, or relieve any person from civil liability, regarding the presence or use of, or failure to use, any automated external defibrillator, except as expressly provided in paragraph (2).

(2) An owner or employee of a public swimming pool is not liable in connection with the use or nonuse of an automated external defibrillator , unless:

(A) the pool does not have an automated external defibrillator available as this Section requires; or

(B) an employee has acted with gross negligence or engaged in willful or wanton misconduct.

(d) Any violation of this Section is a class C civil violation. The County Attorney or any affected person may file an action in a court with jurisdiction to enjoin repeated violations of this Section.

(e) The County Fire and Rescue Service must investigate each complaint alleging a violation of this Section and take appropriate action, including issuing a citation when compliance cannot be obtained otherwise. The Department of Health and Human Services may, if requested, assist the Service in enforcing this Section.

Approved:

Roger Berliner, President, County Council — Date

Approved:

Isiah Leggett, County Executive — Date

This is a correct copy of Council action.

Linda M. Lauer, Clerk of the Council — Date

LEGISLATIVE REQUEST REPORT

Bill 26-12
Swimming Pools - Defibrillators

DESCRIPTION:	Bill 26-12 would require certain swimming pools to have an automated external defibrillator available on the premises under certain circumstances.
PROBLEM:	Automated external defibrillators are currently not required on site at swimming pools that are open to the public.
GOALS AND OBJECTIVES:	To require swimming pools, other than private swimming pools, to have an automated external defibrillator on site.
COORDINATION:	Fire and Rescue Service; Department of Health and Human Services
FISCAL IMPACT:	To be requested.
ECONOMIC IMPACT:	To be requested.
EVALUATION:	To be requested.
EXPERIENCE ELSEWHERE:	To be researched.
SOURCE OF INFORMATION:	Amanda Mihill, Legislative Attorney, 240-777-7815
APPLICATION WITHIN MUNICIPALITIES:	To be researched.
PENALTIES:	Class C violation.

MONTGOMERY COUNTY COUNCIL
ROCKVILLE, MARYLAND

MEMORANDUM

September 6, 2012

To: Councilmembers

From: George Leventhal and Hans Riemer

Re: Bill 26-12, Swimming Pools – Defibrillators

We are introducing a bill which is attached to this memorandum. The bill mandates that a defibrillator become standard equipment at all semi-public pools in Montgomery County (i.e. swim clubs). The county already mandates that a defibrillator be on site for all county operated swim facilities. In 2004 the Council passed Bill 22-04 which requires commercial fitness centers in Montgomery County to have a defibrillator on the premises.

The need for this legislation is illustrated by a tragic event that occurred in Anne Arundel County on June 22, 2006. A 5 year old boy, Connor Freed, drowned beneath an empty lifeguard chair, at a country club, in five feet of water. A patron of the pool spotted Connor's lifeless body and pulled him out of the water. Another patron began performing cardiopulmonary resuscitation (CPR) as he threw up water. Once 911 was called, they questioned, "Is there a defibrillator there?" The response: "Yes. But we are not allowed to use it." Connor went into cardiac arrest in the ambulance on the way to the hospital.

The importance of having a defibrillator on site is because it needs to be used within the first five minutes when someone is experiencing cardiac arrest. Paramedics usually can take five minutes or longer to arrive on scene. Defibrillators save lives. A person's chances of survival are reduced by 7 to 10 percent with every minute that passes without CPR and defibrillation. Few attempts at resuscitation succeed after 10 minutes.[1] Similar legislation has been enacted in Queen Anne's and Anne Arundel counties. All Maryland lifeguards are now required by law to be CPR certified as well as trained on the use of a defibrillator.

1 "Cardiac Arrest," from the American Heart Association Web site, http://www.americanheart.org/presenter.jhtml?identifier=4481

BILL 26-12

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ROCKVILLE, MARYLAND

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MEMORANDUM

October 9, 2012

TO: Roger Berliner, President, County Council

FROM: Jennifer A. Hughes, Director, Office of Management and Budget
Joseph F. Beach, Director, Department of Finance

SUBJECT: Council Bill 26-12 – Swimming Pools - Defibrillators

Attached please find the fiscal and economic impact statements for the above-referenced legislation.

JAH:dl

Attachment

c: Kathleen Boucher, Assistant Chief Administrative Officer
Lisa Austin, Offices of the County Executive
Joy Nurmi, Special Assistant to the County Executive
Patrick Lacefield, Director, Public Information Office
Gabriel Albornoz, Department of Recreation
Uma Ahluwalia, Department of Health and Human Services
Michael Coveyou, Department of Finance
David Platt, Department of Finance
Alex Espinosa, Office of Management and Budget
Amy Wilson, Office of Management and Budget
Deborah Lambert, Office of Management and Budget
Naeem Mia, Office of Management and Budget

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Fiscal Impact Statement
Council Bill 26-12 – Swimming Pools - Defibrillators

1. **Legislative Summary**
   Bill 26-12 would require certain swimming pools to have an automated external defibrillator available on the premises under certain circumstances. All County-owned or –operated pools are currently in compliance and are not affected by the proposed bill.

2. **An estimate of changes in County revenues and expenditures regardless of whether the revenues or expenditures are assumed in the recommended or approved budget. Includes source of information, assumptions, and methodologies used.**
   The proposed bill will have no impact on County revenues or expenditures. All County-owned or –operated pools are in compliance.

3. **Revenue and expenditure estimates covering at least the next 6 fiscal years.**
   The proposed bill will have no impact on County revenues or expenditures.

4. **An actuarial analysis through the entire amortization period for each bill that would affect retiree pension or group insurance costs.**
   Not applicable. This bill does not affect retiree pension or group insurance costs.

5. **Later actions that may affect future revenue and expenditures if the bill authorizes future spending.**
   The bill does not authorize future spending.

6. **An estimate of the staff time needed to implement the bill.**
   The Department of Recreation reports that no staff time is required to implement the bill.

   The Department of Health and Human Services (DHHS) reports the following: if inspectors are required only to check for presence of defibrillator and MIEMSS registration status, DHHS estimates an additional 70 hours per year is required after the bill takes full effect for ongoing inspection.

   In the first year of implementation, additional staff time is required to address non-compliance and training/education activities - a total of 160 hours of staff time is needed to handle these functions.

7. **An explanation of how the addition of new staff responsibilities would affect other duties.**
   The Department of Recreation will not incur any additional staff responsibilities. DHHS estimates it can absorb its additional duties by current Environmental Health Regulatory Services staff.

   However, DHHS notes that any additional time devoted to this new responsibility may reduce the ability to complete the 10,000 + mandated inspections per year. In FY12,

(9)

DHHS' existing staff resources completed approximately 75% of currently mandated inspections.

8. **An estimate of costs when an additional appropriation is needed.**
   Not applicable.

9. **A description of any variable that could affect revenue and cost estimates.**
   It is difficult to estimate how many complaints would be logged, but DHHS staff would likely have to make a separate visit to the facility to investigate each complaint.

10. **Ranges of revenue or expenditures that are uncertain or difficult to project.**
    Not applicable. The bill has no impact on County revenues or expenditures.

11. **If a bill is likely to have no fiscal impact, why that is the case.**
    Not applicable.

12. **Other fiscal impacts or comments.**
    None.

13. **The following contributed to and concurred with this analysis:**
    Robin Riley, Department of Recreation
    Clark Beil, Licensure and Regulatory Services, Department of Health & Human Services
    Pat Brennan, Department of Health & Human Services
    Deborah Lambert, Office of Management & Budget
    Naeem Mia, Office of Management & Budget

Jennifer A. Hughes, Director
Office of Management and Budget

10/10/12
Date

(10)

Economic Impact Statement
Council Bill 26-12
Swimming Pools - Defibrillators

Background:

This proposed legislation requires certain swimming pools to have an automated external defibrillator available on the premises under certain circumstances and generally amends the law concerning swimming pools.

1. The sources of information, assumptions, and methodologies used.

    a. Source of information:

        i. Montgomery County Department of Recreation (REC)
        ii. Montgomery County Department of Fire and Rescue Service (FRS)
        iii. Maryland Institute for Emergency and Medical Services System (MIESS)

    b. Assumptions:

        i. Average cost for a defibrillator: $1,200.00
        ii. Expected life for the defibrillator (years): 5
        iii. Replacement costs for pads: $75.00
        iv. Average life of batteries (years): 3
        v. Replacement cost for batteries: $200.00
        vi. Average life of pads (years): 3
        vii. Average cost for training per staff: $13.45
        viii. Average cost for certification per staff: $17.20
        ix. Average number of personnel per pool: 4
        x. Training cycle every two years
        xi. One extra set of batteries

    c. Methodologies used:

        Not applicable

2. A description of any variable that could affect the economic impact estimates.

    Cost of defibrillator
    Cost of replacement batteries
    Cost of replacement pads
    Cost of training and certification
    Number of pool staff that require training and certification
    Number of swimming pools required to install a defibrillator

3. The Bill's positive or negative effect, if any on employment, spending, saving, investment, incomes, and property values in the County.

   The bill will have a modest economic effect on the operators/owners of the swimming pools. The effect is based on the cost of the defibrillator, the cost of replacing the batteries and pads, and the cost to train and certify the users of the equipment. The total economic effect is the number of swimming pools required to install a defibrillator times the costs.

   Based on information provided by REC, FRS, and MIEMSS; the cost of a defibrillator ranges from $500 to $2,500. However, according to FRS, the average cost of defibrillators currently in use is $1,200. The batteries are assumed to have a life of 3 years with a total cost of $200.00 and Automated External Defibrillator (AED) regulations require an extra set of batteries. The pads are assumed to have a life of 3 years with a total cost of $75.00. Finally, the operator of the defibrillator must be trained and certified in the use of the equipment.

   Assuming the operating life of the defibrillator is 5 years and the average cost of those currently in use, the total cost per swimming pool is estimated to be approximately $2,200. Since there are approximately 526 swimming pools in the County, the grand total of the investment would be approximately $1,167,000.

   That amount assumes that all swimming pools would be required to install a defibrillator and that all staff would be trained and certified. However, there are some facilities that currently have such equipment and a number of pool staff have been trained and certified. Therefore, the total investment cost of $1,167,000 would be the maximum investment cost to the swimming pool operators/owners.

4. If a Bill is likely to have no economic impact, why is that the case?

   The Bill will have a very modest economic effect on each of the swimming pool operators/owners.

5. The following contributed to and concurred with this analysis: David Platt and Mike Coveyou, Finance

Joseph F. Beach, Director
Department of Finance

10/8/12
Date

MONTGOMERY COUNTY TESTIMONY
OCTOBER 16TH, 2012

My name is Debbie Neagle-Freed and I am Connor Freed's mother and president of the Connor Cares Foundation. On June 22nd, 2006, at a local country club, Connor drowned beneath an empty lifeguard chair in five feet of water. A patron of the pool spotted Connor's lifeless body and pulled him out of the water. Another patron began performing CPR as he threw up water. Once 911 was called, they questioned, "Is there a defibrillator there?" The response: "Yes. But we are not allowed to use it." Connor went into cardiac arrest in the ambulance on the way to the hospital. We strongly feel that a simple defibrillator would have saved his life. Unfortunately, in 2006, Maryland lifeguards only had to be CPR certified and were not trained on the use of an AED. The American Red Cross now requires all lifeguards in the state of Maryland to be CPR certified as well as trained on how to use a defibrillator.

Anne Arundel County passed 'Connor's Law' on July 6th, 2012, and within a couple weeks, a young boy who nearly drowned was aided back to life with the help of an AED and CPR. It is crucial to have an AED on site and accessible for lifeguards and patrons because if used within the first five minutes, a person in sudden cardiac arrest have up to a 90% survival rate (With CPR alone, it's less than 35%). Paramedics can take up to 10 minutes or longer to get to a scene and by then, it's often too late with an outcome of death or permanent brain damage.

I would like to thank the Montgomery County councilmembers for introducing this important life-saving bill. I sincerely hope that Montgomery County becomes the third county in Maryland to pass 'Connor's Law'. Thank you for your time.

Hello, my name is Jeremy Gruber. Retired Fire Rescue Captain and Paramedic from MCFRS where I worked for over 20 years. I am also a Registered Respiratory Therapist who has practiced medicine in our community hospitals; also I am the creator/founder of a company called Rescue One which provides CPR and AED Training and manages thousands of AED programs.

With over 30 years of experience in emergency services and health care I have dealt with numerous cardiac arrests in and out of hospitals. There is no question in my mind and the clinical experience that I possess that early CPR and Defibrillation makes all the difference between life and death. I could personally give you hundreds of accounts of where this has made a difference.

One such account occurred several months ago at my local gym in Olney when a fellow gym member collapsed in a scheduled fitness class. During the rescue 911 was called immediately along with CPR by fellow classmates. The AED was gotten and put in to use and before Emergency units arrived the AED had shocked the victim several times correcting his lethal arrhythmia. Also several weeks ago a teenager at Catonsville High school was saved by one of my devices while attending class. CPR was begun and the AED brought to the victim. After one shock her hearts arrhythmia was reset to a pumping heart with a pulse.

I am here today in support of legislation to require AED units at all public and semi public swimming pools.

Every year approximately 1/2 million people die from Sudden Cardiac Arrest (SCA), the silent killer. SCA is one of the leading causes of death in industrial countries. SCA is most often caused by an electrical malfunction of the heart called ventricular fibrillation (VF) in which the electrical signals that normally induce a regular, coordinated heartbeat suddenly go chaotic, causing the heart to abruptly stop pumping blood effectively. The victim stops breathing and has no detectable pulse. Without proper intervention, death can occur within minutes. Along with CPR the best treatment to restore an effective heart rhythm is with defibrillation;

Automated External Defibrillators (AEDs) are life-saving devices and are easy to use for those with little medical knowledge. People unfamiliar with the device often can listen to the voice prompts and aid in a rescue. It's a simple matter of opening or turning on the AED, attaching the pads to the victim, and following voice prompts. The device is able to diagnose the heart problem, and if it's a treatable one, the AED will deliver one or more shocks to restart a normal heartbeat. The best chance for survival is immediate CPR and for an electrical shock to be delivered to the heart using an AED.

Time is critical for 100% recovery. Why you can't wait for help:

- Only 5-10% SCA victims survive nationwide
- Providing early access to defibrillation and CPR is key to survival and most critical first step
- For every minute that defibrillation is delayed, the victim's chance of survival decreases by seven to ten percent

- The victim suffers irreversible brain damage (due to lack of oxygen) within four to six minutes after sudden cardiac arrest, after ten minutes, very few victims can survive
- Waiting for EMS results in a 5-7% survival rate
- Survival rates of over 50% can be achieved where early defibrillation programs have been established

SCA can happen anytime, anywhere to anybody at any age WITHOUT any warnings or symptoms. It causes more deaths than house fires, AIDS, firearms, prostate and breast cancer and automobile accidents, COMBINED. Surviving a SCA is mostly dependent on how quickly a victim is defibrillated.

An AED is no different than a smoke Detector, air bag, fire extinguisher or life preserver. When the devices are needed they are needed at that very moment that there is a need.

Since the legislation went into effect requiring gyms to have AED units on site numerous lives have been saved. Five Gyms that I have personally provided CPR training and AED units to have had successful resuscitations with those individuals alive and fully functioning as citizens and tax payers.

Through the creation of Rescue one, we have trained tens of thousands of people in the use of an AED and CPR and First Aid Training, and provided over ten thousand AEDs through all walks of life and business. I hear from individuals and companies and the government on somewhat of a daily basis in reference to the lives saved by the AEDs and training. I cannot tell you how gratifying that is, but more can be done. This is why I am here today.

I would encourage the members of the county council to not only legislate the placement of AED units at pools but to take it to the next level and require them in all county buildings, including ALL Schools and large places of assembly. This should also be part of the Fire and building codes requiring units to be placed in new construction of certain sizes and assembly.

I want to thank you for taking the time in taking up this life saving legislation and hope you will pass this and consider even more to make Montgomery county the leader in public safety.

State of Maryland
Maryland Institute for Emergency Medical Services Systems
653 West Pratt Street
Baltimore, Maryland
21201-1536

Martin O'Malley
Governor

Donald L. DeVries, Jr., Esq.
Chairman
Emergency Medical Services Board

Robert R. Bass, MD
Executive Director
410-706-5074
FAX 410-706-4768

September 20, 2012

The Honorable Roger Berliner
President, Montgomery County Council
Stella B. Werner Council Office Building
100 Maryland Avenue
Rockville, Maryland 20850

Re: Bill 26-12: Swimming Pools-Defibrillators

Dear Councilman Berliner and Members of the Montgomery County Council:

The Maryland Institute for Emergency Medical Services Systems (MIEMSS) is the State agency that administers Maryland's Public Access Automated External Defibrillator (AED) program in accordance with the Annotated Code of Maryland, Education Article § 13-517. The statute requires non-healthcare facilities that locate AEDs on the premises to meet certain requirements, including registration with MIEMSS. MIEMSS issues a certificate valid for three years to facilities that meet the requirements. The statute provides registered facilities in compliance with the statutory requirements with immunity from civil liability for acts or omissions in the provision of automated external defibrillation.

In the event Bill 26-12 passes, the pools will be required to meet the requirements of the above named statute. Enclosed are copies of the statute, regulations, and an AED Application Packet for your information.

Please feel free to contact Lisa Myers, MIEMSS Director of Cardiac and Special Programs at lmyers@miemss.org or 410-706-4740 if you have any questions about the Maryland AED program and requirements for participation.

Sincerely,

Robert R. Bass, MD, FACEP

Cc: Amanda Mihill, Legislative Attorney

Enclosures (3)

(16)

1 of 1 DOCUMENT

*** Current through all Chapters Effective October 1, 2012, of the 2012 General Assembly Regular Session, First Special Session, and Second Special Session. ***
*** Annotations through August 18, 2012 ***

EDUCATION
DIVISION III. HIGHER EDUCATION
TITLE 13. UNIVERSITY OF MARYLAND -- GENERAL PROVISIONS
SUBTITLE 5. EMERGENCY MEDICAL SERVICES

GO TO MARYLAND STATUTES ARCHIVE DIRECTORY

Md. EDUCATION Code Ann. § 13-517 (2012)

§ 13-517. Automated External Defibrillator Program

(a) Definitions. --

(1) In this section the following words have the meanings indicated.

(2) "Automated external defibrillator (AED)" means a medical heart monitor and defibrillator device that:

(i) Is cleared for market by the federal Food and Drug Administration;

(ii) Recognizes the presence or absence of ventricular fibrillation or rapid ventricular tachycardia;

(iii) Determines, without intervention by an operator, whether defibrillation should be performed;

(iv) On determining that defibrillation should be performed, automatically charges; and

(v) 1. Requires operator intervention to deliver the electrical impulse; or

2. Automatically continues with delivery of electrical impulse.

(3) "Certificate" means a certificate issued by the EMS Board to a registered facility.

(4) "Facility" means an agency, association, corporation, firm, partnership, or other entity.

(5) "Jurisdictional emergency medical services operational program" means the institution, agency, corporation,

or other entity that has been approved by the EMS Board to provide oversight of emergency medical services for each of the local government and State and federal emergency medical services programs.

(6) "Program" means the Public Access Automated External Defibrillator Program.

(7) "Regional administrator" means the individual employed by the Institute as regional administrator in each EMS region.

(8) "Regional council" means an EMS advisory body as created by the Code of Maryland Regulations 30.05.

(9) "Regional council AED committee" means a committee appointed by the regional council consisting of:

(i) The regional medical director;

(ii) The regional administrator; and

(iii) Three or more individuals with knowledge of and expertise in AEDs.

(10) "Registered facility" means an organization, business association, agency, or other entity that meets the requirements of the EMS Board for registering with the Program.

(b) Established; purpose. --

(1) There is a Public Access Automated External Defibrillator Program.

(2) The purpose of the Program is to coordinate an effective statewide publilc access defibrillation program.

(3) The Program shall be administered by the EMS Board.

(c) Powers of EMS Board. -- The EMS Board may:

(1) Adopt regulations for the administration of the Program;

(2) Issue and renew certificates to facilities that meet the requirements of this section;

(3) Deny, suspend, revoke, or refuse to renew the certificate of a registered facility for failure to meet the requirements of this section;

(4) Approve educational and training programs required under this section that:

(i) Are conducted by any private or public entity;

(ii) Include training in cardiopulmonary resuscitation and automated external defibrillation; and

(iii) May include courses from nationally recognized entities such as the American Heart Association, the American Red Cross, and the National Safety Council;

(5) Approve the protocol for the use of an AED; and

(6) Delegate to the Institute any portion of its authority under this section.

(d) Facility certification required. --

(1) Each facility that desires to make automated external defibrillation available shall possess a valid certificate from the EMS Board.

(2) This subsection does not apply to:

(i) A jurisdictional emergency medical services operational program;

(ii) A licensed commercial ambulance service;

(iii) A health care facility as defined in *§ 19-114 of the Health - General Article*; or

(iv) A place of business for health care practitioners who are licensed as dentists under Title 4 of the Health Occupations Article or as physicians under Title 14 of the Health Occupations Article and are authorized to use an AED in accordance with that license.

(e) Facility certification -- Requirements. -- To qualify for a certificate a facility shall:

(1) Comply with the written protocol approved by the EMS Board for the use of an AED which includes notification of the emergency medical services system through the use of the 911 universal emergency access number as soon as possible on the use of an AED;

(2) Have established automated external defibrillator maintenance, placement, operation, reporting, and quality improvement procedures as required by the EMS Board;

(3) Maintain each AED and all related equipment and supplies in accordance with the standards established by the device manufacturer and the federal Food and Drug Administration; and

(4) Ensure that each individual who is expected to operate an AED for the registered facility has successfully completed an educational training course and refresher training as required by the EMS Board.

(f) Report of use of AED. -- A registered facility shall report the use of an AED to the Institute for review by the regional council AED committee.

(g) Report of use of AED -- Procedures. -- A facility that desires to establish or renew a certificate shall:

(1) Submit an application on the form that the EMS Board requires; and

(2) Meet the requirements under this section.

(h) Certificate -- Contents. --

(1) The EMS Board shall issue a new or a renewed certificate to a facility that meets the requirements of this section.

(2) Each certificate shall include:

(i) The type of certificate;

(ii) The full name and address of the facility;

(iii) A unique identification number; and

(iv) The dates of issuance and expiration of the certificate.

(3) A certificate is valid for 3 years.

(i) Cease and desist orders. -- The EMS Board may issue a cease and desist order or obtain injunctive relief if a

facility makes automated external defibrillation available in violation of this section.

(j) Immunities. --

(1) In addition to any other immunities available under statutory or common law, a registered facility is not civilly liable for any act or omission in the provision of automated external defibrillation if the registered facility:

(i) Has satisfied the requirements for making automated external defibrillation available under this section; and

(ii) Possesses a valid certificate at the time of the act or omission.

(2) In addition to any other immunities available under statutory or common law, a member of the regional council AED committee is not civilly liable for any act or omission in the provision of automated external defibrillation.

(3) In addition to any other immunities available under statutory or common law, an individual is not civilly liable for any act or omission if:

(i) The individual is acting in good faith while rendering automated external defibrillation to a person who is a victim or reasonably believed by the individual to be a victim of a sudden cardiac arrest;

(ii) The assistance or aid is provided in a reasonably prudent manner; and

(iii) The automated external defibrillation is provided without fee or other compensation.

(4) The immunities in this subsection are not available if the conduct of the registered facility or an individual amounts to gross negligence, willful or wanton misconduct, or intentionally tortious conduct.

(5) This subsection does not affect, and may not be construed as affecting, any immunities from civil or criminal liability or defenses established by any other provision of the Code or by common law to which a registered facility, a member of the regional council AED committee, or an individual may be entitled.

(k) Opportunity for hearing. --

(1) A registered facility aggrieved by a decision of the Institute acting under the delegated authority of the EMS Board under this section shall be afforded an opportunity for a hearing before the EMS Board.

(2) A registered facility aggrieved by a decision of the EMS Board under this section shall be afforded an opportunity for a hearing in accordance with Title 10, Subtitle 2 of the State Government Article.

HISTORY: 1999, ch. 167; ch. 702, § 5; 2000, ch. 61, § 1; 2001, ch. 29, § 1; 2005, ch. 413; 2008, chs. 593, 596, 597.

NOTES: EFFECT OF AMENDMENTS. --Chapter 593, Acts 2008, effective October 1, 2008, rewrote the section. Chapters 596 and 597, Acts 2008, effective October 1, 2008, made identical changes. Each reenacted (a)(1), (a)(3), and (m)(5) [(j)(5)] without change; deleted (m)(3)(iv); and in (m)(4) [(j)(4)] added "or an individual".

EDITOR'S NOTE. --Chapters 593, 596, and 597, Acts 2008 all amended (m). None of the chapters referred to the others. Chapter 593 redesignated the subsections following repeals and additions of subsections. The changes by chs. 596 and 597 to (m) appear in (j). In addition, chs. 596 and 597 deleted (j)(3)(iv); thus the amendment to this subsubparagraph by ch. 593 is superseded. The amendments to (j)(4) have been blended to give effect to all.

BILL REVIEW LETTER. --Chapters 593, 596 and 597, Acts 2008, (Senate Bill 570, House Bill 1134, and Senate Bill 579) were approved for constitutionality and legal sufficiency, and altered individual immunity from civil liability for providing automated external defibrillation. Chapter 593 renames the Program with the purpose of coordinating

effective statewide public access program. The other bills repeal certain existing requirements to retain immunity and provided that immunities are not available if the conduct of the individual amounted to gross negligence, willful or wanton misconduct, or intentional tortious conduct. It is recommended that the bills' provisions be read together and given effect with the exception of *§ 13-517(m)(3) of the Education Article.* If, as a matter of policy, effect is to be given to the repeal of conditions under which an individual is immune from civil liability as enacted by HB 1134 and SB 579, these bills should be signed after SB 570; SB 570 was signed first as Chapter 593. (Letter of the Attorney General dated April 17, 2008.)

LexisNexis 50 State Surveys, Legislation & Regulations

Nongovernmental Ambulance & Emergency Services

UNIVERSITY OF BALTIMORE LAW REVIEW. --For article, "Gross, Reckless, Wanton, and Indifferent: Gross Negligence in Maryland Civil Law," see *30 U. Balt. L. Rev. 1 (2000).*

Report to the Maryland General Assembly

Regarding the Placement of

Automated External Defibrillators

SB742 (Chapter 349) 2007

The Maryland Institute for Emergency Medical Services Systems (MIEMSS)

Robert R. Bass, M.D.
Executive Director

December 2007

(22)

Table of Contents

(23)

Background

Senate Bill 742 (Chapter 349, 2007) "Swimming Pools – Automated External Defibrillators – Study" required the Maryland Institute for Emergency Medical Services Systems, in consultation with interested stakeholders, to study whether automated external defibrillators (AEDs) should be provided on-site at swimming pools in Maryland and to examine: 1) which swimming pools should be required to provided AEDs; 2) whether the presence of individuals trained in the use of automated external defibrillators should be required by swimming pools; and 3) the safety of providing AEDs at a swimming pool. In addition, the statute required MIEMSS to make recommendations on locations, other than swimming pools, where AEDs should be required.

This report contains information and results from analyses conducted on cardiac arrest data in Maryland. MIEMSS conducted the analyses over the course of several months. Results were reviewed and approved by the AED Task Force at its meeting on November 9, 2007 as well as by the State EMS Board at its November 13, 2007 meeting. A listing of the members of the AED Task Force, as well as other interested individuals who attended AED Task Force meetings in 2007 is included at Appendix A.

Executive Summary

- Sudden cardiac arrest ("SCA") occurs when the heart develops an abnormal rhythm (usually ventricular fibrillation or ventricular tachycardia) which results in a loss of an effective heartbeat and death if not treated rapidly. Maryland has approximately 4,000 SCAs each year.

- The abnormal heart rhythms that most commonly cause SCA are ventricular fibrillation and ventricular tachycardia which frequently occur spontaneously and without warning. The treatment for these abnormal heart rhythms is to shock the heart, a procedure called "defibrillation."

- Defibrillation is most effective if provided within 3 - 5 minutes of SCA and has limited or no effectiveness after 10 minutes.

- Since the early 1990's, there have been increasing calls for placing AEDs in the community for use by lay rescuers, a process referred to as "Public Access Defibrillation" ("PAD").

- The effectiveness of defibrillation in a given PAD program is directly related to the percentage of arrests that are witnessed and how often and how quickly the rescuers are able to obtain, correctly apply, and activate the AED. The cost-effectiveness of a given PAD program is related to a number of factors including the likelihood of a cardiac arrest occurring at the location and the likelihood that the victim will survive.

- A number of resources may be utilized to guide the State in making public policy decisions regarding the response to out of hospital SCA, including National Guidelines, especially from the American Heart Association, published peer reviewed scientific studies, legislative trends in other states, and available data.

- Current American Heart Association guidelines recommend establishment of PAD Programs at locations that are likely to have at least one SCA every 5 years and where the public safety time to defibrillation is greater than 5 minutes. They also recommend PAD Programs at health clubs with > 2500 members and places with a high likelihood of witnessed SCA such as international airports, casinos, and sports facilities.

- A few states have passed legislation in the past several years mandating the establishment of PAD programs at the following locations: schools (10 states); health clubs, fitness centers, health spas, health studios, gyms, weight control studios, and martial arts schools with > 500 members (7 states); and places of public assembly (2 states).

- Maryland Cardiac Arrest Data indicate that the following high-risk locations should have the capability to provide defibrillation within 3 to 5 minutes of SCA through a PAD program, public safety, and/or the availability of AEDs or manual defibrillators for healthcare workers at that location:

    - BWI Marshall Airport (PAD program already in place)

(56)

- Skilled nursing facilities
- Dialysis centers
- Racecourses and racetracks
- Enclosed malls
- Hospitals and hospital premises

- Maryland Cardiac Arrest Data, national guidelines, legislative trends and the likelihood of a higher percentage of witnessed SCAs indicate that the following intermediate risk locations be should considered as potential locations for requiring the capability to provide defibrillation within 3 to 5 minutes of SCA through a PAD program and / or public safety:

  - Sports stadiums
  - Rehabilitation facilities
  - Ocean City beaches (PAD program already in place)
  - Amusement parks
  - Public parks
  - Colleges and universities
  - Golf courses
  - Health clubs and related facilities
  - Places of large public assembly
  - Casinos (if established in Maryland)
  - High rise residential facilities and housing complexes with greater than 250 individuals over the age of 50 present for 16 or more hours a day.

- Cost- effectiveness of PAD programs at intermediate risk locations is enhanced when the locations are large/high exposure facilities (e.g. health clubs with more than 500 members (AHA recommends 2500) or educational facilities with over 1000 students, faculty and staff present).

- Requiring AEDs at every swimming pool is not currently supported based on an analysis of national guidelines, legislative trends, and Maryland MCASS data. Voluntary placement of AEDs at swimming pools, especially larger ones, as well as participation in PAD Programs should be encouraged.

- Perceived barriers to participation in PAD Programs should be eliminated.

- MIEMSS should continue to trend data from MCASS, review national recommendations, legislative trends, and published scientific studies and periodically report back to the Legislature as new information becomes available. MIEMSS should also continue to work toward obtaining hospital discharge information as the outcome measure for cardiac arrest; however, this may require additional resources not currently available.

- Consideration should be given to greater investment in public safety AED programs – fire, EMS, and police – that are capable of arriving and defibrillating within 5 minutes of arrest. At the present time, this is the only proven effective approach to addressing SCA in homes which account for the vast majority of SCAs (about 80%).

(20)

Introduction

Sudden cardiac arrest ("SCA") occurs when the heart develops an abnormal rhythm (usually ventricular fibrillation or ventricular tachycardia) which results in a loss of an effective heartbeat and death if not treated rapidly. These abnormal heart rhythms frequently occur spontaneously and without warning and may occur in any age group, although are more likely to occur in individuals who are over 50 years of age.

There are an estimated 250,000 - 360,000 SCAs in the United States each year; in Maryland there are approximately 4,000 SCAs each year. Most SCAs occur outside of a hospital; of those SCAs occurring outside of a hospital, approximately 80% are in residential settings and 20% in community settings.

The treatment for these abnormal heart rhythms is to shock the heart, a procedure called "defibrillation." Defibrillation is most effective if provided within 3 - 5 minutes of SCA and has limited or no effectiveness after 10 minutes. Cardiac arrests that occur secondary to other events, e.g., trauma, electrocution, drug overdose, or drowning may or may not require or benefit from defibrillation.

In the past, defibrillation was provided by healthcare providers (i.e., physicians, nurses and paramedics). With the development of computerized defibrillators called "automated external defibrillators" ("AEDs"), however, individuals with far less medical training (such as fire, police, and EMS first responders) may successfully defibrillate a victim of SCA. Fire and EMS personnel responding to 911 calls, however, are frequently not able to reach a victim of SCA within 10 minutes of the arrest. Poor outcomes from out-of-hospital SCA are generally related to the amount of time it takes these public safety personnel to reach the victim and administer defibrillation. Survival from a witnessed out of hospital SCA varies significantly from community to community, but is typically well below 10% (national published median 6.4%) with some notable exceptions such as Seattle, Washington.

Public Access Defibrillation

Since the early 1990's, there have been increasing calls for placing AEDs in the community for use by lay rescuers, a process collectively referred to as "Public Access Defibrillation" ("PAD"). PAD programs are based on the concept that AEDs are most effective when used within 3 to 5 minutes of SCA. Experience with PAD programs has also indicated that such programs are most effective when the AEDs are used by persons who have received appropriate training and when the AEDs are properly maintained. PAD programs have also been found to be effective at certain high volume facilities, such as international airports, where the device is mounted on the wall for access by bystanders who in many cases can successfully defibrillate the victim before staff arrives. This has led to recommendations that public access AEDs be stored in plain sight with signage for access by bystanders at high risk locations.

The effectiveness of defibrillation in a PAD program is directly related to two factors: 1) the percentage of arrests that are witnessed and 2) how often and how quickly the rescuers are able to obtain, correctly apply, and activate the AED. A "witnessed" cardiac arrest is one where a

bystander sees the victim collapse; the presence of such a bystander witness greatly increases the chances that the bystander will intervene to help the victim and/or summon others to provide immediate aid. Generally, an individual suffering an unwitnessed cardiac arrest has a poorer chance of survival. The rapid response of the rescuers is another important factor: every minute the victim is in cardiac arrest, chances of survival decrease by about 10%. The less time it takes the rescuer to obtain the AED from its location, take it to the victim's side, and apply the AED, the greater the changes of survival.

Studies have shown varying degrees of effectiveness of PAD programs. A recent study by the National Institutes of Health / National Heart Lung & Blood Institute indicated that PAD programs could potentially double the likelihood of successful resuscitation using trained lay rescuers with medical oversight at selected high risk locations[1]. Also, PAD programs at locations such as airports and casinos and with police officers have achieved remarkable results – 49% - 74% survival of victims of a witnessed SCA[2]. Studies of AEDs in homes (where most SCA occurs) have not been able to demonstrate effectiveness[3].

Despite its apparent effectiveness, however, concerns have been expressed about the cost-effectiveness of PAD programs. The cost-effectiveness of a given PAD program is related to a number of factors including the likelihood of a cardiac arrest occurring at the location and the likelihood that the victim will survive. Two factors generally increase the likelihood of a cardiac arrest occurring at a given location – exposure (expressed as the person-years of individuals at a particular location) and the characteristics of the individuals who are at the location (for instance, individuals who are over 50).

Cost-effectiveness in health care interventions is believed to occur when the intervention results in a cost equal to or less that $50,000 per year of life saved[4]. With SCA, studies and recommendations have indicated that this corresponds to one cardiac arrest per PAD location

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[1] Reed DB, Birnbaum A, Brown LH, O'Conner RE, et al. Location of Cardiac Arrests in the Public Access Defibrillation Trial. Prehospital Emergency Care. 2006; 10(1):61-67.

[2] Hazinski MF, Idris AH, Kerber RE, Epstein A, et al. Lay Rescuer Automated External Defibrillator ("Public Access Defibrillation") Programs: Lessons Learned from an International Multicenter Trial: Advisory Statement from the American Heart Association Emergency Cardiovascular Committee; the Council on Cardiopulmonary, Perioperative, and Critical Care; and the Council on Clinical Cardiology. Circulation. 2005; 111:3336-3340.

[3] 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, Part 5: Electrical Therapies: Automated External Defibrillators, Defibrillation, Cardioversion, and Pacing. Circulation. 2005; 112(suppl IV):IV-19-IV-34.

[4] Gold LS, Eisenberg M. Cost-effectiveness of automated external defibrillators in public places: Pro. Curr Opin Cardiolology 2007; 22(1):5-10.

every 5 - 10 years[5] [6]. Further, placement of AEDs at high risk locations is generally thought to be cost-effective because there is a greater likelihood that the AED will be used. However, these high-risk locations represent only a small percentage of all out-of-hospital SCAs: only 1 – 2 % if non-hospital health care facilities are excluded. Consequently, while cost-effective, placement of AEDs at high risk locations is likely to have little impact at a population level. PAD programs that place AEDs at low-risk locations are unlikely to be cost-effective since there is a smaller likelihood that the AED will ever be used. And AED placement at low-risk locations may be even less cost-effective than alternative approaches, such as prevention or improving public safety response to SCA.

Maryland Public Access Defibrillation

Maryland's PAD program was implemented in 1999[7]. The Program permits a business, organization, association, etc. ("authorized facility"), that meets certain requirements, to set up a program whereby someone suffering a cardiac arrest on the authorized facility's premises can receive treatment with an automated external defibrillator (AED) on-site by appropriately trained non-medical personnel before the arrival of emergency medical services personnel. An authorized facility may be a single organization located at one place or a business that operates at several locations (sites). In 2006, the Maryland General Assembly passed a law mandating AEDs at all public high schools in Maryland[8]. Participation by other types of facilities is currently voluntarily; however, if a facility determines to have an AED on site, it must participate in the Program.

Maryland's PAD Program sets forth specific requirements for authorized facilities, including training of AED operators by an approved AED training program. Authorized facilities meeting program requirements receive a certificate that is valid for three years if the facility remains compliant with the program requirements. The program requirements may be found at COMAR 30.06.01-05.

Since the inception of the Maryland PAD Program, there have been 38 successful AED uses out of 212 reported incidents (18%) at PAD sites. Success is defined as the victim having a return of pulse at EMS arrival or during EMS transport. Of the overall arrests, 125 were witnessed, and 34 of those witnessed arrests regained a pulse at the time of EMS arrival for a 27% save rate for witnessed cardiac arrests.

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[5] Cram P, Vijan S, Fendrick AM. Cost-effectiveness of Automated External Defibrillator Deployment in Selected Public Locations. J. General Internal Medicine. 2003; 18:745-754.

[6] 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, Part 5: Electrical Therapies: Automated External Defibrillators, Defibrillation, Cardioversion, and Pacing. Circulation. 2005; 112 (supp. IV):IV-19-IV-34.

[7] SB 294, Ch. 167, 1999; Ed. Art. §13-517, Ann. Code MD.

[8] HB 1200, Ch. 203, 2006; Ed. Art. §7-425, Ann. Code MD.

There are currently 874 facilities participating in the Program with just over 2,100 sites (see Appendix B). Of these, 53 sites are community pools (see attached listing and map showing community pool participants at Appendix C).

Public Policy Development

A number of resources may be utilized to guide the State in making public policy decisions regarding the response to out of hospital SCA. These include the following:

- National Guidelines, especially from the American Heart Association;
- Published peer-reviewed scientific studies;
- Legislative trends and initiatives in other states; and
- Available statewide data specific to cardiac arrests.

National Guidelines and Pertinent Peer-Reviewed Research

Current American Heart Association guidelines recommend PAD programs be established at locations that are likely to have at least one SCA every 5 years and where the public safety time to defibrillation is greater than 5 minutes. They also recommend that PAD programs be established at health clubs with > 2500 members and at places with a high likelihood of witnessed SCA such as international airports, casinos, and sports facilities.

Research generally supports the current AHA recommendations for PAD programs that have an emphasis on planning, training, practice of CPR and use of AEDs. Results support placement of AEDs in those public locations with a high incidence or likelihood of SCA (e.g., airports, golf clubs, health clubs, large industrial, sports, shopping malls).[9]

At least one published research study considers the AHA recommendation to be too conservative, however. This study indicates that PAD programs may be cost effective if there is a 12% annual likelihood of a sudden cardiac arrest at the location (at least once every 8-9 years)[10]. Further, in the National Institutes of Health / National Heart Lung & Blood Institute's Public Access Defibrillation Trial, high risk locations were defined as having a history of at least 1 cardiac arrest every 2 years or where there are 250 or more individuals 50 years or older for 16 hours or more a day. Results of the PAD trial indicate that the exposure-adjusted rate of SCA

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[9] Hazinski MF, Idris AH, Kerber RE, Epstein A, et al. Lay Rescuer Automated External Defibrillator ("Public Access Defibrillation") Programs: Lessons Learned from an International Multicenter Trial: Advisory Statement from the American Heart Association Emergency Cardiovascular Committee; the Council on Cardiopulmonary, Perioperative, and Critical Care; and the Council on Clinical Cardiology. Circulation. 2005; 111:3336-3340.

[10] Cram P, Vijan S, Fendrick AM. Cost-effectiveness of Automated External Defibrillator Deployment in Selected Public Locations. J. General Internal Medicine. 2003; 18:745-754.

was highest in fitness centers and golf courses, even though the incidence per facility was low and average respectively[11] .

Legislative Trends

In 1997, states began enacting public access laws to encourage AED placement. All fifty states have now have enacted certain AED laws. A review of recent legislative activity indicates that a few states have passed legislation in the past several years requiring or supporting mandating the establishment of PAD programs in certain locations.

- Schools – SCA is less likely to occur in children as compared to adults (0.18 per 100,000 person-years for students versus 4.51 per 100,000 person years for faculty and staff). Despite this, the desire to ensure the safety and well-being of youth has led 10 states, including Maryland, to require PAD programs at some schools. NY requires PAD at school facilities with more that 1000 people on site.

- Health clubs, fitness centers, health spas, health studios, gyms, weight control studios, and martial arts schools with > 500 members. Seven states have enacted such laws with some exceptions to the requirements.

- Places of public assembly that typically host large numbers of people. Two states have enacted requirements for AEDs at these types of locations.

AED Location	States Requiring or Supporting AED Placement
Schools	**Colorado** (donations), **Florida, Illinois, Maryland, Michigan, Nevada, New York, Ohio, Pennsylvania and Virginia** require some schools to have portable defibrillators; actual extent varies.
Health Clubs	**California, Illinois, Massachusetts** (1/07), **Michigan, New Jersey, New York** and **Rhode Island** laws now require health clubs to have at least one AED. *Definition example (Michigan)*: "Health club" means an establishment that provides, as its primary purpose, services or facilities that are purported to assist patrons in physical exercise, in weight control, or in figure development, including, but not limited to, a fitness center, studio, salon, or club. A health club does not include a hotel or motel that provides physical fitness equipment or activities, an organization solely offering training or facilities for an individual sport, or a weight reduction center.
Places of Public Assembly	**New York** ('06); **Arizona** – any state building constructed or renovated at a cost of at least $250,000 must be equipped with AEDs.

From: The National Conference of State Legislatures: State Laws on Heart Attacks, Cardiac Arrest & Defibrillators – Encouraging or requiring community access and use. See: http://www.ncsl.org/programs/health/aed.htm

[11] Reed DB, Birnbaum A, Brown LH, O'Connor RE, et al. Location of Cardiac Arrests in the Public Access Defibrillation Trial. Prehospital Emergency Care. 2006; 10(1):61-67.

Maryland-Specific Data

MIEMSS initiated the Maryland Cardiac Arrest Surveillance System (MCASS) in 2001 to identify and characterize out-of-hospital sudden cardiac arrests in Maryland. Out-of-hospital sudden cardiac arrest is defined as any sudden stop in cardiac function that occurs out-of-hospital and in which the state EMS system is accessed for resuscitative services. Out-of-hospital SCAs occurring to individuals with valid EMS Do Not Resuscitate orders, those where the individual was identified as dead on the arrival of EMS at the scene as well as those that do not contact the EMS system (e.g., individuals under hospice care) are excluded from these surveillance numbers (see Study Limitations). Data from these studies from the period January 1, 2001 to December 31, 2006 were reviewed for this report to identify the location of the cardiac arrest (e.g., school, home, airport, etc.) and other factors.

There were 19,912 out-of-hospital cardiac arrests in Maryland between January 1, 2001 and December 31, 2006 that met the surveillance criteria and were reported to MIEMSS. Less than half of these cardiac arrests were witnessed events. The majority of the witnessed events were observed by a bystander. Cardiac arrests were highly likely to be witnessed when they occurred at BWI airport, on public transportation, restaurants and bars, churches, enclosed malls, courthouses, stadium, racecourses/racetracks, health clubs, dialysis centers, ambulances, and physician/dentist offices.

Table 1 shows lists the annual rates per facility per year of out of hospital witnessed SCA, with medical or unknown arrest etiology in Maryland by location type. The list further ranks locations among three incident rate category types based upon a relative ranking per facility per year: "high" (1 or more SCA every 10 years), "intermediate" (1 SCA every 11 - 100 years), or "low" risk (1 SCA every 101 years or more). In addition, the cumulative percents of total SCA are provided to gauge the influence that category ranking has on the overall SCA population. Rates will vary within location types based upon exposure: those locations that have greater numbers of individuals and demographic characteristics (e.g., bigger malls, amusement parks, and buildings as well as health clubs with larger memberships will have greater exposure and therefore a greater likelihood of SCA). The results of SCA by type of location are fairly consistent with other studies of SCA conducted in the U.S.; however, there have been relatively few such studies.

Results indicate the following locations as being at a "high" risk for a witnessed SCA (at least 1 witnessed SCA within a ten year period):

- BWI Marshall Airport (PAD program already in place)
- Skilled nursing facilities
- Dialysis centers
- Racecourses and racetracks
- Enclosed malls
- Hospitals and hospital premises

Results indicate the following locations as being at an "intermediate" risk for a witnessed SCA (at least 1 witnessed SCA every 11 to 100 years):

- Sports stadiums
- Rehabilitation facilities
- Ocean City beaches (PAD program already in place)
- Amusement parks
- Public parks
- Colleges and universities
- Golf courses
- Health clubs and related facilities
- Places of large public assembly
- Casinos should they be established in Maryland
- High rise residential facilities and housing complexes with greater than 250 individuals over the age of 50 present for 16 or more hours a day.

Results indicate the following locations as being at a "low" risk for a witnessed SCA (at least 1 witnessed SCA per > 100 years):

- Other airport (small)
- Adult day care
- Hotel / Motel
- Courthouse
- Ambulance (Commercial service transporting patient while en route)
- Industrial Place and Premises
- Restaurant / Bar
- Museum
- School / educational facility (PK – 12)
- Theater / Cinema
- Other Public Beach
- Physician / Dentist Office
- Church
- Home
- Youth Camp
- Community Pool
- Child Day Care
- Convention Center

The following locations are classified as "unknown," indicating that there was insufficient information to complete a risk determination:

- Senior Living Housing
- Other Residential
- Bus / Bus Station
- Street / Highway
- Public Transportation

- Other Transportation
- Government Administration Building
- Public Building
- Retail Store (non-enclosed mall)
- Senior Recreational Center
- Other Building
- Recreational Center
- Urgent Care Facility
- Other Medical Facility

Cardiac Arrest at Community Pools – Special Considerations

As previously mentioned, the effectiveness of resuscitation from SCA is usually calculated based on the number of witnessed cardiac arrests of medical/cardiac or unknown etiology where an abnormal cardiac rhythm is suspected to be the primary cause. A number of other known conditions such as trauma and drownings may result in a cardiac arrest as a secondary condition. The likelihood of a cardiac arrest requiring defibrillation is very high in primary cardiac arrests because the primary problem is usually an abnormal heart beat that requires defibrillation. The likelihood of a secondary cardiac arrests needing defibrillation is very variable.

The ranking of the locations listed above, including pools, was calculated based on the number of witnessed cardiac arrests of medical/cardiac or unknown etiology where an abnormal cardiac rhythm is suspected to be the primary cause. Over the six-year study period, four (4) witnessed SCAs of medical/cardiac or unknown etiology and 13 drownings, for a total of 17 occurred at the 2,992 pools that were included in the study. One additional cardiac arrest was reported in someone with a terminal illness.

If all cardiac arrests at pools rather than just the medical/cardiac and unknown etiology were used, the resulting rate would be 1 SCA every 997.333 years. This rate is still very low relative to other locations. See Table 1.

Defibrillation at Pools – Safety Issues

Regarding the safety of applying an AED at a swimming pool, the American Heart Association advises that use of an AED at a pool presents a special situation and cautions that providing an AED shock to a victim lying in water or lying on a wet surface around a pool may cause burns or shocks to the victim or rescuers. When a drowning is suspected, the AHA recommends first removing the victim from the water, opening the airway, and attempting ventilations. If these actions fail to resuscitate the victim, an AED may be indicated and the following actions should be undertaken when an AED is available[12]:

1. Remove the victim from contact with water.
2. Drag the victim gently by the arms or legs, or use a blanket drag.

[12] American Heart Association. Heartsaver AED for the Lay Rescuer and First Responder. Page 3-5, 1997-99.

3. Dry the victim's chest quickly before attaching the AED.

Conclusions and Recommendations

The capability to provide defibrillation within 3 to 5 minutes of SCA should be in place through a PAD program, public safety, and/or the availability of AEDs or manual defibrillators for healthcare workers at the following high risk locations:

- BWI Marshall Airport (PAD program already in place)
- Skilled nursing facilities
- Dialysis centers
- Racecourses and racetracks
- Enclosed malls
- Hospitals and hospital premises

The capability to provide defibrillation within 3 to 5 minutes of SCA should be in place through a PAD program and / or public safety at the following intermediate risk locations based on national guidelines, legislative trends, and higher percentages of witnessed SCAs:

- Sports stadiums
- Rehabilitation facilities
- Ocean City beaches (PAD program already in place)
- Amusement parks
- Public parks
- Colleges and universities
- Golf courses
- Health clubs and related facilities
- Places of large public assembly
- Casinos should they be established in Maryland
- High rise residential facilities and housing complexes with greater than 250 individuals over the age of 50 present for 16 or more hours a day

Cost- effectiveness of PAD programs at intermediate risk locations is enhanced when the locations are large/high exposure facilities (e.g. health clubs with more than 500 members (AHA recommends 2500) or educational facilities with over 1000 students, faculty and staff present).

MIEMSS should continue to trend data from MCASS, review national recommendations, legislative trends, and published scientific studies and modify public policy as new information becomes available. Additionally, voluntary placement of AEDs at swimming pools and other community locations, as well as participation in PAD Programs should be encouraged; perceived barriers to participation in PAD Programs should be eliminated. The promising 27% "save rate" for witnessed SCA at facilities currently participating in the Maryland PAD Program serves as a public health incentive to encourage the growth of these programs; "save rate" means pulse at EMS arrival or while being transported. Also, serious consideration should be given to greater investment in public safety AED programs – fire, EMS, and police – that are capable of arriving and defibrillating within 5 minutes of arrest. At the present time, rapid response by public safety

the only potentially effective approach to addressing SCA in homes which account for the vast majority of SCAs.

Study Limitations

The MCASS database includes all out-of-hospital cardiac arrests in Maryland that are reported to MIEMSS. All EMS personnel that provide care to an individual in cardiac arrest are requested to submit copies of the following: (1) the Maryland Ambulance Information System (MAIS) Run Report or EMAIS equivalent; (2) the EMS Cardiac Arrest Supplemental Form; (3) a narrative explaining the history of the cardiac arrest and subsequent treatment; and (4) the AED or manual defibrillator summary report. The narrative is used to conduct quality assurance checks on responses provided on the other forms. The MAIS master database, which comprises ambulance run information from all EMS incidents regardless of the nature of the incident, is also queried for cardiac arrest cases that may have inadvertently not been submitted. These incidents are followed up to obtain the necessary study information. Response times are gathered from the MAIS report and validated from data provided by the local 9-1-1 systems. For some jurisdictions, data are submitted by E-MAIS, the electronic equivalent of the MAIS Run Report, EMS Cardiac Arrest Supplemental form and other reports.

All EMS jurisdictions in the state are expected to contribute information on all out-of-hospital sudden cardiac arrest cases seen by EMS. Rigorous un-duplication measures are taken to ensure that all documentation belonging to a single cardiac arrest incident is not split into multiple incidents. Currently, there is no way to completely un-duplicate incidents reported in the MAIS database. Therefore, information provided from this state EMS database may contain overestimates in the numbers. Also, the MCASS database does not contain all EMS jurisdictional information, including one of the largest jurisdictions in Maryland. The exact amount of underreporting is unknown, but estimated to be in the range of 20%. It is doubtful, however, that the underreporting will have a significant impact on the rank order of annual rates by location. Finally, variability of reporting may exist across jurisdictions; data have not been presented by jurisdiction in this report.

The statistics provided are generated from the Maryland EMS system. As such, they reflect only those out-of-hospital cardiac arrests that notified and utilized the EMS system. The data do not include out-of-hospital cardiac arrests that:

1. Do not contact the 9-1-1 system for care,
2. Contact the system but do not use the system due to the presence of a valid EMS Do Not Resuscitate Order, or
3. No resuscitative efforts were provided by EMS and the patient was classified as "Dead on Arrival" at the scene.

Also, this report provides a six-year aggregate of the data. Because cardiac arrests are a relatively rare event, small numbers may greatly impact percentages and rates. This data limitation is thought to directly affect the statistics associated with the locations in which cardiac arrests occur, since there are a large number of subcategories of locations within the five main categories.

Rates for the place of occurrence charts are calculated using denominators from various sources. Most of these sources are from state agencies or licensing bureaus and thought to be complete and accurate. Other denominators such as shopping malls were obtained from Internet lists and validated in statewide focus groups. Finally, other denominators such as the ones for churches, hotels/motels and restaurants/bars were obtained from the yellow pages phone book. The lists were checked for duplicates and misclassified listings; however, these denominators may provide an overestimate of the true rate since the definition demands that the place of occurrence have a listed phone number for the establishment. Averaging of the annual rates shown in the table may not accurately capture the impact of the size of a given location on the likelihood of an SCA event. Certain denominators, e.g., the number of streets and highways, could not be accurately determined.

Definition of Community Pools

Information regarding the number of swimming pools included in the study was obtained from the Department of Health & Mental Hygiene. Maryland State regulations define "Public Pools" to include three (3) classifications: 1) Recreational; 2) Semi-Public; and 3) Limited Public Use Pools. See the language of COMAR 10.17.01 which is shown in Appendix D. This report used all three types of public pools as the cardiac arrest denominator in determining the relative risk of a witnessed SCA at a community pool. This was done for several reasons. First, there was no definition of "pool" contained in the language of SB 742. Second, the DHMH information on public pools came from local health departments which did not necessarily report the type of "public pool." Third, the Maryland cardiac arrest data collection did not differentiate among various types of community pools; rather, information was reported on "community pools" generally. Thus, the decision to use the combined number of all three types of public pools was determined to be reasonable.

If it is determined, however, that the combined pool number is inaccurate because it incorrectly includes pools that would not appropriately qualify as "community pools," an alternative methodology is to calculate the number of such community pools it would take to make pools fall into the "high" risk category. Using this method, even if all 18 SCA victims (4 medical / cardiac / unknown etiology, 13 drownings and 1 terminally ill) were deemed to have all been in a shockable rhythm and thus eligible for use of an AED, the number of pools would have to decrease from the current number of 2,992 pools to no more than 30 in order for pools to be fall in the "high risk" category. And, in order for pools to fall into the "intermediate risk" category, the number of pools would have to be no more than 300. By any count, there are many more than 300 community pools within the State of Maryland. Thus, the risk of SCA at community pools cannot fall into the "high" or "intermediate" categories under any reasonable methodology.

Despite the limitations of the study, the MCASS data reported in this study are well within the range of data reported by other researchers.

Table 1. Ranked Out-of-Hospital Witnessed Cardiac Arrests with Medical or Unknown Etiology (All Ages), Calendar Years 2001-2006

	6 Yr. Total	Number Of Facilities	Rate of CA per Facility per Year	Years per CA per Facility	Percent of Total	Cumulative Percent
High Risk Locations						
Airport - BWI	13	1	2.1667	**0.462**	0.18	0.18
Skilled Nursing Facility	584	223	0.4365	**2.291**	8.29	8.47
Dialysis Center	122	77	0.2641	**3.787**	1.73	10.20
Racecourse/Racetrack	7	5	0.2333	**4.286**	0.10	10.30
Jail/Correctional Facility	34	43	0.1318	**7.588**	0.48	10.78
Retail Store (enclosed mall)	21	32	0.1094	**9.143**	0.30	11.08
Hospital Place and Premise	45	75	0.1000	**10.000**	0.64	11.72
Intermediate Risk Locations						
Stadium	9	19	0.0789	**12.667**	0.13	11.85
Rehabilitation Center	45	97	0.0773	**12.933**	0.64	12.49
Public Beach - Ocean City	2	6	0.0556	**18.000**	0.03	12.51
Amusement Park	2	8	0.0417	**24.000**	0.03	12.54
Park	31	163	0.0317	**31.548**	0.44	12.98
School/Educational Facility (College)	11	66	0.0278	**36.000**	0.16	13.14
Train/Train Station	14	116	0.0201	**49.714**	0.20	13.34
Ambulance-Jurisdictional (in route)	73	611	0.0199	**50.219**	1.04	14.37
Assisted Living Facility	148	1,363	0.0181	**55.257**	2.10	16.47
Golf Course	21	202	0.0173	**57.714**	0.30	16.77
Health Club	20	267	0.0125	**80.100**	0.28	17.05
Low Risk Locations						
Airport - Other	2	35	0.0095	**105.000**	0.03	17.08
Adult Day Care	9	162	0.0093	**108.000**	0.13	17.21
Hotel/Motel	51	1,532	0.0055	**180.235**	0.72	17.93
Courthouse	1	34	0.0049	**204.000**	0.01	17.95
Ambulance-Commercial (in route)	7	261	0.0045	**223.714**	0.10	18.05
Industrial Place and Premise	65	3,910	0.0028	**360.923**	0.92	18.97
Restaurant/Bar	115	7,253	0.0026	**378.417**	1.63	20.60
Museum	1	69	0.0024	**414.000**	0.01	20.62
School/Educational Facility (PK-12)	32	2,604	0.0020	**488.250**	0.45	21.07
Theatre/Cinema	2	163	0.0020	**489.000**	0.03	21.10
Public Beach - Other	2	191	0.0017	**573.000**	0.03	21.13
Physician/Dentist Office	76	8,553	0.0015	**675.237**	1.08	22.20
Church	46	5,506	0.0014	**718.174**	0.65	22.86
Home	4503	1,980,859	0.0004	**2639.386**	63.89	86.75
Youth Camp	1	522	0.0003	**3132.000**	0.01	86.76
Community Pool	4	2,992	0.0002	**4488.000**	0.06	86.82
Child Day Care	1	13,690	0.0000	**82140.000**	0.01	86.83
Convention Center	0	3	0.0000	**0.000**	0.00	86.83
Unranked Locations						
Senior Living Housing	60	Unk			0.85	
Other Residential	71	Unk			1.01	
Bus/Bus Station	3	Unk			0.04	
Street/Highway	363	NA			5.15	
Public Transportation	8	NA			0.11	
Other Transportation	26	NA			0.37	
Government Admin. Building	35	Unk			0.50	
Public Building	69	Unk			0.98	
Retail Store (non enclosed mall)	93	Unk			1.32	
Senior Recreation Center	3	Unk			0.04	
Other Building	36	Unk			0.51	
Recreation Center	14	Unk			0.20	
Other Recreation Place	61	Unk			0.87	
Urgent Care Facility	4	Unk			0.06	
Other Medical Facility	19	Unk			0.27	
Unknown	63	Unk			0.89	
Total	7048	NA			100.00	

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AMENDMENT

To Bill 26-12

BY COUNCILMEMBER LEVENTHAL

PURPOSE: To title the law.

Beginning on page 5, line 90, add Section 2 to read:

Sec. 2. This law may be cited as "Connor's Law."

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(41)