

Preventing Sudden Cardiac Death:

By Creating
**HEART SAFE
SCHOOLS**

ECCU Conference
Workshop,
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Presenter Disclosure Information

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Preventing Sudden Cardiac Death in Schools and Communities

FINANCIAL DISCLOSURE:

- Employed by Children's Healthcare of Atlanta

UNLABELED/UNAPPROVED USES DISCLOSURE:

- None

Presenter Disclosure Information

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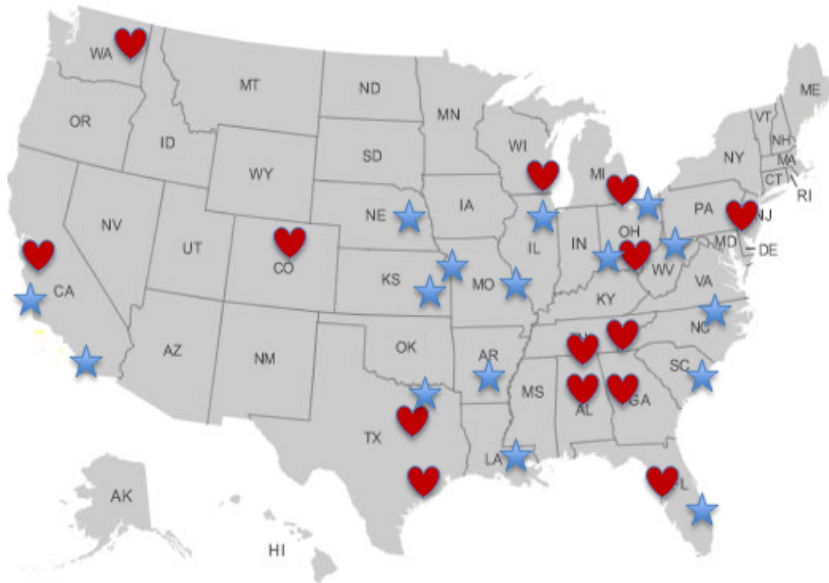
Today's Objectives

- 1. Identify Primary and Secondary Prevention Measures of Sudden Cardiac Death***
- 2. Site Assessment and All Staff Awareness***
- 3. Practice Plans***
- 4. Practice Drills***
- 5. School Save Case Study***

At a School in Grafton ... 1999

- 17 year old athlete, Adam Lemel, collapses while playing basketball.
- CPR was initiated and 911 called.
- No AED was available within the school.
- EMS arrived.
- Adam passed away.

Affiliate Map



Established Affiliate Sites

- Children's Hospital of Wisconsin (National Office)
- U.C. Davis Children's Hospital
- Children's Healthcare of Atlanta
- Florida Hospital for Children
- Children's Hospital of Philadelphia
- Cook Children's Medical Center
- Texas Children's Hospital
- Children's of Alabama
- East Tennessee Children's Hospital
- Monroe Carell Jr. Children's Hospital at Vanderbilt
- Providence Sacred Heart Children's Hospital
- C.S. Mott Children's Hospital
- Children's Hospital Colorado
- Nationwide Children's Hospital

Interested Affiliate Sites (notated in blue)

Project ADAM[®]

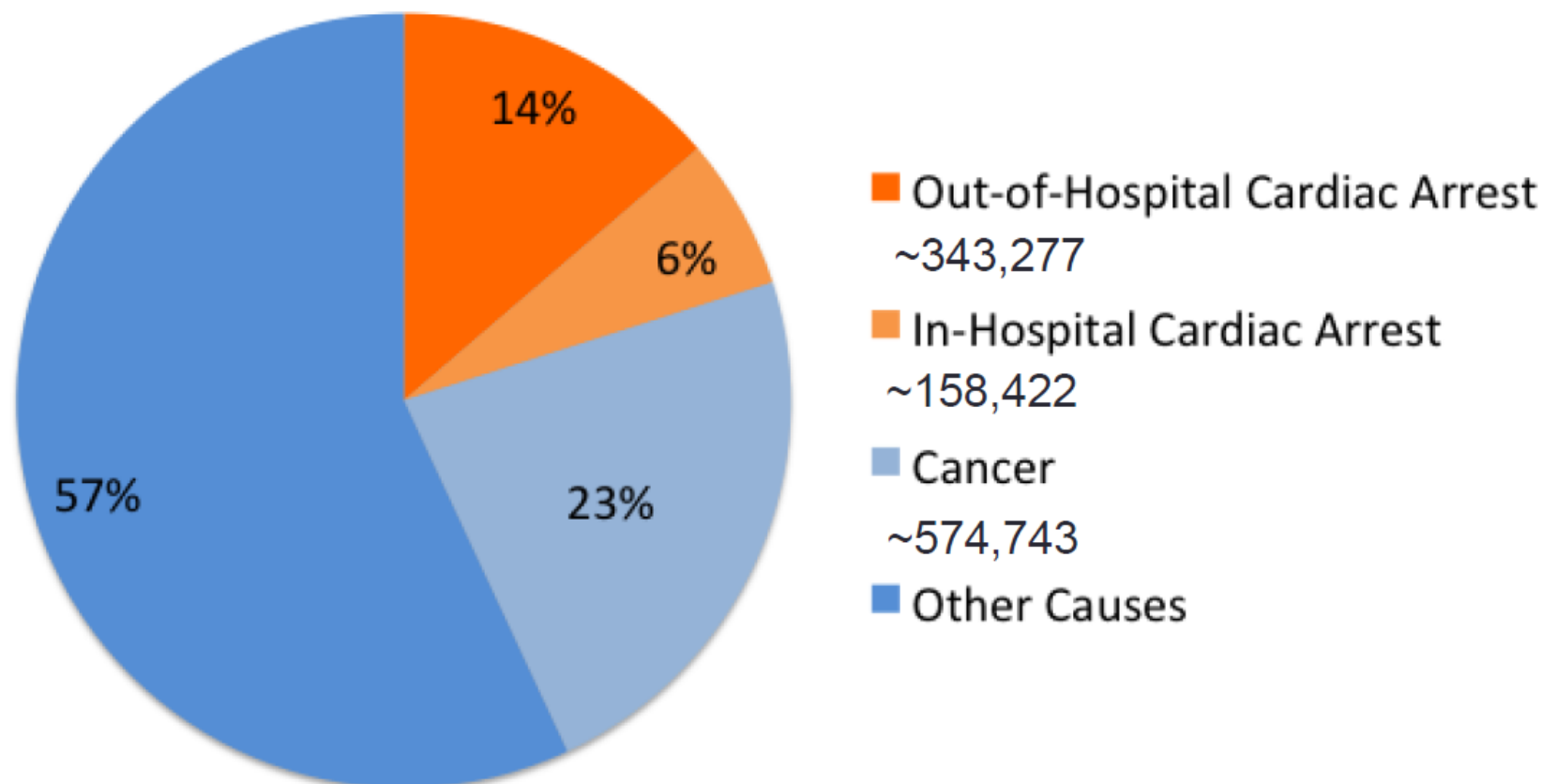
SAVES LIVES



Cardiac Arrest is Responsible for **One of Every Five Deaths** in the United States.

Deaths in the United States: 2011

2,513,171



CDC Death Statistics 2011 http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf

AHA Statistical Update, Go et al, Circulation 2013;129:e28-e292

Response to Cardiac Arrest and Selected Life-Threatening Medical Emergencies: The Medical Emergency Response Plan for Schools: A Statement for Healthcare Providers, Policymakers, School Administrators, and Community Leaders

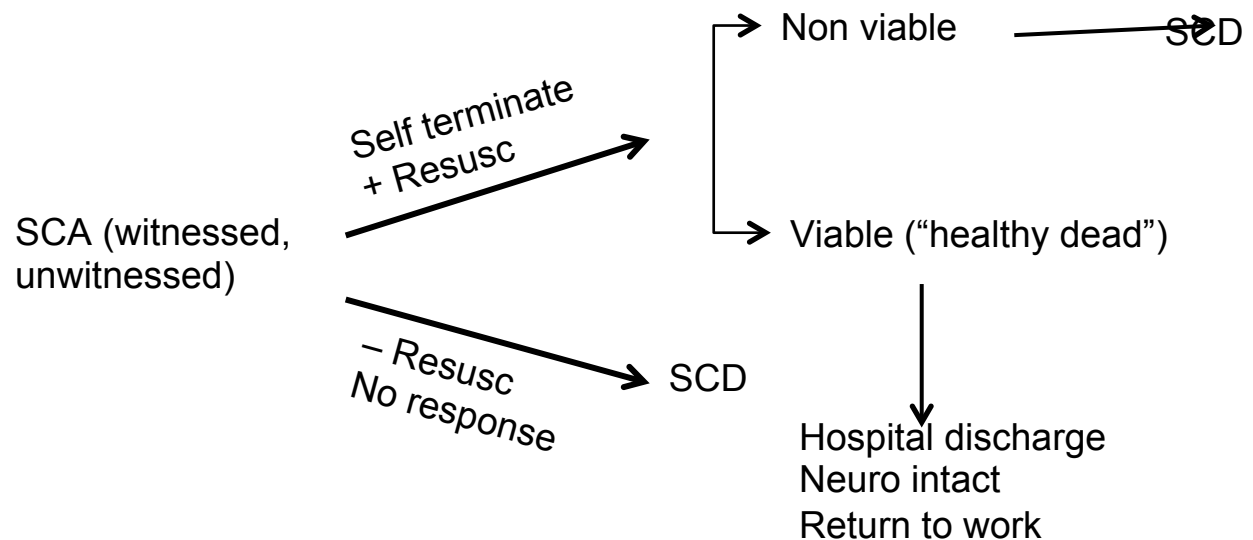
“On any given day, as much as 20% of the combined US adult and child population can be found in schools”

Primary Prevention

Diagnose
Treat

Secondary Prevention

EAP, CPR/AED
Chain of Survival



Primary Prevention

Definition

Primary prevention (**prior to** SCA occurring) includes:

- Staff awareness of early warning signs of a sudden cardiac event.
- Use of a pre-participation sports physical exam, such as the one endorsed by the American Academy of Pediatrics (AAP).

Secondary Prevention & All Staff Awareness

Definition

Secondary prevention is crucial because sudden cardiac events often occur without recognition or warning. Prompt CPR and use of an AED play a vital role in the survival of victims of sudden cardiac events.

- Secondary prevention (**upon** SCA occurring) includes:
 - Staff and student CPR-AED training and SCA awareness.
 - Developing a response team.
 - Accessible and maintained AEDs.
 - Practice plans and drills.

Cardiac Emergency Response Planning for Schools

A Policy Statement

“The mere presence of an AED and/or bystanders with CPR training is not adequate should a SCA occur. Development of the Cardiac Emergency Response Plan (CERP) requires input from the school nurse and other key school and community personnel, in addition to EMS.”

September 2016 | NASN School Nurse

All Staff Awareness

- Symptoms of a Sudden Cardiac Arrest
- Seizure-like activity
- Gasping for breath

All Staff Awareness

- AED Location(s)
- Communication Plan
- Cardiac Emergency Response Plan & Team

Resources

- All Staff Awareness Video:

<https://choasoftware.wistia.com/medias/060mt1p78r>

- Script {Annual School Staff Orientation},

www.projectadam.com/heartsafeschools

Break & Networking

Site Assessment

Equipment Assessment

- Number of People
- Number of Buildings
- Number of AEDs
- Community Use?
- Athletic Fields
- Number of Teams
- Practice Fields
- AEDs with Teams at Fields

School Campus



Building Assessment: Heart Safe School Checklist

~ 14 checklist areas

PROGRAM QUALITY	YES	NO	NEED HELP	COMMENTS
A CPR-AED site coordinator is identified, who oversees the CPR-AED program activities and training.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
The placement of the AED(s) makes it accessible from any part of the building or campus within 2-3 minutes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AED(s) have clear signage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
There is a designated cardiac emergency response team comprised of at least 10% of staff or 5-10 people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CPR-AED training for the cardiac emergency response team is updated annually (or every 2 years) and there is a system in place to track retraining.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All faculty and staff know where the AED(s) are located and how to access them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All faculty and staff have annual awareness training on sudden cardiac arrest (warning signs, recognition, communication procedures, other staff roles, etc.) and our school's cardiac emergency response plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
We have a cardiac emergency communication code (overhead page or other) to notify responders and others in the area that an incident is occurring. Staff outside always carry a communication device.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Cardiac Emergency Response PLANS

Jonathan Wenhold

- 2004, Sope Creek Elementary School, an incident where a 3rd grade student suddenly collapsed during PE class following jump roping activity.
- At the time of quick responders, no first responder knowledge of hands only CPR/emergency response procedures.



The Plan: Venue

Equipment

- Do you have an AED
- How many
- Accessibility
- Budget for replacement pads & batteries

Buildings

- Building Names
- Doors – keys or access codes
- Elevators or stairs

EMS Access Points

- Construction
- Locked gates

The Plan: Communication

- First call 911
- Land Lines vs Cellular
- Communication Tree
 - Activation
 - Members
 - Message



The Plan: First Responders

Team:

- Teachers/Coaches
- Custodians
- Front Office Staff
- Team Parent

The Plan: First Responders

Training:

- AED special circumstances
- Incorporate with fire safety-HR Training
- What does a cardiac/medical emergency look like
- CPR/AED training
- EPI Pen Training
- Lay people vs medical personnel

The Plan: Equipment

AED

- pads
- batteries

First Aid Kit

- scissors
- razor
- masks

Transportation



Scene to ambulance

Ambulance to nearest
healthcare facility



Resources

- Customizable templates can be found:
www.projectadam.com/heartsafeschools

Cardiac Emergency Response DRILLS

Practice Drills

- Assign tasks
- Use a drill summary form
- Bring the AED to every emergency
- Emphasize early CPR
- Debrief



Equipment

- CPR manikin
- First responder kit
- AED training unit
- Drill summary checklist/pen

Sample Drill Checklist

AED Drill Checklist I - Basic

Directions: Utilize this AED drill checklist during your first few AED drills to ensure your team implements the basic elements of an AED drill.

Date/Time: _____

School: _____

Drill Location: _____

RESPONSE ACTION	YES	NO
Victim unresponsiveness was determined	YES	NO
Office was called	YES	NO
Cardiac Emergency Response Team was called	YES	NO
EMS/911 was called	YES	NO
Cardiac Emergency Response Team arrived	YES	NO
CPR was started	YES	NO
AED arrived to the scene within 2 minutes	YES	NO
AED pads were placed immediately on the victims bare chest	YES	NO
AED advised a first shock	YES	NO
Proper body mechanics re: CPR	YES	NO
Proper AED pad placement	YES	NO
Office obtained necessary information for EMS call	YES	NO
Did someone go to meet/direct EMS	YES	NO
Crowd control took place	YES	NO

Drills in Action

- School AED Drill Video:

<https://www.youtube.com/watch?v=wJ-reIDQCnk&list=PL0SsMsgRJwXUqj-4FgNiEnazpjPS9xaMM&index=23>

Full Circle

- Back in 2005, Rocky Mt. became the first designated, Project SAVE/ADAM school. Sope Creek ES was the first, designated in 2004.
- JoAnne Browne, RN is our current nurse at Rocky Mt and tirelessly worked to establish a first responder team and have regular first responder drills.
- During a recent drill, the school picked an area right outside of the GYM, instead of a classroom that had a panic button, as it required fast thinking to get help.

Full Circle

- Monday, a **third grade** student suddenly collapsed during **PE class** following a running exercise, while dribbling basketballs. No history of any health problems.
- This time:
 - a walkie was used to call for first responder team and 911,
 - an AED was immediately brought on scene,
 - a first responder team assessed the situation, placed the AED on the student and began CPR.
- This student is **alive** and expected to return to school soon.

Resources

- Customizable templates can be found, drill templates {AED Drill Checklists I & II}:

www.projectadam.com/heartsafeschools

School Save Case Study

Claire

On October 13th, 2015, a 17 year old female was playing in a varsity volleyball game. The game had been going for less than 10 minutes when the female collapsed and went into cardiac/respiratory arrest.

Timeline

- 00:00 - Patient grabs her chest (Levine Sign)
- 00:03 – Patient Hits the floor
- 00:16 – Bystander tells someone to call 911
- 00:32 – AED arrives
- 00:56 – CPR is started
- 01:43 – AED is pads are applied
- 02:11 – Defibrillation at 120 joules
- 03:27 – CPR discontinued

911 Info

- 17 year of age female unconscious
- Time of Dispatch 1839 hours
- On scene at 1850 hours
- Transporting to Gwinnett Medical then
Diverted to Egleston at 1857

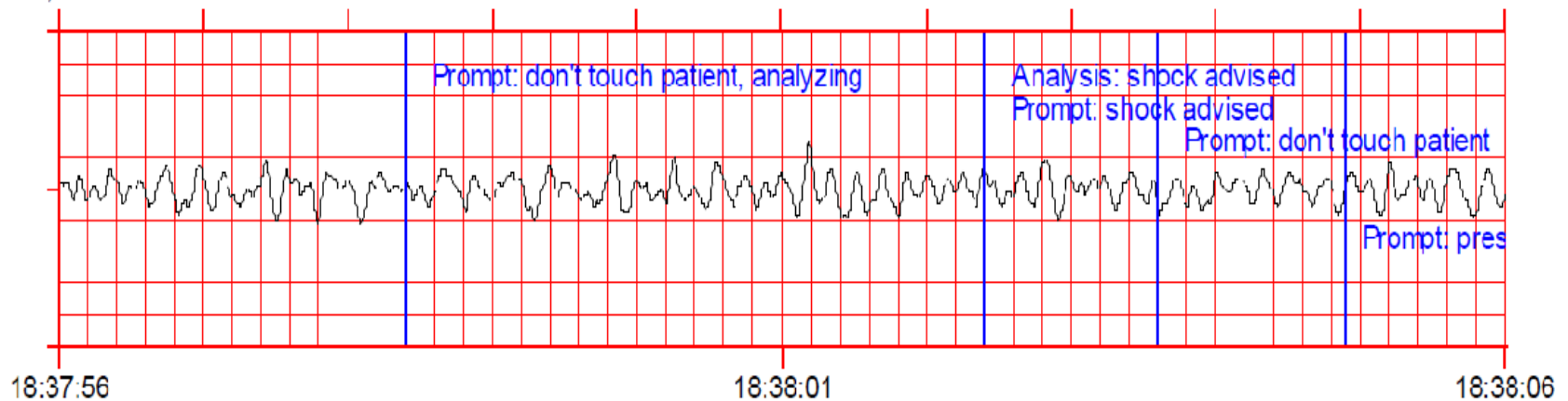
CPR

- Performed by a certified Athletic Trainer
- Performed without hesitation
- CPR performed for 1 minutes and 54 seconds
- CPR stopped due to ROSC

AED

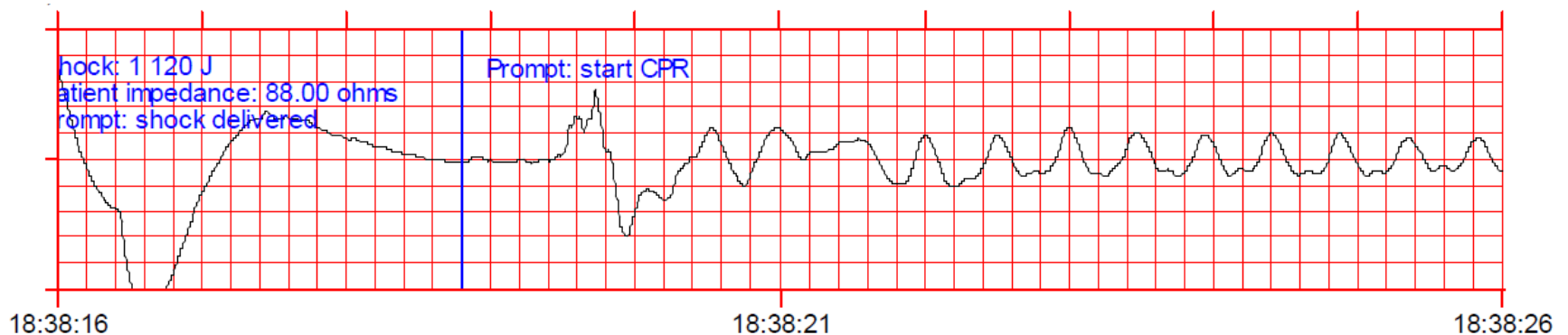
- Zoll AED Plus (Biphasic)
- Initial Rhythm: V-Fib

Pads, ECG x1



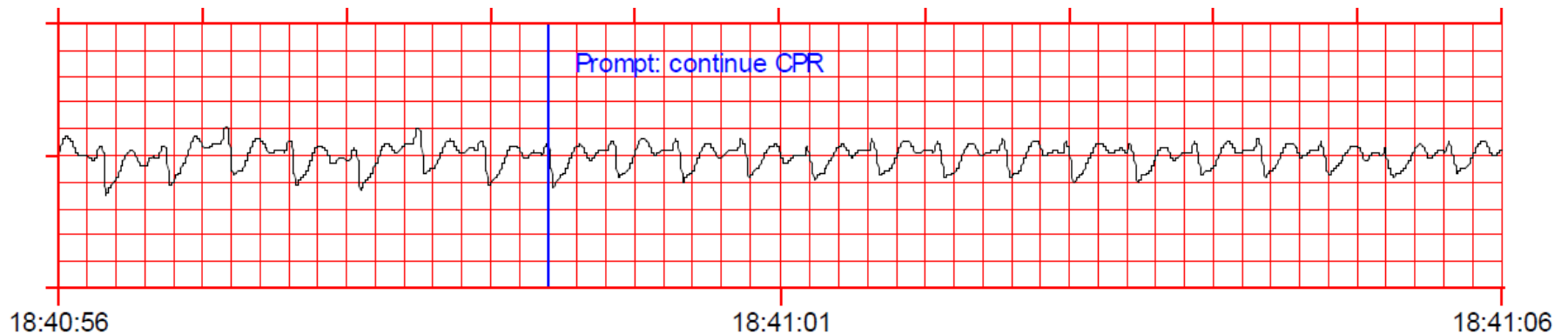
AED

- Defibrillated at 120 joules
- CPR continued



AED

- ROSC
- Ending Rhythm



Positives

- CPR started without hesitation
- Crowd Control
- AED on the scene
- EMS on scene time
- ROSC

Improvements

- Remove clothing that interferes with CPR
- 1:11 to apply AED Pads after AED was on scene
- Information given to EMS (initial & updates)
- Protecting patient privacy

Chapter 4: Implementing Project ADAM

www.projectadam.com/heartsafeschools

Resources @ www.projectadam.com/heartsafeschools

School Manual

Description: Schools can utilize the following manual as a guide to implement Project ADAM. Click on the link below to download and review the manual.

- [Project ADAM School Manual](#)

Program Templates

Instructions: Schools can utilize the following templates to implement Project ADAM. Click on any of the links below to download word documents that can be customized for your school building. Contact your local affiliate for support.

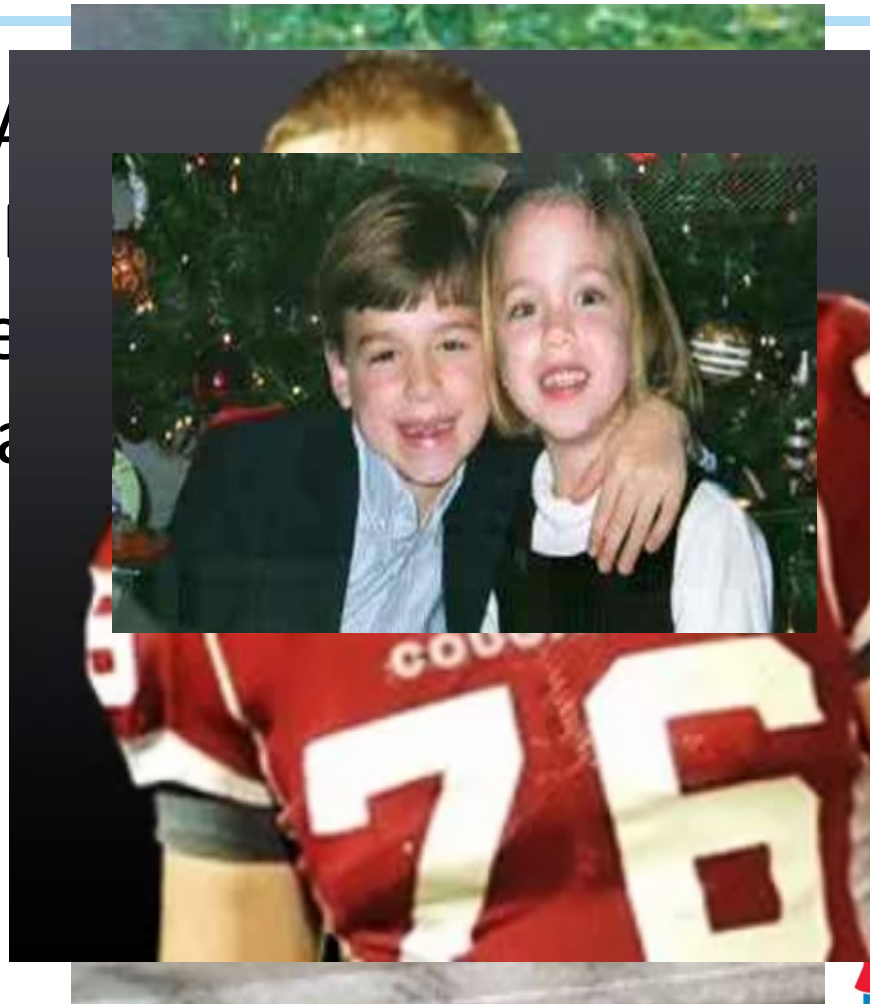
- [Implementation Timeline](#)
- [Fundraising Tools](#)
- [Budget Template](#)
- [AED Site Assessment](#)
- [Medical Director Checklist](#)
- [Choosing an AED](#)
- [Written Plan for SCA in Schools – Full Version](#)
- [Written Plan for SCA in Schools – Partner School](#)
- [Written Plan for SCA in School – Athletics](#)
- [CPR-AED Training Tips](#)
- [AED Maintenance](#)
- [AED Incident Debriefing](#)
- [Cardiac Emergency Response Drills](#)
- [AED Drill Checklist I](#)
- [AED Drill Checklist II](#)
- [School-Based Drill Scenarios](#)
- [Annual School Staff Orientation](#)
- [School Incident Form](#)
- [Partner School Summary](#)
- [Project ADAM Acknowledgement](#)

At a School in West Allis ... 2016

- 17 year old athlete, Michael Saxby, collapses while playing basketball.
- CPR was initiated by a nearby trainer and 911 called.
- An AED from within the school arrived at the scene.
- EMS arrived and transported Michael to Children's Hospital of Wisconsin.

In Memory

Project A
Adam's
Adam Le
while pla



illators in
after 17 y/o
sed and died

Q & A Thank You!

