MI HEARTSafe Schools

2015 MASN Annual Conference

May 7-8, 2015

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Learning Objectives

- Explain the public health surveillance and engagement of partners working to prevent sudden cardiac death of the young (SCDY) in Michigan
- Recognize the importance of cardiac emergency preparedness for schools
- Consider MI HEARTSafe Schools as an example of cardiac emergency preparedness at local level

New Michigan Department of Health and Human Services (MDHHS)

Vision:

Promote better health outcomes, reduce health risks and support stable and safe families while encouraging self-sufficiency

Former Michigan Department of Community Health (MDCH)

Mission:

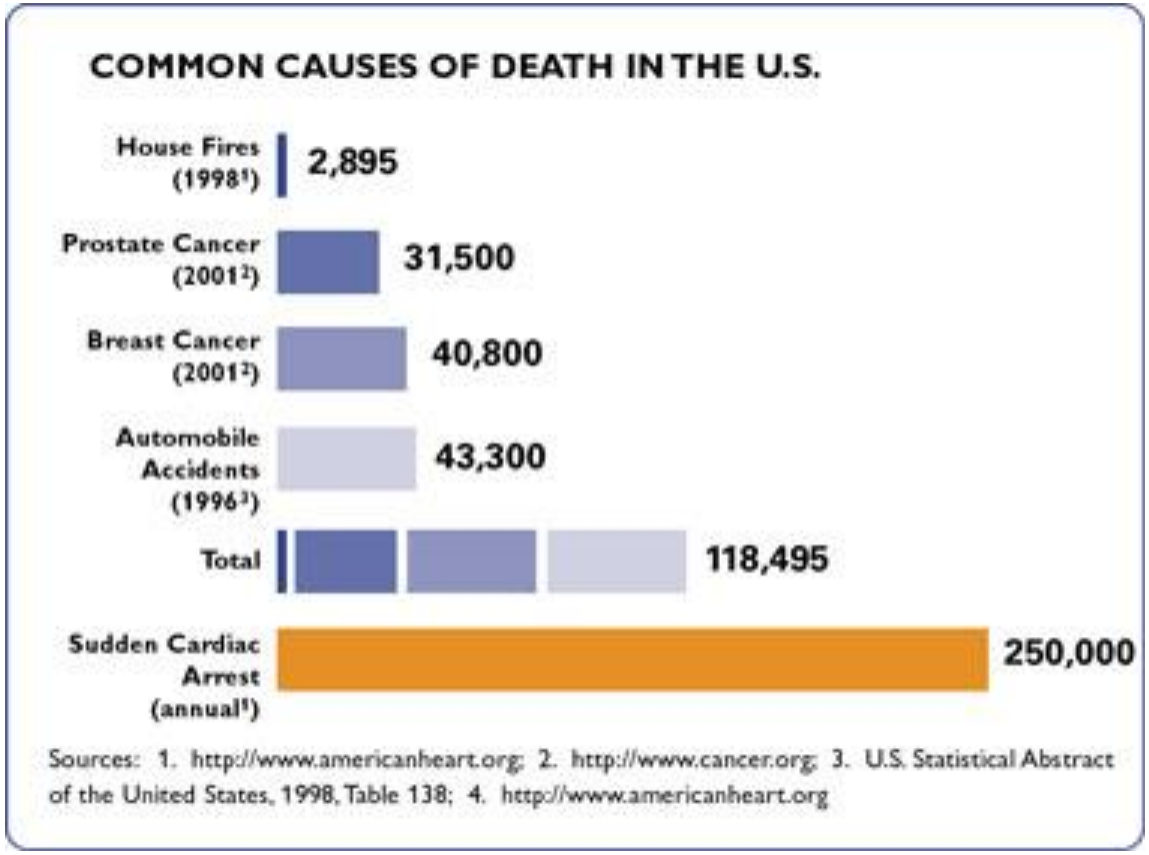
MDCH will **protect, preserve, and promote** the health and safety of the people of Michigan with particular attention to providing for the needs of **vulnerable and under-served populations**

What is Sudden Cardiac Death?

- Specific
  - *Witnessed death*: victim in his or her usual state of health without acute symptoms for ≤6 hours prior to death
  - *Unwitnessed death*: victim last seen in his or her usual state of health without acute symptoms until <24 hours before death
- General
  - Deaths occurring out-of-hospital or in the emergency room or as “dead on arrival” with an underlying cause of death reported as a cardiac disease

Zheng ZJ, Croft JB, Giles WH, et al. State-Specific Mortality from Sudden Cardiac Death United States, 1999. MMWR Morb Mortal Wkly Rep. 2002;51(06):123-126.

Sudden Cardiac Death (SCD)



Sudden Cardiac Death of the Young (SCDY)

- Variably defined as < 30, < 35, < 40 years of age
- Especially tragic event; often high-profile, associated with young athletes
- A potentially preventable condition, due to the heritable nature of certain cardiac disorders
  - More likely to have genetic determinants than similar conditions in older persons
    - As many as 40% of SCDY victims have been identified as having a heritable disease
  - Immediate family members of SCDY victims may be at increased risk of sudden death

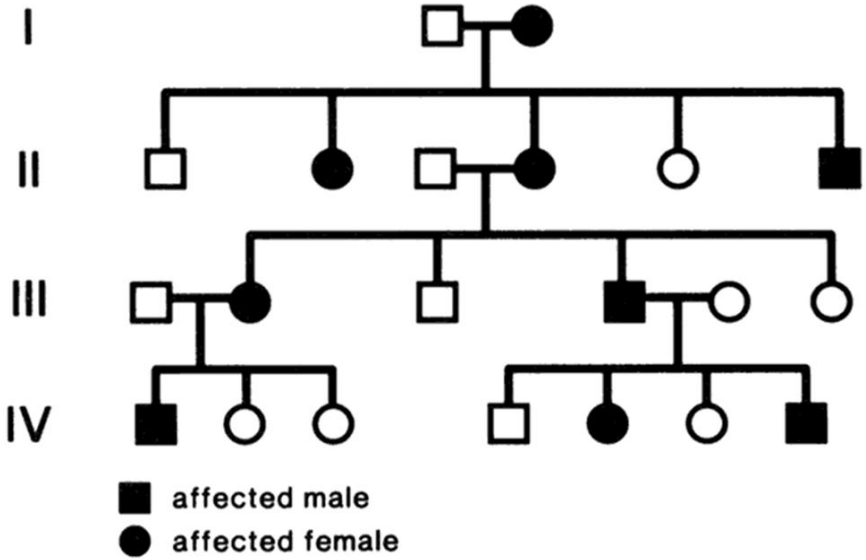
SCDY Etiologies

- Coronary artery disease
- Coronary artery abnormalities
- Myocardial disorders
  - Hypertrophic cardiomyopathy
  - Arrhythmogenic right ventricular dysplasia (ARVD)
  - Dilated cardiomyopathy
- Other structural/functional abnormalities
  - Primary pulmonary hypertension
  - Restrictive cardiomyopathy
  - Marfan syndrome with aortic dissection
  - Aortic valve stenosis
- Primary electrical abnormalities/ion channelopathies
  - Long QT syndromes
    - Romano Ward
    - Jervell Lange Nielsen
    - Acquired
  - Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)
  - Brugada syndrome
  - Short QT Syndrome
  - Wolf-Parkinson White syndrome
  - Heart block: congenital or acquired
- Environmental causes

  E.g., commotio cordis ('blow to chest') cocaine, stimulants, inhalants, gasoline, others

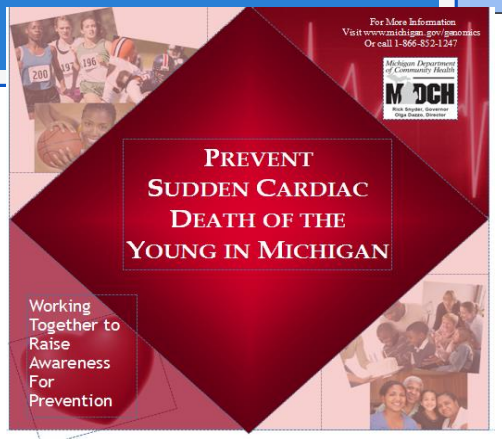
Adapted from Berger et al, Pediatric Clinics of North America (2004). 51:1201-1209

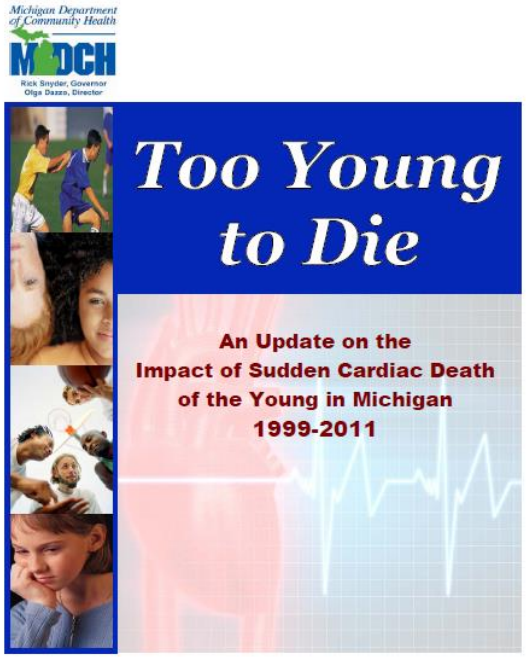
Signs of Inherited Conditions



- Occurs in **young** individuals
- **Multiple** family members
- Closely **related** individuals
- Seen in multiple **generations**

Michigan Sudden Cardiac Death of the Young (SCDY) Surveillance and Prevention, 2003-2015





Aim: Prevention of SCDY (1-39 years of age) in Michigan through early detection of individuals at risk, treatment of those with predisposing conditions, & intervention for victims experiencing sudden cardiac arrest

www.michigan.gov/scdy

Death Certificates Review: Significant Health Disparities

Table 1
Sudden cardiac deaths (SCDs)* of Michigan residents aged 1 - 39 years, 1999 - 2009

		Number	Percent
Total		**3,134**	
Sex			
	Male	2,179	69.5
	Female	955	30.5
Race			
	White	1,961	62.6
	Black	1,089	34.7
	Other	84	2.7
Age			
	1-4 years	91	2.9
	5-9 years	45	1.4
	10-14 years	64	2.0
	15-19 years	137	4.4
	20-24 years	213	6.8
	25-29 years	380	12.1
	30-34 years	716	22.8
	35-39 years	1,488	47.5
Place of death			
	Home	1,339	42.7
	Nursing home, extended care	28	0.9
	Hospital: emergency room / outpatient	1,462	46.6
	Ambulance	34	1.1
	Other / unknown	271	8.6
Autopsy			
	Yes	2,474	78.9
	No	658	21.0
	Unknown	2	0.1

* Includes decedents who died out of the hospital, or in an emergency department, or were dead on arrival to an emergency department, and had one of the identified ICD-10 codes reported as the underlying cause of death on the death certificate

<u>Age-Adjusted Mortality Rates:</u>

Statewide: 5.5 per 100,000

White Males: 6.1 per 100,000

Black Males: 16.5 per 100,000

White Females: 2.4 per 100,000

Black Females: 8.3 per 100,000

1-9 years: 1.0 per 100,000

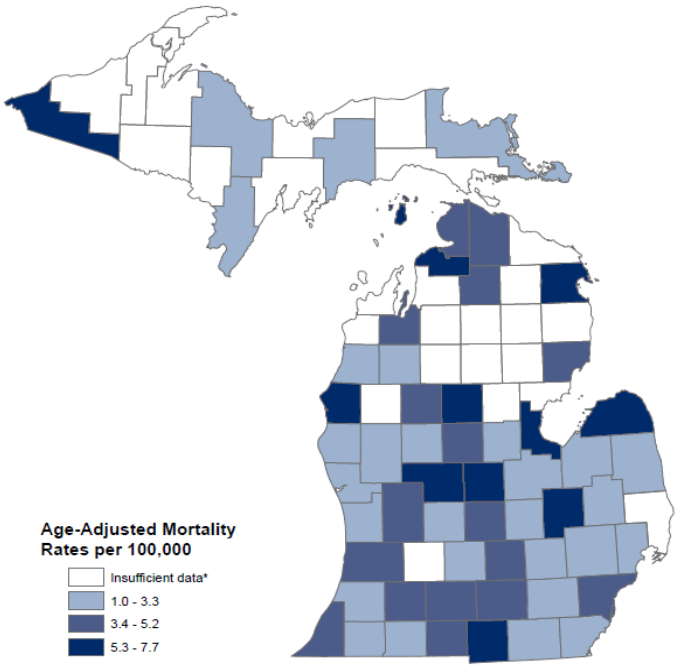
10-19 years: 1.2 per 100,000

20-29 years: 4.1 per 100,000

30-39 years: 14.5 per 100,000

http://www.michigan.gov/documents/mdch/6-18_SCDY_Report_FINAL_June2012_389619_7.pdf

Age-Adjusted Mortality Rates among Michigan Residents, Ages 1-39 by County, 2003-2012

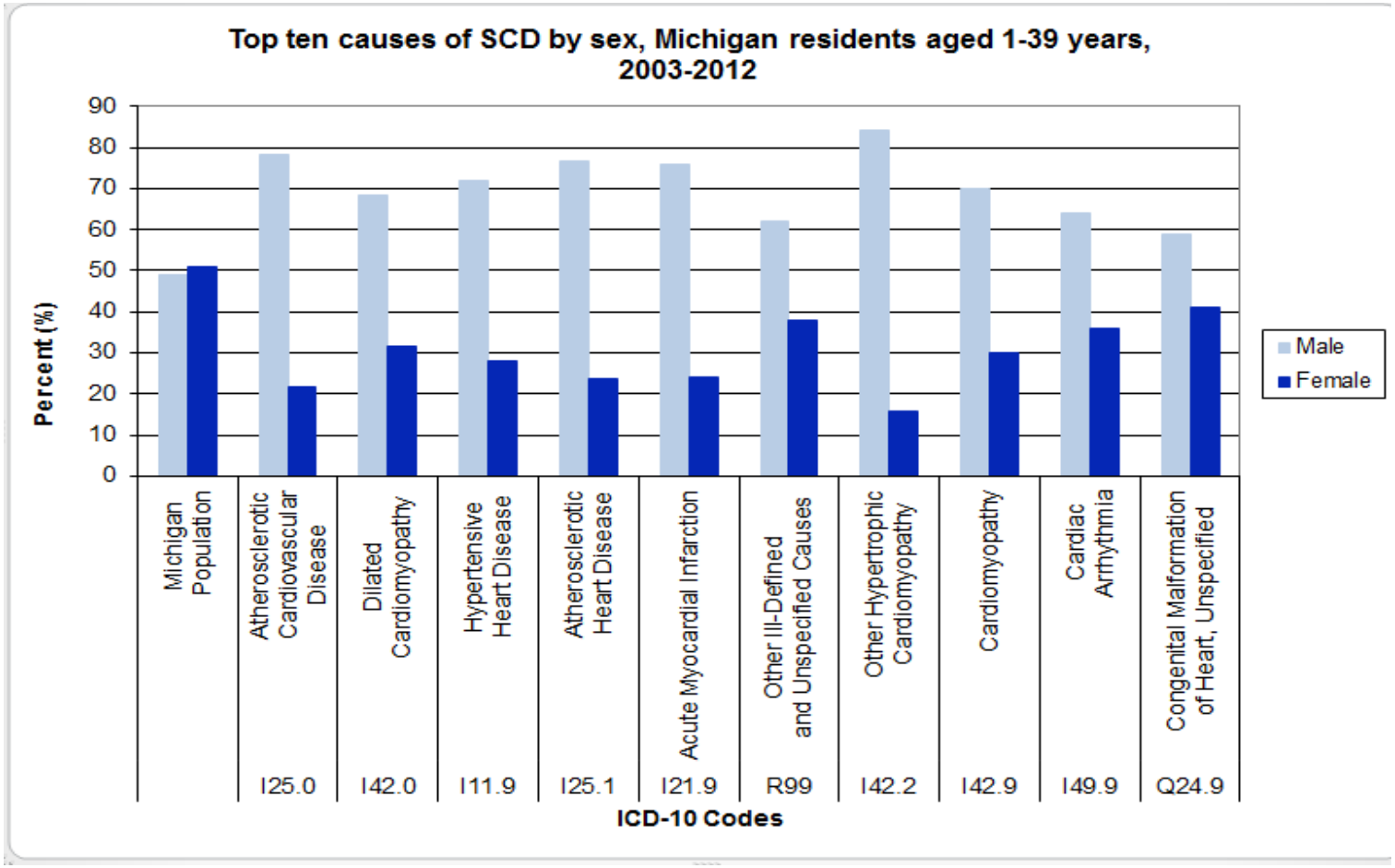


*Counties with fewer than five sudden cardiac deaths from 2003-2012
Michigan age-adjusted mortality rate is 5.2 per 100,000
Source: MDCH Vital Statistics
Age-adjusted to the 2000 U.S. standard population

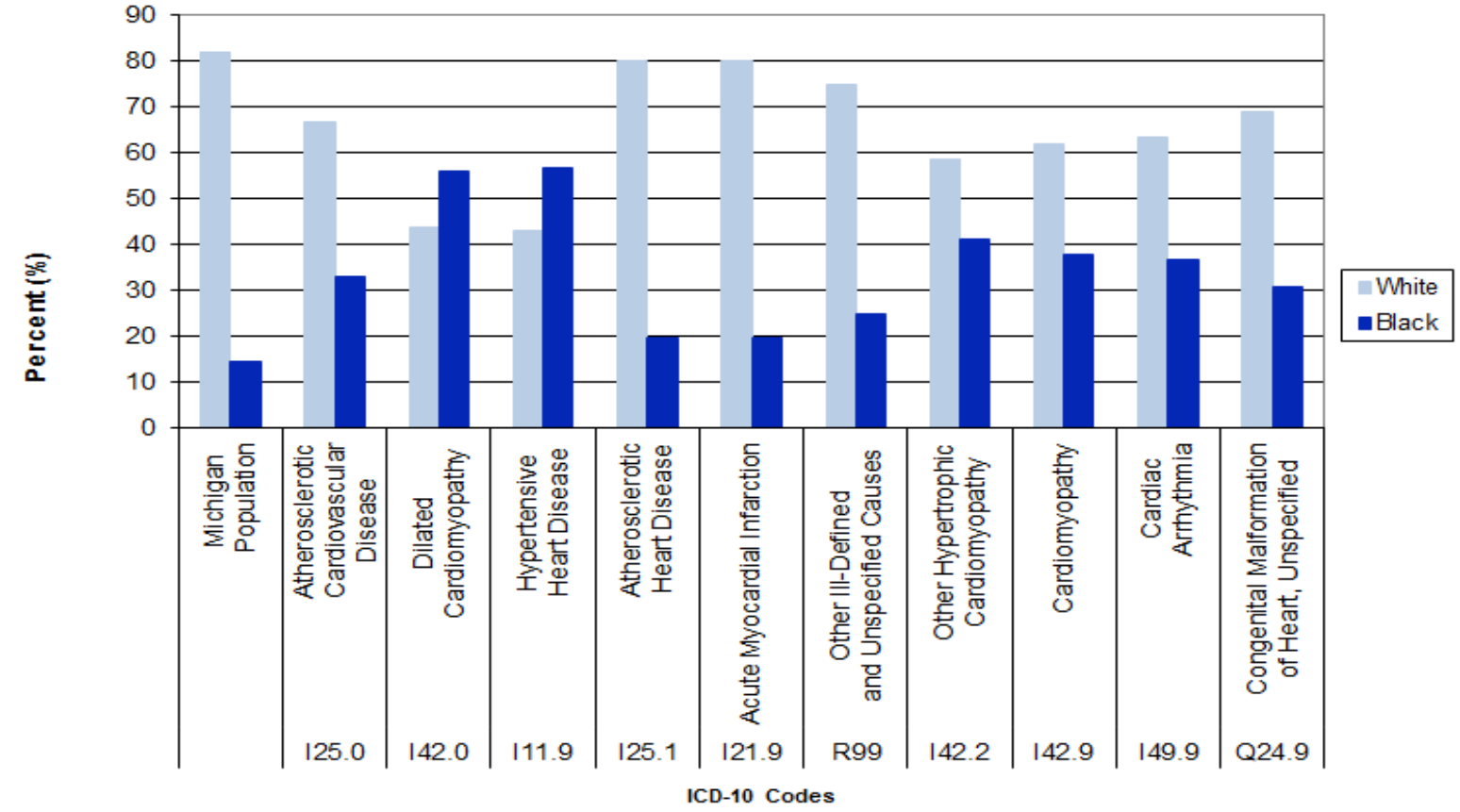
- Michigan age-adjusted mortality rate is 5.2 per 100,000 (5.5 per 100,000 in 1999-2009)
- Top age-adjusted counties
  - Hillsdale =7.7 per 100,000
  - Gogebic =6.7 per 100,000
  - Gratiot= 6.5 per 100,000
  - Genesee =6.4 per 100,000
- Top counties in counts
  - Wayne =944 deaths
  - Oakland =234 deaths
  - Macomb =164 deaths

Please contact duquetted@michigan.gov for other county-specific data

Top Ten Causes of SCDY by Gender, 2003-2012



Top Ten Causes of SCDY by Race, 2003-2012



Family History of SCDY

Michigan 2007 Behavioral Risk Factor Survey (MiBRFS)

- 2,856 Michigan adults were asked about SCDY
- 6.3% have a family history of SCDY
  - ➢ 26.2% with multiple relatives
  - ➢ 35.5% with first degree relative
- Significantly more blacks (11.2%) than whites (5.4%) reported SCDY

Table 3

Family History of Sudden Cardiac Death of the Young[a]

2007 Michigan Behavioral Risk Factor Survey

	%	95% Confidence Interval
Total	**6.3**	**(5.2 - 7.7)**
Age		
18 – 24	3.8	(1.6 - 8.7)
25 – 34	8.6	(4.9 - 14.6)
35 – 44	4.2	(2.4 - 7.1)
45 – 54	7.7	(5.4 - 10.9)
55 – 64	5.9	(4.1 - 8.5)
65 – 74	8.5	(5.4 - 13.3)
75 +	5.4	(3.5 - 8.2)
Gender		
Male	5.4	(3.9 - 7.4)
Female	7.7	(6.1 - 9.6)
Race/Ethnicity		
White non-Hispanic	5.4	(4.3 - 6.8)
Black non-Hispanic	11.2	(7.7 - 16.0)
Other non-Hispanic	9.4	(3.8 - 21.3)
Hispanic	--[b]	
Education		
Less than high school	10.8	(5.8 - 19.3)
High school graduate	8.8	(6.6 - 11.7)
Some college	4.7	(3.3 - 6.8)
College graduate	4.4	(2.8 - 6.8)
Household Income		
< $20,000	7.8	(5.1 - 11.7)
$20,000 - $34,999	8.4	(5.9 - 11.8)
$35,000 - $49,999	8.8	(5.5 - 13.8)
$50,000 - $74,999	4.1	(2.1 - 7.9)
$75,000 +	3.2	(1.9 - 5.2)

[a] Among all respondents (n = 2,856), the proportion who reported having at least one biological family member that had a sudden cardiac death, or sudden unexplained death, between the ages of 1 and 39.

Note: Interviewers were instructed not to include spouses of the respondent, infants less than one year of age, as well as drug-related deaths, traumatic deaths (such as car crashes), suicides, homicides, or individuals who had a long illness.

[b] The denominator in this subgroup is less than 50.

Table 3. Prevalence of health-related characteristics among Michigan adults by family history of sudden cardiac death of the young (SCDY)

Health-Related Characteristic	Has Family History of SCDY*		χ^2	Wald-F
	Yes % (95% CI)	No % (95% CI)	P-Value	P-Value†
Health Care				
No health insurance	17.8 (11.0-27.5)	10.6 (9.0-12.5)	0.1048	0.5798
On Medicaid insurance	23.1 (15.4-33.1)	10.6 (9.0-12.4)	0.0034‡	0.1971
No personal doctor	13.0 (7.9-20.5)	15.0 (12.9-17.4)	0.5396	0.5940
No routine checkup in past year	29.3 (20.1-40.5)	31.3 (28.7-34.0)	0.7059	0.9948
No blood cholesterol test in past 5 years	27.4 (17.9-39.6)	20.1 (17.6-23.0)	0.2286	0.3939
Health Status				
Fair to poor general health	16.1 (11.1-22.7)	14.3 (12.6-16.2)	0.5613	0.8687
Rarely-never receive needed emotional support	12.3 (7.1-20.4)	6.2 (5.1-7.6)	0.0773	0.0619
Has a disability	26.4 (19.6-34.6)	21.8 (19.8-23.9)	0.2296	0.1432
Obese (BMI ≥ 30)	34.0 (25.0-44.4)	27.6 (25.2-30.2)	0.2203	0.3252
Chronic Conditions				
Ever diagnosed with high blood pressure	39.5 (30.8-49.1)	27.9 (25.8-30.2)	0.0131‡	0.0019‡
Ever diagnosed with high cholesterol (among tested)	42.4 (33.0-52.4)	40.8 (38.1-43.5)	0.7492	0.7620
Ever diagnosed with diabetes	13.1 (8.9-19.1)	8.6 (7.5-9.9)	0.0801	0.0684
Ever diagnosed with cardiovascular disease	10.0 (6.2-15.8)	9.5 (8.3-10.9)	0.8345	0.9661
Behaviors				
Current smoking	32.2 (23.3-42.6)	20.1 (17.9-22.6)	0.0243‡	0.2078
No leisure-time physical activity	20.2 (13.3-29.5)	19.3 (17.2-21.5)	0.8199	0.8181
Inadequate physical activity	48.3 (38.2-58.5)	47.3 (44.5-50.0)	0.8542	0.8022
Inadequate fruit and vegetable consumption	82.4 (75.6-87.6)	78.1 (75.7-80.2)	0.1973	0.2502

*Reported having at least one biological family member who had a sudden cardiac death, or sudden unexplained death, between the ages of 1 and 39.

†Generated from multivariable logistic regressions with each health-related characteristic as the dependent variable, family history of SCDY as the independent variable, and age group, sex, race, education, and household income as possible confounding variables.

‡$p < .05$.

Michigan SCDY Expert Mortality Review Panel

- Confirm the cause of death or suggest an alternative cause
- Describe the factors that may have contributed to the death
- Identify possible risk to family members
- Suggest recommendations for prevention of future deaths

J Community Health
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ORIGINAL PAPER

Sudden Cardiac Death of the Young in Michigan: Development and Implementation of a Novel Mortality Review System

Siddharth Mukerji · Beth Hanna · Debra Duquette · Janice Bach · Kenneth Rosenman

Abstract Advances in screening, detection and treatment make Sudden Cardiac Death of the Young (SCDY) a potentially preventable condition. Since hereditary causes account for many deaths, identification of an affected individual has implications for immediate relatives; who should receive targeted screening with the aim of preventing SCDY. To develop a mortality review process for SCDY and to identify potential unmet needs for family-based, medical system and public health interventions. The Michigan Department of Community Health and Michigan State University developed a system for investigating SCDY. Review of medical records and next-of-kin (NOK) interviews were conducted. A de-identified summary of each case was presented to an expert panel. The panel identified factors that contributed to the death and possible actions to prevent future deaths. If the case was deemed to have a likely heritable cause, NOK were notified of a possible increased risk and need for evaluation of immediate family members. Twenty-three deaths aged 1–39 years between 2006 and 2008, were selected for review. Sixteen NOK were interviewed. Several primary and secondary prevention measures were identified, including enhanced pre-participation sports screening; provider education; public awareness of risk factors, symptoms, emergency response training for coaches and the general public; and creation and dissemination of emergency response and medical examiner protocols. Seventeen NOK were notified of the potential heritable cause. Investigation of these deaths has led to identification of individual, family, public and provider needs and motivated policy makers to initiate changes to prevent future SCDY.

Keywords Arrhythmia · Cardiomyopathy · Genetics · Sport's physical · Sudden cardiac death · Surveillance

Introduction

Sudden cardiac death (SCD) is a catastrophic event that affects all age groups. Commonly recognized definitions include an "unexpected natural death from a cardiac cause within a short time period, generally <1 h from the onset of symptoms in a person without any apparent prior fatal condition;" [1] or "an unexpected sudden death due to cardiac cause and occurring out of hospital or in the emergency department [2]". For epidemiological studies, the latter definition is typically preferred. It is estimated that between 400,000 and 460,000 individuals die from SCD each year in the United States [2]. The number and rate of SCD markedly increase with age, and are higher among men and among individuals of lower socioeconomic status [2]. Sudden cardiac death is a devastating event especially when it occurs in the young. SCD of the young (SCDY), variably defined as SCD in those less than 30, 35 or 40, occurs less frequently but has an enormous impact on the family and community, often generating attention from the media and the public [2, 3].

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Michigan Case Study, 2008

Clinical and Family History

- African American teenage male
- Student, basketball player
- Symptoms 4 months – “skipped beats and fluttering” especially while playing basketball; dizzy when rising from chair; tired all the time; legs hurt all the time; he thought these symptoms meant he was out of shape so he would practice harder
- Private health insurance coverage
- Family History - mother had “stroke“ as teen; maternal uncle had heart attack at 40 years old
- Sports physical 4.5 months prior
- Never referred to cardiologist or specialist
- Weight 82nd percentile

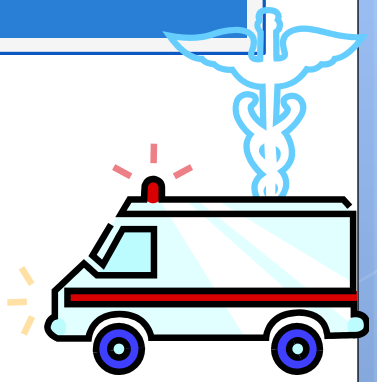
Day of Death

- Playing basketball, collapsed
- No CPR prior to EMS, police were needed to allow EMS access
- Locked AED at site, coach had no training on AED
- No pulse/not breathing

Autopsy

- Hypertrophic cardiomyopathy
- Toxicology – negative for alcohol, illicit drugs
- Family members not made aware of genetic implications

Expert Panel Findings



Patient-related factors

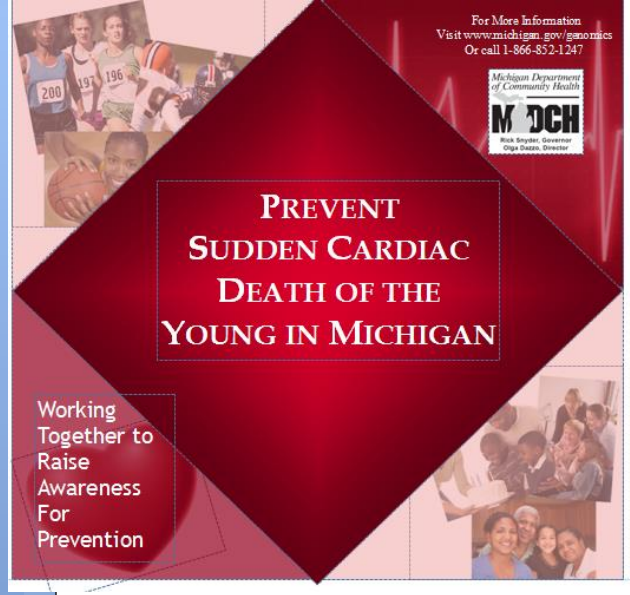
- Education when to seek medical care
- Family history and screening

Physician-related factors

- Quality of pre-participation sports physical
- Awareness of need to screen family members, and when genetics or cardiology referral indicated
- Education on content of family history screening form

System-related factors

- CPR training for coaches, or CPR training for community and schools
- If AED present on-site, require training and availability
- Update Michigan High School Athletic Association pre-participation sports screening template to include 2007 AHA 12 point screen and 2004/2010 national consensus recommendations
- Mechanism for family contact, including assuring autopsy report reaches primary care provider
- Storage of biologic specimen / DNA



Using Data for Action:
Continuing Steps, 2008-2015

Data to Action, 2008-2015

Sudden Cardiac Death of the Young in Michigan:

A Call to Action

Thursday, September 18, 2008
Michigan Department of Community Health (MDCH)
Capitol View Conference Center
1:00 p.m.—5:00 p.m.

AGENDA

1:00 Welcome and Overview of Michigan Sudden Cardiac Death of the Young (SCDY) Surveillance Project
—Gregory Holzman, MD, MPH
MDCH Chief Medical Executive

1:15 Epidemiology of SCDY in Michigan
—Beth Anderson, MPH, MDCH Cardiovascular Health Epidemiologist

1:35 Findings from the SCDY Mortality Review
—Kenneth Rosenman, MD
Chief, Division of Occupational and Environmental Medicine, Michigan State University

2:05 Introduction to Action Team breakout groups
—Rochelle Hurst, BSN, MA
Acting Director, MDCH Division of Chronic Disease and Injury Control

2:15 Networking Break with display tables/move to breakouts

2:45 Action Team breakout groups with brief reports on current status/initiatives

- Pre-participation sports physicals and screenings
—Gregory Holzman, MD, MPH, MDCH
- Medical examiner protocols
—Stephen D. Cohle, MD, Spectrum Health
- Emergency response protocols
—Robert Swor, DO, Beaumont Hospital
- Provider education and public awareness of SCDY risk factors
—Sharlene Mary Day, MD, University of Michigan
- Public awareness of cardiac symptoms and CPR/AED training
—John Shupra, Life EMS Ambulance

4:20 Break/reconvene to large group

4:30 Team presentations and review of action agenda
—Gregory Holzman, MDCH Chief Medical Executive
—Jean Chabut, MDCH Deputy Director of Public Health Administration

5:00 Adjourn

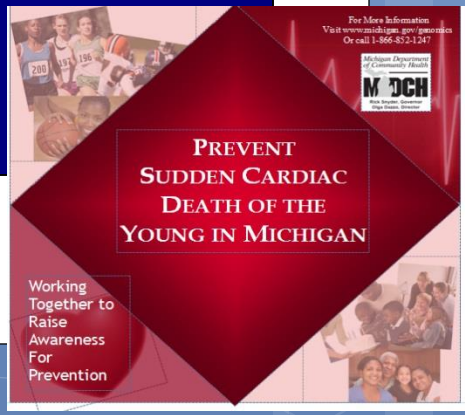
Michigan Department of Community Health
MDCH
Jennifer M. Granholm, Governor
Janet Olszewski, Director

- Based on SCDY expert mortality review, **21 action steps** identified to prevent SCDY
- Grouped into 5 major themes:
  - ✓ **Pre-participation sports physicals and screenings**
  - ✓ **Provider education and public awareness of SCDY risk factors**
  - ✓ **Emergency response protocols**
  - ✓ **Public awareness of cardiac symptoms and CPR/AED training**
  - ✓ **Medical examiner protocols**

Partners, Partners, Partners…!

"…no important health problem will be solved by clinical care alone, or research alone, or by public health alone- But rather by all public and private sectors working together"

JS Marks. Managed Care 2005;14:p11
Supplement on "The Future of Public Health"



Multiple Sectors Working to Prevent SCDY in Michigan

- **Academia**
  - Wayne State University, Michigan State University, University of Michigan, Oakland University, Ferris State University, Grand Valley State University, Central Michigan University, Saginaw Valley Sate University
- **Employers/industry**
  - AED distributors, Health plans
- **Health care delivery system**
  - Michigan State Medical Society, American College of Cardiology- Michigan Chapter, American Academy of Pediatrics-Michigan Chapter, William Beaumont Hospital, Detroit Medical Center, Spectrum Health, Henry Ford Hospital, Michigan Osteopathic Association, Michigan Association of Physician Assistants, Michigan Association of Certified Nurse Practitioners, Society of Adolescent Medicine- Michigan Chapter, Michigan Association of Family Practice, Michigan College of Emergency Physicians, Michigan Association of Medical Examiners, Michigan Athletic Trainers Association, local EMS, Michigan School Nurses Association
- **Media**
  - Local television news, radio, newspapers
  - Detroit Free Press
  - APHA Newsletter
  - EMS Today
- **Communities**
  - American Heart Association, Michigan High School Athletic Association, Hypertrophic Cardiomyopathy Association, Sudden Arrhythmia Death Syndromes Foundation, Sudden Cardiac Arrest Association, Kayla Foundation, Gillary Foundation, Wes Leonard Foundation, Thomas Smith Foundation, Pulse3, Project ADAM-Michigan
- **Government**
  - Michigan Department of Health and Human Services (Cardiovascular Section; Vital Records; Genomics; EMS), Michigan Department of Education; Centers for Disease Control and Prevention, state legislatures, local health departments, local ISDs, NHLBI

Recommended 12 point screening protocol for young athletes (AHA 2007)

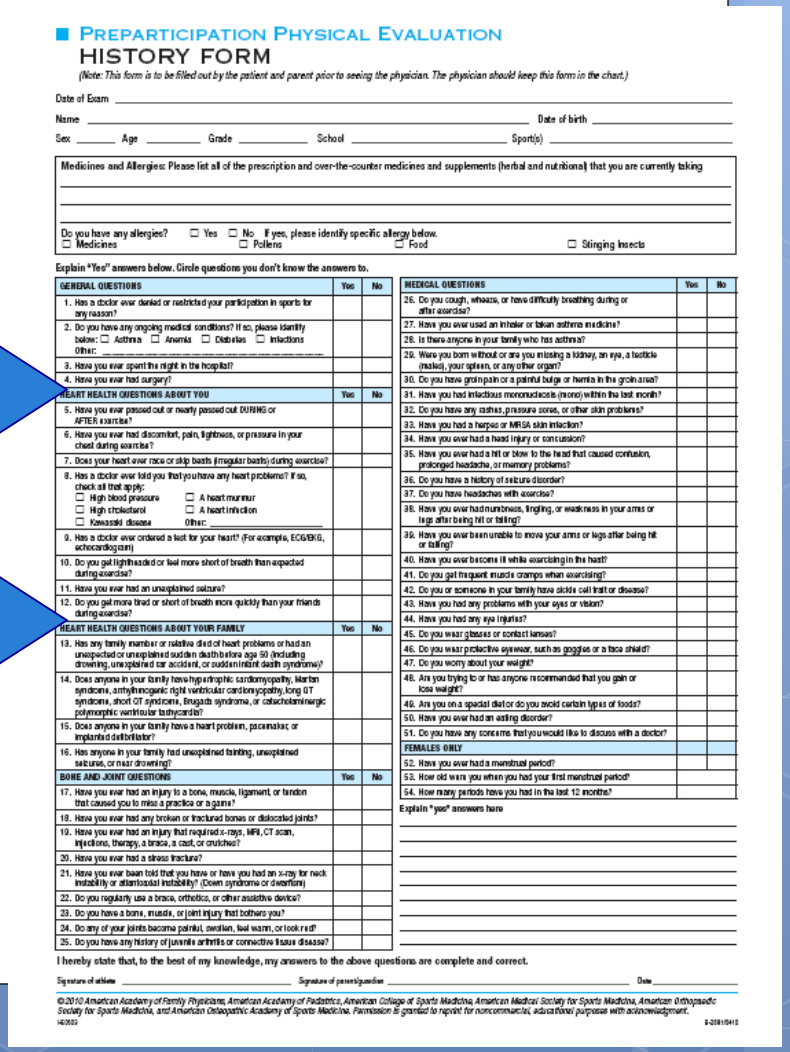
- Personal History
  - Palpitations
  - Exertional chest pain/discomfort
  - Unexplained syncope
  - Exertional unexplained fatigue
  - Elevated systemic blood pressure
  - Heart murmur
- Family History
  - Assess premature death, disability from heart disease in close relative younger than 50 years old
  - Known cardiovascular genetic conditions
- Physical Exam
  - Assess heart murmur
  - Femoral pulses
  - Physical stigmata of Marfan syndrome
  - Brachial artery blood pressure

Example of SCDY Prevention Policy Accomplishment: MHSAA Pre-participation Screening and Physical Form

- **Pre-participation Sports Screening:**
  - Work group with 50-55 members, including Michigan High School Athletic Association (MHSAA)
  - Reviewed published literature on evidence-based and/or consensus recommendations for pre-participation sports screening and forms from 50 states
  - Recommended revised form (based on national consensus form) to MHSAA; adopted by MHSAA Board of Directors, December 2010
  - Required to be used since 2011/2012
    - 500,000 forms distributed per year

Heart Health

Family History



PREPARTICIPATION PHYSICAL EVALUATION
HISTORY FORM

(Note: This form is to be filled out by the patient and parent prior to seeing the physician. The physician should keep this form in the chart.)

Date of Exam _____

Name _____ Date of birth _____

Sex _____ Age _____ Grade _____ School _____ Sport(s) _____

Medicines and Allergies: Please list all of the prescription and over-the-counter medicines and supplements (herbal and nutritional) that you are currently taking

Do you have any allergies? ☐ Yes ☐ No If yes, please identify specific allergy below.
☐ Medicines ☐ Pollens ☐ Food ☐ Stinging Insects

Explain "Yes" answers below. Circle questions you don't know the answers to.

GENERAL QUESTIONS	Yes	No
1. Has a doctor ever denied or restricted your participation in sports for any reason?		
2. Do you have any ongoing medical conditions? If so, please identify below: ☐ Asthma ☐ Anemia ☐ Diabetes ☐ Infections Other: _____		
3. Have you ever spent the night in the hospital?		
4. Have you ever had surgery?		
HEART HEALTH QUESTIONS ABOUT YOU	**Yes**	**No**
5. Have you ever passed out or nearly passed out DURING or AFTER exercise?		
6. Have you ever had discomfort, pain, tightness, or pressure in your chest during exercise?		
7. Does your heart ever race or skip beats (irregular beats) during exercise?		
8. Has a doctor ever told you that you have any heart problems? If so, check all that apply: ☐ High blood pressure ☐ A heart murmur ☐ High cholesterol ☐ A heart infection ☐ Kawasaki disease Other: _____		
9. Has a doctor ever ordered a test for your heart? (For example, ECG/EKG, echocardiogram)		
10. Do you get lightheaded or feel more short of breath than expected during exercise?		
11. Have you ever had an unexplained seizure?		
12. Do you get more tired or short of breath more quickly than your friends during exercise?		
HEART HEALTH QUESTIONS ABOUT YOUR FAMILY	**Yes**	**No**
13. Has any family member or relative died of heart problems or had an unexpected or unexplained sudden death before age 50 (including drowning, unexplained car accident, or sudden infant death syndrome)?		
14. Does anyone in your family have hypertrophic cardiomyopathy, Marfan syndrome, arrhythmogenic right ventricular cardiomyopathy, long QT syndrome, short QT syndrome, Brugada syndrome, or catecholaminergic polymorphic ventricular tachycardia?		
15. Does anyone in your family have a heart problem, pacemaker, or implanted defibrillator?		
16. Has anyone in your family had unexplained fainting, unexplained seizures, or near drowning?		
BONE AND JOINT QUESTIONS	**Yes**	**No**
17. Have you ever had an injury to a bone, muscle, ligament, or tendon that caused you to miss a practice or a game?		
18. Have you ever had any broken or fractured bones or dislocated joints?		
19. Have you ever had an injury that required x-rays, MRI, CT scan, injections, therapy, a brace, a cast, or crutches?		
20. Have you ever had a stress fracture?		
21. Have you ever been told that you have or have you had an x-ray for neck instability or atlantoaxial instability? (Down syndrome or dwarfism)		
22. Do you regularly use a brace, orthotics, or other assistive device?		
23. Do you have a bone, muscle, or joint injury that bothers you?		
24. Do any of your joints become painful, swollen, feel warm, or look red?		
25. Do you have any history of juvenile arthritis or connective tissue disease?		

MEDICAL QUESTIONS	Yes	No
26. Do you cough, wheeze, or have difficulty breathing during or after exercise?		
27. Have you ever used an inhaler or taken asthma medicine?		
28. Is there anyone in your family who has asthma?		
29. Were you born without or are you missing a kidney, an eye, a testicle (males), your spleen, or any other organ?		
30. Do you have groin pain or a painful bulge or hernia in the groin area?		
31. Have you had infectious mononucleosis (mono) within the last month?		
32. Do you have any rashes, pressure sores, or other skin problems?		
33. Have you had a herpes or MRSA skin infection?		
34. Have you ever had a head injury or concussion?		
35. Have you ever had a hit or blow to the head that caused confusion, prolonged headache, or memory problems?		
36. Do you have a history of seizure disorder?		
37. Do you have headaches with exercise?		
38. Have you ever had numbness, tingling, or weakness in your arms or legs after being hit or falling?		
39. Have you ever been unable to move your arms or legs after being hit or falling?		
40. Have you ever become ill while exercising in the heat?		
41. Do you get frequent muscle cramps when exercising?		
42. Do you or someone in your family have sickle cell trait or disease?		
43. Have you had any problems with your eyes or vision?		
44. Have you had any eye injuries?		
45. Do you wear glasses or contact lenses?		
46. Do you wear protective eyewear, such as goggles or a face shield?		
47. Do you worry about your weight?		
48. Are you trying to or has anyone recommended that you gain or lose weight?		
49. Are you on a special diet or do you avoid certain types of foods?		
50. Have you ever had an eating disorder?		
51. Do you have any concerns that you would like to discuss with a doctor?		
FEMALES ONLY		
52. Have you ever had a menstrual period?		
53. How old were you when you had your first menstrual period?		
54. How many periods have you had in the last 12 months?		

Explain "yes" answers here

I hereby state that, to the best of my knowledge, my answers to the above questions are complete and correct.

Signature of athlete _____ Signature of parent/guardian _____ Date _____

2012: Michigan SCDY Case Receives National Attention

CDC Home

Centers for Disease Control and Prevention

CDC 24/7: Saving lives, protecting people, reducing health costs

SEARCH

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Genomics and Health Impact Blog

A blog devoted to discussing best practices and questions about the role of genomics in disease prevention, health promotion and healthcare.

Public Health Genomics > Genomics and Health Impact Blog

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Can Sudden Cardiac Death of the Young be Prevented?

Categories: genomics, heart disease

March 1st, 2012 3:06 pm ET - Guest Blogger

Debra Duquette, MS, CGC, Genomics Coordinator & Beth Anderson, MPH, Michigan, Genomics Epidemiologist, Michigan Department of Community Health

A Michigan Story on Lessons Learned and Action Steps to Take

The winter months have arrived and with them comes a certain madness, specifically March Madness. On March 12, 2012 the NCAA men's college basketball tournament will commence. Most of the focus will be on cheering for the teams we picked to win our brackets; however, as Michigan learned last year, this isn't the only thing we need to focus on.

On March 3, 2011, with less than 30 seconds left in overtime in Fennville High School's final regular season men's basketball game, a winning layup was scored that brought Fennville's team an undefeated record. With district playoffs in Fennville's future, the gymnasium was full of celebration. Within moments, the crowd went silent as their star player collapsed to the ground. Wes Leonard, the player who had scored the winning basket moments before was now unconscious. Over 2,000 fans stood stunned, waiting for paramedics to arrive. Although an AED was present at the school, it was not charged and CPR was not performed because people did not think that cardiac arrest could be at fault in someone so young. Wes was later declared dead at a local hospital and the autopsy showed that he died of cardiac arrest due to an enlarged heart.

Sudden deaths of young athletes bring attention to an important public health problem known as sudden cardiac death of the young (SCDY), which occurs in non-athletes, too. On average, an estimated 66 athletes die suddenly of cardiac cause each year in the United States. Each year in Michigan alone, approximately 300 people aged 1-39 years die suddenly of a cardiac cause.

Blog Categories

- family history
- genomics
- heart disease
- investigation
- personal genomics
- pharmacogenomics
- stroke
- whole genome sequence

Posts by Month

- March 2012
- February 2012
- January 2012
- December 2011
- November 2011
- October 2011

Older Months »

SI VAULT — Your Link to Sports History — An SI.com Network Site

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February 20, 2012

TEXT SIZE

The Legacy Of Wes Leonard

You may have heard about the Michigan high schooler who made a game-winning basket and then died. Here's the rest of the story: a violent car crash, a bone-shaking tackle, a near-perfect season, a reluctant substitute and a search for the will to carry on

THOMAS LAKE

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After the autopsy, when the doctor found white blossoms of scar tissue on Wes Leonard's heart, he guessed they had been secretly building there for several months. That would mean Wes's heart was slowly breaking throughout the Fennville Blackhawks' 2010--11 regular season, when he led them in scoring and the team won 20 games without a loss.

It would mean his heart was already moving toward electrical meltdown in December, when he scored 26 on Decatur with that big left shoulder clearing a path to the hoop. It would mean his heart swelled and weakened all through January (25 against Hopkins, 33 against Martin) even as it pumped enough blood to fill at least 10 swimming pools.

This heart pounded two million times in February, probably more, heaving under its own weight, propelling Wes's 6'2", 230-pound frame along the glimmering hardwood with such precision and force that finally a kid from Hartford gave up on the rules and tackled him in the lane. By March 3, the night of Wes's last and most glorious game, his heart weighed 21½ ounces, double the weight of a normal heart, and it gave him all he needed from the opening tip to the final buzzer. Then the wiring failed, the current going as jagged as a thunderbolt, and Wes fell to the floor with his big heart quivering.

If all this seems implausible—that Wes could play so well for so long with such faulty equipment—consider a scientific phenomenon called *functional reserve*. The human heart has a reservoir of unused ability, like a powerful

Michigan Alliance for Prevention of Sudden Cardiac Death of the Young (MAP-SCDY)

- **Vision**: The MAP-SCDY strives to prevent sudden cardiac death of the young
- **Mission**: The MAP-SCDY is a statewide collaborative network that provides leadership, education, and resources to help communities prevent sudden cardiac death of the young

- Created in 2012
- MDHHS Genomics facilitates
- Very active listserv
- Membership meetings twice per year
- Over 50+ members representing multiple sectors

- Open to anyone to become member
- Contact duquetted@michigan.gov to be added to the membership list

➢ **Current activities:**

- Increase public and professional awareness of SCDY
- Promote AHA 'Chain of Survival'
- Create and maintain website
- Assist members in their SCDY prevention activities
- Promote MI HEARTSafe Schools
- Provide information to assist achieving MI HEARTSafe Schools criteria
  - Including examples of written cardiac emergency plans and other resources

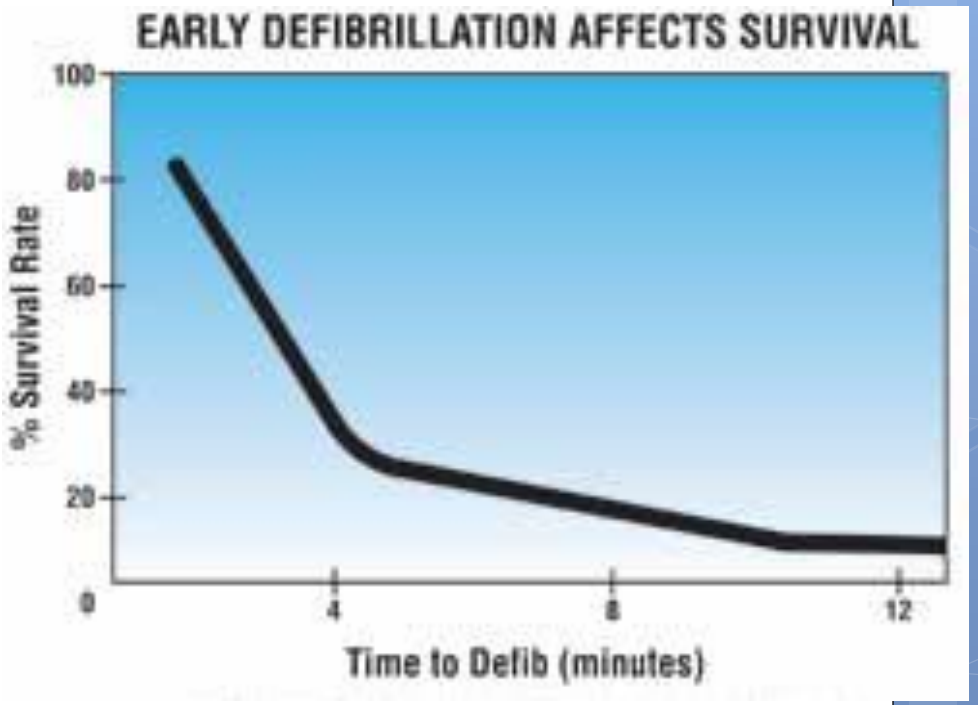
American Heart Association

Chain of Survival

- ✓ Immediate **recognition** of cardiac arrest and **activation** of the emergency response system
- ✓ Early **cardiopulmonary resuscitation (CPR)** with an emphasis on chest compressions
- ✓ Rapid **defibrillation**
- ✓ Effective **advanced life support**
- ✓ Integrated **post-cardiac arrest care**

Public Access to Defibrillation (PAD) in Schools

- 20% of the population is in a school on any given day
- Survival rate of up to 74% when bystander CPR is provided and defibrillation occurs with 3-5min of collapse
  - Each minute that passes without defibrillation reduces chance of survival by 7-10%
- Most school cardiac arrests are *witnessed* and *present with ventricular fibrillation*



Drezner et al. Circulation 2009; 120:518-525.

Cardiac arrests at school usually not in students

By Frederik Joelving
NEW YORK | Fri Sep 28, 2012 4:53pm EDT

(Reuters Health) - Student athletes collapsing from cardiac arrest in the middle of a game may grab headlines, but when someone's heart gives up at a school, it's usually not a youngster's.

In a new five-year study, researchers from Michigan found that only two out of 47 cardiac arrests at K-12 schools occurred during sports events. In fact, as many as a third of cases happened after 5 pm and mostly in adults.

"Schools are community-gathering places, and two-thirds of our cases were adults," said Dr. Robert Swor, an emergency physician at Oakland University William Beaumont School of Medicine in Royal Oak.

His findings, based on registries and interviews with bystanders and school officials across the country, show that fewer than two out of every 1,000 cardiac arrests overall happen at K-12 schools. Sixteen of the 47 cardiac arrests at schools involved minors.

Still, Swor told Reuters Health, "these are high-profile events individually. Every time something happens in a school like this it gets a lot of community awareness."

- National study of 30,603 SCA events
  - 47 SCA Events at K-12 schools
  - Only 16 SCA Events in individuals < 19 years old
- Conducted by Dr. Swor, Beaumont Emergency
  - MAP-SCDY partner

American Heart Association | American Stroke Association
Learn and Live

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association
Learn and Live℠

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

Mary Fran Hazinski, David Markenson, Steven Neish, Mike Gerardi, Janis Hootman, Graham Nichol, Howard Taras, Robert Hickey, Robert O'Connor, Jerry Potts, Elise van der Jagt, Stuart Berger, Steve Schexnayder, Arthur Garson, Jr, Alidene Doherty, Suzanne Smith and Writing Group

***Circulation* 2004;109;278-291**

American Heart Association® | American Stroke Association®
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AHA Recommendations

- AED placement in schools should be part of a coordinated, practiced medical emergency response plan
- Recommended elements of an ideal emergency response plan:
  1. Efficient campus-wide communication system
  2. Coordination, practice, and evaluation of a response plan with the school nurse and physician, athletic trainer, and local EMS agency
  3. Risk reduction
  4. Training in CPR and first aid for staff and students
  5. An AED program

Circulation 2004;109;278-291

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AHA Recommendations (con't)

2. Coordination, practice, and evaluation of a response plan

- Development includes school nurse, athletic trainers and physicians
- Local EMS input should be sought and involved in plan development
- Written notification protocols should specify who should be contacted and when
- Copy of completed plan provided to EMS and local dispatch
- Should detail the location of emergency equipment
- Schools should practice and evaluate the plan
- Designated rescuers should participate in periodic unannounced drills

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AHA Recommendations (con't)

3. Risk reduction

- Education about injury prevention
- Proper maintenance of equipment and grounds
- Awareness of children with medical conditions

4. CPR training for students and staff

- Ideally all staff and students are trained
- No specific number of trained staff recommended but should be sufficient to ensure that a trained responder can reach a medical emergency with the proper equipment anywhere on campus within 90 seconds
- Staff responders should be trained in First Aid
- Appropriate equipment (may include medications) should be available

American Heart Association | American Stroke Association
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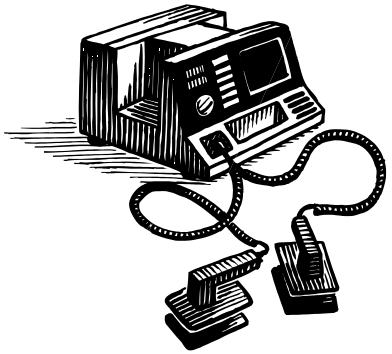
AHA Recommendations (con't)



5. AED Programs should include:
   - Medical/healthcare provider oversight
   - Appropriate training of anticipated rescuers in CPR
   - and use of the AED
   - Coordination with the EMS system
   - Appropriate device maintenance
   - An ongoing quality improvement program to monitor training and evaluate response with each use of the device
   - Device should be centrally located near a telephone
   - EMS should be aware of the AED placement

*Project ADAM listed as a resource in *Circulation* paper

PAD in Schools: Variable Presence and Training

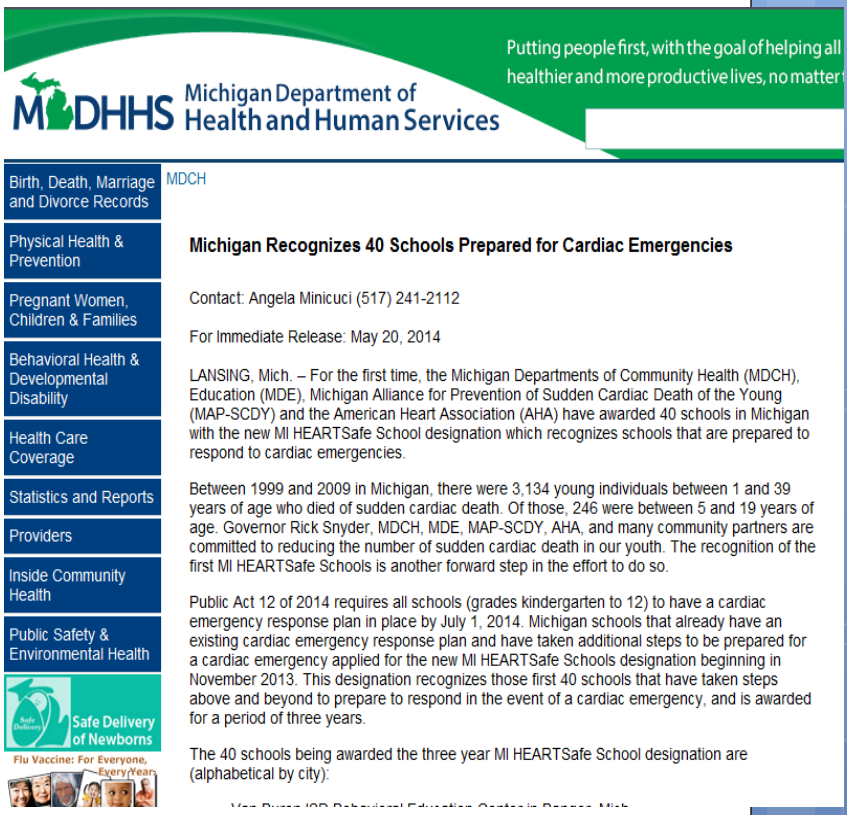
- 2007 survey of high schools in Washington[1]:
  - Larger schools more likely to have AEDs
  - Most AEDs funded by donations

- 2013 national survey of 3,371 high schools[2]:
  - Larger, suburban schools are more likely to have an AED
  - AED training was not assessed

1. Rothmier et al. Br J Sports Med. 2007 May: 41(5) 301-5; discussion 305.
2. Toresdahl et al. J Athl Train. 2013 Mar-Apr; 48(2):242-7.

MI HEARTSafe School Program Launched!

- Launched on November 7, 2013
  - Joint partnership with MDHHS, MDE, AHA, and MAP-SCDY in 2013/2014
  - Added MHSAA in 2014/2015
  - Open to <u>any</u> Michigan school <u>building</u> to apply at no cost
  - Designation valid for 3 years
- <u>40 school buildings</u> awarded in May 2014
  - Disseminated at press conference, press releases, websites, newsletters
  - Awarded schools received certificate, decals, banners
- <u>122 school buildings</u> to be awarded in May 2015



Putting people first, with the goal of helping all
healthier and more productive lives, no matter

MDHHS Michigan Department of Health and Human Services

Birth, Death, Marriage and Divorce Records
Physical Health & Prevention
Pregnant Women, Children & Families
Behavioral Health & Developmental Disability
Health Care Coverage
Statistics and Reports
Providers
Inside Community Health
Public Safety & Environmental Health

Safe Delivery of Newborns

Flu Vaccine: For Everyone, Every Year

MDCH

Michigan Recognizes 40 Schools Prepared for Cardiac Emergencies

Contact: Angela Minicuci (517) 241-2112

For Immediate Release: May 20, 2014

LANSING, Mich. – For the first time, the Michigan Departments of Community Health (MDCH), Education (MDE), Michigan Alliance for Prevention of Sudden Cardiac Death of the Young (MAP-SCDY) and the American Heart Association (AHA) have awarded 40 schools in Michigan with the new MI HEARTSafe School designation which recognizes schools that are prepared to respond to cardiac emergencies.

Between 1999 and 2009 in Michigan, there were 3,134 young individuals between 1 and 39 years of age who died of sudden cardiac death. Of those, 246 were between 5 and 19 years of age. Governor Rick Snyder, MDCH, MDE, MAP-SCDY, AHA, and many community partners are committed to reducing the number of sudden cardiac death in our youth. The recognition of the first MI HEARTSafe Schools is another forward step in the effort to do so.

Public Act 12 of 2014 requires all schools (grades kindergarten to 12) to have a cardiac emergency response plan in place by July 1, 2014. Michigan schools that already have an existing cardiac emergency response plan and have taken additional steps to be prepared for a cardiac emergency applied for the new MI HEARTSafe Schools designation beginning in November 2013. This designation recognizes those first 40 schools that have taken steps above and beyond to prepare to respond in the event of a cardiac emergency, and is awarded for a period of three years.

The 40 schools being awarded the three year MI HEARTSafe School designation are (alphabetical by city):

2014/2015 MI HEARTSafe School Application

**** Application must be received by April 15, 2015 for consideration for the 2014/2015 school year. ****

The Michigan Department of Community Health (MDCH), Michigan Department of Education (MDE), Michigan High School Athletic Association (MHSAA) and American Heart Association (AHA) in conjunction with the Michigan Alliance for Prevention of Sudden Cardiac Death of the Young (MAP-SCDY) encourages and promotes public awareness of the life-saving potential of bystander response in the event of sudden cardiac arrest (SCA). The chance of surviving a SCA is optimized when bystanders recognize the signs of SCA and respond rapidly by calling 9-1-1 and use cardiopulmonary resuscitation (CPR) and accessible automated external defibrillators (AEDs) until EMS arrives to provide advanced life support.

In order to increase awareness, MDCH, MDE, MHSAA, AHA and MAP-SCDY have developed an initiative to award Michigan schools with a **MI HEARTSafe School** designation. The MI HEARTSafe School program encourages schools to prepare and protect students, staff, and visitors in the event of a cardiac emergency.

A **MI HEARTSafe School** designation is awarded when a school meets the following minimum criteria:

1. A written cardiac emergency response plan reviewed at least annually with staff as designated by state law (HB4196 approved in February 2014)
2. A cardiac emergency response team with current CPR/AED certification, sufficient to respond to an emergency during school hours AND during organized after-school activities and sports.
3. At least 10% of staff, 50% of coaches, and 50% of P.E. staff with current CPR/AED certification
4. A sufficient number* of accessible, properly maintained and inspected AEDs ready to use, with signs identifying AED locations.

**Sufficient number is estimated by time to scene, in place, and analyzing within a target goal of 3 minutes.*

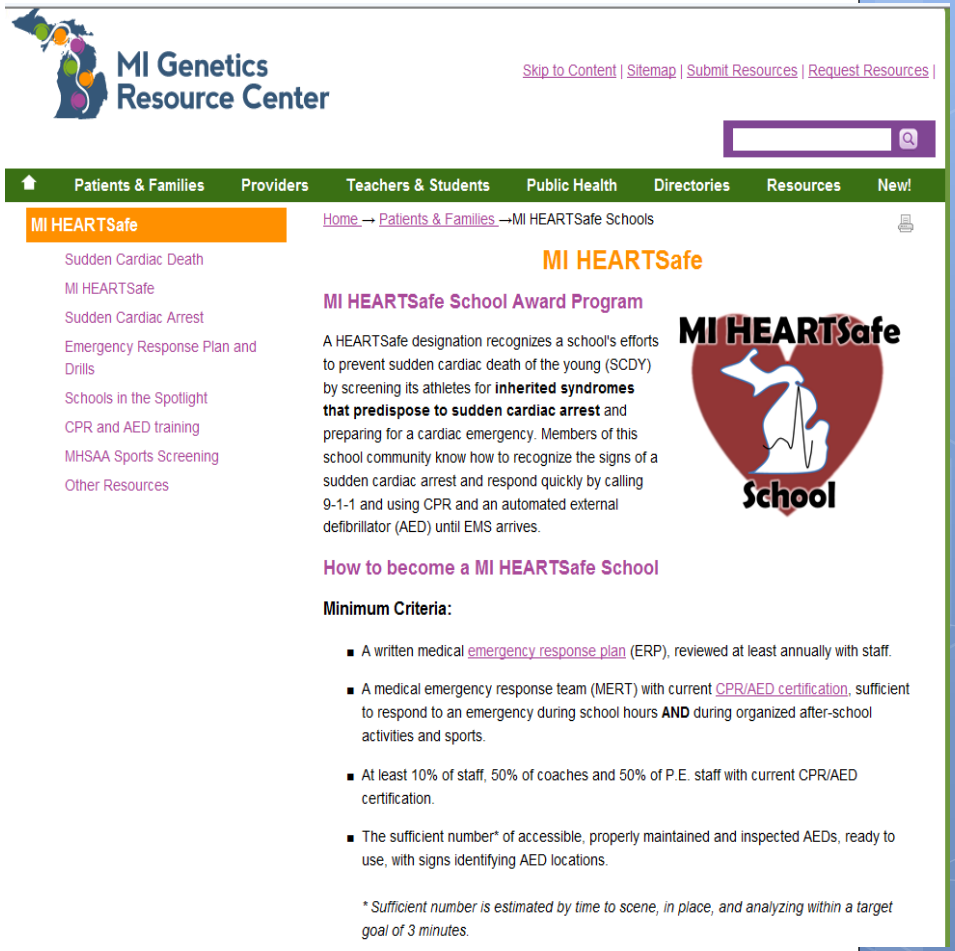
5. The performance of at least one cardiac emergency response drill* per year.

** Including recognizing signs of cardiac arrest and using the American Heart Association's Chain of Survival: calling 9-1-1 and use of bystander CPR and AED until EMS arrive to provide advanced life support.*

6. All athletic pre-participation screening completed with the Michigan High School Athletic Association (MHSAA) form (updated in 2010).

If you have any questions about how to become a MI HEARTSafe School, please visit www.migrc.org/miheartsafe , or contact Debra Duquette at the Michigan Department of Community Health using the contact information below. After you have completed the following application, please return it by fax or scan and e-mail to:

Debra Duquette, MDCH Genomics Program Coordinator
E-mail: duquetted@michigan.gov
Phone: 517.335.8286
Fax: 517.335.9790



https://migrc.org/Library/heartsafeprogram.html

Cardiac Component of HB 4713 – effective July 1, 2014

The governing body of a school that operates any of grades K to 12 shall adopt and implement a *cardiac emergency response plan* for the school.

The cardiac emergency response plan shall address and provide for at least all of the following:

(a) Use and regular maintenance of AEDs, if available.

(b) Activation of a cardiac emergency response team during an identified cardiac emergency.

(c) A plan for effective and efficient communication throughout the school campus.

(d) If the school includes grades 9 to 12, a training plan for the use of an AED and in CPR techniques.

(e) Incorporation and integration of the local emergency response system and emergency response agencies with the school's plan.

(f) An annual review and evaluation of the cardiac emergency response plan

Signed by Gov. Rick Snyder on February 25, 2014

Act No. 12
Public Acts of 2014
Approved by the Governor
February 25, 2014
Filed with the Secretary of State
February 25, 2014
EFFECTIVE DATE: July 1, 2014

STATE OF MICHIGAN
97TH LEGISLATURE
REGULAR SESSION OF 2014

Introduced by Reps. Graves, Franz, Schmidt, Forlini and Rendon

ENROLLED HOUSE BILL No. 4713

AN ACT to amend 1941 PA 207, entitled "An act to provide for the prevention of fires and the protection of persons and property from exposure to the dangers of fire or explosion; to authorize the investigation of fires and the discovery of crime or other offenses in relation thereto; to require the razing, repair, or alteration of buildings, and the clearing and improvement of premises which constitute a fire hazard or a menace to the peace, security, or safety of persons or property; to control the construction, use, and occupancy of buildings and premises in relation to safety, including fire safety; to provide for the certification of fire inspectors and the delegation of certain powers to those certified fire inspectors; to provide for the regulation of the storage and transportation of hazardous material; to provide for the issuance of certificates; to prohibit the use of certain fire extinguishers and fire extinguishing agents; to provide immunity from liability for certain persons; to provide for the administration and enforcement of this act; to prescribe penalties; to provide for the promulgation of rules; to provide for the assessment of fees; and to repeal acts and parts of acts," by amending section 19 (MCL 29.19), as amended by 2006 PA 337.

The People of the State of Michigan enact:

Sec. 19. (1) The chief administrative officer and the teachers of all schools, including state supported schools, colleges, and universities and the owner, or owner's representative, of all school dormitories shall have a fire drill each month and ensure unrestricted emergency egress during school hours and when the school is open to the public. Each teacher in a school, including a state supported school, college, or university and the owner or owner's representative of a dormitory shall comply with these requirements and keep a record of the drills.

(2) Except as provided in subsection (3), a minimum of 8 fire drills is required for each school year. If weather conditions do not permit fire drills to be held at least once a month, then at least 5 fire drills shall be held in the fall of each year and 3 fire drills shall be held during the remaining part of the school year.

(3) A minimum of 5 fire drills is required for each school year for a school that operates any of grades kindergarten to 12. Three of the fire drills shall be held by December 1 of the school year, and 2 shall be held during the remaining part of the school year, with a reasonable spacing interval between each drill.

(4) A minimum of 2 tornado safety drills is required for each school year at the schools and facilities described in subsection (1). At least 1 of the tornado safety drills shall be conducted during March of the school year. These drills shall be conducted for the purpose of preventing injuries caused by severe weather.

MAP-SCDY Workgroup Develops Resources for Schools

Developing a cardiac emergency response plan

Michigan law now requires that schools have a written cardiac emergency response plan. A cardiac emergency response plan includes recognizing the signs of sudden cardiac arrest, calling 9-1-1, and initiating the use of CPR and AED until local EMS arrives. Questions to consider in developing a cardiac emergency response plan:

- What defines a cardiac emergency?
- What are the signs of sudden cardiac arrest?
- How will the emergency response team and EMS be activated?
- What are the roles of the responders?
- How will students be managed?

The following documents were created by the Michigan Alliance for Prevention of Sudden Cardiac Death of the Young (MAP-SCDY) to assist Michigan schools with a written cardiac emergency plan template. These samples may be modified for use at your school, and should be reviewed by the appropriate legal counsel for your school.

- Cardiac Emergency Response Plan
- Cardiac Emergency Response Team
- Cardiac Emergency Response Protocol
- Project ADAM - CPR/AED drill
- Contacting your local EMS - State of Michigan Medical Control Authorities Directory

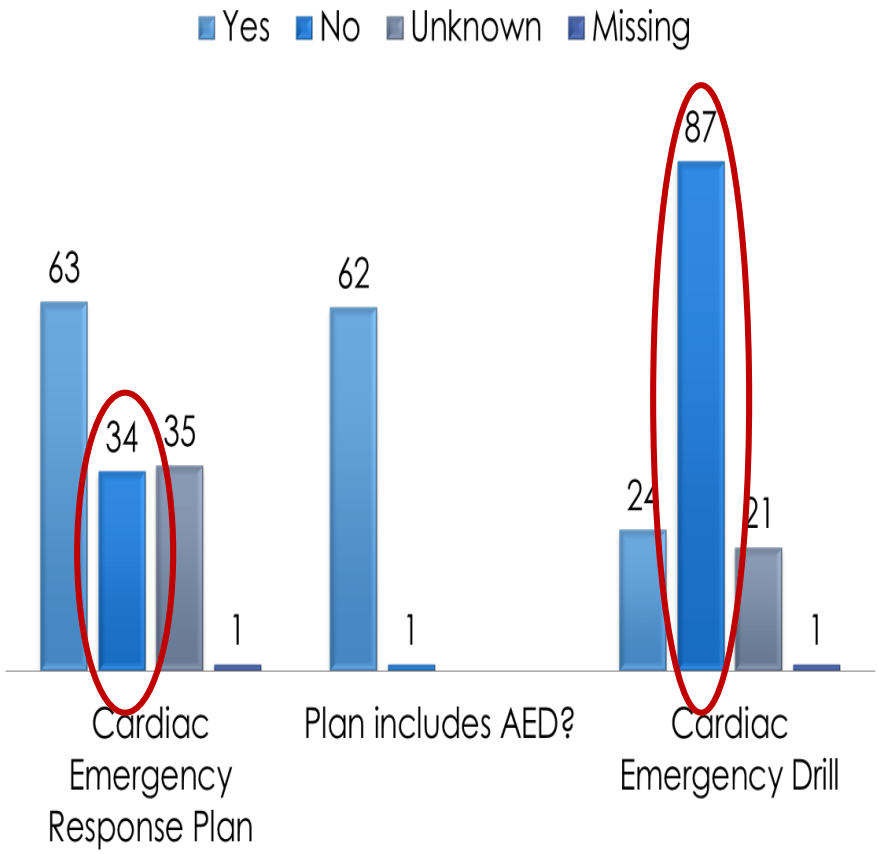
These additional resources created by national organizations may also be helpful to schools developing a cardiac emergency response plan:

- American Heart Association's Medical Emergency Response Plan for Schools:

https://migrc.org/Library/HeartSafeActionPlan.html

University Of Michigan Study: AEDs and Cardiac Emergency Response Plans

- 133 Michigan public high schools completed survey in 2014-2015
- Survey results
  - 100% of schools with AED
    - 82% with more than one AED
  - 89% AED maintenance at least annually
- Significantly fewer Cardiac Emergency Response plans in schools located in counties of **lower socioeconomic status** and counties with **higher SCDY incidence**



Ovid-Elsie, 2012

Lansing State Journal
A GANNETT COMPANY
TUESDAY, NOVEMBER 6, 2012 THE POWER OF KNOWING SINCE 1855 WWW.LSJ.COM

CARDIAC EMERGENCY READINESS URGED

Cardiologist Dr. Monica Martin Goble examines Chris Fowler on Monday. Fowler suffered cardiac arrest on Oct. 9 during football practice at Ovid-Elsie High School. GREG DERUITER/LANSING STATE JOURNAL

HAPPY ENDING

Ovid-Elsie athlete alive because coaches had the right equipment and knew what to do

By Ken Palmer
kpalmer@lsj.com

Chris Fowler doesn't remember much about the episode that interrupted an otherwise ordinary football practice and made him a poster boy, of sorts, for emergency readiness.

But the Ovid-Elsie High School sophomore is all too aware that things might have turned out differently had his school district and his coaches not been prepared to react.

On Oct. 9, Fowler and his teammates were running wind sprints when his heart rhythm suddenly changed.

"I had just finished running a sprint," Fowler, 16, said Monday. "I remember telling the quarterback that my ankle hurt. That's the last thing I remember."

Fowler dropped to one knee, then collapsed entirely.

Coaches began administering CPR. The district's athletic director rushed to a school building to get an automated external defibrillator, or AED for short.

The AED detected an irregular heart beat and delivered a single shock to Fowler's chest, jolting his heart back into rhythm.

Fowler was taken to Sparrow Hospital and later taken to Mott's Children Hospital in Ann

See CPR/AED, Page 2A

ABOUT CPR/AED DRILL WEEK

» **Nov. 5-9** is CPR/AED Drill Week.
» **The University of Michigan Hospital** and other groups are urging schools to practice their readiness to respond to cardiac emergencies. CPR helps keep blood flowing to the brain, increasing the likelihood that a shock from an AED will make the heart start beating properly again. The device only delivers a shock if it detects an abnormal heart rhythm or none at all.
» **From 1999 to 2009,** sudden cardiac arrest killed more than 3,134 people under 40 in the state, according to the Michigan Department of Community Health. About 70 percent of those victims were male, the MDCH said.
» **Michigan school districts** are required to stage at least six fire drills, two tornado drills and two lockdown drills per year but are not required to hold AED drills.
» **For more information** go to www.aeddrill.com call 1-800-228-3343.

West Branch, September, 2014

"My son (11) suffered cardiac arrest 9/15/2014 while at school. He collapsed and because of the staff who were trained only 4 days earlier on how to use the AED, he was saved. As a mother there's not enough thanks in the world I can give them."

http://www.wnem.com/story/26609396/school-saves-boy-after-he-collapses

Adrian, Michigan
February 2015

Teen saved after heart stops on soccer field

Doctor says rescue highlights importance of AEDs

Published On: Feb 27 2015 05:40:53 PM EST | Updated On: Mar 02 2015 02:25:04 PM EST

A A A Print Recommend Share 441 +1 2 Tweet Pin it

Teen saved after heart stops

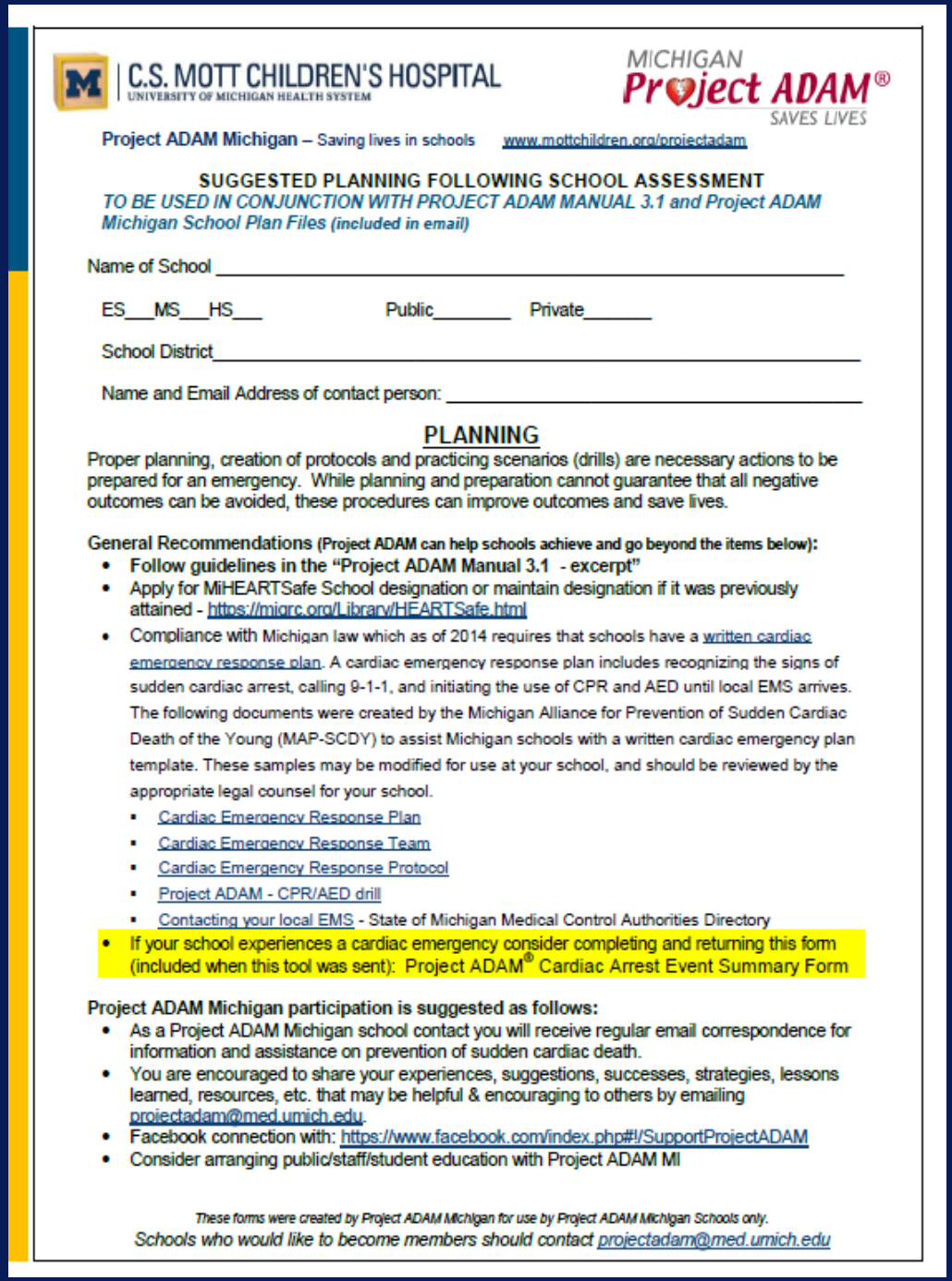
Project ADAM Michigan

www.mottchildren.org/projectadam

This checklist is under development by Project ADAM Michigan for use by Michigan schools. Plans are being refined

Schools who would like to participate should contact projectadam@med.umich.edu

University of Michigan
C.S. Mott Children's Hospital
Congenital Heart Center



C.S. MOTT CHILDREN'S HOSPITAL
UNIVERSITY OF MICHIGAN HEALTH SYSTEM

MICHIGAN Project ADAM® SAVES LIVES

Project ADAM Michigan – Saving lives in schools www.mottchildren.org/projectadam

SUGGESTED PLANNING FOLLOWING SCHOOL ASSESSMENT

TO BE USED IN CONJUNCTION WITH PROJECT ADAM MANUAL 3.1 and Project ADAM Michigan School Plan Files (included in email)

Name of School _____

ES___MS___HS___ Public_____ Private_____

School District_____

Name and Email Address of contact person: _____

PLANNING

Proper planning, creation of protocols and practicing scenarios (drills) are necessary actions to be prepared for an emergency. While planning and preparation cannot guarantee that all negative outcomes can be avoided, these procedures can improve outcomes and save lives.

General Recommendations (Project ADAM can help schools achieve and go beyond the items below):

- **Follow guidelines in the "Project ADAM Manual 3.1 - excerpt"**
- Apply for MiHEARTSafe School designation or maintain designation if it was previously attained - https://migrc.org/Library/HEARTSafe.html
- Compliance with Michigan law which as of 2014 requires that schools have a written cardiac emergency response plan. A cardiac emergency response plan includes recognizing the signs of sudden cardiac arrest, calling 9-1-1, and initiating the use of CPR and AED until local EMS arrives. The following documents were created by the Michigan Alliance for Prevention of Sudden Cardiac Death of the Young (MAP-SCDY) to assist Michigan schools with a written cardiac emergency plan template. These samples may be modified for use at your school, and should be reviewed by the appropriate legal counsel for your school.
  - Cardiac Emergency Response Plan
  - Cardiac Emergency Response Team
  - Cardiac Emergency Response Protocol
  - Project ADAM - CPR/AED drill
  - Contacting your local EMS - State of Michigan Medical Control Authorities Directory
- If your school experiences a cardiac emergency consider completing and returning this form (included when this tool was sent): Project ADAM® Cardiac Arrest Event Summary Form

Project ADAM Michigan participation is suggested as follows:

- As a Project ADAM Michigan school contact you will receive regular email correspondence for information and assistance on prevention of sudden cardiac death.
- You are encouraged to share your experiences, suggestions, successes, strategies, lessons learned, resources, etc. that may be helpful & encouraging to others by emailing projectadam@med.umich.edu.
- Facebook connection with: https://www.facebook.com/index.php#!/SupportProjectADAM
- Consider arranging public/staff/student education with Project ADAM MI

These forms were created by Project ADAM Michigan for use by Project ADAM Michigan Schools only.
Schools who would like to become members should contact projectadam@med.umich.edu

“I thought we were forgotten….

I thought no one cared…”

- Michigan mother of 18 year old victim, upon being asked for a next-of-kin interview

Thank you!

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