



Department of Emergency Medicine

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6350 '04 JAN 25 P131

January 21, 2004

Division of Dockets Management (HFA-305)
U.S. Food and Drug Administration
5630 Fishers Lane
Room 1061
Rockville, Maryland 20852

Re: Docket No. 1994N-0418 Reclassification of Automated External Defibrillators

To Whom It May Concern:

My name is Michael R. Sayre, MD, and I am writing in support of the above-referenced reclassification of automated external defibrillators (AEDs) and to urge the FDA to move forward with the reclassification of these devices.

I am an Associate Professor of Emergency Medicine at The Ohio State University. I am a member of the Basic Life Support Subcommittee for the American Heart Association and served on the Executive Committee for the recently completed Public Access Defibrillation Trial. I was also the Principal Investigator for the Cincinnati Police AED Trial. My curriculum vitae is attached. I have been involved with research into the use of AEDs for about 10 years and am familiar with the recent medical literature regarding AEDS. Based on my long clinical experience with the AED, I believe that reclassification of the AED to Class II is appropriate.

It is my experience that AEDs today provide significant clinical benefit in the fight to reduce the mortality from sudden cardiac arrest (SCA). AEDs are a vital tool in the chain of survival for SCA victims. For example, the results from the Public Access Defibrillation Trial presented in November 2003 at the American Heart Association Scientific Sessions demonstrated that placing AEDs in public buildings as a part of a response system that also included trained rescuers doubled survival from SCA. Therefore, I believe it is important that we should continue to work together to improve public access to AEDs.

It is also my experience that risks and adverse events associated with AEDs are rare and minimal compared to clinical benefits they provide. Shock advisory algorithm performance has been continually improved over the last several years. During the PAD trial, there were no inappropriate shocks delivered. In addition, operators of AEDs are

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trained to attach the device only to patients who are unconscious and show no signs of life. With this approach, the operator serves as a second verification system to confirm that the patient is be suffering from sudden cardiac arrest.

I support the reclassification of the AED as a Class II device based on a review of the extensive record, the literature, my clinical experience, and the standard safeguards developed to address the potential device risks. I thank you for the opportunity to share my views.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael R. Sayre". The signature is fluid and cursive, with a large, stylized initial "M".

Michael R. Sayre, MD
Associate Professor

Michael Richard Sayre, M.D.**Curriculum Vitae****Personal Information****Business**

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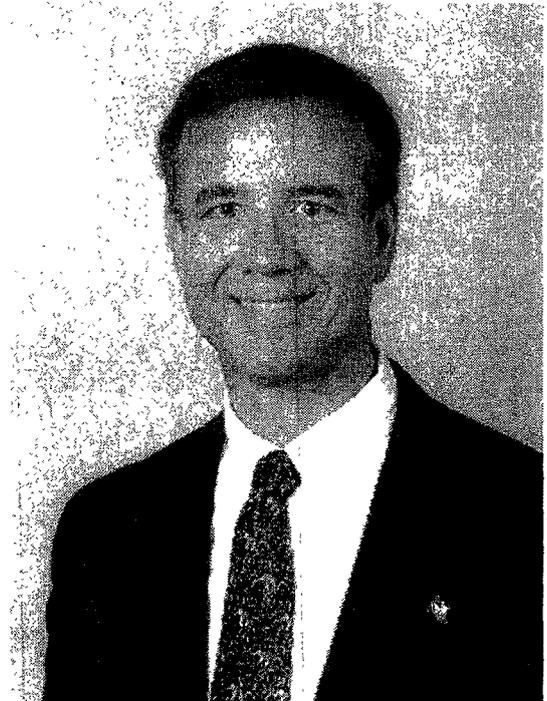
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e-mail: sayre.84@osu.edu

Date of Birth: July 23, 1960

Place of Birth: Cincinnati, Ohio

**Education****Undergraduate**

September 1976 - May 1980

Xavier University
 Cincinnati, OH 45207

B.S. Magna Cum Laude
 (Natural Sciences)

Graduate

September 1980 - June 1984

University of Cincinnati
 Cincinnati, OH 45267

M.D.

Residency

July 1984 - June 1986

Allegheny General Hospital
 Pittsburgh, PA 15212

Emergency Medicine

July 1986 - June 1987

Allegheny General Hospital
 Pittsburgh, PA 15212

Chief Resident
 Emergency Medicine

Appointments and Positions

July 1987 to June 1990

Attending Staff
 Emergency Medicine
 Allegheny General Hospital
 Pittsburgh, PA 15212

November 1987 to June 1990

Emergency Medicine Medical Coordinator

Life Flight Air Medical Transport
Allegheny General Hospital

October 1988 to April 1989 Instructor in Emergency Medicine
Medical College of Pennsylvania
Philadelphia, PA 19129

May 1989 to June 1990 Assistant Professor of Emergency Medicine
Medical College of Pennsylvania

July 1990 to August 2000 Assistant Professor of Clinical Emergency
Medicine
University of Cincinnati
College of Medicine
Cincinnati, OH 45267

July 1990 to September 2000 Attending Staff
Emergency Medicine
University of Cincinnati Hospital
Cincinnati, OH 45267

July 1990 to June 1993 Attending Staff
Emergency Medicine
St. Luke West Hospital
Florence, KY 41042

August 1990 to August 2000 Medical Director
Center for Prehospital Education
University of Cincinnati

July 1992 to August 2000 Medical Director
City of Cincinnati Division of Fire
430 Central Avenue
Cincinnati, OH 45202

July 1995 to August 2000 Regional Physicians Advisory Board - Region I
State Board of EMS
Department of Public Safety
State of Ohio

September 2000 Associate Professor of Emergency Medicine
University of Cincinnati
College of Medicine
Cincinnati, OH 45267

October 2000 to April 2001 Associate Professor of Clinical Medicine
University of Chicago School of Medicine
Chicago, IL 60637

October 2000 to April 2001 Attending Staff Emergency Medicine
University of Chicago Hospital
Chicago, IL 60637

May 2001 to May 2003 Attending Staff
Emergency Medicine
Good Samaritan Hospital

Cincinnati, OH 45220

May 2001 to May 2003 Attending Staff
Emergency Medicine
Bethesda North Hospital
Cincinnati, OH 45242

June 2003 to present Associate Professor of Emergency Medicine
The Ohio State University College of Medicine
and Public Health
Columbus, OH 43210

June 2003 to present Attending Staff
Emergency Medicine
The Ohio State University Medical Center
Columbus, OH 43210

Certification and Licensure

- Diplomate, National Board of Medical Examiners July 1, 1985
- Diplomate, American Board of Emergency Medicine December, 1988; Recertified December 1997
- Commonwealth of Pennsylvania July 12, 1985
- State of Ohio February 1990
- Commonwealth of Kentucky June 1990
- State of Illinois September 2000
- ACLS Provider June 1984 to April 1999
- ATLS Provider June 1984 to July 2000
- ACLS Instructor March 1985 to April 1999
- ATLS Instructor March 1988 to July 2000

Memberships in Societies

American College of Emergency Physicians

- Member: 1984 - present
- Fellow: September 1990 - present

Ohio Chapter, American College of Emergency Physicians

- Member: 1990 - present

Society for Academic Emergency Medicine

- Member: 1986 - present
- Member of EMS Task Force: 1994 - 1999

The EMS task force was responsible for awarding a \$50,000 stipend to one fellow annually and for selecting medical centers that were eligible to receive that stipend.

- Chairman of EMS Task Force: 1997 - 1999

Hamilton County, Ohio EMS

- Member of the Academy of Medicine Emergency and Disaster Services Committee: 1990 - 2000

The EDS committee set the medical standards of care for paramedic level emergency medical services in Hamilton County, Ohio.

- Chairman of Protocol Subcommittee, Prehospital Care Operations Committee: 1991 - 2000

The protocol subcommittee wrote the detailed treatment instructions for paramedic level emergency medical services in Hamilton County, Ohio.

National Association of EMS Physicians

- Member: 1990 - present
- Member of Research Committee: 1992 - present

The research committee reviewed the research abstracts that were submitted for the annual meeting and selected abstracts to be presented at the meeting.

- Chairman of Research Committee: 1997 - 2000
- Board of Directors: 1998 - 2002

American Heart Association

- Member of the Emergency Cardiovascular Care Basic Life Support Subcommittee: 1998 - 2001, 2003 - present

The BLS subcommittee sets the standards for performing cardiopulmonary resuscitation for the United States and most of the world.

- Chairman of the Operation Heartbeat Task Force for the Ohio Valley Affiliate: 1999 - 2000

Operation Heartbeat is a new initiative of the AHA which aims to increase the number of lives saved from sudden cardiac arrest throughout the Ohio Valley Affiliate area of Ohio, West Virginia, and Kentucky.

- Member of the Field Operations Committee for the Ohio Valley Affiliate: 1999 - 2000

The field operations committee oversees the fund raising budgets for the Ohio Valley Affiliate area of Ohio, West Virginia, and Kentucky.

Journal Reviewer

- *Academic Emergency Medicine*
- *Annals of Emergency Medicine*
- *Circulation*

- *Journal of the American Medical Association*
- *Prehospital Emergency Care*

Awards

- Best Oral Presentation, Fourth Annual Ohio/Midwest Regional Research Symposium on Emergency Medicine, Dayton, Ohio, April, 1994.
- Best Scientific Presentation, National Association of EMS Physicians Annual Meeting, San Diego, CA, August 1995.
- Best Scientific Presentation, National Association of EMS Physicians Annual Meeting, Dana Point, CA, January 2000.
- International Visiting Fellow, Monash University Centre for Ambulance and Paramedic Studies, Melbourne, VIC, Australia, May 2003

The Monash University sponsors a visiting professorship for two weeks each year. The fellow provides advice to the faculty, collaborates on research, and input into the paramedic courses in the degree granting paramedic educational program. The program, led by Prof. Frank Archer, offers undergraduate and graduate degrees in emergency health services up through the doctoral level.

Publications

Published Papers

1. Roberge R, Brader E, Martin ML, Jehle D, Evans T, Harchelroad F, Magreni G, Gesualdi G, Belardi C, Sayre M, Hartmann A. The root of evil: Pokeweed intoxication. **Ann Emerg Med** 1986;15:470-473.
2. Sayre MR, Lucid EJ. Management of varicella-zoster virus-exposed hospital employees. **Ann Emerg Med** 1987;16:421-424.
3. Roberge RJ, Kelly M, Evans TC, Hobbs E, Sayre M, Cottingham E. Facilitated intravenous access through local application of nitroglycerin ointment. **Ann Emerg Med** 1987;16:546-549.
4. Sayre MR, Roberge RJ, Evans TC. Nontraumatic subdural hematoma in a patient with osteogenesis imperfecta and renal failure. **Am J Emerg Med** 1987;5:298-301.
5. Sayre MR, Jehle D. Elevated toxoplasma IgG antibody in patients tested for infectious mononucleosis in an urban emergency department. **Ann Emerg Med** 1989;18:383-386.
6. Sayre MR, Nordeman L. Cardiovascular pharmacology. **Top Emerg Med** 1989;11(2):23-41.
7. Sayre MR. What's new in hemorrhagic shock. **J Air Med Transp** 1991;10(5):17-25.
8. Sayre MR, Weisgerber I. The use of neuromuscular blocking agents by air medical services. **J Air Med Transp** 1992;11(1):7-11.
9. Gibler WB, Sayre MR, Levy RC, Runyon JP, Kacich R, Hamilton C, Walsh RA. Serial 12-lead monitoring in patients presenting to the emergency department with chest pain. **J Electrocardiol** 1994; 26(suppl):238-243.
10. Hoekstra JW, Gibler WB, Levy RC, Sayre MR, Naber W, Chandra A, Kacich R, Magorien R, Walsh R. Emergency-department diagnosis of acute myocardial infarction and ischemia: A cost analysis of two diagnostic protocols. **Acad Emerg Med** 1994; 1:103-110.
11. Sayre MR, Sakles J, Mistler A, Evans J, Kramer A, Pancioli AM. Teaching basic EMTs endotracheal intubation: Can basic EMTs discriminate between endotracheal and esophageal intubation? **Prehosp Disas Med** 1994; 9:234-237.
12. Gibler WB, Runyon JP, Levy RC, Sayre MR, Kacich R, Hattemer CR, Hamilton C, Gerlach JW,

- Walsh RA. A rapid diagnostic and treatment center for patients with chest pain in the emergency department. **Ann Emerg Med** 1995; 25:1-8.
13. Sayre MR, Gibler WB. New approaches to ruling out acute ischemic coronary syndrome in the emergency department [editorial]. **Ann Emerg Med** 1996; 27:75-78.
 14. Pancioli AM, Sayre MR. Pediatric airway, breathing, and circulation. **Top Emerg Med** 1996; 18 (2):15-29.
 15. Sayre MR, Daily SW, Stern SA, Storer DL, van Loveren HR, Hurst JM. Out-of-hospital administration of mannitol does not change systolic blood pressure. **Acad Emerg Med** 1996; 3:840-848.
 16. Sayre MR. Chest pain evaluation centers: Will they accelerate therapeutic interventions? **Emergency Medicine** 1997; Aug Suppl:16-20.
 17. Sayre MR, Sakles JC, Mistler AF, Evans JL, Kramer AT, Pancioli AM. Field trial of endotracheal intubation by Basic EMTs. **Ann Emerg Med** 1998; 31:228-233.
 18. Pepe PE, Zachariah BS, Sayre MR, Floccare D, for the Chain of Recovery Writing Group. Ensuring the chain of recovery for stroke in your community. **Acad Emerg Med** 1998; 5:352-358.
 19. Pepe PE, Zachariah BS, Sayre MR, Floccare D, for the Chain of Recovery Writing Group. Ensuring the chain of recovery for stroke in your community. **Prehosp Emerg Care** 1998; 2:89-95.
 20. Sayre MR, Kaufmann KH, Chen IW, Sperling M, Sidman RD, Diercks DB, Liu T, Gibler WB. Measurement of cardiac troponin T is an effective method for predicting complications among emergency department patients with chest pain. **Ann Emerg Med** 1998; 31:539-549.
 21. Selker HP, Beshansky JR, Griffith JL, Aufderheide TP, Ballin DS, Bernard SA, Crespo SG, Feldman JA, Fish SS, Gibler WB, Kiez DA, McNutt RA, Moulton AW, Ornato JP, Podrid PJ, Pope JH, Salem DN, Sayre MR, Wollard RH. Use of the acute cardiac ischemia time-insensitive predictive instrument (ACI-TIPI) to assist with triage of patients with chest pain or other symptoms suggestive of acute cardiac ischemia. **Ann Intern Med** 1998; 129:845-855.
 22. Liu T, Wang Q, Baxter MS, Sayre MR, Gibler WB. Development of a statistical model for prediction of acute myocardial infarction by biochemical markers. **Drug Inform J** 1999; 33:141-148.
 23. Crocco TJ, Kothari RU, Sayre MR, Liu T. A nationwide prehospital stroke survey. **Prehosp Emerg Care** 1999; 3:201-206.
 24. Falk JL, Sayre MR. Confirmation of airway placement. **Prehosp Emerg Care** 1999; 3:273-278.
 25. Liu T, Sayre MR, Carleton SC. Emergency Medical Care: Types, Trends, and Factors Related to Nonurgent Visits. **Acad Emerg Med** 1999; 6:1147-1152.
 26. Diercks DB, Gibler WB, Liu T, Sayre MR, Storrow AB. Identification of patients at risk by graded exercise testing in an emergency department chest pain center. **Am J Cardiol** 2000; 86:289-292.
 27. Foutz RA, Sayre MR. Automated external defibrillators in long-term care facilities are cost-effective. **Prehosp Emerg Care** 2000; 4:314-317.
 28. Gibler WB, Hoekstra JW, Weaver WD, Krucoff MW, Hallstrom AP, Jackson RE, Sayre MR, Christenson J, Higgins GL, Innes G, Harper RJ, Young GP, Every NR, for the SMARTT Investigators. A randomized trial of the effects of early cardiac serum marker availability on reperfusion therapy in patients with acute myocardial infarction. **J Am Coll Cardiol** 2000; 36:1500-1507.
 29. Kothari RU, Hacke W, Brott T, Dykstra EH, Furlan A, Koroshetz W, Marler J, Sayre MR. Stroke. **Ann Emerg Med** 2001; 37:S137-S144.
 30. Barnes TA, MacDonald D, Nolan J, Otto C, Pepe P, Sayre MR, Shuster M, Zaritsky A. Airway devices. **Ann Emerg Med** 2001; 37:S145-S151.
 31. Kosowsky JM, Stephanides SL, Branson RD, Sayre MR. Prehospital use of continuous positive airway pressure (CPAP) for presumed pulmonary edema: a preliminary case series. **Prehosp**

- Emerg Care** 2001; 5:190-196.
32. O'Connor RE, Slovis CM, Hunt RC, Pirallo RG, Sayre MR. Eliminating errors in emergency medical services: Realities and recommendations. **Prehosp Emerg Care** 2002; 6:107-113.
 33. Crocco TJ, Sayre MR, Aufderheide TP. Prehospital triage of chest pain patients. **Prehosp Emerg Care** 2002; 6:224-228.
 34. Sayre MR, Gausche-Hill M. Conducting randomized trials in the prehospital setting. **Prehosp Emerg Care** 2002; 6(2 Suppl):S38-47.
 35. McVerry BJ, Sayre MR. Cardiac arrest research methodology. **Prehosp Emerg Care** 2002; 6(2 Suppl):S57-S62.
 36. Mosesso VN Jr, Newman MM, Ornato JP, Paris PM, Andersen L, Brinsfield K, Dunnavant GR, Frederick J, Groh WJ, Johnston S, Lerner EB, Murphy GP, Myerburg RJ, Rosenberg DG, Savino M, Sayre MR, Sciammarella J, Schoen V, Vargo P, van Alem A, White RD. Law Enforcement Agency Defibrillation (LEA-D): proceedings of the National Center for Early Defibrillation Police AED Issues Forum. **Prehosp Emerg Care** 2002; 6:273-282.
 37. Newman MM, Mosesso VN Jr, Ornato JP, Paris PM, Andersen L, Brinsfield K, Dunnavant GR, Frederick J, Groh WJ, Johnston S, Lerner EB, Murphy G, Myerburg RJ, Rosenberg DG, Savino M, Sayre MR, Sciammarella J, Schoen V, Vargo P, van Alem A, White RD. Law Enforcement Agency Defibrillation (LEA-D): position statement and best practices recommendations from the National Center for Early Defibrillation. **Prehosp Emerg Care** 2002; 6:346-347.
 38. Sayre MR, White LJ, Brown LH, et al., for the National EMS Research Agenda Writing Team. National EMS Research Agenda. **Prehosp Emerg Care** 2002; 6(3 Suppl):S1-S43.
 39. Sayre MR, White LJ, Brown LH, McHenry SD, for the National EMS Research Agenda Writing Team. The National EMS Research Agenda executive summary. **Ann Emerg Med** 2002; 40:636-643.
 40. Sayre MR. Damage control: past, present, and future of prehospital stroke management. **Emerg Med Clin North Am** 2002; 20:877-886.
 41. Sayre MR, Swor R, Pepe PE, Overton J. Current issues in cardiopulmonary resuscitation. **Prehosp Emerg Care** 2003; 7:24-30.
 42. Ornato JP, McBurnie MA, Nichol G, Salive M, Weisfeldt M, Riegel B, Christenson J, Terndrup T, Mohamud D; PAD Trial Investigators. The Public Access Defibrillation (PAD) trial: study design and rationale. **Resuscitation** 2003; 56:135-47. (M Sayre is a PAD Trial investigator and member of the study executive committee.)
 43. Lim SH, Sayre MR, Gibler WB. 2-D echocardiography prediction of adverse events in ED patients with chest pain. **Am J Emerg Med** 2003; 21:106-110.
 44. Sayre MR, White LJ, Brown LH, McHenry SD, for the Implementation Symposium Participants. National EMS Research Agenda: Proceedings of the implementation symposium. **Acad Emerg Med** 2003; 10:1100-1108.

Book Chapters

1. Sayre MR, Lucid EJ. Viral diseases, in Schwartz GR, Cayten CG, Mangelsen HA, et al (Eds), **Principles and Practice of Emergency Medicine**, 3rd edition. Lea and Febiger, Philadelphia, 1992, pp. 1857-1872.
2. Sayre MR, Lucid EJ. Needlestick protocol, in Schwartz GR, Cayten CG, Mangelsen HA, et al (eds), **Principles and Practice of Emergency Medicine**, 3rd edition. Lea and Febiger, Philadelphia, 1992, pp. 1941-1945.
3. Sayre MR, Carlin B. Obstructive airway disease, in Kravis TC, Warner CG, Jacobs LM Jr., (eds) **Emergency Medicine: A Comprehensive Review**, 3rd edition. Raven Press, New York, 1993, pp. 1129-1140.
4. Sayre, MR. Other causes of chest pain: Noncardiac, in Gibler WB, Aufderheide TP, **Emergency Cardiac Care**, Mosby, St. Louis, 1994, pp. 304-327.

5. Holleran RS, Sayre MR. Role of nursing in prehospital care, in **Prehospital Nursing: A Collaborative Approach**, Mosby, St. Louis, 1994, pp. 3-21.
6. Gibler WB, Sayre MR. Emergency evaluation of acute ischemic coronary syndrome, in Vincent J-L, (Ed), **1997 Yearbook of Intensive Care and Emergency Medicine**, Springer, Berlin, 1997, pp 329-338.
7. Sayre MR, Swor RA, Honeycutt LK. Prehospital identification and treatment, in Marler JR, Jones PW, Emr M, (Eds), **Proceedings of a National Symposium on Rapid Identification and Treatment of Acute Stroke**, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, 1997, pp 35-44.
8. Sayre MR, Schwartz GR. Pediatric viral infections: Measles, mumps, rubella, "fifth" disease, roseola, chicken pox, herpes virus, cytomegalovirus, infectious mononucleosis, rotavirus, adenovirus, polio, conjunctivitis, gingivostomatitis, rabies. In Schwartz GR, Hanke BK, Mayer TA, et al (Eds), **Principles and Practice of Emergency Medicine**, 4th edition. Williams & Wilkins, Baltimore, 1999, pp. 1439-1449.

Abstracts

1. Davis EA, Sayre MR. The use of oral acyclovir in the treatment of herpetic whitlow. **Ann Emerg Med** 1989;18:471.
2. Holleran RS, Sayre M, Downing C. Procedures performed by the flight crew and their effect on bedside and flight time. **J Air Med Transp** 1991;10(10):65.
3. Sayre MR, Sakles J, Mistler A, Evans J, Kramer A, Pancioli AM. Can basic EMTs discriminate between endotracheal and esophageal intubation? **Prehosp Disas Med** 1992; 7(Suppl 1):19S.
4. Sayre MR, Sakles J, Mistler A, Evans J, Kramer A, Shapiro M. Teaching basic EMTs endotracheal intubation: A comparison of blind digital intubation with conventional oral intubation. **Prehosp Disas Med** 1992; 7(Suppl 1):23S.
5. Hockstra JW, Gibler WB, Levy RC, Sayre M, Nober W, Flynn M, Kacich R, Walsh R, Magoreen R. Emergency department diagnosis of acute myocardial infarction and ischemia: A cost analysis (abstract). **Ann Emerg Med** 1993; 22:941-942.
6. Sayre MR, Dailey S, Stern S, Storer DL, VanLoveren H, Hurst J. Prehospital administration of mannitol in head-injured multiple trauma patients. **Prehosp Disas Med** 1993; 8(Suppl 1):S64.
7. Kaufmann K, Sidman RD, Sayre MR, Gerlach JW, Sperling M, Chen I, Gibler WB. The use of serum troponin-T levels for the early detection of acute myocardial infarction. **Acad Emerg Med** 1994; 1:A3.
8. Sidman RD, Sayre MR, Kaufmann K, Gerlach JW, Sperling M, Chen I, Gibler WB. Elevated serum troponin-T levels predict ischemic complications in patients with unstable angina. **Acad Emerg Med** 1994; 1:A44.
9. Sayre MR, Bender AL, Dey CC, Henke TJ, Hess PM, Stanforth DM, Treon BM, Gerlach JW, Hamilton CA, Gibler WB. Evaluating chest pain patients in an emergency department rapid diagnostic and treatment center is cost-effective. **Acad Emerg Med** 1994; 1:A45.
10. Sayre MR, Mistler AF, Kramer AT, Pancioli AM, Evans JL, Sakles JC. Field trial of endotracheal intubation by Basic EMTs. **Prehosp Disas Med** 1995; 10(Suppl 3):S51.
11. Lim SH, Sayre MR, Gibler WB. Two-dimensional echocardiography is not useful after evaluation of chest pain patients in an ED chest pain unit. **Acad Emerg Med** 1996; 3:429.
12. Jain V, Brancel JA, Bullard DA, Sayre MR, Breaux TS, Uphus MF. Health related quality of life among survivors of prehospital cardiac arrest. **Prehosp Disas Med** 1996; 11:S39.
13. Pipkin MB, Kothari RU, Sayre MR, Liu T. Out-of-hospital stroke management: How much do they know? **Acad Emerg Med** 1997; 4:458.
14. Sayre MR, Liu T, Bullard DS, Brancel JA, Breaux TF, Jain V, Uphus M. Survival from out-of-hospital cardiac arrest is related to socioeconomic status. **Prehosp Emerg Care** 1997; 1:182.

15. Sayre MR, Brancel J, Bullard D, Breaux T, Lim SH, Liu T. Use of the esophageal intubation detector for verifying endotracheal tube placement in the out-of-hospital environment. **Ann Emerg Med** 1997; 30:410.
16. Liu T, Wang Q, Sayre MR. Emergency medical care: Types, trends, and factors related to nonurgent visits. **Ann Emerg Med** 1997; 30:411.
17. Sayre MR, Evans JL, Liu T, Snyder KF. Police officers retain defibrillation skills. **Circulation** 1997; 96:I-367.
18. FitzGerald DJ, Sayre MR, Kazunas G, Liu T. How long does it take to process a cardiac arrest call? **Acad Emerg Med** 1998; 5:387.
19. FitzGerald DJ, Sayre MR, Kazunas G, Liu T. Can medical call takers accurately identify cardiac arrest? **Acad Emerg Med** 1998; 5:387.
20. Crocco TJ, Kothari RU, Sayre MR, Liu T. A nationwide out-of-hospital stroke survey. **Acad Emerg Med** 1998; 5:440.
21. Diercks DB, Storrow AB, Sayre MR, Gibler WB, Liu T. The prognostic effect of graded exercise testing in an emergency department chest pain diagnostic unit. **Acad Emerg Med** 1998; 5:508.
22. Diercks DB, Sayre MR, Gibler WB, Liu T. Troponin T as a long-term prognostic indicator of adverse cardiac events in patients who present to the emergency department. **Acad Emerg Med** 1998; 5:519.
23. Purcell RT, Sayre MR. Costs and potential benefits of equipping physician offices with automated external defibrillators. **Prehosp Emerg Care** 1998; 2:212.
24. Potluri J, Sayre M. Cost-effectiveness of prehospital 12-lead ECGs in improving outcomes of acute myocardial infarction. **Prehosp Emerg Care** 1998; 2:217.
25. Crocco T, Sayre MR, Potluri J, Liu T. A mathematical determination of the automatic external defibrillators required at mass gatherings. **Prehosp Emerg Care** 1999; 3:80.
26. Kothari R, Pio BJ, Sayre M, Liu T. A prospective evaluation of the accuracy of prehospital diagnosis of acute stroke. **Prehosp Emerg Care** 1999; 3:82.
27. Fitzgerald DJ, Sayre MR, Gasaway M, Liu T. The angina lengthy evaluation reminder tone (ALERT) study. **Acad Emerg Med** 1999; 6:305.
28. Foutz RA, Sayre MR. Placement of automated external defibrillators in long-term care facilities is cost-effective. **Circulation** 1999; 100(Suppl I):I-868.
29. Sayre MR, Evans J, Brennan T, Winburn C. Early defibrillation of cardiac arrest patients by urban police officers. **Circulation** 1999; 100(Suppl I):I-868.
30. Sayre MR, Evans J, Brennan T. Early defibrillation of cardiac arrest patients by urban police officers. **Prehosp Emerg Care** 2000; 4:95.
31. Foutz RA, Sayre MR. Placement of automated external defibrillators in long-term care facilities is cost-effective. **Prehosp Emerg Care** 2000; 4:96.
32. Brennan TD, Sayre MR, Evans J. Perception by urban police officers of proficiency in the use of automated external defibrillators. **Prehosp Emerg Care** 2000; 4:98.
33. Kosowsky JM, Branson RD, Crocco TJ, Stephanides SL, Liu T, Abraham WT, Sayre MR. Training paramedics to administer continuous positive airway pressure (CPAP) to patients with presumed cardiogenic pulmonary edema. **Prehosp Emerg Care** 2000; 4:100.
34. Foldenauer SKN, Sayre MR. Treating dental emergencies in a busy urban emergency department is expensive. **Ann Emerg Med** 2000; 36:S17.
35. Stephanides S, Kosowsky J, Sayre M. Prehospital CPAP for CHF: Paramedic impressions of a feasibility study. **Prehosp Emerg Care** 2001; 5:112.
36. Mosesso VN, Brown LH, Aufderheide TP, Craven RA, Sayre MR, Schmidt TA, Travers A, Weisfeldt ML, Green L. Variation in institutional review board responses to the public access defibrillation trial. **Ann Emerg Med** 2002; 40(4):S43.
37. Mosesso VN, Brown LH, Aufderheide TP, Craven RA, Sayre MR, Schmidt TA, Travers A, Weisfeldt ML, Green L. The direct costs of community consultation and public disclosure for exception from informed consent for emergency research. **Prehosp Emerg Care** 2003; 7:165-6.

38. Sayre MR. The PAD Study: Input and output but not outcome: The PAD Investigators. *Circulation* 2003; 108(17, Suppl IV):IV-1029.

Letters

1. Sayre MR, Jehle D. Pulmonary resistance and the rabbit model. *Ann Emerg Med* 1986; 15:1505-6.
2. Sayre MR, Liu T, Diercks DB, Gibler WB. Cardiac troponin T as a predictor of complications. *Ann Emerg Med* 1999; 33:474.

Grants Received

1. Foundation for Aeromedical Research. *Prehospital Mannitol in Head Injured Trauma Patients*. Principal Investigator. \$3,000. October 1991.
2. Agency for Health Care Policy Research. *A Time-Insensitive Predictive Instrument Impact Trial*, Co-investigator, study site. February 1993.
3. Emergency Medicine Foundation. *Endotracheal Intubation by Basic EMT's: A Pilot Study*. Principal Investigator. \$5,000. June 1993.
4. Marion Merrell Dow. *Comparison of the efficacy, safety, and economic outcomes of Cardizem injectable and digoxin IV in the treatment of actual fibrillation and actual flutter*, Principal Investigator, study site. \$25,000. March 1995.
5. Physio-Control Corporation. *Early defibrillation of cardiac arrest patients by urban police officers*. Principal Investigator. \$75,000 in equipment. January 1997.
6. American Heart Association, Ohio Affiliate. *Early defibrillation of cardiac arrest patients by urban police officers*. Principal Investigator. \$60,000. July 1997.
7. National Highway Traffic Safety Administration, Department of Transportation (DTN 22-99-H-05100), Department of Health and Human Services - Health Resources Services Administration, Washington, DC, and National Association of EMS Physicians, Lenexa, KS. *National EMS Research Agenda*. Principal Investigator. \$450,000. July 1999 - March 2005.
8. National Heart, Lung, and Blood Institute. *Public Access to Defibrillation*. Principal Investigator, study site. \$250,000. October 1999.
9. Agency for Healthcare Research and Quality. R13 HS12086-01. White LJ (PI), Sayre MR (Co-investigator), *EMS Research Agenda and Outcomes Project Symposium*, Small Grant Program for Conference Support. \$24,216 awarded to NAEMSP, May 2002.
10. Ohio Department of Public Safety. Key CB (PI), Sayre MR (Co-investigator), White LJ (Co-investigator), *Teaching paramedics endotracheal intubation using advanced human patient simulators*. \$95,085. July 2003
11. University of Washington. *AutoPulse Assisted Prehospital International Resuscitation (ASPIRE) Trial*. Principal Investigator, study site. \$314,073. October 2003

Consulting

1. TheraCardia, Inc, San Clemente, CA. *Minimally Invasive Device for Cardiac Massage and Defibrillation*. 2001-2002.

Presentations

1. University Association for Emergency Medicine, Annual Meeting, Cincinnati, OH. Elevated toxoplasma IgG antibody in patients tested for infectious mononucleosis in an urban emergency

- department. May 1988.
2. Association of Air Medical Services, Annual Meeting, Phoenix, AZ. Pharmacologic Paralysis of the Problem Patient. November 1989.
 3. Florence Rescue EMS Conference, Florence, KY. Shock and Fluids. February, 1991.
 4. Society for Academic Emergency Medicine, Annual Meeting, Washington, D.C. Midwest Regional CPC Competition. May 1991.
 5. Trauma Update VI, Cincinnati, OH. Fluid Resuscitation. May 1991.
 6. Florence Rescue EMS Conference, Florence, KY. Electrical Therapy. February, 1992.
 7. National Association of EMS Physicians, Annual Meeting, Pittsburgh, PA. Can Basic EMTs Discriminate Between Endotracheal and Esophageal Intubation? June 1992.
 8. Emergency Management of Chest Pain Conference, Cincinnati, OH. Prehospital Evaluation of Chest Pain. October, 1992.
 9. National Association of EMS Physicians, Winter Meeting, Naples, FL. Endotracheal Intubation by Basic EMT's. January, 1993.
 10. Society for Academic Emergency Medicine, Annual Meeting, San Francisco, CA. Serial Electrocardiograms are Useful for Identifying Patients with Potential Ischemic Heart Disease at Rest in the Emergency Department. May, 1993.
 11. National Association of EMS Physicians, Annual Meeting, Minneapolis, MN. Prehospital Administration of Mannitol to Head Injured Multiple Trauma Patients. June, 1993.
 12. Applied Research Ethics National Association (ARENA), Annual Meeting, Boston, MA. Informed Consent for Biomedical Research in Acute Care Medicine. October, 1993.
 13. Tulsa Regional Medical Center, Grand Rounds, Tulsa, OK. The Development and Use of the Heart ER. February, 1994.
 14. Society for Academic Emergency Medicine, Annual Meeting, Washington, DC. Evaluating Chest Pain Patients in an Emergency Department Rapid Diagnostic and Treatment Center is Cost-Effective. May, 1994.
 15. Second Annual Stephen C. Rector Visiting Lectureship in Emergency Medicine, West Virginia University. Morgantown, WV. Prehospital Management of Chest Pain. May, 1994.
 16. 21st Annual Critical Care Symposium, Oregon Chapter, Society of Critical Care Medicine. Portland, OR. Rapid Identification and Treatment of Acute MI. November, 1994.
 17. Greater Cincinnati Chapter, Emergency Nurses Association, Ninth Annual Emergency Care Conference, Cincinnati, OH. The ABC's of EMS. November, 1994.
 18. Allegheny General Hospital, Fifth Annual Selected Topics in Emergency Medicine, Pittsburgh, PA. Prehospital Management of Chest Pain. November, 1994.
 19. Emergency Medicine, The Next Hundred Years, The University of California, School of Medicine at San Francisco, CA. Prehospital Thrombolytic Therapy and the Inevitable 12 Lead EKG Standard of Care. March, 1995.
 20. Ohio Association of EMS. 1995 Spring Quarterly Conference, Cincinnati, OH. Prehospital 12 Lead EKG. April, 1995.
 21. CICBF Conference, Indianapolis, IN. Diagnosis of Myocardial Ischemia in the Emergency Department. April, 1995
 22. Emergency Medicine Grand Rounds, Scott & White Hospital, Temple, TX. Development and Efficacy of the Heart ER. April 1995
 23. Region II for Respiratory Care, 22nd Annual Meeting, Cincinnati, OH. Emergency Airway Care. April 28, 1995.
 24. Cardiology for Primary Care Physicians, Cincinnati, OH. The Use of Serum Enzyme Markers for Detecting Acute Ischemic Coronary Syndrome. May 13, 1995.
 25. National Association of EMS Physicians, Annual Meeting, San Diego, CA. Field Trial of Endotracheal Intubation by Basic EMTs. August, 1995.
 26. American College of Emergency Physicians Satellite Symposium, Washington, DC Management of Arrhythmias in a Chest Pain Center. September, 1995.

27. Cardiac Emergencies: Evaluation, Treatment, and Triage, Spokane, WA. Prehospital Evaluation and Treatment of Myocardial Infarction. September, 1995.
28. Blessing Hospital First Annual Emergency Medical Conference, Quincy, IL. Diagnosis and Treatment of Myocardial Infarction. October, 1995.
29. Eleventh Annual Allen Ziegler, D.O. Memorial Lecture Series, Novi, MI. Risk Stratifying Chest Pain Patients in the Year 2000. November, 1995.
30. Miami Valley Hospital, Internal Medicine Grand Rounds, Dayton, OH. Evaluation of Chest Pain in the Emergency Department. December, 1995.
31. Kettering Medical Center, Internal Medicine Grand Rounds, Dayton, OH. Evaluation of Chest Pain in the Emergency Department. January, 1996.
32. University of Kentucky Medical Center, Emergency Medicine Grand Rounds, Lexington, KY. Evaluation of Chest Pain in the Emergency Department. January, 1996.
33. Leadership Symposium, Emergency Nurses Association, Orlando, FL. Cardiac Care: Where and How Much? February, 1996.
34. American College of Emergency Physicians, Research Symposium, Cincinnati, OH. Database Development for a Chest Pain Center. February, 1996.
35. Deaconess Medical Center, Cardiology Grand Rounds, Boston, MA. Diagnosis of Myocardial Infarction in the Emergency Department. April, 1996.
36. First Southwestern Ohio Emergency Medicine Symposium, Cincinnati, OH. Prehospital Management of Chest Pain. April, 1996
37. Ohio Athletic Trainers Conference, Cincinnati, OH. Introduction to Emergency Medical Services. May, 1996.
38. Chest Pain Center Conference, Sacramento, CA. Development of a Chest Pain Treatment and Evaluation Unit. May, 1996.
39. Methodist Hospital of Indiana, Emergency Medicine Grand Rounds, Indianapolis, IN. Diagnosis of Myocardial Infarction in the Emergency Department. May, 1996.
40. American Association of Clinical Chemistry Satellite Symposium, Chicago, IL. Detecting Cardiac Damage with New Diagnostic Tools. July, 1996.
41. American College of Emergency Physicians Satellite Symposium, New Orleans, LA. Acute Myocardial Infarction: Eliminating Obstructions to Better Emergency Therapy. September, 1996.
42. National Association of EMTs Annual Meeting, Louisville, KY. Endotracheal Intubation by EMT Basics. October, 1996.
43. Bay County Affiliate, American Heart Association, Panama City, FL. Diagnosis and Therapy of Acute Myocardial Infarction. October, 1996.
44. Missouri Baptist Hospital, Medical Grand Rounds, St. Louis, MO. Diagnosis of Myocardial Infarction in the Emergency Department. October, 1996.
45. Ohio Affiliate, Basic Trauma Life Support, Cincinnati, OH. Management of Trauma During Pregnancy. October, 1996.
46. University Hospital of Jacksonville, Emergency Medicine Grand Rounds, Jacksonville, FL. Diagnosis of Myocardial Infarction in the Emergency Department. November, 1996.
47. Florida Chapter, American College of Emergency Physicians Leadership Symposium, Orlando, FL. Diagnosis of Myocardial Infarction in the Emergency Department. November, 1996.
48. Henry Ford Hospital, Cardiology Grand Rounds, Detroit, MI. Diagnosis and Therapy of Acute Myocardial Infarction. December, 1996.
49. National Institute of Neurological Disorders and Stroke, Washington, DC. Prehospital Management of Stroke. December, 1996.
50. National Association of EMS Physicians, Annual Meeting, Naples, FL. Research Symposium: Sample Size and Power. January, 1997.
51. National Association of EMS Physicians, Annual Meeting, Naples, FL. Chest Pain and Stroke Centers: Implications for EMS. January, 1997.
52. York Hospital, Emergency Medicine Grand Rounds, York, PA. Diagnosis of Myocardial

- Infarction in the Emergency Department. January, 1997.
53. Veterans Hospital, Cardiology Grand Rounds, Temple, TX. Diagnosis and Management of Acute Myocardial Infarction. January, 1997.
 54. George Washington University, Emergency Medicine Grand Rounds, Washington, DC. Diagnosis of Myocardial Infarction in the Emergency Department. February, 1997.
 55. Westmoreland Hospital, Medical Conference, Greensburg, PA. Diagnosis and Management of Acute Myocardial Infarction. March, 1997.
 56. Shadyside Hospital, Cardiology Grand Rounds, Pittsburgh, PA. Diagnosis and Management of Acute Myocardial Infarction. March, 1997.
 57. Advances in Emergency Medicine, University of California San Francisco, San Francisco, CA. Emergency Department Assessment of Chest Pain. April, 1997.
 58. State-of-the-Art Emergency Care, University of Cincinnati, Cincinnati, OH. Myocardial Injury - Early Recognition and Intervention. May, 1997.
 59. National Association of EMS Physicians, Research Meeting, Lake Tahoe, NV. Research Symposium: Sample Size and Power. July, 1997.
 60. National Association of EMS Physicians, Research Meeting, Lake Tahoe, NV. Survival from out-of-hospital cardiac arrest is related to socioeconomic status. July, 1997.
 61. Presbyterian Hospital, Cardiovascular Grand Rounds, Charlotte, NC. Diagnosis of Myocardial Infarction in the Emergency Department. August, 1997.
 62. Update in Cardiology and Cardiovascular Emergencies, Kansas City, MO. Emergency Department Assessment of Chest Pain. September, 1997.
 63. Association of Air Medical Services, Annual Meeting, Cincinnati, OH. Prehospital Evaluation and Treatment of Chest Pain. October, 1997.
 64. American College of Emergency Physicians, Research Symposium, San Francisco, CA. Use of the Esophageal Intubation Detector for Verifying Endotracheal Tube Placement in the Out-of-Hospital Environment. October, 1997.
 65. American Heart Association, 70th Scientific Sessions, Orlando, FL. Police Officers Retain Defibrillation Skills. November, 1997.
 66. EMS Research Interest Group, Akron, OH. Update on EMS Research in Cincinnati. December, 1997.
 67. National Association of EMS Physicians, Annual Meeting, Ft. Lauderdale, FL. Destination Protocol for Chest Pain and Stroke Patients. January, 1998.
 68. Allegheny University, EMS Update, Pittsburgh, PA. EMS Care of the Stroke Patient. March, 1998.
 69. EMS Australia, 1998 Meeting, Melbourne, Victoria, Australia. Early Defibrillation by Police: A Report from the United States. March, 1998.
 70. Singapore General Hospital, Emergency Medicine Grand Rounds, Singapore. Early Defibrillation by Police. March, 1998.
 71. 18th International Conference on Intensive Care and Emergency Medicine, Brussels, Belgium. Early Management of Acute Cardiac Ischemia. March, 1998.
 72. 18th International Conference on Intensive Care and Emergency Medicine, Brussels, Belgium. Diagnosis of Acute Myocardial Infarction. March, 1998.
 73. National Association of EMS Physicians, Mid-year Meeting, Incline Village, NV. Research Symposium. July, 1998.
 74. National Association of EMS Physicians, Mid-year Meeting, Incline Village, NV. Prehospital Thrombolysis. July, 1998.
 75. National Association of EMS Physicians, Mid-year Meeting, Incline Village, NV. System Showcase: City of Cincinnati EMS. July, 1998.
 76. National Association of EMS Physicians, Annual Meeting, Marco Island, FL. Research Symposium. January, 1999.

77. Allegheny General Hospital, EMS Update: A Gathering of Eagles. Pittsburgh, PA. Public Access Defibrillation. March, 1999.
78. International Association of Fire Fighters, EMS Section Meeting. San Francisco, CA. City of Cincinnati EMS. May, 1999.
79. American Heart Association, Evidence Evaluation Conference. Dallas, TX. EMT Basic Endotracheal Intubation. September, 1999.
80. American Heart Association, Evidence Evaluation Conference. Dallas, TX. EMS Transport of Stroke. September, 1999.
81. American Heart Association, 72nd Scientific Sessions. Atlanta, GA. Early Defibrillation of Cardiac Arrest Patients by Urban Police Officers. November, 1999.
82. National Association of EMS Physicians, Annual Meeting, Dana Point, CA. Research Symposium. January 2000.
83. National Association of EMS Physicians, Annual Meeting, Dana Point, CA. EMS Research: Raising the Bar. January 2000.
84. National Association of EMS Physicians, Annual Meeting, Dana Point, CA. Early Defibrillation of Cardiac Arrest Patients by Urban Police Officers. January 2000.
85. Allegheny General Hospital, EMS Update: A Gathering of Eagles II. Pittsburgh, PA. Public Access Defibrillation. February 2000.
86. The C.C. Roussi, M.D. Memorial Lectureship, Akron General Medical Center, Akron, OH. Facilitated Percutaneous Coronary Intervention in the Management of Acute Myocardial Infarction. May 2000.
87. The 10th Annual SAEM/Midwest Regional Research Symposium, Dayton, OH. Keynote Speaker. EMS Research: Raising the Bar, May 2000.
88. Society for Academic Emergency Medicine Annual Meeting, San Francisco, CA. Controversies and Consensus in CPR and ACLS. May 2000.
89. National Association of EMS Physicians, Annual Meeting, Ft. Myers, FL. Research Symposium. January 2001.
90. Christiana Care Health System, Wilmington, DE. Advanced Cellular Life Support. February 2001.
91. University of Texas, Southwestern. EMS Update: A Gathering of Eagles III. Dallas, TX. EMS Management of Stroke. February 2001.
92. University of Chicago, Department of Medicine Grand Rounds. Chicago, IL. How will the PAD trial affect you? March 2001.
93. The Second Asian Conference on Emergency Medicine. Taipei, Taiwan. Past, Present, and Future of Prehospital Stroke Management. March 2001.
94. Borgess Hospital Neurological Symposium, Kalamazoo, MI. EMS Management of Stroke. October, 2001.
95. Summit County Ohio Prehospital Research Group. Akron, OH. The National EMS Research Agenda. November 2001.
96. National Association of EMS Physicians, Annual Meeting. Tucson, AZ. Research Symposium. January 2002.
97. National Association of EMS Physicians, Annual Meeting. Tucson, AZ. The National EMS Research Agenda. January 2002.
98. Turtle Creek IV: EMS Consensus Development Conference. Dallas, TX. Controversies in CPR. February 2002.
99. Emergency Medical Services for Children National Conference. Dallas, TX. The National EMS Research Agenda. April 2002.
100. National EMS Research Agenda Implementation Symposium. Alexandria, VA. Conference Moderator and Speaker: The National EMS Research Agenda. June 2002.
101. Allegheny General Hospital. Emergency Medicine Grand Rounds. Pittsburgh, PA. Future of Advanced Cardiac Life Support. July 2002.

102. BTLS International, Annual Meeting. Toronto, ON, Canada. Research Symposium. September 2002.
103. National Association of EMS Physicians, Annual Meeting. Panama City, FL. Research Symposium. January 2003.
104. National Association of EMS Physicians, Annual Meeting. Panama City, FL. Research Using the Emergency Exception to Informed Consent: The PAD Trial Experience. January 2003.
105. 13th World Congress on Disaster and Emergency Medicine. Melbourne, VIC, Australia. Overcoming Barriers to Prehospital Research, Pre-conference Workshop. May 2003.
106. 13th World Congress on Disaster and Emergency Medicine. Melbourne, VIC, Australia. Status of Controlled Trials in the Field of Prehospital Care. Pre-conference Workshop on Developing a Cochrane Collaboration for Prehospital Care. May 2003.
107. 13th World Congress on Disaster and Emergency Medicine. Melbourne, VIC, Australia. National (US) EMS Research Agenda. May 2003.
108. Society for Academic Emergency Medicine Annual Meeting, Boston, MA. Resuscitative Hypothermia Academic Industry Roundtable. May 2003.
109. Akron General Medical Center, Emergency Medicine Resident Orientation, Akron, OH. Research Symposium. July 2003.
110. 25th Anniversary of Emergency Medicine at Ohio State Conference, Columbus, OH. Update on Cardiovascular Care in EMS. September 2003.
111. American Heart Association, 76th Scientific Sessions, Orlando, FL. The PAD Study: Input and output but not outcome: The PAD Investigators. November 2003
112. National Association of EMS Physicians, Annual Meeting. Tucson, AZ. EMS-C Research Symposium. January 2004
113. National Association of EMS Physicians, Annual Meeting. Tucson, AZ. Salvaging the Circular File. January 2004.