

Approved 3-22-88
Date

MINUTES OF THE SENATE COMMITTEE ON PUBLIC HEALTH AND WELFARE

The meeting was called to order by SENATOR ROY M. EHRLICH at
Chairperson

10:00 a.m./~~pm~~ on March 15, 1988 in room 526-S of the Capitol.

All members were present except:

Committee staff present:

Emalene Correll, Legislative Research
Norman Furse, Revisors Office
Clarene Wilms, Committee Secretary

Conferees appearing before the committee:

Dr. Shane Christensen, Medical Director for Kansas City, Kansas Fire Dept.
Thomas W. Pollan, Interim Director, Emergency Medical Service, Sedgwick, KS
Al Dimmitt, Emergency Medical Training Program, University of Kansas, Kansas
City, Missouri
Chip Wheelan, Kansas Medical Society
John E. Coslett, Coordinator of Fire Service Training, State Fire Marshall
Dept., Topeka, KS, presenting testimony for Aaron Estabrook, Fire
Service Representative
Fred Thorp, EMS, Kansas City, Kansas Fire Department
Representative Mary Jane Johnson
Representative Debara Schauf
Representative Jessie Branson
Carolyn Middendorf, KSNA
Lt. Bill Jacobs, Kansas Highway Patrol
Written testimony, Ed DeSoignie, KDOT
Written testimony, Nancy Bauder, President, Kansans for Highway Safety
Written testimony, Sgt. Bob Giffen, Kansas Highway Patrol
Written testimony, Kansas District Magistrate Judges Association
Written testimony, Ruth N. Meserve, Kansas Coalition for Drug-free Driving

The chairman called the meeting to order and stated that Staff would explain the County Tax Levies for Local Health Services. It was pointed out that the blanks did not mean those areas were not funding local health department activities. These counties have chosen to use the Charter Ordinance Authority to opt out of making individual levies for a number of different county functions and rather budget those functions in their General Fund. By charter you can fund various types of government activities for which there is specific levy authority out of the general fund and take the total levy out of the general fund. Large counties tend to have combined health departments and both city and county contribute.
Attachment 1

Dr. Shane Christensen testified in support of HB-2835 stating that survival rates would be improved if this bill is passed, also survival rates for cardiac arrest and ventricular defibrillation patients would be improved. Dr. Christensen further stated that the bill would benefit the citizens of Kansas by increasing availability of the technic of defibrillation. This bill would allow automatic defibrillation by first responders with a 45 hour training course plus 4 hours of training in specific use of this device.

Thomas W. Pollan testified on HB-2835 and stated he was supportive of the use of automated defibrillators by certified personnel when they are properly trained and retrained, medically authorized and reviewed, and coordinated through the local EMS system. Attachment 2

Al Dimmitt testified concerning HB-2835. The stated position of the Medical Center on defibrillation therapy is appropriate under the

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON PUBLIC HEALTH AND WELFARE,
room 526, Statehouse, at 10:00 a.m./p.m. on March 15, 1988

conditions: 1) the technician has completed a course of instruction on the equipment and procedures for its use; 2) when there is support and approval by the local medical society; 3) when the procedure is used on oral order of a physician, or standing order approved by the local medical society; 4) a mechanism for incident review with the medical adviser has been established; 5) a process for regular and periodic update is implemented; and 6) when defibrillation occurs within the EMS system which can provide for the total emergency care of the patient. Attachment 3

Chip Wheelen distributed a position paper on the EMT Defibrillator program and requested that the committee not take action on HB-2835 but instead request that the chairman, who is a member of the Senate Local Government Committee, offer a motion to that committee to incorporate the amendment, Page 7 of HB-2639 "(o) develop standards for automated defibrillation by emergency medical technicians, emergency medical technician-intermediates, and certified first responders." Mr. Wheelen stated this was an expeditious way to solve the problem. Attachment 4

John Coslett presented testimony by Aaron Estebrook, Fire Service Representative, State EMS Council. In his written testimony Mr. Estabrook stated support for HB-2835 in order that use of the automatic external defibrillators could be used in fire, EMS and other emergency service programs of Kansas. Attachment 5

Fred Thorp testified in favor of HB-2835 stating the bill extends life saving therapy to the citizens of Kansas who have little time left for survival of a heart attack unless someone quickly intervenes with a defibrillator. It was further stated a 4 to 6 hour training program for automated technology would be sufficient training, rather than the lengthy and costly educational requirements. Attachment 6

Representative Johnson, a sponsor of HB-2835 appeared and requested that HB-2835 be allowed to remain a separate bill and not be incorporated into HB-2639 as requested by the Medical Society.

Representative Schaaf, also a sponsor of HB-2835, stated that during the interium study she found that this bill was just as important as changing the organization of the Bureau. Ms. Schaaf stated it was critical that the citizens of Kansas be provided with the right tools to save lives. The apparent power struggles and personality battles should not be allowed to defeat a needed bill.

Representative Jessie Branson appeared in support of HB-2716 stating this bill was introduced partly as a result of the findings of a 1987 Interim Study on "Epilepsy and Related Disorders and also due to the fact that a number of advocacy groups under the umbrella of Kansans for Highway Safety, including law enforcement personnel, have requested strengthening the law and making it more enforceable. Attachment 7

Carolyn Middendorf testified for KSNA in support of HB-2716 stating this bill would strengthen the current law related to child passenger safety and could significantly lower the number and severity of injuries, medical costs and hospitalization. Attachment 8

Time constraints allowed no further testimony to the committee. Lt. Bill Jacobs, Kansas Highway Patrol was scheduled to appear but time did not permit. No written testimony was presented.

Ed DeSoignie, presented written testimony for Kansas Department of Transportation stating support for HB-2716 as amended stating that the bill would provide a more enforceable child passenger safety act and would improve traffic safety on our state's highways. Attachment 9

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON PUBLIC HEALTH AND WELFARE,
room 526, Statehouse, at 10:00 a.m.~~pm~~ on March 15, 1988, 19 .

Nancy Bauder presented written testimony in support of HB-2716. Ms. Bauder stated that children should not be exempt from one of the most life and injury-saving laws that this state has ever passed. Attachment 10

Sgt. Bob Giffin, Kansas Highway Patrol, presented written testimony stating support of HB-2716 which would amend the child passenger safety act to include children up to age 14 and institute other improvements in current law. Attachment 11

Written testimony was presented of the Kansas District Magistrate Judges Association supporting the intention of HB-2716 to strengthen the protection of child passengers in automobiles. The testimony expressed concern about lines 38-42 and 58-61 which seem to weaken requirements. Attachment 12

Written testimony was presented by Ruth N. Meserve, Kansas Coalition for Drug-Free Driving, supporting HB-2716 stating there is no law protecting children from age 4 to 9 either under the child restraint law or mandatory seat belt law. Attachment 13

The meeting adjourned at 11:03 and the committee will meet Wednesday, March 16, 1988 in Room 526-S, at 10 a.m.

SENATE
PUBLIC HEALTH AND WELFARE COMMITTEE

DATE March 15, 1988

(PLEASE PRINT)
NAME AND ADDRESS

ORGANIZATION

ENDE SOIGNE

Ks. Dept. of Transportation

Cliff Heckathorn

Ks. Head Injury Assoc.

Nancy Boulder

Kansans for Highway Safety

Bob Giffen

KANSAS HIGHWAY PATROL

Richard Funk

KASO

Jim McBride

observer

Chris Hildenbrand

Close-up Ks.

Beverly Laseke

Close-up Ks. (Boulder HS)

Star Hildenbrand

CLOSE UP KANSAS Hutchinson
CHRISTIAN SCIENCE COMMITTEE
ON PUBLICATION FOR KANSAS

KEITH R LANDIS

Bob Perkins

Kans. Hospital Assn

Bob McDaudd

KHP

Bob Stanbary

Laendal Med Corp

Al Dimmitt

KUMC

Fred Hoop

KCK Fire Dept

Dr. Shane R. Christensen, M.D.

" " "

Sue Bond

Disitar

Pamela Hart

Visitor

Marjorie Van Buren

for Kansas District Magistrate Judges Assn

SENATE
PUBLIC HEALTH AND WELFARE COMMITTEE

DATE 3-15-88

(PLEASE PRINT)
NAME AND ADDRESS

ORGANIZATION

Carolyn Middleton

KSWA

Terri Roberts

KSNA

Robert Semler

Student

County Tax Levies for Local Health Services by County
(Levy Made in 1987 for Calendar Year 1988)

COUNTY	LEVY	COUNTY	LEVY	COUNTY	LEVY
Allen	.510	Haskell	---	Riley	.990
Anderson	.670	Hodgeman	---	Rooks	.640
Atchison	.510	Jackson	.640	Rush	---
Barber	.586	Jefferson	.500	Russell	.474
Barton	.492	Jewell	1.000	Saline	.674
Bourbon	.496	Johnson	.745	Scott	.730a
Brown	.470	Kearney	.230	Sedgwick	---
Butler	.646	Kingman	.750	Seward	---
Chase	.890	Kiowa	.837	Shawnee	---
Chautauqua	.750	Labette	1.000	Sheridan	.368
Cherokee	.720	Lane	.670	Sherman	.995
Cheyenne	.270	Leavenworth	.155	Smith	.570
Clark	.820	Lincoln	1.210	Stafford	.730
Clay	.400	Linn	.249	Stanton	---
Cloud	1.120	Logan	.638	Stevens	---
Coffey	.298	Lyon	1.294	Sumner	.670
Comanche	1.233	Marion	.497	Thomas	.310
Cowley	.540	Marshall	.421	Trego	.273
Crawford	.910	McPherson	.336	Wabaunsee	1.000
Decatur	.471	Meade	.050	Wallace	.420
Dickinson	.544	Miami	.249	Washington	.595
Doniphan	.250	Mitchell	.420	Wichita	.820
Douglas	.995	Montgomery	.695	Wilson	.480
Edwards	.560	Morris	1.079	Woodson	.530
Elk	1.265	Morton	.400	Wyandotte	.994
Ellis	.240	Nemaha	---		
Ellsworth	.513	Neosho	.500		
Finney	.300	Ness	.838		
Ford	.527	Norton	.750		
Franklin	.500	Osage	.880		
Geary	1.000	Osborne	.680		
Gove	---	Ottawa	.900		
Graham	.540	Pawnee	.820		
Grant	.320	Phillips	1.410		
Gray	.720	Pottawatomie	.200		
Greeley	.250	Pratt	.930		
Greenwood	.566	Rawlins	.500		
Hamilton	.610	Reno	.998		
Harper	.940	Republic	.910		
Harvey	---	Rice	---		

a. Scott County is also making a levy of .790 for home health services.



SEDGWICK COUNTY, KANSAS

Emergency Medical Service

Thomas W. Pollan
Interim Director

March 15, 1988

To: Chairman Roy Ehrlich and Members of the Senate
Public Health and Welfare Committee

From: Thomas W. Pollan, Interim Director
Sedgwick County Emergency Medical Service

Subject: House Bill 2835 - Automated Defibrillator

Honorable Chairman and Members of the Senate Public Health and
Welfare Committee:

First, I would like to express my sincere appreciation for the opportunity to review and comment on House Bill 2835. I am supportive of House Bill 2835, however, I believe that some modifications are required to ensure its' effective implementation.

My presence before this committee is to represent the Emergency Medical Service of Sedgwick County and the Directors association of South Central Kansas. Since 1975, the political entities, medical professionals and para-professionals within Sedgwick County have devoted considerable energy and funding to develop, implement, and coordinate our sophisticated Advanced Life Support Emergency Medical system. The success of the system is directly linked to support from state and local elected officials in establishing a coordinated county-wide EMS System. This system includes; an E911 phone system and centralized emergency communication network; first response program provided by local fire departments (volunteer and paid); volunteer ambulance services; area hospitals; local medical society; and the Sedgwick County Emergency Medical Service, an advanced life support ambulance provider. The end product of this coordinated system is that those services provided to Sedgwick County are of the "Best in the nation."

When I testified before the House Local Government Committee I indicated that I was supportive of the concepts of House Bill 2835, but, I was opposed to how the bill was written. During the House Committee's public hearing, committee members introduced amendments that addressed the majority of my concerns. I subse-

quently withdrew my opposition.

Having had additional time to review House Bill 2835, I found that my decision to support this bill was done without studying in detail its language. I failed to ensure that the input submitted addressed all of the issues and their impact on pre-hospital care both positively and negatively. For this I must apologize.

I believe that the positive aspects of the use of automated defibrillators were addressed. However, in my opinion, one of the negative aspects of House Bill 2835 is that it fails to specifically authorize the performance of defibrillation of patients who are pulseless, non-breathing and detected electronically as being in a state of cardiac ventricular fibrillation, rapid ventricular tachycardia or asystole. Additionally, the current bill fails to recognize the need for coordination through the local medical society and EMS system. There are individuals who will argue that this is a "simple and safe" procedure, when personnel are properly trained, and does not require medical authorization. I disagree, as a Mobile Intensive Care Technician, I perform many "simple and safe" procedures that require medical authorization either by direct orders from a physician or are covered by written protocols approved by the local medical society. Without proper medical authorization of this procedure by the local component medical society and coordination with the local EMS system, it is doubtful we will ever be able to measure the success or failure of this program. It is imperative that the authorization and coordination of such programs by the local medical community and the local EMS system be in the language of this legislation.

In summary, I am supportive of the use of automated defibrillators by certified personnel when they are properly trained and retrained, medically authorized and reviewed, and coordinated through the local EMS system.

Thank you for your attention and interest in the emergency care provided to our citizens.

HOUSE BILL No. 2835

By Representatives Johnson and Schauf

2-9

0017 AN ACT concerning the use of ~~automatic and semi-automatic~~
0018 ~~automated~~ defibrillators for cardiac defibrillation; authorizing
0019 the certification of ~~individuals~~ certain persons in the use
0020 thereof; providing exemptions from civil liability in certain
0021 instances.

0022 *Be it enacted by the Legislature of the State of Kansas:*

0023 Section 1. As used in this act: (a) "Ambulance service"
0024 means any ambulance service which holds a permit to operate as
0025 an ambulance service under K.S.A. 65-4317 *et seq.* and amend-
0026 ments thereto "Automated defibrillator" means an automatic
0027 defibrillator or semi-automatic defibrillator.

0028 (b) "Automatic defibrillator" means a monitor-defibrillator
0029 capable of rhythm analysis which will charge and deliver a shock
0030 after electronically detecting the presence of ventricular fibril-
0031 lation, ~~or~~ rapid ventricular tachycardia.

0032 (c) "Semi-automatic defibrillator" means a monitor-defibril-
0033 lator which is capable of electronically detecting ventricular
0034 fibrillation and rapid ventricular tachycardia, ~~but requires user~~
0035 interaction in order to deliver a shock.

0036 (d) "Council" means the emergency medical services coun-
0037 cil established under K.S.A. 65-4316 and amendments thereto.

0038 Sec. 2. (a) Any ~~individual~~ certified first responder, emer-
0039 gency medical technician or emergency medical technician-in-
0040 termediate in this state may be certified in the use of ~~automatic~~
0041 ~~or semi-automatic~~ automated defibrillators for cardiac defibrilla-
0042 tion in accordance with the provisions of this act. The council
0043 shall adopt rules and regulations establishing minimum, basic
0044 standards governing training in the use of ~~automatic and semi-~~
0045 ~~automatic~~ automated defibrillators in accordance with this act.

Add: or asystole

0046 This training shall be conducted by personnel of ambulance
 0047 services instructors who are qualified to conduct such training in
 0048 accordance with the rules and regulations adopted by the coun-
 0049 cil. The minimum course of training shall not exceed six clock
 0050 hours in length and shall be provided at no cost to the trainee be
 0051 not less than four clock hours in length.

0052 (b) ~~Each local service provider shall develop medical proto-~~
 0053 ~~cols consistent with the criteria established by the council.~~

0054 (c) Upon the satisfactory completion of training in the use
 0055 of automatic or semi-automatic automated defibrillators for car-
 0056 diac defibrillation as authorized under this section, the individ-
 0057 ual certified first responder, emergency medical technician or
 0058 emergency medical technician-intermediate who has satisfacto-
 0059 rily completed such training shall be issued a certificate indicat-
 0060 ing that such individual person has satisfactorily completed such
 0061 training. The certificate shall be issued by the ambulance service
 0062 which conducted the training and shall be in a form prescribed
 0063 by the council by rules and regulations. The certificate shall be
 0064 valid for three years one year following the date of issuance and
 0065 may be renewed upon the expiration thereof at the end of such
 0066 three-year one-year period by retaking and satisfactorily com-
 0067 pleting the training in the use of automatic or semi-automatic
 0068 automated defibrillators for cardiac defibrillation authorized
 0069 under this section.

0070 (E)(e) (d) No individual who holds a valid certificate under
 0071 subsection (b) (c) for the satisfactory completion of training in the
 0072 use of automatic or semi-automatic automated defibrillators for
 0073 cardiac defibrillation shall be liable for civil damages as a result
 0074 of the use by such individual of an automatic or semi-automatic
 0075 automated defibrillator to provide cardiac defibrillation during
 0076 an emergency, except such damages which may result from gross
 0077 negligence or by willful or wanton acts or omissions on the part
 0078 of such individual.

0079 Sec. 3. This act shall take effect and be in force from and
 0080 after its publication in the statute book.

Emergency Medical Service or Ambulance Service

(D) May perform defibrillation of a pulseless, non-breathing patient in accordance with the provisions of this act when specifically authorized by written protocols, approved by the local component medical society.

CODE BLUE STATS 1987

TOTAL CODE BLUES 519
 FIELD SAVES 99
 CLINICAL SAVES 25
 TOTAL SAVES 124 = 24% SAVE RATE

AVERAGE SCENE TIME FOR ALL CODE BLUES = 22 MINUTES

CODE BLUES BY INITIAL RHYTHM

RHYTHM	TOTALS/YR	% OF TOTAL BLUES	SAVES/YR	SAVE RATE
COARSE FIB	100	19%	35	35%
FINE FIB	24	5%	5	21%
TOTAL V-FIBS	124	24%	40	32%
ASYSTOLE	225	43%	18	8%
EMD	119	23%	32	27%
V TACH	5	1%	2	40%
OTHERS	40	8%	32	80%

BY AGE	TOTALS/YR	% OF TOTAL BLUES	SAVES/YR	SAVE RATE
0-10	22	5%	4	18%
11-19	12	2%	1	8%
20-29	29	6%	8	23%
30-30	39	7%	6	15%
40-49	35	8%	10	28%
50-59	61	12%	5	8%
60-69	108	21%	37	34%
70-79	117	22%	24	21%
80-89	72	14%	24	33%
90 & UP	22	5%	5	22%
UNKNOWN	3	.06%	0	0%

TRAUMA ALERTS 1987

TOTAL TRAUMA ALERTS: 310

EMS TRANSPORTS : 286 = 92% OF TOTAL
 L.W. TRANSPORTS: 24 = 7% OF TOTAL
 PINS: 16 = 5% OF TOTAL

AVERAGE RESPONSE TIMES

EMS: 6 MINUTES
 LIFE WATCH: 15 MINUTES

AVERAGE SCENE TIME: 14 MINUTES

AVERAGE TRANSPORT TIME: 8 MINUTES FOR EMS
 8 MINUTES FOR LIFE WATCH

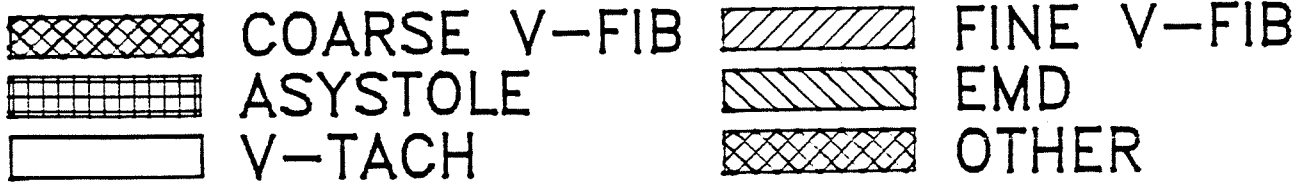
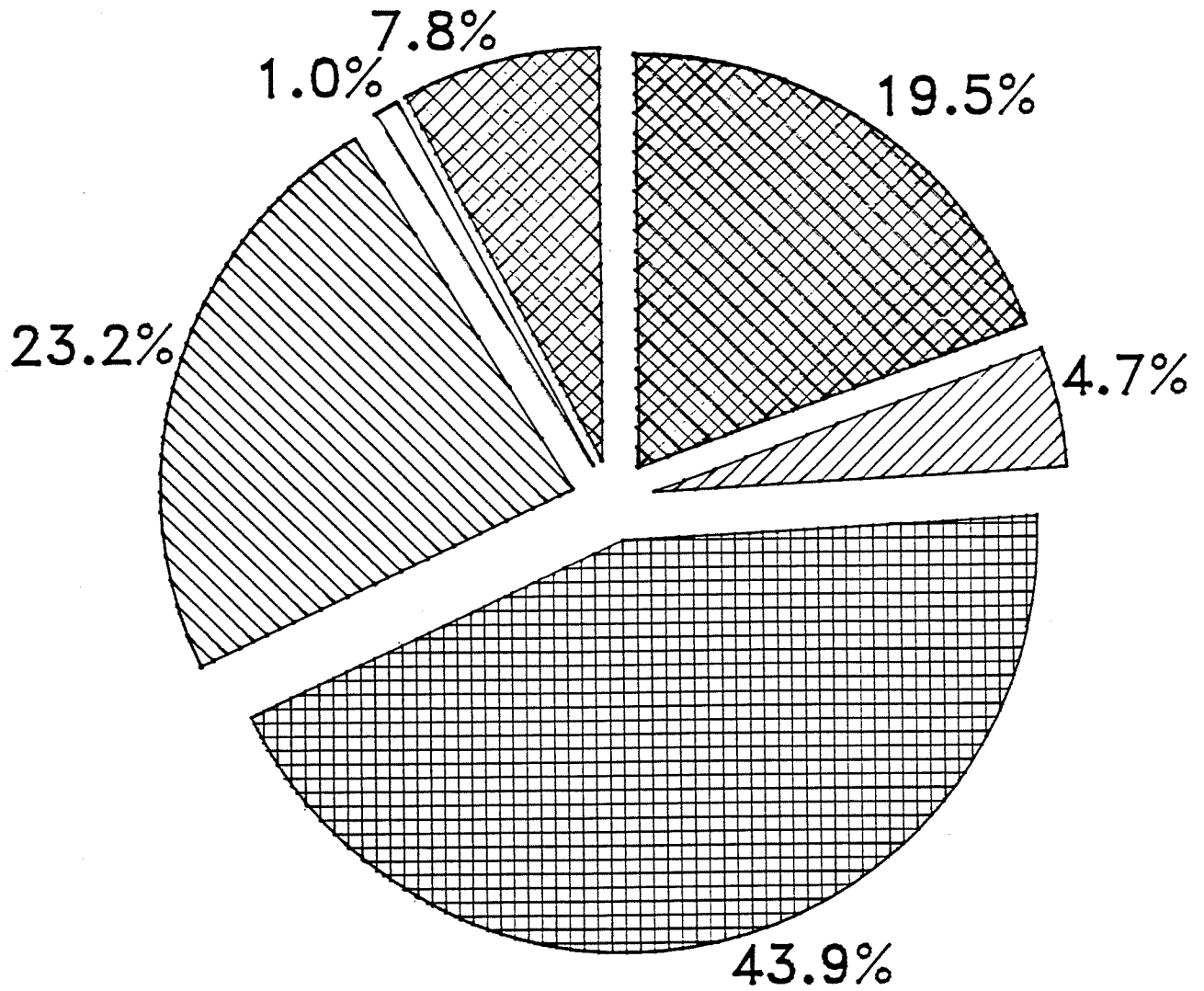
FROM ARRIVAL AT SCENE 22 MINUTES FOR EMS
 TO ARRIVAL AT ER 27 MINUTES FOR LIFE WATCH

AVERAGE CALL TIME: 28 MINUTES

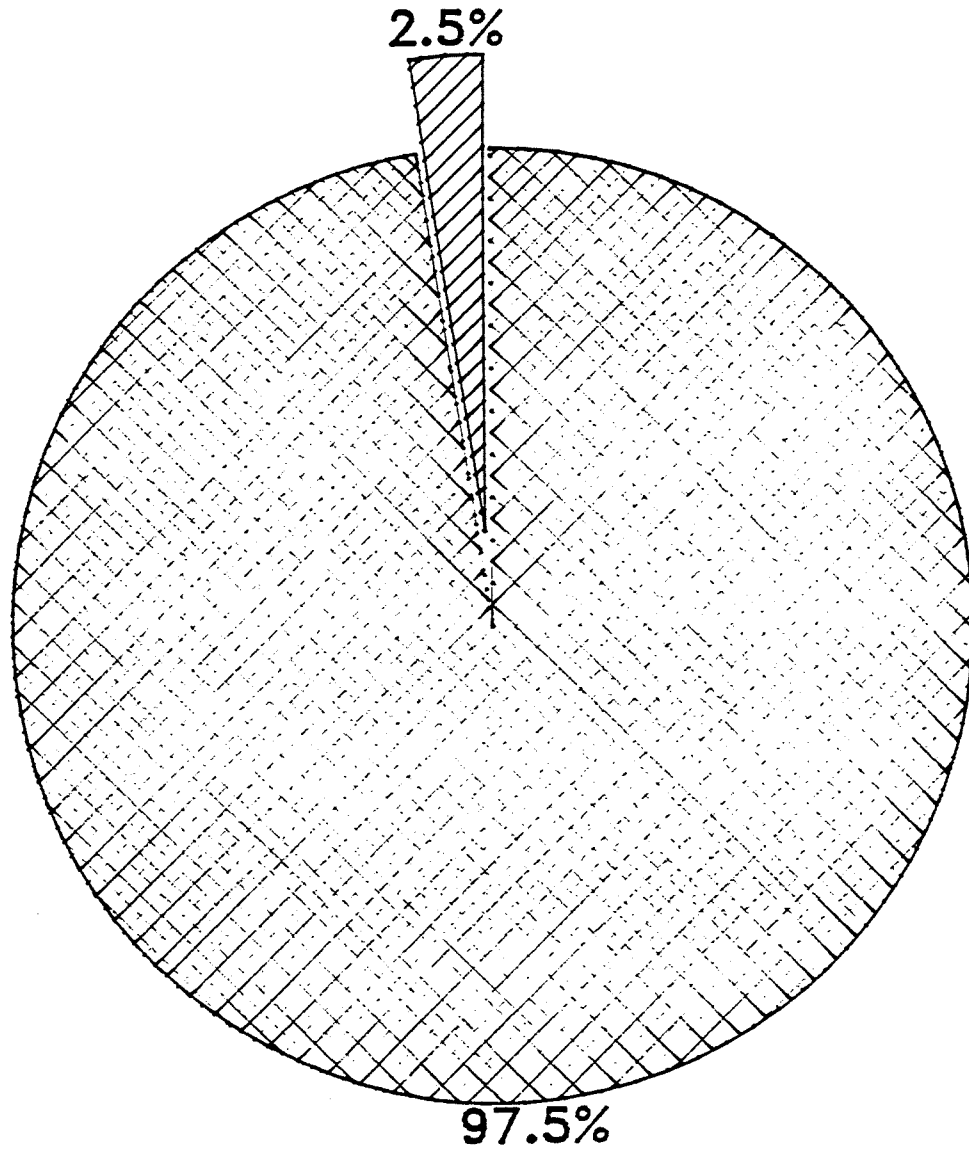
HOSPITALS	TOTALS	% OF TOTAL TRAUMA ALERTS
RIVERSIDE	44	14%
ST. FRANCIS	79	25%
HCA WESLEY	91	29%
NOTE: 24 (26%) OF HCA WESLEY'S TOTAL WERE TRANSPORTED BY LIFE WATCH		
ST. JOSEPH	96	31%



CAUSES	TOTALS	% OF TOTAL
MOTOR VEHICLE	142	27%
WITHOUT PINS	101	19%
WITH PINS	13	2%
WITH PEDESTRIANS	22	4%
WITH BICYCLES	2	.03%
WITH TRAINS	4	.07%
MOTORCYCLE	31	6%
ASSAULTS	89	34%
GSW	53	10%
STABBINGS	25	5%
OTHERS	11	2%
OTHER CAUSES		
ELECTROCUTIONS	2	.03%
FALLS	24	5%
INDUSTRIAL	6	1%
HANGINGS	2	.03%
BURNS	8	1.5%
OTHERS	6	1%

1987 CODE BLUE BY INITIAL RHYTHM

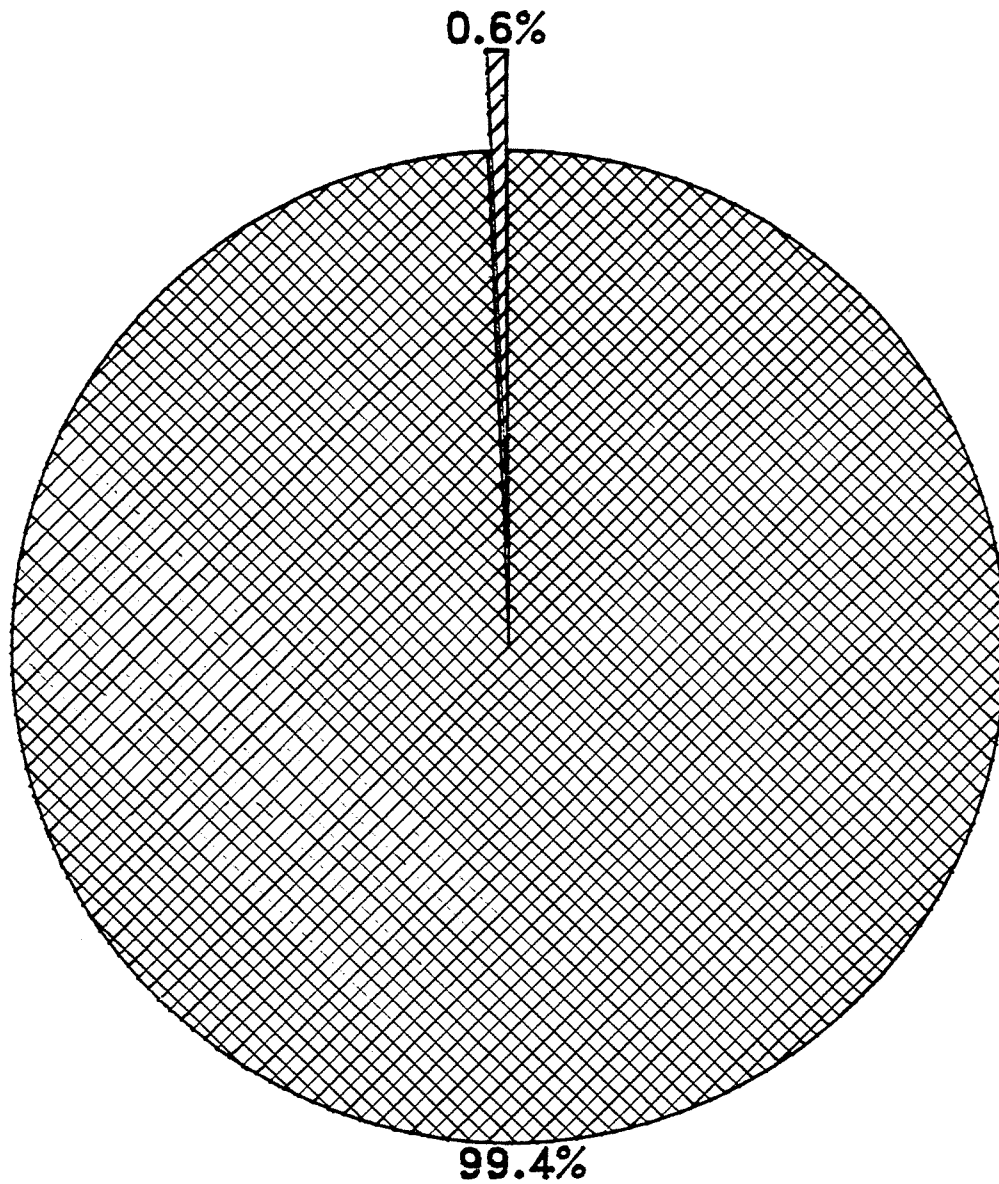


EMERGENCY CALL BY CARDIAC ARREST



 EMERGENCY CALLS  CARDIAC ARREST

EMERGENCY CALLS BY CARDIAC ARREST PRESENTING IN V-FIB



 EMERGENCY CALLS  CARDIAC ARREST/ V-FIB

Sedgwick County EMS
1987 Summary

Call Volume

	Emergent	Non-Emergent	St. Francis Special Trsf.	Total	Avg/Day	Average # Calls/Crew
1980	13994	N/A	N/A	13994	38	583
1984	16969	N/A	N/A	16969	47	528
1985	17817	3068	N/A	20885	57	712
1986	19275	4301	1596	25172	69	730
1987	19908	4150	3574	27632	79	747

97% Increase in Call Volume between 1980 and 1987
86% of the Call Volume occurs within Wichita

Patients Transported

	Total	Avg/Day	Average # Pts/Crew
1980	10702	29	446
1984	13925	38	515
1985	16810	46	563
1986	20673	57	600
1987	22836	63	617

113% Increase in patients transported between 1980 and 1987.

System Cost

	Total Cost/Call	Tax Sup/Call	User Fee/Call
1980	123.77	84.46	39.31
1984	131.90	84.40	47.80
1985	136.47	76.52	59.95
1986	126.51	76.46	50.05
1987	134.48	73.84	61.00

8.65% Increase in Total Cost per Call between 1980 and 1987.

Collections

	User Fees	% of Increase over Previous Year
1980	501377	N/A
1984	940130	27%
1985	1225226	30%
1986	1626402	33%
1987	1682515	4%

236% Increase in User Fees collected between 1980 and 1987.

Collection Rate for 1986	82%
for 1987	81%
*National Average Public	61.1%
Private	76.8%
*Fitch & Associates, Kansas City, MO	

Response Times

	Wichita	County	Overall
1980			5.46
1984	5.26	7.98	5.63
1985	5.18	7.70	5.52
1986	5.15	7.86	5.53
1987	5.21	8.46	5.69
1986 8 min. or less avg.			87.58%
1987 8 min. or less avg.	91.40	56.46	86.28%

Standard National Target is 90% in 8 min. or less

Field Resuscitation Rate

1980	26%
1984	29%
1985	21%
1986	24%
1987	24%

Units staffed within corporate limits of Wichita

Minimum 4 when staffing level is 7.
6 when status is 9.
7 when status is 11.
8 when status is 12.

3 of the 5 county posts are 1 mile or less from the city limits

TO: Chairman Ivan Sand and Members of the
Local Government Committee

FROM: T. W. Pollan, Interim Director
Sedgwick County Emergency Medical Service

DATE: February 18, 1988

SUBJECT: House Bill 2835
Automatic External Defibrillators

My presence before this committee today is to represent the Emergency Medical Service of Sedgwick County and its interest in House Bill 2835. Since 1975, the political entities within Sedgwick County have devoted considerable energy and funding to develop, implement, and coordinate our sophisticated Advanced Life Support Emergency Medical Services system. The end product of these efforts is that the service provided to Sedgwick County is one of the "Best."

It is for this reason that I stand before you today to support the concept of improving EMS systems and health care by using Automatic External Defibrillators (AED). However, I am opposed to the current HB 2835, which would allow for the certification of "Wildcat" defibrillator technicians. In a recent article published by one of the EMS Regions the Editor states "Successful EMS services do not function alone, they are but one link in the SYSTEM. The system is comprised of medical control which extends all the way from a hospital to the street corner of AnyTown USA. The reverse is also true. The person out

on the corner must be identified with and/or associated as an essential link of the local EMS system and not a wildcat with a defibrillator."¹ I agree totally with these statements. However, the proposed legislation seems to miss these major concepts stated above and is essentially allowing for field experimentation without medical authorization, control or coordination.

Four nationally published articles in 1986 recognized the necessity of medical control of such programs. The articles stated: 1)"This prospect of a proliferation of community responders equipped with automatic defibrillators raises several issues of medical control: Who will prescribe and maintain these devices? Who will be responsible for training, for skill review and for case review? And who will be named in the inevitable law suit? These issues must be resolved by gradual introduction of the devices into community settings in evaluative projects."², 2)"...it seems only prudent that a more formal review of the operation of the AED and the approved patient care protocol should be conducted..."³, 3)"An account of the events during resuscitation seems mandatory in order to determine that patients receive appropriate and safe care."⁴ and 4)"... communities were

¹Fred Thorp:Howdy friends and neighbors.
NUS-FER-YUE-AWL!; 1987;Vol 2;Num 2

²CumminsRO,EisenbergMS,StultsKR:Automatic external Defibrillators:clinical issues for cardiology. J AHA Circulation 3:382,1986

³StultsKR,BrownDD,KerberRE:Efficacy of an automated external defibrillator in the management of out-of-hospital cardiac arrest:validation of the diagnostic algorithm and initial clinical experience in a rural environment. J AHA Circulation 4: 709, 1987

⁴WeaverWD,CopassMK,HillDL,FahrenbruchC,HallstromAP, DobbLA:Cardiac Arrest Treated with a New Automatic External Defibrillator by Out-of-Hospital First Responder. Amer J of (Footnote Continued)

selected to use EMTDs based on the following criteria (1)Strong Medical Control locally.."⁵ (emphasis added) These are the statements made by the authorities who have researched or implemented such programs.

It is my request that you utilize the Kansas Medical Society for expertise on this issue. The Committee on EMS from the Kansas Medical Society has addressed this issue in their "Position Paper" dated December 15, 1987. Between the Kansas Medical Society and Emergency Medical Service Council, or the new EMS Board, the mechanism is in place to develop, implement and evaluate such treatment modalities. The issue of who can use AEDs is emotional, and potentially lives are at stake. But, without proper medical control and coordination of a EMS system using AEDs, it is doubtful we will ever be able to measure the success or failure of such programs.

In summary, I am not opposed to the use of AEDs by qualified lay persons when they are properly trained and retrained, medically controlled and reviewed, and are coordinated through the local EMS system.

Thank you for your attention and continued interest in the Emergency Medical Services provided to our citizens.

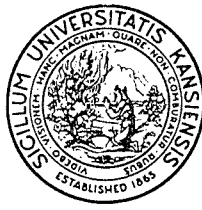
TWP:twp

ATTACHMENTS

(Footnote Continued)

Cardiology 57: 1020, 1986

⁵BachmanJW,McDonaldGS,O'BrienPC: A Study of Out-of-Hospital Cardiac Arrests in Northeastern Minnesota. JAMA 4: 478, 1986



THE UNIVERSITY OF KANSAS

Emergency Medical Training Program
College of Health Sciences and Hospital
39th and Rainbow Blvd., Kansas City, Kansas 66103
(913) 588-7600

Testimony of Albert Dimmitt
Before the Senate Committee on Health and Welfare
House Bill 2835
March 15, 1988

Mr. Chairman and Members of the Committee:

My name is Albert Dimmitt. I am Program Director of Emergency Medical Training at the University of Kansas Medical Center. I appreciate the opportunity to address the Committee regarding House Bill 2835.

It is the position of the Medical Center that defibrillation therapy is an appropriate adjunct to the treatment capabilities of the Emergency Medical Technician and Emergency Medical Technician-Intermediate when the following conditions have been met: 1) the technician has completed a course of instruction on the equipment and procedures for its use; 2) when there is support and approval by the local medical society; 3) when the procedure is used on oral order of a physician, or standing order approved by the local medical society; 4) a mechanism for incident review with the medical adviser has been established; 5) a process for regular and periodic update is implemented; and, 6) when defibrillation occurs within the EMS system which can provide for the total emergency care of the patient.

We have not advocated the use of defibrillators by certified first responders. While the research evidence is clear that electrical countershock by EMTs can be effective in many instances, studies of defibrillation by first responders are not yet definitive. At issue is not the ability of the individuals to learn or apply the skill, nor is the safety or efficacy of automated defibrillation equipment. The role of other variables in the cardiac arrest situation is critical in determining patient outcome. Those variables include whether or not the arrest was witnessed, the amount of time between the arrest and initiation of cardiopulmonary resuscitation, and the availability of more definitive advanced cardiac life support in either emergency department or paramedic field care.

There are undoubtedly settings in which first responders defibrillation will be ineffective due to an unfavorable constellation of these variables. The problem is we don't know, from current research, what those settings are. Including first responders in this legislation may help clarify the question, but only after some communities have invested time, energy, and precious financial resources in a project that does not impact cardiac arrest survival. We would encourage a more conservative approach.

We are also concerned that the bill is weak in its requirement for medical oversight. While the details of medical oversight can be accomplished in the council regulatory process, local component medical society approval of the project and protocol should be mandated in the statute. Inclusion of this requirement would be consistent with existing EMT-D legislation, and would insure that physicians are involved in the implementation of this medical program.

I appreciate the opportunity to appear today and would be happy to answer questions.

Position Paper

The EMT-Defibrillator Program
and
The Use of Automated Defibrillators

Committee on Emergency Medical Services
Kansas Medical Society
15 December 1987

The use of manual defibrillators requires the ability to recognize potential lethal dysrhythmias. The current training requirements of 26 hours followed by state examination and certification are felt to be appropriate for those emergency medical technicians who will be using manual defibrillators. The present regulations requiring ambulance services using manual defibrillators to have a medical director, who is responsible, either personally or through his designee, for reviewing the medical indications and appropriateness each time the defibrillator is used, are necessary for medical control, quality assurance, and educational purposes. The Committee feels they should be maintained. In addition, the medical directors need to be advised as to the medical, legal, and moral responsibilities they assume in supervising and reviewing the use of manual defibrillators by emergency medical technicians under their authority.

The resuscitation of acute cardiac conditions, especially arrhythmias, does not revolve about an isolated event that can be solved by the use of a single, magic, flashy, high tech modality called defibrillation. The foundation of a successful resuscitation is built on other mundane, but more important, capabilities including the ability to rapidly provide effective basic life support; respond in an appropriate and organized manner, through repetitive training and practice, to the chaos and confusion that occur at all major cardiac incidents; and the ability to effectively maintain, support, and, if necessary, transport the patient until advanced cardiac life support is available.

To meet the above criteria, an emergency medical technician wishing to use an automated defibrillator should be certified or recertified in basic life support (CPR) at least each year, preferably every six months. The initial training program should consist of 10-15 hours in the proper and approved use of the defibrillator; the appropriate management of a cardiac patient, including patient assessment, airway management, oxygen therapy, treatment protocols, verbal and written communication skills, and medical record documentation. Because knowledge and skill retention deteriorate so rapidly, the Committee recommends a yearly, 8-10 hour refresher course covering the same areas, in addition to CPR recertification. Successful completion of the initial and yearly training requirements should be documented by a written and practical examination.

The Committee recommends the Kansas Medical Society support necessary legislative changes to enable EMT, EMT-D, and EMT-Intermediates to use automated defibrillators under the conditions outlined above, provided that each service, using automated defibrillators, have a medical director, listed with the Bureau of Emergency Medical Services, who, either personally or through his designee, would be responsible for reviewing, in accordance with guidelines developed by the Bureau, the medical indications and appropriateness each time the defibrillator was used. In addition, the local component medical society should approve the protocols for the use of the defibrillators and the review mechanism.

For those ambulance services having contractual agreements with other agencies to provide first response services, the Committee recommends the Kansas Medical Society support legislative or regulatory changes to allow the first response provider to use automated defibrillators if they are in compliance with all conditions listed above.

Because the Committee feels the patient assessment and management skills required to deal with unstable cardiac patients are beyond the scope of training of first responder, the use of automated defibrillators

by certified first responders is felt to be inappropriate. The Committee recommends the Kansas Medical Society oppose any legislative change to permit such usage.

The Committee recommends that the Kansas Medical Society adopt a position that the use of automated defibrillators by individuals, not certified or licensed as emergency medical technicians, emergency medical intensive care technicians, registered nurses, nurse clinicians/practioners, physician assistants, or medical physicians, except in the case of family members functioning on the order of and after instruction by a licensed medical or osteopathic physician, should be considered the practice of medicine without appropriate authority.

Looking at the broad medical, social, and financial implications of automated defibrillators, the Committee suggests that services considering automated defibrillators must honestly evaluate their particular situation to determine the appropriateness of their use. Medical criteria to be considered include, but are not limited to, the number of potential cardiac arrhythmia responses per year (Estimated at 1/1000 population, 1-2/10,000 savable), percentage of witnessed arrests, average response time (>8-10 minutes = brain death), availability of basic life support (CPR), availability of ACLS and ACLS response time, and transport time. Using national data to establish parameters for those criteria, there may be few areas in Kansas which can medically justify the cost and effort to establish a defibrillator program using automated defibrillators. Communities should consider the potential for greater benefit if their manpower and financial resources are utilized to improve emergency medical care through the development of "911" emergency telephone networks, or programs to promote citizen CPR and first aid programs within the community and schools.

0234 lease such vehicle.

0235 Sec. 10. The emergency medical services board shall:

0236 (a) Adopt any rules and regulations necessary to carry out the
0237 provisions of this act;

0238 (b) review and approve the allocation and expenditure of
0239 moneys appropriated for emergency medical services;

0240 (c) conduct hearings for all regulatory matters concerning
0241 emergency medical services and first responders certified pur-
0242 suant to this act;

0243 (d) submit a budget to the legislature for the operation of the
0244 board;

0245 (e) develop a state plan for the delivery of emergency medi-
0246 cal services;

0247 (f) enter into contracts as may be necessary to carry out the
0248 duties and functions of the board under this act;

0249 (g) review and approve all requests for state and federal
0250 funding involving emergency medical services projects in the
0251 state or delegate such duties to the administrator;

0252 (h) approve all training programs for ambulance attendants;

0253 (i) approve methods of examination of applicants for initial
0254 attendants' certificates and prescribe examination fees by rules
0255 and regulations;

0256 (j) develop the criteria for and approve a course of instruction
0257 for instructor-coordinators;

0258 (k) conduct or contract for the provision of instruction of
0259 instructor-coordinators;

0260 (l) certify instructor-coordinators;

0261 (m) appoint a medical consultant for the board. Such person
0262 shall be a person licensed to practice medicine and surgery and
0263 shall be active in the field of emergency medical services; and

0264 (n) approve all training programs for certified first re-
0265 sponders.

0266 Sec. 11. As used in this act: (a) "Administrator" means the
0267 administrator of the emergency medical services board.

0268 (b) "Ambulance" means any privately or publicly owned
0269 motor vehicle, airplane or helicopter designed, constructed,
0270 prepared and equipped for use in transporting and providing

(o) develop standards for automated defibrillation by
emergency medical technicians, emergency medical technician-
intermediates, and certified first responders.

M E M O R A N D U M

Date: March 15, 1988

TO: Senator Roy Ehrlich, Chairman of the Public
Health and Welfare Committee

FROM: Aaron Estabrook, Fire Service Representative,
State EMS Council

RE: HB 2835

The primary concern of all firefighters as they perform their duties is the saving of life. This holds true whether a life is threatened by fire or a medical emergency, whether the victim is a firefighter or a citizen.

With this in mind I support HB 2835 making the use of automatic external defibrillators (A.E.D.) a reality in the fire, EMS, and other emergency service programs in Kansas.

With the large number of EMT's in the state and the new first responder certification, it is my opinion that the laws and/or regulations should allow for these individuals to be certified in their use to help in combating the life threatening problem of cardiac arrest.

Fred Thorp, Director
Emergency Medical Services
Kansas City Kansas Fire Department

March 15, 1988

The Honorable Roy M. Ehrlich, Chairman
Senate Committee on Public Health and Welfare

Re: H.B. 2835 AN ACT concerning the use of automated defibrillators for cardiac defibrillation; authorizing the certification of certain individuals in the use thereof; providing exemptions from civil liability in certain instances.

I favor passage of the bill as it has been amended to this date. The bill extends life saving therapy to the citizens of Kansas who have LITTLE time left for survival of a heart attack unless someone quickly (<10 min.) intervenes with a DEFIBRILLATOR!

My only regrets regarding the bill concerns the removal of the cap on the amount of training hours required for certification. This means, that communities like Bonner Springs, Plains, Kansas City or anyone else opting to implement a defibrillator program must submit volunteer personnel to "extensive medical training" when a four to six hour training program for automated technology approaches the maximum for educational minutia. This places unnecessary training-hour costs on the program (s)!

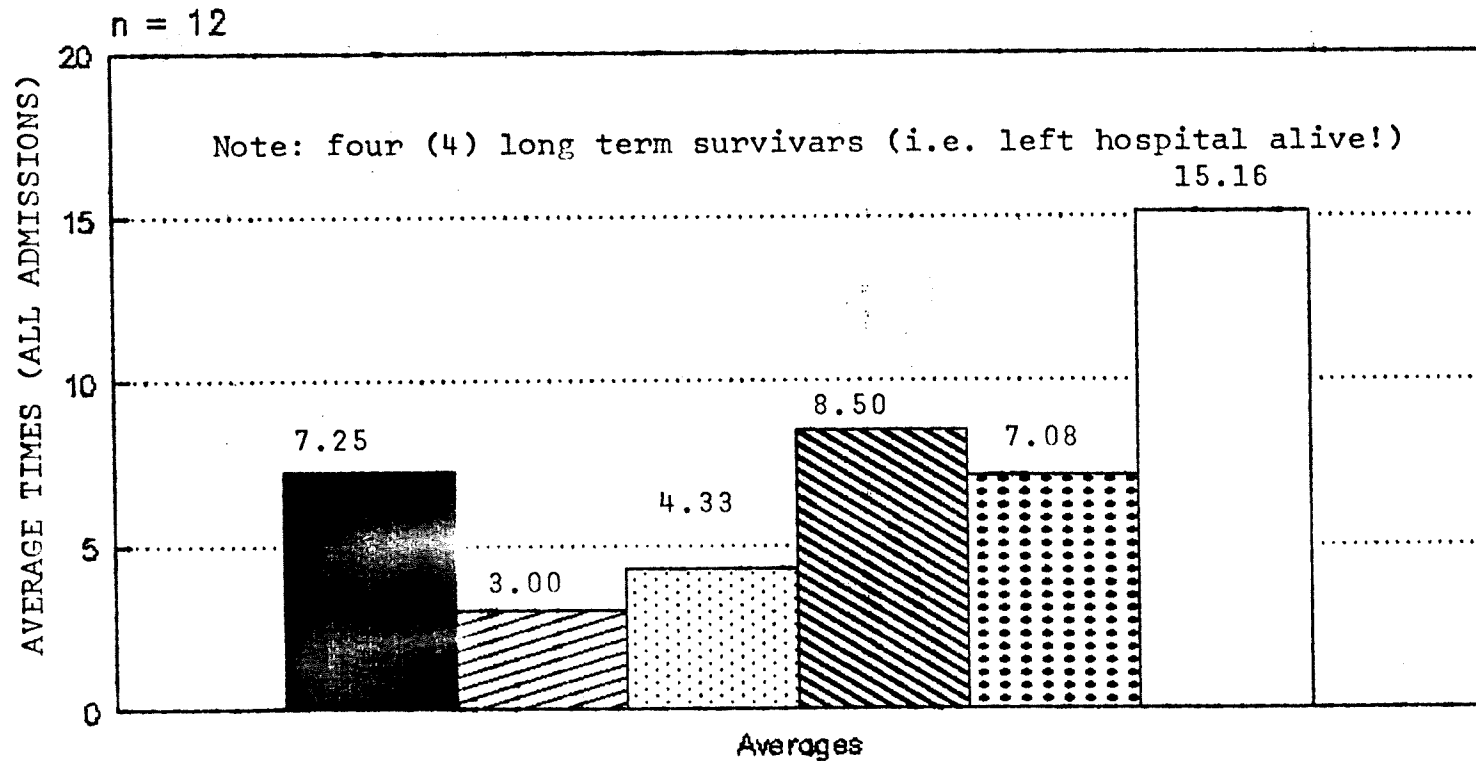
The major plus of the automated technology aside from it's benefit to the community is the minimum amount of training required and the safety built into the device. The bureaucrats of KU, the Bureau of EMS and the Kansas Medical Society have only consented to allowing "certified first responders" to defibrillate assuming they are now endorsing this bill or as Doctor Woirsing wrote February 20, 1988 "will not oppose the bill." The rationale these leaders use to mandate pre-hospital rescue personnel training hours which a person using the automated defibrillator cannot use escapes me. There is absolutely no medical decisions for pre-hospital field personnel to make other than to hook the device up to the PULSELESS-NON-BREATHING PATIENT!!!

It is now axiomatic in the United States; automated early defibrillation works, it is safe and only minimal training is required to implement such technology. OUR problem today, is to find innovative methods of placing automated defibrillators in communities where persons suffering a heart attack live and to enable persons within the community to use the device within ten minutes or until the ambulance and/or trained EMTs arrive. Persons who suffer fibrillation longer than ten minutes have been resuscitated but expire in a short time because of neurological complications. The medical literature clearly points out this fact as it has for almost a decade.

Passage of H.B. 2835 will assist those who require this technology, placing a lid on the training requirement will enhance defibrillation programs on a greater scale.

CARDIAC ARREST

Ventricular fibrillation



1987 Data

- A**
E.D.T.
- B**
FIRE ARR
- C**
KARE ARR
- D**
ACLS
- E**
DAYS CCU
- F**
LAPSED TIME TO ACLS

Division of Emergency Medical Services

2-9

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS • INCORPORATED



1329 18th STREET, N.W. • WASHINGTON, D.C. 20036

AREA CODE 202
833-3420

March 11, 1988

The Honorable Roy M. Erlich
Senate Chambers Room 138 North
Capital Building
Topeka, KA 66612

Dear Senator Erlich,

The International Association of Fire Chiefs would like to share with you our support of the "Rapidzap" automatic defibrillation concept. The IAFC Board of Directors has strongly supported any effort to increase the effectiveness and efficiency of our nation's prehospital Emergency Medical Services systems.

As you may know, the IAFC introduced a "Rapidzap" program to the nation's fire service last summer. The IAFC Emergency Medical Services Committee has shown that the concept of an automatic defibrillation program, has been clinically proven with many demonstrations and pilot programs. In short, the "Rapidzap" programs have demonstrated an apparently excellent field record.

In addition to being clinically effective, the automatic defibrillation concept seems to provide excellent cost effectiveness in the initial training, and continuing education of our prehospital emergency medical services personnel.

We are pleased to hear that Kansas is considering statewide legislation addressing automatic defibrillation. Given the crucial factor of timeliness in a cardiac emergency, anything that can be done to facilitate rapid and easy intervention should be given the strongest consideration by any governing body.

If you need any further information please do not hesitate to call.

Sincerely,

Garry L. Briese CAE
Executive Director

Robert A. Worsing, Jr., MD
8409 Huntington
Wichita, Kansas 67206
316 683-0002

20 February 1988

The Honorable Ivan Sands
Chairman, House Committee on Local Government
The Kansas Statehouse
Topeka, Kansas 66612

Dear Representative Sands,

First, I would like to express my sincere appreciation for the opportunity to review and comment on House Bill No. 2835 and the proposed amendments. With the current proposed amendments, the Kansas Medical Society will not oppose the bill.

After reviewing the amended bill, may I submit the following general comments for your consideration. The initiation of a specific prehospital treatment modality through legislative mandate is a significant departure from legislative precedent. As an alternative, may I suggest the Legislature provide the EMS Council with regulatory authority to develop training, certification, and retraining programs for the use of automated defibrillators by prehospital personnel, as well as standards and protocols for appropriate medical control and interaction with the established local emergency medical services system.

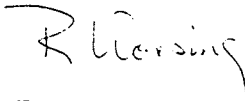
I would also suggest the use of the generic term automated defibrillator rather than specifying automatic and semi-automatic. The only difference between automatic and semi-automatic defibrillators is that after the machine has determined there is an arrhythmia, the semi-automatic units require the operator to push a button to deliver the electrical shock to the patient. For your information, the semi-automatic defibrillator may be a somewhat safer unit. Being operator-controlled, there is a decreased risk of accidentally "shocking" another rescuer who is working on the patient and unaware of the impending defibrillation.

As an aside, most of the automated defibrillators are semi-automatic, the limitation of automatic units in the proposed amendments makes the bill vendor-specific.

Lastly, I would suggest that any local service provider using automated defibrillators should have their medical protocols approved by the local component medical society. This would encourage medical control, quality assurance, and educational programs, as well as incorporation into the local EMS system.

I am honored to have been given the opportunity to review and comment on House Bill No. 2835 and the proposed amendments. I hope these comments will assist you in your deliberations. If there are any questions, or if I may be of further assistance, I would be delighted to accomodate your request.

Respectfully yours,



Robert A. Worsing, Jr., MD
Chairman, KMS Committee on EMS

xc: Mr. Chip Whelan, KMS

EMERGENCY MEDICAL SERVICES AUTHORITY

1030 15TH STREET, SUITE 302
SACRAMENTO, CALIFORNIA 95814

February 29, 1988

The Honorable Don Montgomery, Chair
Senate Committee on Local Government
Capitol Building
Topeka, KS 66603

Dear Mr. Montgomery:

We have been asked to provide a brief synopsis regarding our recent activity in changing the level of personnel who may use defibrillators in the State of California. We are more than happy to provide this brief summary and to answer any additional questions that you might have.

California statute mandates the Emergency Medical Services Authority to set the training standards in first aid and cardiopulmonary resuscitation practices for public safety personnel, which encompasses all public lifeguards, firefighters and peace officers.

On December 30, 1987, through regulatory law, local EMS agencies were provided a mechanism to allow them the option to expand the scope of practice of public safety personnel to include the use of the automatic or semi-automatic defibrillator. Public safety personnel include firefighters, life guards at public pools and beaches, and most but not all peace officers in the state.

We added defibrillation because research clearly shows a linear relationship between survival from cardiac arrest and the length of time to initial defibrillatory shocks. Work in the area around Seattle, Washington and in rural Iowa demonstrated that EMT-Is could safely perform defibrillation and that survival rates increased as a result of these programs. Furthermore, it is the opinion of many individuals involved in these initial programs that the newly-developed semi-automatic and automatic external defibrillators are sufficiently simple to operate that they can be safely and effectively used by individuals not trained as Emergency Medical Technicians and, indeed, by the general public. Several unpublished studies in other parts of the nation, including Dallas, Texas, and Denver, Colorado, have demonstrated successful use by non-EMT-Is who function as emergency first responders.

The Honorable Don Montgomery, Chair
February 29, 1988
Page 2

Since a number of first responders are public safety personnel and a major goal of emergency medical services is to decrease morbidity and mortality, than it appeared to be reasonable to add this option to the scope of practice of public safety personnel. The provisions, codified in the California Code of Regulations, specify the mandated training and retraining requirements, the necessary medical control requirements, and the ongoing monitoring of the program.

Additionally, the initiative to allow defibrillation by less than EMT trained personnel was strengthened by our early experience with the utilization of these devices by EMT-Is. Since March, 1987, defibrillation has been performed by EMT-Is in four programs in the state. In two of these programs, a total of eight victims of out of hospital cardiac arrest who had witnessed ventricular fibrillation when the EMTs arrived have been shocked; four of these individuals were discharged from the hospital and returned home to independent, normal life. These two programs are located in areas without paramedics and we believe that all four individuals would have died before the institution of these two programs. We are quite enthusiastic about the results to date and we both hope and expect that many more programs will begin in the near future.

We hope this information is of assistance to you. If further information is needed, please feel free to contact me.

Sincerely,



Bruce E. Haynes
DIRECTOR

✓
cc: Fred Thrope, EMS Director
Kansas City Fire Department



CITY OF KANSAS CITY, KANSAS

FIRE DEPARTMENT

Reply Refer To

STANLEY J. MIROSLAW, CHIEF

March 2, 1988

The Honorable Don Montgomery
Senate Chambers
Capitol Building
Topeka, Kansas 66612

Re: H.B. 2835 Automated Defibrillators

Dear Senator Montgomery:

I am pleased to send along copy of an unsolicited letter and newspaper clipping.

While attending a recent seminar, I was discussing the defibrillator bill with Dr. Michael K. Copass, M.D. Dr. Copass will write you with his comments concerning the bill. He sent a reprint of an article published in the American Journal of Cardiology. The last sentence in the abstract says it all for me.

Thanks for your consideration of the bill and the enclosed information.

Best wishes,

A handwritten signature in cursive script that reads "Fred Thorp".

Fred Thorp, Director
Emergency Medical Services

FT/cd

enclosure

Cardiac Arrest Treated with a New Automatic External Defibrillator by Out-of-Hospital First Responders

W. DOUGLAS WEAVER, MD, MICHAEL K. COPASS, MD, DEBORAH L. HILL, BA,
CAROL FAHRENBRUCH, MSPH, ALFRED P. HALLSTROM, PhD,
and LEONARD A. COBB, MD

Two hundred sixty patients in cardiac arrest were treated with an automatic external defibrillator by first-responding firefighters before arrival of paramedics. On average, first responders arrived 5 minutes before paramedics. Of 118 patients with ventricular fibrillation, 91 (77%) were administered shocks, 21 (23%) of whom had return of pulse and blood pressure by the time paramedics arrived. Fifty-six (62%) were admitted to the hospital and 30 (33%) survived. The survival rate for all 118 victims discovered with ventricular fibrillation was

27%. The device correctly classified the initial and all subsequent rhythms in 92 patients with asystole, 46 with electromechanical dissociation, and 22 others with presumed respiratory arrest; it did not deliver any inappropriate shocks to patients or to the rescuers using the device. An automatic external defibrillator can be used by first responders as an adjunct to basic life support, and its use may improve survival by shortening the time to defibrillation.

(Am J Cardiol 1986;57:1017-1021)

Survival rates and neurologic recovery after out-of-hospital cardiac arrest and ventricular fibrillation (VF) can be enhanced by shortening the delay from collapse until application of the first defibrillator shock.¹⁻³ Since 1970, the survival rate (proportion discharged alive) for victims found in cardiac arrest with VF and treated by Seattle paramedics averages 25%. In this tiered response system, first responders (firefighters) usually provide only basic life support until paramedics arrive. After analyzing the time factors attendant in all cases of cardiac arrest and VF in the

years 1978 to 1982, we estimated that survival could be substantially increased if defibrillation could be delivered earlier by the first-responding fire engine companies and before arrival of skilled paramedics.

Extensive implementation of such a strategy was not considered feasible if standard commercially available defibrillators were to be used. Even if restricted to select firefighter companies expected to produce the greatest benefit, training would need to be provided to so many persons that standard Emergency Medical Technician Defibrillation instruction would be a prohibitively huge undertaking. In this city of one-half million people, over 400 firefighters would require training in skills that might be used by each trainee only once or twice a year. Therefore, since 1979, we have been involved in the development and bench testing of a simple and essentially automatic external defibrillator that could be used by first-aid providers. This report describes the application, experience and problems with 1 type of automatic external defibrillator.

Methods

Beginning in May 1984, we trained all fire personnel assigned to 20 selected fire stations (449 persons) to use an automatic external defibrillator. The stations

From the Division of Cardiology and the Department of Biostatistics, Harborview Medical Center and the University of Washington, Seattle, Washington. This study was supported in part through a Grant-in-Aid from the American Heart Association and the American Heart Association of Washington and with additional funds from the Medic-I Emergency Medical Services Foundation, Seattle, and from Physio-Control Corporation, Redmond, Washington. Manuscript received October 8, 1985; revised manuscript received October 31, 1985, accepted November 1, 1985.

Address for reprints: W. Douglas Weaver, MD, Harborview Medical Center (ZA 35), 325 Ninth Avenue, Seattle, Washington 98104.

were selected on the probable number of cases of VF and expected response times for each case. In each of the previous 4 years, firefighters from each station responded to at least 5 patients with VF and had considerably shorter response times than did paramedics. Thus, the devices were located in areas with long paramedic response times and lower than average survival rates. The training was divided into the following 3 parts requiring a total of approximately 5 hours: (1) refresher training in cardiopulmonary resuscitation and an introduction to the concept of automatic external defibrillation, (2) a lecture on cardiac arrest and device operation, plus individual practice to reach competence, and (3) a review of the standing orders plus a written and practical examination. Approximately half of those trained had previously been taught only first-aid and about half had completed an Emergency Medical Technician training course.⁴

In this tiered emergency response system, first responders reach the victim's street address in an average of 3.1 ± 1.5 minutes (\pm standard deviation) and paramedics arrive 6.2 ± 3.2 minutes after simultaneous dispatch. The average time from collapse until defibrillation is 12 minutes. This includes the delay from collapse until telephoning the dispatch center plus time required by paramedics to locate the victim, assess the rhythm and deliver a shock. By using an automatic defibrillator, we have attempted to reduce the delay to defibrillation from 12 minutes in witnessed cases (paramedic level care) to 8 (early defibrillation by first responders). Paramedics initiate care including defibrillation, intubation and drug therapy, under standing orders in effect since 1973. Survival rates after cardiac arrest with VF have been consistently 24 to 30% each year.

The automatic defibrillator is relatively small ($22 \times 22.5 \times 6.5$ to 8.0 cm) and weighs about 2.5 kg (LifePak 100, Physio-Control Corp.). It is specifically designed for use outside the hospital by minimally trained persons. The device can be used for only a single cardiac arrest, but can deliver three 200-J shocks if necessary. Initial shocks at this energy level have been as effective as shocks using the maximal available energy level.⁵ The machine is turned on by removing the cover, thus activating a liquid crystal display that provides instructions for the user. Two 12×16 -cm-oval adhesive electrodes contained inside the instrument are used for defibrillator paddle electrodes and for monitoring. These electrodes are effective for both cardioversion and defibrillation.⁶ After the electrodes are firmly attached, the display cycles through a series of instructions and advisories. In cases of VF, the rescuer is urged to activate the defibrillator by pushing a "shock" button. For other conditions, the rescuer is advised to return to basic life support measures. The instrument is, thus, user-interactive.

A digital detector processes the electrocardiogram and determines chest impedance through the electrodes. Static impedance levels ascertain electrode-to-skin integrity, and dynamic impedance is used to detect respiration, pulsatile blood flow, chest compres-

sions and body movements. Levels of impedance were chosen after observations in both normal persons and victims of cardiac arrest. The major value of the impedance detector is to reduce the likelihood of attempting electrocardiographic (ECG) analysis during periods of electrical noise, chest compressions or spontaneous body movement. The ECG rhythm detector classifies ventricular fibrillation and other rhythms by analyzing frequency, variation in rate, amplitude, the proportionate period in which there is no change in voltage and the QRS waveform morphologic pattern. Earlier bench tests of the ECG detector, using taped rhythms from out-of-hospital cardiac arrests and from standard ambulatory ECG databases, had an 89% sensitivity in recognizing episodes of VF and 96% specificity in correctly classifying all other rhythms (unpublished data). For safety considerations, the logic is biased to be conservative in recognizing VF and thus not deliver inappropriate shocks to other conditions. The minimal time for detection is 6.4 seconds; however, nonadherent or loose electrodes or any manipulation of the victim by the rescuer (bag-mask ventilation or chest compression) inactivates the rhythm detector and can substantially increase detection time. The defibrillator delivers a shock only after an impedance requirement for cardiac arrest has been met, VF has been recognized, and the rescuer has pushed the shock button. Three shocks can be delivered for episodes of persistent or recurrent VF within approximately 2 minutes; however, the device can function for 30 minutes or more.

When paramedics arrive, the first responders disconnect and remove the automatic defibrillator electrodes, inactivating the device. Paramedics use a standard defibrillator monitor and administer all further treatment.

The automatic device records the analog signals and the elapsed time of all device instructions and events on magnetic tape. The initial rhythm on arrival of paramedics is also recorded on tape using a separate recorder. Additionally, a written report is made by the paramedics that includes the patient's initial rhythm as well as a chronologic record of the resuscitation events. The recorded rhythms before and after each automatic detection are later reviewed on a monitor, printed on a strip chart and categorized.

The sensitivity of the detector is the number of patients or rhythms administered shock by the device, defined as a percentage of the total number of patients or analyses with VF. Specificity is the proportion of all patients with organized rhythms who were correctly classified and not administered shocks by the automatic devices.

Patient outcome, (i.e., return of pulse before paramedic arrival, admission to the hospital with pulse and blood pressure, and survival) was determined from the taped events and hospital records. The study was approved by the University of Washington Human Subjects Review Committee. A questionnaire was used to assess the firefighters' reaction to the device and to determine any untoward effects.

Results

In 10 months, 282 patients were treated using the new defibrillator. One or more shocks were delivered in 91 of 118 patients with VF (77%) (116 patients discovered in cardiac arrest with VF and 2 who had cardiac arrest immediately after arrival of first responders). Twenty-one of those administered shock (23%) had return of pulse and blood pressure and were resuscitated by the time paramedics arrived. Of the 91 patients administered shock by the device, 56 (62%) were admitted to the hospital and 33% survived and were discharged alive (Table I). The survival rate for all 118 patients initially discovered with VF was 27%.

The rhythm in each of the 92 victims discovered in asystole was correctly classified by the detector and no shocks were administered. Also, 46 patients initially found with electromechanical dissociation plus 22 others, presumably with respiratory arrest (pulses present on arrival of paramedics), were not administered shocks. Of the 138 patients initially discovered to have asystole or electromechanical dissociation, none had return of pulse on arrival of paramedics, 14 (10%) were admitted to the hospital, and 2 survived.

Sensitivity and specificity of the detector: Shocks were correctly advised by the detector in 147 of 280 six-second rhythm segments of VF in 118 patients (52%) (Tables I and II). The detector classifies ECG signals of 150 μ V or less as asystole, and many (37%) of the missed segments were low-amplitude signals ("fine" VF, 200 μ V or less). The other "missed" rhythms were ventricular tachycardia (5%) and episodes of "coarse" VF that seemingly should have been correctly identified (60%). Defibrillation occurred after 90 of 147 shocks were delivered (61%) and at least once in 76% of patients delivered a shock by the automatic defibrillator before arrival of paramedics (69 of 91).

The specificity of the detector was 100%. All segments of asystole and electromechanical dissociation were correctly categorized. More important, the rhythms in 22 patients presumably found only in respiratory arrest, plus those rhythms subsequently ana-

TABLE I Outcome of Patients Treated by First Responders Using the Automatic External Defibrillator

Initial Rhythm or Condition Treated*	No. of Pts	Admitted to Hospital n (%)	Discharged Alive n (%)
VF (shocked)	91	56 (62%)	30 (33%)
VF (not shocked)	27	7 (22%)	2 (7%)
Primary respiratory arrest	22	22 (100%)	6 (27%)
VT	4	1 (25%)	1 (25%)
Asystole	92	8 (9%)	0 (0%)
Electromechanical dissociation†	46	6 (13%)	2 (4%)

* In 17 cases a tape recording was not available: 7 who were shocked by the device and considered to have had VF plus 10 others to whom no shock was delivered. The latter patients are tabulated according to the first rhythm recorded by paramedics (2 VF, 4 asystole, 3 electromechanical dissociation and 1 respiratory arrest). Of the 118 cases with VF, all but two had cardiac arrest when first examined.

† One patient converted to VF while under surveillance of the first responders and before arrival of paramedics.

VF = ventricular fibrillation; VT = ventricular tachycardia.

lyzed in the 21 patients who regained an organized rhythm with pulse and blood pressure after defibrillation, were also correctly classified and no inappropriate shocks were delivered.

Logistics and operator interactions: Firefighters using the automatic defibrillator arrived 5.1 ± 3.5 (\pm standard deviation) minutes before paramedics. The device was applied 2.6 ± 1.9 minutes after arrival, a time similar to that needed by paramedics or emergency medical technicians to set up and apply a conventional device.¹ The first shock was delivered 1.9 ± 1.0 minutes after opening the cover of the defibrillator, and the device was disconnected after 4.8 ± 2.9 minutes when paramedics had arrived. The disconnect time represents the earliest time that a patient with VF could have received a shock had the automatic defibrillator not been available.

No rescuer inadvertently received a shock. Questionnaires indicated that the first responders were neither intimidated nor offended by the simplicity of the

TABLE II Response of the Automatic External Defibrillator in Patients and for All Rhythm Segments*

	Initial Rhythm/Condition Treated On Arrival of 1st Responders			Cardiac Rhythm†				
	Cardiac Arrest (VF/VT)	Cardiac Arrest (Other Rhythms)	Respiratory Arrest	Coarse VF	Fine VF	VT	Asystole	Other Rhythms
Shock delivered (n)	93	0	0	136	11	2	0	0
(% of column)	(76%)	(0%)	(0%)	(63%)	(17%)	(17%)	(0%)	(0%)
Total	122	138	22	216	64	9	315	295

* Number and percent of patients and 6-second rhythm segments shocked or not shocked by the automatic defibrillator. The rhythm includes both initial and all subsequent rhythms analyzed by the device. There was a partial or total failure of the tape recording device in 17 patients, and analysis of the rhythms in these cases was not possible. Of these patients, 7 were shocked, and 4 of the 7 had return of pulse and blood pressure prior to arrival of paramedics; 2 others were in VF at the time paramedics arrived; and one was found in electromechanical dissociation. The 10 additional patients without recorded rhythms were not shocked by the device; 2 were later found to have VF, 4 asystole, 3 with electromechanical dissociation and one who had spontaneous rhythm and circulation upon arrival of paramedics.

† Number of 6-second rhythm segments analyzed by the automatic defibrillator.

VF = ventricular fibrillation; amplitudes of 0.3 mV or more are designated as coarse and lower amplitudes are designated as fine fibrillation; VT = ventricular tachycardia.

device. The interactive display was deemed helpful in integrating defibrillation in the delivery of basic life support. The machine was believed to be simple enough to be safely used by lay persons by 96% of rescuers. In listening to the voice recordings, the only concern that we perceived was a sense of uneasiness during periods in which chest compressions were interrupted while rescuers paused for the machine to operate. We noted an average pause of 31.3 ± 6.5 seconds each time VF was identified and shock delivered and a pause of 15.4 ± 7.5 seconds for analysis cycles in which no shock was delivered. Pauses beyond the 6 seconds necessary for ECG analysis include those caused by excessive levels of impedance that prevent the detector from beginning ECG analysis, an 11-second charge time for the capacitor and also the period required for the user to interact with the device.

Discussion

Although the use of an automatic external defibrillator was first reported in 1979, such devices have not come into widespread use.⁷ There are several reasons for this: A need for a simple defibrillator was not clearly shown until recently, limited experience with such devices reported to date did not permit an evaluation of efficacy, and the only commercially available instrument used an unconventional pathway for defibrillation, which was unproved until recently.⁸ The survival rates reported in 2 field trials, in which a small number of patients were treated by automatic external defibrillators, have also been disconcerting. Five of 38 patients (13%) treated in Brighton survived, and in a series of 13 patients discovered with VF and treated in suburban King County, Washington, only 1 (8%) survived.⁹⁻¹¹ These relatively low rates may be the result of patient selection or long delays before initiating treatment.

Automatic external defibrillators should improve survival in patients with out-of-hospital cardiac arrest with VF by reducing the period from collapse until defibrillation. On the other hand, automatic defibrillators cannot be expected to function perfectly in detecting VF; more importantly, they also have the potential to interfere with the delivery of basic life support through excessive interruptions, or worse, by causing the rescuer to withdraw basic life support completely and relegate care to an electronic device. These possible conflicting factors, as well as the necessity to document the safety of such devices, mandate careful field trials before automatic external defibrillators are widely applied.

In 10 months, we tested a compact automatic defibrillator in 282 patients treated by first responders in areas of the city in which paramedic response times are longer and expected survival rates lower than average. The device was applied 5 minutes earlier than what would have been otherwise possible. Almost 25% of patients administered shock by the device had return of pulse and blood pressure before arrival of paramedics, and 33% survived and were later discharged from the hospital.

Despite these encouraging results, there are technical problems to be solved if automatic external defibrillation is to be widely used and without any standard back-up. Although the tape recorder is independent and does not affect performance of the detector or the defibrillator, it failed in 6% of uses, and we considered this a serious problem. An accurate account of the events during resuscitation seems mandatory in order to determine that patients receive appropriate and safe care. We have found that a voice channel helps greatly to make a reasonably accurate appraisal of what transpired. A second shortcoming in the device we used was caused by the impedance detector which interrupted the rhythm analysis, thereby prolonging the detection time with resultant pauses in basic life support. This sum total of pauses averaged 1 minute per patient, not including the time required to place the electrodes. We have insufficient experience to assess the clinical significance of this factor.

This device has other deficiencies. The detection algorithm failed to identify 25% of the patients who were in cardiac arrest with VF and correctly identified only half of all 6-second rhythm segments in which a shock seemed indicated. Many of these segments were low-amplitude VF, a condition associated with only a 6% survival rate.¹² Even so, field results were considerably worse than our previous bench test results and provided valuable information for improving future algorithms. It is probable that the sensitivity can be enhanced, but possibly at the price of decreased specificity, which will require further testing.¹³ Because of the situations in which these devices are likely to be used, in particular by household members of high-risk patients, it is imperative that the instruments be safe, even if they err by occasionally failing to treat.

Widespread application of safe and effective automatic external defibrillators may prove extremely beneficial and permit shortening of 1 of the 2 logistic factors (delay until defibrillation) affecting survival after cardiac arrest. The delay until initiation of basic life support can be reduced by training a large proportion or targeted members of the community in cardiopulmonary resuscitation.¹⁴ Extrapolation from findings in patients treated by paramedics suggest that if defibrillation could be delivered by the person witnessing the collapse after a delay of only 2 or 3 minutes, considerably higher survival rates could be achieved. Such an improvement seems possible; in 1 study of 25 patients who had cardiac arrest during gymnasium exercise and who were administered shock within 1 minute of collapse, 100% survived.¹⁵

Automatic external defibrillators, because of their relative simplicity, modest requirements for training, and ease of operation, are feasible for first-aid providers in small communities that do not have paramedics. Likewise, in larger, congested cities, first responders (e.g., building security personnel, ambulance men, police, firefighters) could also be taught, in addition to basic life-support techniques, to use a device that provides early "definitive" care in the form of defibrillation.

Acknowledgment: We are grateful for the outstanding cooperation extended by the Seattle Fire Department, whose desire for improvement and excellence has made this trial possible. Also, Michael Emery helped in the data tabulation and analysis. Paramedics G.R. Brace, R.K. Carlson, K.R. Cornie, R.C. Ford, R.Q. Foy, D.E. Gomez, R.H. Herth, R.E. Moody, R.A. Newbrey, J.P. Severin, CM. Shlosser, B.J. Stender and M.F. Ylenni are acknowledged for their important contributions in providing training to firefighters. Bill Newman, past Director of Research Engineering at Physio-Control Corporation, grasped our clinical concept and set the foundation that led to the production of the instrument used in this trial. Regretfully, he died during the development of this work.

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Addendum

Since this report, the detection algorithm has been modified using the findings obtained in this field trial. Since then, the device has shocked almost all patients with VF and per analysis has over 90% sensitivity with no loss in specificity.

LAW OFFICES OF
VASOS, KUGLER & DICKERSON

SUITE 512
SECURITY BANK BUILDING
707 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

DONALD W. VASOS
CHARLES D. KUGLER
STEPHEN G. DICKERSON

TELEPHONE
(913) 342-3100

February 16, 1988

Fred Thorpe, Director
Emergency Medical Services
Kansas City, Kansas Fire Department
815 North 6th Street
Kansas City, Kansas 66101

RE: EMT/Firefighter Training

Dear Fred:

I read the enclosed article in Sunday's edition of The Kansas City Star. I'm on your side. It does make sense to equip and train firefighters. Keep up the good work.

Very truly yours,



DONALD W. VASOS

DWV:clw
Enclosure

Bill aims at faster help for heart attack victims

By Roger Dick

Staff writer

For some heart attack victims, a defibrillator is a matter of life and death.

A bill co-sponsored and introduced this year in the Kansas House by Reps. Mary Jane Johnson, a Kansas City, Kan., Democrat, and

Debara Schauf, a Mulvane Republican, would allow firefighters and others to use the device after receiving six hours of training.

Under state law, only licensed emergency medical technicians or paramedics and others who have received extensive training are allowed to use defibrillators.

Some members of the medical profession, however, oppose the measure, saying defibrillators require extensive emergency medical training to operate.

"We believe this would amount to the practice of medicine by unlicensed people who won't have strong medical oversight," said Al Dimmitt, program director of the Emergency Medical Training Program at the Medical Center in Kansas City, Kan.

Dimmitt said he and others were concerned that unless defibrillator operators received extensive training they might misdiagnose a heart attack or otherwise be ill-prepared to deal with complications.

But Fred Thorp, director of emergency medical services for the Kansas City, Kan., Fire Department, said he supported the

bill because many heart attack victims could be saved if those who arrived first were equipped with defibrillators and can use them.

"The issue is simple," Thorp said. "We think that putting defibrillators in the hands of the people who are first on the scene is going to save lives."

Thorp said people could be easily trained to recognize a heart attack. Some fully automated defibrillators use microchip sensors that detect heart conditions and automatically relay easy-to-understand instructions to the user, he said.

"Yes, there are some risks in using these things, but the point is the person is going to be dead, quite likely, if they aren't used," Thorp said.

Johnson said her bill, which is scheduled for a committee hearing Thursday, was modeled after a California law. Several city and county emergency medical services directors throughout Kansas plan an extensive lobbying campaign for the bill, she said.

"It's clear that time is of the essence in getting to heart attack victims," Johnson said. "It just makes sense to equip and train our first responders. They're the ones in the position to do the most good."

**Kansas
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TOPEKA

HOUSE OF
REPRESENTATIVES

March 15, 1988

COMMITTEE ASSIGNMENTS
RANKING MINORITY MEMBER: PUBLIC HEALTH AND
WELFARE
VICE CHAIRMAN: COMMISSION ON ACCESS TO SERVICES
FOR THE MEDICALLY INDIGENT AND THE HOMELESS
MEMBER: EDUCATION
TAXATION
STATE ADVISORY COMMISSION ON SPECIAL
EDUCATION

TO: Roy Ehrlich, Chairman
and Members
Senate Committee on Public Health and Welfare

FROM: Representative Jessie Branson

RE: House Bill 2716
Amendments to the Child Passenger Safety Act

A handwritten signature in black ink that reads "Jessie" with a long, sweeping underline.

Thank you very much for this opportunity to appear before the Committee as a proponent of H.B. 2716.

The Child Passenger Safety Act was first enacted in the 1981 Session and was strengthened in the 1984 Session. However, it remains the weakest children's safety restraint law in the nation for a number of reasons, but primarily because of the back seat exclusion.

H.B. 2716 has been introduced in this Session partly as a result of the findings of a 1987 Interim Study on "Epilepsy and Related Disorders", and also due to the fact that a number of advocacy groups under the umbrella of Kansans for Highway Safety, including law enforcement personnel, have requested strengthening the law and making it more enforceable. In particular there was concern that children ages 4 to 14 years are not effectively covered in any existing Kansas law.

Currently the Kansas Child Passenger Safety Act provides the following:

- - Requires that all children under the age of 4 years, while riding in the front seat of a passenger car, be protected by proper use of an approved safety restraining system. (Back seat requirement is excluded)
- - Parents and legal guardians only are responsible to provide this protection. Baby-sitters, aunts, uncles, grandparents or any one else who may be driving the car is exempt.

- - Cars registered out-of-state are exempt, as are "temporary substitute vehicles".
- - Pick-up trucks are not included.
- - The fine is \$10 plus court costs, which can be waived upon proof of purchase of a child safety device. A citation may be issued on first offense.

House Bill 2716 would provide the following changes (as amended by the House)

- 1) Strike the "front seat area" language, thus making the law apply to the back seat as well as the front seat.
- 2) Makes the driver of the vehicle responsible, rather than just the driver who is the parent or legal guardian.
- 3) Raises the age level from 4 years to 14 years.
- 4) Applies to all passenger cars traveling in Kansas, out-of-state as well as those registered in Kansas.
- 5) Breaks out by age the type of safety device to be used -- under age 4 years the child must be in a safety seat, and for age four to 14 years the child must be in a safety belt, except that for those children in excess of the number of passenger securing locations there is no violation.
- 6) The fine is raised from \$10 per occurrence to \$20 per occurrence (not per child).
- 7) Failure to comply does not constitute a moving violation.
- 8) Failure to comply is not admissable in an action to determine comparative negligence or mitigation of damages.

Thank you very much for your time and consideration.

FOR FURTHER INFORMATION CONTACT:

TERRI ROBERTS, J.D., R.N.
 EXECUTIVE DIRECTOR
 KANSAS STATE NURSES' ASSOCIATION
 820 QUINCY, SUITE 520
 TOPEKA, KANSAS 66612
 PHONE: (913) 233-8638



H.B. 2716 - CHILD PASSENGER SAFETY ACT

Senator Ehrlich and members of the Senate Public Health & Welfare Committee, my name is Carolyn Middendorf, R.N., M.N., and I am presently a nursing instructor at Washburn University School of Nursing. I have been in the field of nursing for fifteen years and am currently the Legislative Chairperson for the Kansas State Nurses' Association.

The Kansas State Nurses' Association supports H.B. 2716. This bill strengthens the current law related to child passenger safety, and as health care providers and consumers, nurses recognize that hospitalization, medical costs and severe injury to children is significantly lower for those using motor vehicle occupant restraint devices in an automobile collision. Kansas was one of the first states to enact a Child Passenger Safety Act in 1981, and consequently the Kansas law is one of the weakest in the country. The time has come to strengthen the provisions of this act.

Current Law
 4 years or under
 front-seat passenger
 only parents/guardians can
 be ticketed
 \$10.00 first offense

H.B. 2716 - Proposed
 14 years
 not distinguished
 (deletes front-seat requirements)
 Drivers transporting children can be
 ticketed
 \$20.00 first offense

The current law can be strengthened by implementing all of the proposed changes. The Kansas Child Passenger Safety Act is particularly weak in two areas when compared to other states child passenger protection laws.

The first is who the law applies to. Only Kansas and ten other state laws apply to parents and legal guardians. In the remaining forty states and Washington, D.C., the law applies to all drivers. This specific language would provide continuity to the children being transported by Grandparents and others.

The second area is the front seat only requirement. According to the National Highway Traffic Safety Administration (NHTSA), Kansas is the only state that has this requirement in their current law. It is important that infants and children be restrained regardless of seating arrangement in the car.



KANSAS STATISTICS

Last year in Kansas, Department of Transportation statistics showed 122 fatalities under age 19. 118 of those persons were not wearing safety belts. Of the age group four and under, there were 8 fatalities (5 not belted).

BUCKLING UP CHILDREN

MYTH: I put the children in the rear seats. That's safe enough, isn't it?

FACT: Children need to be protected because their potential for ejection and for serious and fatal injury is just as great as that for adults.

MYTH: "I wouldn't think of putting my baby in a restraint seat. She's fine in my arms."

FACT: A baby may weigh very little, but in an accident, the baby's apparent weight increases dramatically as accident forces exert pressures on occupants. In a crash as slow as 10 mph, the forces on occupants can reach 20 times the force of gravity. In such an occurrence, an unrestrained 12-pound child will exert a 240-pound force on the arms of the person holding the child. Under such conditions, the baby would be almost impossible to hold.

Attached is a profile of Child Passenger Protection laws distributed by the National Highway Traffic Safety Administration (NHTSA) comparing state laws for your reference.

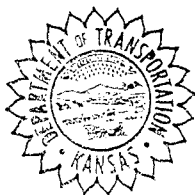
Thank You!

Child Passenger Protection Laws

State	Original Year Enacted	Original Effective Date	Restraint Requirement Age	Safety Seat Required	May Substitute Safety Belt	Safety Belt Required
Alabama	1982	7/82	Under 3	Under 3	No	
Alaska	1984	6/85	Under 6	Under 4	Between 4 & 6	
Arizona ¹ *	1983	8/83	Thru 4 ²	Thru 4 ²	No	
Arkansas	1983	8/83	Under 5	Under 3	Between 3 & 5	
California ¹	1982	1/83	Under 4 ²	Under 4 ²	If not in parent's vehicle	**
Colorado	1983	1/84	Under 4 ²	Under 4 ²	No	**
Connecticut	1982	5/82	Under 4	Under 4	Between 1 & 4 in rear seat	**
Delaware ¹	1982	6/82	Under 4	Under 4	No	**
Florida*	1982	7/83	Under 6	Under 4	Between 4 & 6	
Georgia	1983	7/84	Under 4	Under 3	Between 3 & 4	**
Hawaii	1983	7/83	Under 4	Under 3	Between 3 & 4	**
Idaho ¹	1984	1/85	Under 4 ²	Under 4 ²	No	**
Illinois ¹ *	1982	7/83	Under 6	Under 4	Between 4 & 6	**
Indiana	1983	1/34	Under 5	Under 3	Between 3 & 5	**
Iowa*	1984	1/85	Under 6	Under 3	Between 3 & 6	**
Kansas ¹ *	1981	1/82	Under 4 ⁴	Under 4 ⁴	No	**
Kentucky ¹	1982	7/82	Under 40"	Under 40"	No	**
Louisiana	1984	9/84	Under 5	Under 5	Between 3 & 5 in rear seat	**
Maine ¹ *	1983	9/83	Under 12	Under 4	Between 1 & 4 if not in parent's vehicle	4 thru 11
Maryland	1983	1/84	Under 5	Under 3	Between 3 & 5	**
Massachusetts*	1981	1/82	Under 12	Under 5	Under 5	5 thru 11
Michigan	1981	4/82	Thru 4	Thru 4	1 thru 4 in rear seat	**
Minnesota*	1982	8/83	Under 4	Under 4	No	
Mississippi	1983	7/83	Under 2	Under 2	No	**
Missouri	1983	1/84	Under 4	Under 4	Under 4 in rear seat	**
Montana ¹ *	1983	1/84	Under 4 ²	Under 2	Between 2 & 4	
Nebraska	1983	8/83	Under 4	Under 1	Between 1 & 4	**
Nevada	1983	7/83	Under 5	Under 5	Under 5 in rear seat	**
New Hampshire*	1983	7/83	Under 5	Under 5	Under 5	**
New Jersey	1983	4/83	Under 5	Under 5	Between 1½ & 5 in rear seat	**
New Mexico*	1983	6/83	Under 11	Under 5	Between 1 & 5 in rear seat	5 thru 10 **
New York*	1981	4/82	Under 10	Under 4	Between 4 & 10 in rear seat	4 thru 9 **
North Carolina*	1981	7/82	Under 6	Under 3	Between 3 & 6	**
North Dakota*	1983	1/84	Thru 5	Under 3	3 thru 5	**
Ohio	1982	3/83	Under 4 ²	Under 4 ²	Between 1 & 4 if not in parent's vehicle	**
Oklahoma*	1983	11/83	Under 5	Under 4	Under 4 in rear; 4-5 in front or rear	**
Oregon*	1983	1/84	Under 16	Under 1	Between 1 & 5	5 thru 15**
Pennsylvania*	1983	1/84	Under 4	Under 4	Between 1 & 4 in rear seat	**
Rhode Island*	1980	7/80	Thru 12	Thru 3	No	4 thru 12
South Carolina	1983	7/83	Under 4	Under 4	Between 1 & 4 in rear seat	**
South Dakota*	1984	7/84	Under 5	Under 2	Between 2 & 5	**
Tennessee*	1977	1/78	Under 4	Under 4	No	**
Texas	1984	10/84	Under 4	Under 2	Between 2 & 4	**
Utah ¹	1984	7/84	Under 5	Under 2	Between 2 & 5	**
Vermont*	1984	7/84	Under 5	Under 5	Between 1 & 5 in rear seat	**
Virginia*	1982	1/83	Under 4	Under 3	Between 3 & 4 or over 40 pounds	**
Washington ¹	1983	1/84	Under 5	Under 1	Between 1 & 5	**
West Virginia*	1981	7/81	Under 9	Under 3	Between 3 & 5	5 thru 8
Wisconsin*	1982	11/82	Under 4	Under 2	Between 2 & 4	**
Wyoming	1985	4/85	Under 3 ²	Under 3 ²	No	**
Dist. of Col.	1982	7/83	Under 6	Under 3	Between 3 & 6	**

- NOTES: ¹ Law applies only to parents and legal guardians
² Or less than 40 pounds
³ Most states waive fines upon proof of safety seat acquisition
⁴ Kansas law applies only to children riding in front seat.
* States which have upgraded laws since original enactment
** Covered by State Safety Belt Laws

STATE OF KANSAS



KANSAS DEPARTMENT OF TRANSPORTATION

*Docking State Office Building
Topeka 66612-1568
(913) 296-3566*

Horace B. Edwards
Secretary of Transportation

March 15, 1988

Mike Hayden
Governor of Kansas

MEMORANDUM TO: Senate Public Health and Welfare Committee

FROM: Kansas Department of Transportation

REGARDING: House Bill 2716, As Amended.

Mr. Chairman, members of the Committee, thank you for the opportunity to comment on House Bill 2716, as amended. The Department appears before you in support of House Bill 2716 and requests favorable consideration of the bill by the Committee.

The policies contained in House Bill 2716 are consistent with the overall direction of highway safety policies established by the Kansas Legislature over the past several years. House Bill 2716 provides for a more enforceable child passenger safety act, and the Department believes that enactment of House Bill 2716, as amended, would improve traffic safety on our state's highways.

The Department requests favorable consideration of House Bill 2716, as amended. Thank you.

Testimony to be Delivered to
THE SENATE TRANSPORTATION COMMITTEE

by Nancy Bauder, President
Kansans for Highway Safety

On behalf of Kansans for Highway Safety, I ask that you support HB 2716, which would strengthen the Kansas Child Passenger Safety Act.

Kansans for Highway Safety is made up of various organizations and individual volunteers who work in Kansas to prevent fatalities and serious injuries on Kansas streets and highways. Our course of action of promotion and educational efforts is to encourage citizens to use safety belts, and other safe driving practices, as well as protect our children with the use of safety belts.

Last year in Kansas, Department of Transportation statistics showed 122 fatalities under age 19. 118 of those persons were not belted. Of the age group four and under, there were 8 fatalities (5 not belted), and 818 injuries (one-half not belted). Of the eight children who died in the rear seat of an automobile last year, none were belted. One fourth of all vehicle-related fatalities are children.

We are not getting the message across that children need to be buckled up in their vehicle. Last year, a University of Michigan study showed that safety belt usage is the lowest among children between the ages of five and fifteen. That is the lowest of all age groups. What kind of message are we giving our children? -that it is safe to sit in the rear seat unbelted? -that after a child becomes four years old it is now ok to not wear a safety belt? -that if you're not from Kansas you don't have to obey our child restraint laws?

Our children should not be exempt from one of the most life and injury-saving laws that this state has ever passed. Our precious child passengers need laws that will include all their age groups, include pick-up trucks and rear seats of automobiles. The fine should be increased to discourage non-compliance, and all drivers should be responsible for children in their vehicles, not just parents or guardians of Kansas citizens.

We greatly appreciate your past efforts in safeguarding our children with the passage of, and previous amendments to the Child Passenger Safety Act. Your concern for the future generation is evident.

Respectfully submitted,
Nancy Bauder

THE KANSAS CHILD RESTRAINT LAW

RATIONALE

NATIONALLY:

Last year (1986) according to the National Highway Traffic Safety Administration -

1. Overall fatalities increased by 7%, and rear seat fatalities increased by 12%.
2. Five times the fatalities occurred when passengers were unbelted compared to belted passengers.
3. One-half of all passengers who died in the rear seat of a vehicle were under 19 years of age (768 children).
4. One-fourth of all passengers killed were under the age of 19 (5500). Of those fatalities, 4200 were unrestrained.

IN KANSAS:

Last year (1986) according to the Kansas Department of Transportation and the National Highway Traffic Safety Administration -

1. Ages 0 to 19: 122 fatalities, 118 were not buckled up. (In the rear seat, eight fatalities, none were buckled up.)
2. Ages 0 to 4: 8 fatalities, 5 of those were not restrained.
3. Ages 0 to 4: 818 injuries, one-half were unrestrained (402).

Of the 500 fatalities, 122 of those were ages 0 to 19 years old. Kansas children are not covered either by the Child Restraint Law or the Mandatory Seat Belt Law if they are between the ages of 4 and 14.

The laws need to include these age groups, and the child restraint law needs to include front and rear seat passengers, have a higher fine for non-compliance, include all children (rather than just Kansas citizens), and be travelling with any driver, not just the parent or guardian.

Respectfully submitted,
Nancy Clark Bauder, President KHS

COMPONENTS OF CHILD RESTRAINT LAWS
PROVIDED BY THE NATIONAL SAFETY COUNCIL

SEPTEMBER 1985 *

Child Restraint Law responsibility applies to:

All drivers	29 states
Parent or guardian	22 states
Must be state resident	27 states

Position in vehicle:

Front and back seat	49 states
FRONT SEAT ONLY	1 state (Kansas)

MAXIMUM Fine for non-compliance, first offense:

No fine	4 states
\$10	8 states (Includes Kansas)
\$15	3 states
\$20	4 states
\$25	20 states
\$30	2 states
\$50	4 states
\$75	1 state
\$100	4 states
\$200	1 state
\$500	1 state (Indiana, waivable)

First offense fine waivable: 39 states

AGE OF CHILD (As reported by the Natl. Highway Traffic Safety
Administration, 1988)

0-2 yrs.	1 state
0-3 yrs.	2 states
0-4 yrs.	19 states (includes Kansas)
0-5 yrs.	14 states
0-6 yrs.	6 states
0-9 yrs.	1 state
0-10 yrs.	3 states
0-11 yrs.	1 state
0-12 yrs.	3 states
0-16 yrs.	1 state
Ht. 0-40" tall	1 state

* As 30 states now have Adult Mandatory Usage laws, these laws may now be more stringent.

Information compiled by:
Nancy Bauder, KHS

SUMMARY OF TESTIMONY

Before the Senate Public Health and Welfare Committee

House Bill 2716

Presented by the Kansas Highway Patrol

(Sergeant Bob Giffin)

March 15, 1988

Appeared in Support

The Kansas Highway Patrol supports House Bill 2716 and the added protection it will provide children being transported in automobiles on our streets and highways.

House Bill 2716 would amend the child passenger safety act to include children up to age 14. Presently, children between the ages of 4 and 10 are afforded no protection under the law. Other improvements in the current law contained in House Bill 2716 include:

- Making the "Driver" responsible for a child's proper use of safety restraining systems, not just the parent or legal guardian
- Extending application of the law to all users of Kansas roadways, not just Kansas residents
- Removes the exemption for substitute vehicles
- Increases the amount of fine for violations of this act from \$10.00 to \$20.00, thus creating an incentive for increased compliance.

Car crashes continue to be the leading cause of death and injury for small children and adolescents.* Even in normal driving, at speeds as low as 5 mph, children may be injured during sudden stops and turns.

It is for this reason, the safety of our children, that the Patrol urges your favorable passage of House Bill 2716.

*Source: American Automobile Association

Testimony Presented on Behalf of
the Kansas District Magistrate Judges Association
on HB 2716
Before the Senate Public Health and Welfare Committee
March 15, 1988

The Kansas District Magistrate Judges Association supports the intention of the sponsor of HB 2716 to strengthen the protection of child passengers in automobiles. However, the judges, who hear many traffic cases in the district courts of the state as a part of their regular dockets, are concerned about the amendments in lines 38-42 and 58-61 which seem to weaken the requirements that each child be protected by a safety belt or other protective device. A comparison with boating may be instructive. Kansas law requires a flotation device to be provided for each passenger. If there are not enough flotation devices, a violation is charged for each passenger for whom no flotation device is available.

Kansas Coalition for Drug-Free Driving

P.O. Box 58093

Topeka, KS 66658

913-286-0555

Ruth N. Meserve

KANSAS COALITION FOR
DRUG FREE DRIVING

February 11, 1988

REGISTERED
LOBBYIST

PRAIRIE VILLAGE, KS
913-649-1177

To: Transportation

Re: House Bill ~~2761~~ 2716

The Kansas Coalition for Drug Free Driving is a state wide coalition. Members include Mothers Against Drunk Driving, RID Remove Intoxicated Drivers, Kansas for Highway Safety, Kansas PTA and Kansas ASAP Association.

Our coalition supports House Bill 2716 concerning child passenger safety. Using a child safety restraint system in motor vehicles such as cars and pickups both in front and back seats is our only way of providing safety.

There is no law protecting children from 4 to 9 either under the child restraint law or mandatory seat belt law.

Our children are the future of our country and it is our responsibility to provide their protection and education of child restraints in all vehicles.

We ask your support on House Bill 2716.

Ruth N. Meserve

Senate Public Health & Welfare

March 15, 1988

Attachment 13

Kansans-for-Highway- Safety Legislative issues:

...Strengthening drunk driving laws and legislation which will be introduced this year.

← ...Strengthening child restraint laws.

...Supporting the legislation for installation of seat belts on all newly-manufactured school buses in Kansas.

Seconded and carried.

MEMBER ORGANIZATIONS

- "A" American Association of University Women-Kansas Division
- "D" Auxiliary to the Kansas Association of Osteopathic Medicine
- "F" Daughters of the Union Veterans of the Civil War, 1861-65
- "I" Kansas Association of Extension Home Economists
- "J" Kansas Dietetic Association
- "K" Kansas Dinner Club
- "L" Kansas District YWCA
- "M" Kansas Fed. of Business & Prof. Women's Clubs, Inc.
- "N" Kansas Fed. of Licensed Practical Nurses Assoc., Inc.
- "O" Kansas Federation of Music Clubs, Inc.
- "P" General Federation of Women's Clubs of Kansas
- "Q" Kansas Extension Homemakers Council
- "R" Kansas Home Economics Association
- "S" Kansas Master Farm Homemakers Council
- "T" Native Sons and Daughters of Kansas
- "U" Kansas State Council Epsilon Sigma Alpha - International
- "W" Kansas State Nurses Association
- "Y" Delta Kappa Gamma Society International
- "Z" Kansas Society of Daughters of 1812
- "A-2" Kansas Medical Society Auxiliary
- "B-2" Auxiliary to the Kansas Optometric Association
- "C-2" Woman's Christian Temperance Union of Kansas
- "D-2" Woman's Kansas Day Club
- "G-2" Auxiliary to the Kansas State Dental Association
- "I-2" Gamma State Conclave of Kappa Kappa Iota
- "K-2" Kansas Women for Highway Safety, Inc.
- "L-2" Kansas Association of Colored Women & Girls, Inc.
- "M-2" Alpha Delta Kappa International
- "N-2" Kansas Paraguay Partners International
- "O-2" Kansas Agri-Women
- "P-2" Kansas Congress of Parents and Teachers

Shirley Fair, Secretary

Ks. Farm Bureau Women

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