

ALASKA LEGISLATURE COMMITTEE FILES, 2005-2006 86 / 2

11748 SENATE HEALTH EDUCATION & SOCIAL SERVICES

Outcome or Systemic Factor, Item (a) Contributing to Non-Conformity, and Areas Needing Improvement	Goal	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
	35.1 A system of effective services will be available to keep children safe in their own home when reasonable or to achieve permanency in alternative placements.	35.1.3 Establish flexible funding opportunities to provide for identified service needs			35.1.3a Convene work group with OCS, DBH, DJJ, DPH and DPA to identify funding sources for children and families, both in-home cases and out-of-home cases by January 2004	Program Administrator	1/1/2004	1/1/2004		
		35.1.4 Develop regional collaborative efforts with DHSS Divisions, Tribes, Tribal Organizations and Community agencies to improve services to children and families			35.1.4a Regional work groups will be formed to develop collaborative process with DHSS Divisions, Tribes, Tribal Organizations and Community agencies and individuals to improve service delivery and capacity to children and families	Program Administrator	11/30/2004			
Item 36: The services in item 35 are accessible to families and children in all political jurisdictions covered in the State's CFSP.									June 2005	
	36.1 Children and families will have access to the services they need in proximity to their community.	36.1.1 Prioritize development of new services in all areas of the state			36.1.1a Refer to Item 35	Program Administrator	See Item #35	2/28/2005		
Item 37: The services in item 35 can be individualized to meet the unique needs of children and families served by the agency.			Complete action steps	Completion of Action steps		Program Administrator			June 2005	
	37.1 Case plans will be individualized based on the needs of the children and family	37.1.1 Provide training to staff on the proper development of individualized case plans			37.1.1a The FSTA Advisory Committee will review the case planning section curriculum and modify as needed to ensure that staff are being taught to individualize case plans by August 1, 2003.	Program Administrator	8/1/2003	8/1/2003		

Outcome or Systemic Factors, Item (s) Contributing to Non-Conformity, and Areas Needing Improvement	Goal	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
	37.1 Case plans will be individualized based on the needs of the child/ren and family				37.1.1b A refresher individualized case planning training module will be developed in partnership with the FSIA by September 1, 2003. 50% of staff will receive the training by March 1, 2004. 75% will have received the training by September 1, 2004. 100% of staff will have received the training by January 1, 2005.		1/1/2005			
Systemic Factor: Foster and Adoptive Parent Licensing, Recruitment, and Retention.										
Item 42: The standards are applied to all licensed or approved foster family homes or child care institutions receiving title IV-E or IV-B funds.			The standards will be applied to all licensed or approved foster family homes or child care institutions receiving title IV-E or IV-B funds.	Administrative Report					August 2005	
		42.1.1 Collect and interpret information by region on the reasons that variances have been granted in the past			42.1.1a Develop method for collecting variances and entering into state wide data base by July 2003	Program Administrator	7/1/2003	7/1/2003		
	42.1 Licensing Standards will be applied fully and equally to all foster homes.				42.1.1b Conduct analysis by September 2003.		9/1/2003	9/1/2003		
					42.1.1c Examine regulations and policy for consistency with safety standards.		1/1/2004	5/30/2004		

Outcome or Systemic Factors, Item (s) Contributing to Non-Conformity, and Areas Needing Improvement	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
42.1 Licensing Standards will be applied fully and equally to all foster homes				42.1.1d Identify and clarify allowable variances for non safety standards Incorporating input and review from ACE		7/1/2005			
				42.1.1e Draft statutory and regulatory changes if needed		7/1/2005			
Item 44: The State has in place a process for ensuring the diligent recruitment of potential foster and adoptive families that reflect the ethnic and racial diversity of children in the State for whom foster and adoptive homes are needed.		The State has in place a process for ensuring the diligent recruitment of potential foster and adoptive families that more clearly reflect the population served	The number of ethnically diverse culturally appropriate foster homes will increase					April 2005	
44.1 Develop and implement a process to increase the pool of skilled, qualified and culturally appropriate foster/adoptive parents.	44.1.1 Establish a statewide plan that incorporates regional plans.			44.1.1a Request TA from National Center for Foster Care and Permanency Planning by February 1, 2003	Program Administrator	2/1/2003	2/1/2003		
				44.1.1b Form Recruitment and Retention workgroup by March 15, 2003		3/15/2003	3/15/2003		
				44.1.1c Workgroup Proposed Statewide recruitment and retention plan developed by May 15, 2003		5/15/2003	5/15/2003		

Outcome or Systemic Factors, Item (s) Contributing to Non-Conformity, and Areas Needing Improvement	Goal	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
	44.1 Develop and implement a process to increase the pool of skilled, qualified and culturally appropriate foster/adoptive parents.				44.1.1d Statewide Foster Care Recruitment and Retention Plan approved by August 30, 2003		8/30/2003	5/30/2004		
					44.1.1e Regional Recruitment and Retention plans developed and approved by January 1, 2004		1/1/2004	5/30/2004		
					44.1.1f Statewide Foster Care Recruitment and Retention Plan implemented by January 1, 2004.		1/1/2004	5/30/2004		
		44.1.2 Conduct thorough review of existing AFPTC contract by January 1, 2003			44.1.2a Identify and negotiate contract modifications to strategically address training, recruitment and retention issues. October, 2003	Program Administrator	10/1/2003	10/1/2003		
		44.1.3 Continue work with tribes to increase Native foster homes.			44.1.3a Tribal State Collaboration Group will meet to discuss resources for Native children	Program Administrator	7/1/2004	7/1/2004		
					44.1.3b Track ICWA compliant placements		12/31/2003	12/31/2003		
					44.1.3c OCS staff to attend conference on recruitment of Native foster Homes		11/30/2004			
		44.1.4 Review and revise foster parent handbook to update for accuracy and include information related to adoption			44.1.4a Completed January, 2004	Program Administrator	1/1/2004	5/30/2004		

Outcome or Systemic Factors, Item (s) Contributing to Non-Conformity, and Areas Needing Improvement	Goal	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
	44.1 Develop and implement a process to increase the pool of skilled, qualified and culturally appropriate foster/adoptive parents.				44.1.4b Distribute to regions for full distribution January 2004		1/1/2004	6/1/2004		
		44.1.5 Implement ORCA to streamline reimbursement process			44.1.5a ORCA will be online in December 2004	ORCA Project Manager	12/1/2004	9/7/2004		
		44.1.6 Streamline foster and adoptive home application process			44.1.6a Develop work group to begin process of integrating foster home and adoption home study processes by January 2004.	Program Administrator	1/1/2004	1/1/2004		
					44.1.6b Revise foster and adoptive parent applications to incorporate requirements into single document/packet by January 30, 2004.		1/30/2004	1/30/2004		
					44.1.6c Provide joint training for adoption workers and licensing staff regarding changes in practice, forms, policy and procedure needed to implement changes in application process for adoptive and foster homes		1/1/2005			
			44.1.7 Develop partnerships to support foster and adoptive families such as Youth for Christ, Adopt a Worker program			44.1.7a Evaluate existing Pilot Project to determine possible expansion January 2004		1/1/2004	5/30/2004	

Outcome or Systemic Factors, Item (s) Contributing to Non-Conformity, and Areas Needing Improvement	Goal	Action Steps	Goal % of Improvement	Method of Measuring Improvement	Measurable Benchmarks and Dates	Responsible Party For Item and/or Action Step	Benchmarks' Projected Dates of Achievement	Benchmarks' Actual Dates of Achievement	Goals' Projected Dates of Achievement	Goals' Actual Dates of Achievement
	44.1 Develop and implement a process to increase the pool of skilled, qualified and culturally appropriate foster/adoptive parents.				44.1.7b Research successful surrounding use of in other states by January 2004		1/1/2004	7/1/2004		
					44.1.7c Target communities and identify potential partnership organizations, including Tribal entities and Faith based organizations to discuss collaborative support program implementation		11/30/2004			

**OVERVIEW**

**WHOLE**

**VILLAGE**

**PROJECT**

**Yukon-Koyukuk School District- Alyeska Worldwide**

**The Whole Village Project**

We are here at the encouragement of Bill Allen, USDA, and he has requested that we provide the attached briefing for Senator Ted Stevens.

## *The Whole Village Project*

- 1 Provide services to rural Alaskan students
- 2 Provide portability to a child's education
- 3 Provide K-12 academic support, encouragement and guidance by Highly Qualified Teachers
- 4 Meet or exceed No Child Left Behind Legislation
- 5 Provide an alternative to Regional Learning Centers
- 6 Provide every student an Individualized Learning Plan
- 7 Increase social entrepreneurial and sustainable development skill-sets
- 8 Provide economic growth and community empowerment

### **Overview**

**"Planting seeds of entrepreneurship must begin early enough in a child's primary education to establish entrepreneurship as a lifelong choice."**

#### *Strengthening America's Communities Initiative*

The Whole Village Project is founded on the belief that there is a reciprocal relationship between successful school and successful community. The mission of The Whole Village Project is to ensure that Alaskan children will be given opportunities, experiences and academic preparation needed for employment upon graduation. Creating a sustainable entrepreneurial culture in Alaskan native villages is essential. Our curriculum focuses on economics, entrepreneurship and commerce. Parents, students, community and industry leaders will play an integral part in helping students to successfully compete in the global entrepreneurial marketplace.

The quality of life in the villages of Alaska is tied to the ability to maintain a viable employment base. As younger rural residents continue to leave their communities and the state, the quality of life for those who remain, both young and old, is reduced. Alaska has one of the highest outmigration rates in the nation. A disproportionately large percentage of Alaska's young adults leave Alaska after graduating from high school or after completing some postsecondary education in the state. There is wide concern that the percentage of Alaskans who continue their education beyond high school is among the lowest in the nation as well.

The Whole Village Project offers students and parents an alternative to traditional public schools by providing home-based and school-based instruction that integrates e-commerce and entrepreneurial components. The Whole Village Project provides students with the opportunity to participate in a program that allows hands-on entrepreneurial learning within their school and/or community. Using an enhanced Junior Achievement model, students in grades K-12 have the opportunity to develop their own business plan, learn economic concepts, and develop merchandising skills that are directly applied to operating their own business. By beginning early in a child's life, our school model seeks to instill the value of self-reliance in every student.

Using proven educational methods, The Whole Village Project is designed to provide an environment that will enhance student learning and improve pupil achievement regardless of physical location. The project will help schools meet the NCLB requirements as well as serve as a plausible alternative to boarding schools that are currently under consideration of the state for youth in rural Alaska. It is an educational model that focuses on data, measuring change, and accountability. And, it offers a two-fold approach: a distance education program with individualized learning programs for every home schooled student and a program that offers services to rural Alaskan students attending traditional schools.

To meet the needs of rural Alaskan students, we offer portability combined with e-commerce and entrepreneurial training. The Whole Village Project is able to advance student performance by providing each child with a program of instruction tailored to the learning needs of that child. An educational training coach along with a certified

Highly Qualified Teacher will work with students in and out of the classroom using an Alaskan standards-based, online/offline curriculum supported by a host of web-based technology tools and resources. Using integrated methods of Peak Learning Model and Assets-Building, the project expands opportunities for experienced teachers by redefining daily responsibilities while increasing their ability to directly influence individual students. Technology-based solutions enable the development, management, delivery, and measurement of individual learning.

Parents and teachers work in partnership to develop a customized learning plan based on Alaska standards and is responsive to each student's needs and strengths. The learning plan includes goals for each subject area, identifies materials to be used, and how progress will be assessed. As teachers work with families to develop the Individual Learning Plans for the students, care is taken to ensure that appropriate grade level and course material are chosen to allow for success.

Based on technology centered solutions and customized student curriculum, The Whole Village Project will ensure Alaskan Native youth achieve success. We will integrate K12 online instruction and state standards to include entrepreneurship, ecommerce, and community internet empowerment strategies. An essential element of this program will be based on creating partnerships with the community through their school officials, students, parents and business and tribal leaders.

**CONSORTIUM FOR DIGITAL LEARNING**  
*Preparing Alaska's Students for Success in the Global Economy*

**OUR WORLD HAS CHANGED**

- The world has become flat. Rapid global changes have created a tipping point.
- Computers and the Internet have changed the way we work, communicate and collaborate.
- Commerce is web-based, economies are global, technological proficiency is essential.
- Jobs are migrating out of the U.S. to India, China, Russia, and other countries.
- Today's students will be competing for jobs with well-educated, technically proficient, highly motivated people from around the world.
- Younger generations are facing a competitive work environment that we cannot fully explain to them.
- We need to position ourselves to capitalize on known global changes so our children will have every advantage we can give them to succeed in the new "flat world" economy they will soon inherit.

**OUR EDUCATION SYSTEM MUST ADAPT**

- Education needs to be approached differently than it has been in the past. Systemic changes are needed.
- If we want students to enjoy fulfilling, well-paying jobs and a standard of living that we have come to expect, we must prepare them to compete.
- The quality of the workforce produced by public schools will determine how competitive future generations will be in the emerging global marketplace, as well as the overall health of the U.S. economy.
- Young adults entering nearly any field will be required to possess technology skills.
- Digital learning is currency of the future. Must insure our kids have sufficient currency to negotiate their way.
- A concerted effort is needed to help digital learning environments grow systemically in Alaska's schools.

**DIGITAL LEARNING ENVIRONMENTS IN SCHOOLS**

- The creation of 1 to 1 laptop computer learning environments and 24/7 wireless broadband Internet access incorporated across the curriculum in Alaska schools will help every student unleash their potential and raise their achievement levels.
- Far more than simply equipping students with laptop computers, this different means of teaching and learning will equip our young people with technology proficiencies to help them compete more successfully.
- This investment will soon produce a young, technology-immersed Alaska workforce that will be in a unique position to take advantage of unrealized economic development opportunities in all regions of our state.

**DIGITAL LEARNING - NATIONAL RESULTS**

- Significant academic gains have been realized in U.S. schools with digital learning environments: more time on task, higher levels of comprehension, greater pride in their work, absentee, dropout rates decreased, more students continuing on to college.

**DIGITAL LEARNING - ALASKA RESULTS**

- Since rolling out Alaska's first 1 to 1 laptop initiative in Denali three years ago, schools in the district show more effective engagement of students in the learning process, steady improvement in AYP scores, K-12 students performing at levels consistently above statewide averages in math, reading and writing.

**CREATION OF A DIGITAL LEARNING CONSORTIUM FOR ALASKA**

- AASB is proposing to create a Consortium for Digital Learning, through which state, federal governments and Alaska school districts can provide the opportunity for Alaskan students to:
  - Enjoy an enhanced quality of education through access to digital learning environments.
  - Raise their academic achievement levels
  - Unleash their tremendous potential
  - Arrive in the workplace well-versed in relevant employment skills,
  - Successfully compete in a global economy
- This initiative addresses workforce & economic development, standards of living, and national security.
- We face short timelines. As a show of good faith and commitment to this initiative, AASB is stepping up to the plate to form the Consortium for Digital Learning prior to receiving any funding.
- We are a learning consortium and a success initiative, dedicated to teaching people what is possible and helping them make it happen.

## ROLE OF THE DIGITAL LEARNING CONSORTIUM

- Based on a shared commitment to excellence in education, AASB has chosen to work collaboratively with Apple, to take full advantage of their experience in implementing large-scale digital learning environments.
- Evaluate district proposals using criteria: Leadership, Learning, Infrastructure and Community readiness.
- Assign a Low-Medium-High readiness level to each applicant district. Cost differences at each readiness level determine the amount of "per classroom" funding available.
- Based on evaluation of readiness levels make site selections.
- Assist participating sites with the costs of implementing digital learning environments in their schools:
  - Leverage funding from federal, state and local sources.
  - Act as purchasing agent to broker technology-related services and equipment to participating sites.

## APPLE'S HISTORY OF COMMITMENT TO EDUCATION

- When tech bubble burst, Apple invested in education. When market recovered, Apple was well positioned as a strong, innovative industry leader.
- Has assisted in the deployment of over 700 digital learning initiatives in schools and districts nationwide.
- Over 25 years experience developing learning and teaching solutions
- Offers a cost effective, holistic approach to digital learning.

## PC AND APPLE COMPUTERS – BASIC DIFFERENCES

- **PC = Open Market System:** Company provides computer, operating system.
- Software and peripherals purchased separately in the open market not integrated, often not compatible with each other.
- **Results:** non-integrated components require more configuration, more tech support time (\$), a less user-friendly experience. Good for people who already understand technology.
- **APPLE = Holistic Integrated System:** Company provides computer, operating system, integrated software package, and peripherals (iPod, iSight videoconference camera, Airport wireless networking, etc).
- Integrated system components designed and built to be compatible, reliable and intuitive.
- **Results:** greater "plug and play" component compatibility and system reliability, less configuration, less tech support time (\$), a more user-friendly experience. Good for technology learners.
- Diverse skills learned on Apple computers are transferable to the PC environment and workplace.

## BENEFITS OF APPLE'S HOLISTIC DIGITAL LEARNING SYSTEM

- Holistic, integrated system components include hardware, software, peripherals, tech support, professional development, and digital curriculum.
- Functional, reliable system users can have confidence in from inception to rollout, and beyond.
- Reliability = less down time, fewer frustrating tech support issues, more student/teacher time on class work.
- Intuitive, ease of use is good for all digital technology learners: students & teachers – natives & immigrants.
- Holistic implementation of digital school makes managing change less complex, more efficient.
- Evaluation of success based on established district readiness criteria used for site selection.

## BENEFITS OF WORKING WITH AN EXPERIENCED INDUSTRY LEADER

- Will help school districts that are selected to capitalize on their assets/strengths, identify obstacles, mitigate weaknesses, and create success.
- Commitment to four key areas of district readiness: Leadership, Learning, Infrastructure, Community.
- Wisdom and experience in successfully managing change.

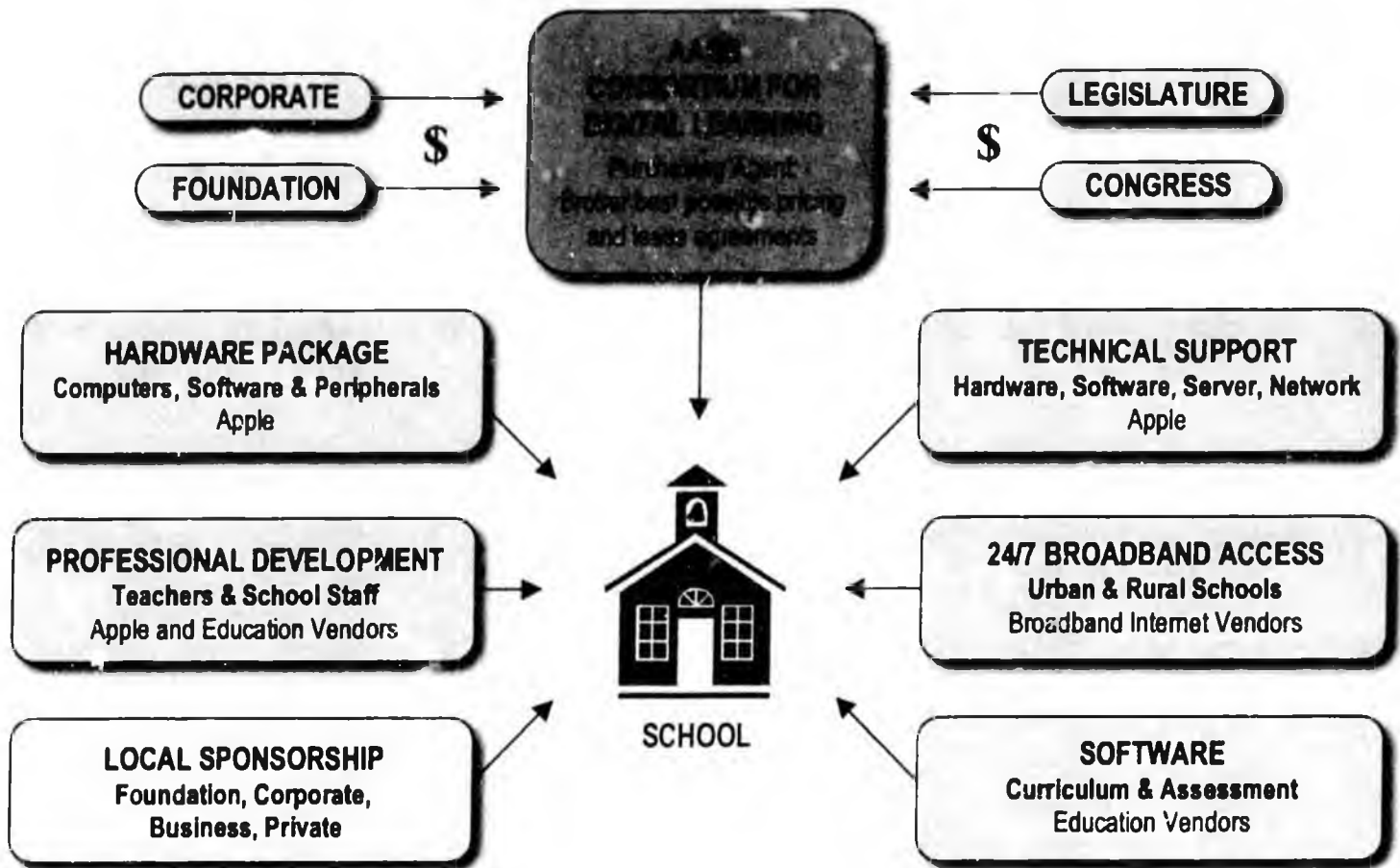
## TIME FRAME

- Funding Disbursement: state fiscal year starts July 1, federal fiscal year starts October 1
- 2006-07 Site Implementation:
  - Summer teacher professional development, with 2-3 pilot classrooms running by fall '06.
  - Fall teacher professional development, with additional pilot classrooms running in Jan '07.
- For efficiency in future years, funding and implementation timelines need to match more closely.

## MORE INFORMATION

View the podcast of Carl Rose's 3/21/06 presentation to the House Special Committee on Education about the Consortium for Digital Learning: <http://alaskaice.org/aasb-podcast/>

## CONSORTIUM FOR DIGITAL LEARNING AN OVERVIEW



### The Association of Alaska School Board's Consortium for Digital Learning

AASB is proposing an enhanced educational delivery system that will prepare Alaska's youth for the digital world. Using an inclusive approach, districts and schools will be supported in:

- Determining readiness levels
- Engaging their community
- Securing hardware, software, and peripherals
- Acquiring necessary technical support for a fully functional system
- Training staff
- Managing change

Many school districts have made significant strides in uses of technology. Rarely, however, has technology been instituted in a systematic fashion that will allow our youth to compete successfully in our increasing global economy. Through the digital learning consortium, AASB is proposing a holistic use of technology that will change the basic approach to K-12 education.

## The Whole Village Project

### Healthy Alaska Villages

- Safety
- Health
- Education
- Economic Development
- Social Services
- Culture
- Government
- Entertainment

---

---

---

---

---

---

---

---

## Project Objectives

- The intent of our project is to integrate K-12 instruction for Alaskan youth to include entrepreneurship, ecommerce, culture, and community learning strategies for Rural Villages.
- "Planting seeds of entrepreneurship must begin early enough in a child's primary education to establish entrepreneurship as a lifelong choice."

---

---

---

---

---

---

---

---

## Project Focus

- Education for At Risk Native Youth
  - Using proven ILP processes
- Rural Economic Development
  - Early development of entrepreneurial skills
  - Enhanced Junior Achievement
- Preservation of Native Culture
  - Providing options for village life
- Content Delivery Networking
  - Cost effectively disseminate content to villages

---

---

---

---

---

---

---

---

## Introduction

- **Alaska Worldwide**
  - Kerry Boyd
  - Presentation Host
  - Project Management
- **WW IDEA**
  - Jim Foster
  - Not For Profit
  - Innovative Education
- **AASB**
  - Carl Rose
  - Digital Learning
- **Lone Eagle**
  - Frank Odasz
  - Rural Economic Development
  - Teacher of Teachers
- **DRS TAMSCO**
  - Fletcher Brown
  - Remote Solutions Deployment
  - Content Distribution Management

---

---

---

---

---

---

---

---

## Supporters

- **Alaska Manufacturing Extension Partnership – Eric Downey**
  - Existing e-commerce program – 16 centers
  - Focus on Native art sales as tool for cultural sustainability
  - Hosting an e-commerce conference on April 24
- **North Star Television Network – Dr. Dan Etulain**
  - Using TV to educate Natives on their e-commerce opportunities

---

---

---

---

---

---

---

---

**WW IDEA, Inc**

**Jim Foster**

---

---

---

---

---

---

---

---

### WW IDEA, INC

- Jim Foster – Background
- Collaborative
- Successful
- Replicable
- Sustainable

---

---

---

---

---

---

---

---

### Two Paradigm Shifts

- Trained teachers to teach differently
- Created an environment where students are successful

---

---

---

---

---

---

---

---

### Another Village School



Grade	Reading				Writing				Math			
	Adv.	Prof.	Below	Not	Adv.	Prof.	Below	Not	Adv.	Prof.	Below	Not
Grade 3	0.0	0.0	10.0	90.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Grade 4	0.0	0.0	10.0	90.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
All Grades	0.0	0.0	10.0	90.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0



---

---

---

---

---

---

---

---

### Galena Benchmark Scores

*Report Card to the Public*  
 Department of Education - Anchorage School District

Grade	Reading				Writing			
	Adv	Prof	Below	Not	Adv	Prof	Below	Not
Grade 1	28.1	59.0	12.7	0.0	23.1	46.2	28.2	0.0
Grade 2	33.1	55.4	11.1	0.0	23.0	49.0	28.0	0.0
Grade 3	34.0	55.0	10.0	0.0	24.0	48.0	28.0	0.0
Grade 4	31.0	54.0	13.0	0.0	22.0	47.0	29.0	0.0
Grade 5	32.0	53.0	14.0	0.0	23.0	46.0	31.0	0.0
Grade 6	33.0	52.0	15.0	0.0	24.0	45.0	31.0	0.0
Grade 7	34.0	51.0	16.0	0.0	25.0	44.0	31.0	0.0
Grade 8	35.0	50.0	17.0	0.0	26.0	43.0	31.0	0.0
Grade 9	36.0	49.0	18.0	0.0	27.0	42.0	31.0	0.0
Grade 10	37.0	48.0	19.0	0.0	28.0	41.0	31.0	0.0
Grade 11	38.0	47.0	20.0	0.0	29.0	40.0	31.0	0.0
Grade 12	39.0	46.0	21.0	0.0	30.0	39.0	31.0	0.0




---

---

---

---

---

---

---

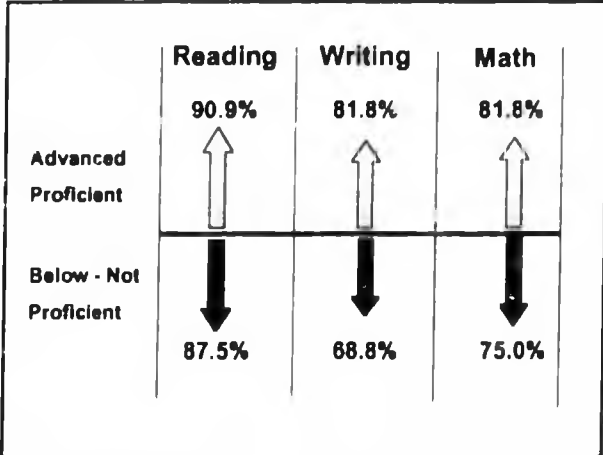
---

---

---

---

---




---

---

---

---

---

---

---

---

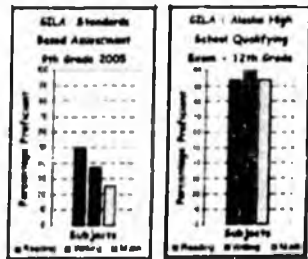
---

---

---

---

### Achievement Success in a Regional Learning Center




---

---

---

---

---

---

---

---

---

---

---

---

### Focus on The Problem

- Schools Are FAILING
- Low (unacceptable) Standardized Test Scores
- Federal Takeover
  - Does not address root problems
  - Most likely lead to continued failure

**Solutions do exist!**

---

---

---

---

---

---

---

---

### ILP Model Works!

- Developing Individual Learning Plans for each student
  - Must involve
    - Teacher
    - Student
    - Parent
- Must be relevant to the State testing standards (GLE)
- Requires significant automation to maximize the potential
  - ILP development for each student
  - ILP execution, tracking and reporting
  - Distribution and management of content

---

---

---

---

---

---

---

---

### Solutions Exist

- Develop Enhanced ILP Model for Alaska
- Replicate Success
- Specific Projects & Concepts
  - Assets Building
  - Researched Based Instruction
  - Implement ILP (Individual Learning Plan)
    - Track Imbedded State standards (GLE)
    - Develop Economic Development Training Standards

---

---

---

---

---

---

---

---

**Lone Eagle  
Frank Odasz**

**Rural Economic Development**

---

---

---

---

---

---

---

---

***DRS TAMSCO Introduction***  
*Fletcher Brown*

**Remote Communications Solutions**

---

---

---

---

---

---

---

---

**About DRS TAMSCO**

- SDB founded 1982
- 8(a) certified 1984
- 2005 Sales: \$330M
- 865 Employees
- 15 CONUS and OCONUS locations



---

---

---

---

---

---

---

---

**Native Economic Development**

- Tribally Owned Native American Companies
- Alaska Native Corporations (ANCs)
  
- Initiated Native Work in 1992
  
- Brought 750 million + in revenue to Native Companies
  - Primary work in communications
  - Virtual work in remote or rural areas

---

---

---

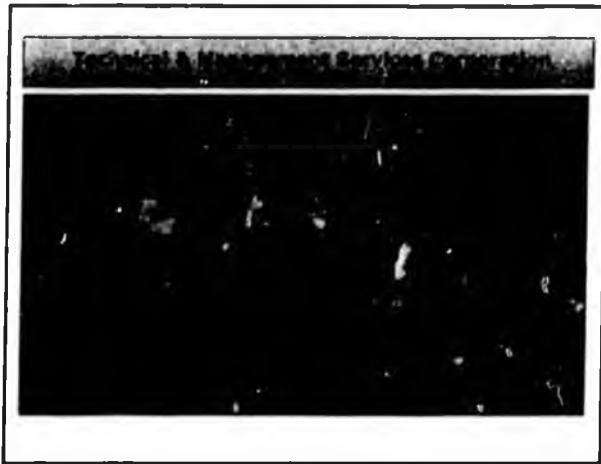
---

---

---

---

---



---

---

---

---

---

---

---

---

**About TAMSCO**  
**Telecommunications (Army Ops)**  
Telecommunications Design, Integration,  
Operation and Maintenance

- ✓ Military & Commercial SATCOM
- ✓ 24-7 Operations and Maintenance Support
- ✓ Position any where within 24 hours
- ✓ Secure & Non-Secure



---

---

---

---

---

---

---

---



---

---

---

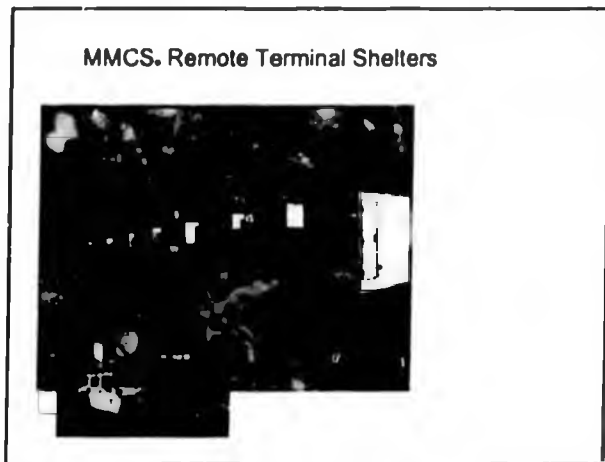
---

---

---

---

---



---

---

---

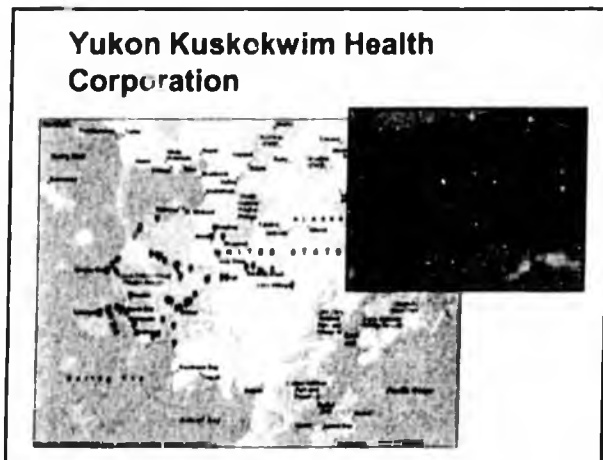
---

---

---

---

---



---

---

---

---

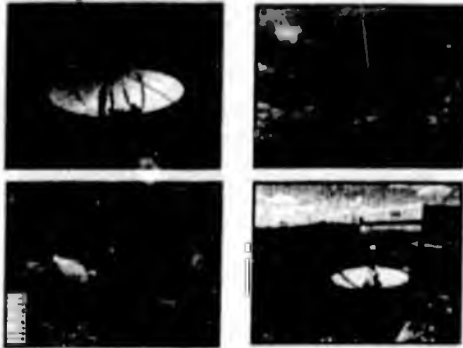
---

---

---

---

**Yukon Kuskokwim Health Corporation**



---

---

---

---

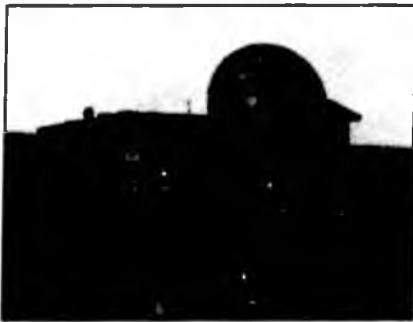
---

---

---

---

**Bethel iDirect Hub**



---

---

---

---

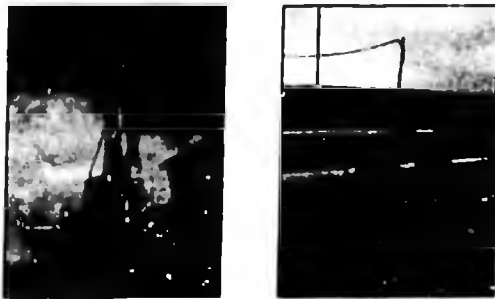
---

---

---

---

**Yukon Kuskokwim Health Corporation**



---

---

---

---

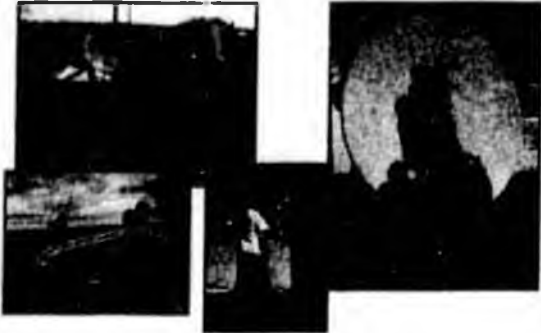
---

---

---

---

### Yukon Kuskokwim Health Corporation



---

---

---

---

---

---

---

---

### YKHC VoIP/LAN Deployment



---

---

---

---

---

---

---

---

### The Bandwidth Myth

- "There will never be enough bandwidth to satisfy the needs of rural and remote villages in Alaska"
- More effective utilization of the bandwidth an organization can afford is the only answer
- Very little attention is given to this problem
- How can resources be used more effectively?

---

---

---

---

---

---

---

---

### The Bandwidth Myth

- Circuit switched communications not efficient
- Packet switched (IP) communications is more efficient
  - Shared resources (subscription rates) - Good
  - Grossly over subscribed rates - Bad
- NOT capable of providing high quality content to remote areas>
  - High Quality Live Training
  - Rich Multimedia Distribution
- Go ahead - Try it - Brings network to its knees

---

---

---

---

---

---

---

---

### Just Buy More Bandwidth

- The cost of satellite RF spectrum
  - 2,500 to 6,000 per Mhz
  - T-1 = 1.5 Mhz out and 1.5 Mhz in = 3.0 Mhz
  - 3.0 Mhz x 2,500/6,000 = 7,500 to 18,000
- This leads us right back to bandwidth sharing
- NOT capable of providing high quality content to remote areas>
  - Live Training
  - Multi Training

---

---

---

---

---

---

---

---

### More Effective Utilization

- Multicast Data and Multimedia Capabilities
  - Create highly efficient multi-media content
  - Use one IP stream to hit 100 sites
- Use bandwidth efficient tools to improve functionality
  - Collaboration Servers
  - Terminal Services (Citrix ICA)
  - DVD (Digital Video Broadcast)
- Use Content Management Systems

---

---

---

---

---

---

---

---

## Content Management

- What is Content? (Types)
  - Voice
  - Video
  - Text
  - Data
  
- What are some examples? (Uses)
  - Audio Discussions
  - Interactive Training Sessions
  - Forms
  - Books
  - Course material
  - Web sites (the entire site)
  - Combinations of all of the above (Multi-Media)

---

---

---

---

---

---

---

---

## Content Management

- Healthy Village Content Areas (MVCA)
  - Safety
  - Health
  - Education
  - Economic Development
  - Culture
  - Social Services
  - Government
  - Entertainment
  
- Establish Virtual Content Management Centers
- Establish Content Management Architecture

---

---

---

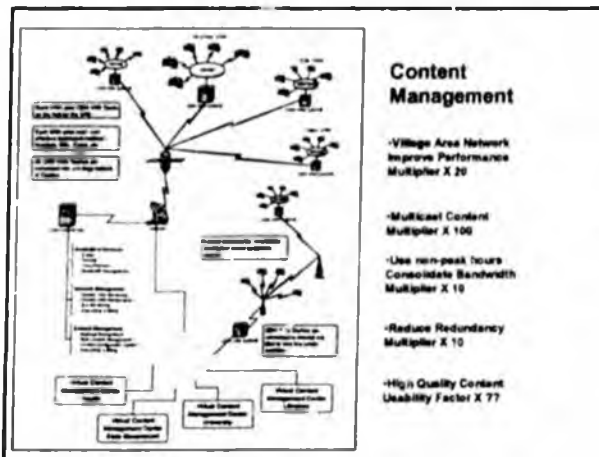
---

---

---

---

---




---

---

---

---

---

---

---

---

### Content Management - Examples

- AMEP - Initial and Recurrent Training
  - Hooper Bay
  
- Alaska Association of School Districts
  - Web Site - With video
  
- Health Aid Training
  - Initial
  - Recurrent
  
- Governance: Tanana Chiefs Conference
  - Annual Meeting
  - Multicast to all TCC villages

---

---

---

---

---

---

---

---

### Preparing Requirements

- Focus on Function (Not Solution)
  - State Objectives
  - Define WHAT you want to achieve
  - Reveal the HOW to achieve it
  
- Make Industry put their thinking caps on
  
- Don't just buy "Bandwidth"

---

---

---

---

---

---

---

---

### Summary

---

---

---

---

---

---

---

---

**Summary**

- Education for At Risk Native Youth
  - Using proven ILP processes
- Rural Economic Development
  - Early development of entrepreneurial skills
  - Enhanced Junior Achievement
- Preservation of Native Culture
  - Providing options for village life
- Content Delivery Networking
  - Cost effectively disseminate content to villages

---

---

---

---

---

---

---

---

**Four Phase Plan**

- Phase I Planning
- Phase II Proof of Concept
- Phase III Limited Operational Deployment
- Phase IV Expanded Deployment

---

---

---

---

---

---

---

---

### Lone Eagle Consulting

- Big Sky Telegraph - 1988-1998
- Reach for the Sky - 1994 Online Teacher Mentoring and Lesson Plan Sharing (Annenberg/CPB)
- First YKSD Internet workshops 1997
- Online Graduate Courses for Alaska Pacific University since 1998
- USDA - Developed Online Rural Ecommerce, Wireless Mobile Laptop Labs, Collected Success Stories
- USDOL Demonstration Project - Refining the Community Awareness Raising Process
- Americorps C™ VISTA Project - National Community Networking Resource Coordinator
- Involved with International Indigenous Internet Issues

---

---

---

---

---

---

---

---

In Times of Change,  
Learners Inherit the Earth

-Eric Fromm

---

---

---

---

---

---

---

---

Presenting for  
"Strengthening the Links Between  
Our Rural Communities" - British  
Columbia Rural Summit Conference,  
April 21<sup>st</sup>

Presenting on the BEST Indigenous  
Broadband Applications for 23  
Nations in Calgary April 25 for the  
Asia Pacific Economic Council's  
Telecommunications Working Group.

---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

The BEST Broadband Application for Alaskans is Self-Actualization:

Maximizing Our Full Collective Potential for Learning, Innovation, and Collaboration.

We're Limited Only By Our Imaginations

---

---

---

---

---

---

---

---

The Internet has Unleashed a Global Explosion of Entrepreneurial Creativity

The Absolute BEST Indigenous Broadband Application would be to keep up to the same instant of progress on the latest indigenous Internet innovations as they occur worldwide.

---

---

---

---

---

---

---

---

**"BEST" Broadband Applications  
will be defined by the community  
or individual based on**

**what they have learned about**

**"Broadband Applications."**

---

---

---

---

---

---

---

---

**Alaska Manufacturing Extension**

**Partnership's**

**E-RAVEN Ecommerce Portal**

- Rural Alaskan Village Ecommerce Network (RAVEN)
- Supported by the Alaska Dept. of Commerce
- 18 Village Ecommerce Centers,  
24 more planned for Fall 2008
- Participatory Research to identify Best Practices  
for Ecommerce and Training
- Creating Village Pilot Projects to Model Success
  
- Partnering with the Alaska Native Arts  
Foundation to create sustainable village  
economies through global E-marketing of Alaska  
Native Art.

---

---

---

---

---

---

---

---

**AMEP and Alaska Native Arts  
Foundation**

**Sustaining Communities Through the Sale of  
Art**

- 722 artists signed on ANAF website
- \$450,000 in ANAF art purchases
- 18 centers established
- 42 communities trained or visited

---

---

---

---

---

---

---

---

### **An Alaskan Village Sustainability Action Plan**

- Assuring educational success for Native youth through Effective Online K12 Instruction matched to standards, and
- Youth Entrepreneurship/Entry-Level Ecommerce matched to Technology Standards, and
- Culturally Appropriate Community Learning with
- Multi-generational Digital Storytelling

---

---

---

---

---

---

---

---

### **Key Alaskan Governmental Policy Challenges**

- Politics of Control, Advocacy, Transparency (Accountability on Genuine Outcomes)
- Authenticity of Citizen/Community Buy-in and Participation
  - Real Benefits for Real People
- Motivating All Potential Innovators and Entrepreneurs
- Efficiently gathering and sharing the best ecommerce success stories, mentoring expertise, fast-track training resources with all citizens on an ongoing basis
- The Need for Continual Reinvention and Innovation Sharing.

---

---

---

---

---

---

---

---

### **Broadband Without a Plan?**

"Build it and they will come" has proved to be a "Field of Dreams."

...the Broadband Myth....

---

---

---

---

---

---

---

---

**SB**

**4**

From the office of . . . Senator John J. Cowdery

State Capitol Building, Rm #101

Juneau, AK 99801


907-465-3879 phone

907-465-2069 fax

## MEMORANDUM

DATE: February 11, 2005

TO: Senator Fred Dyson

FROM: Senator John J. Cowdery 

RE: Request for Hearing, SB 4, "An Act requiring cardiopulmonary resuscitation and first aid certifications for issuance of a secondary school diploma"

---

I respectfully request that SB 4, "An Act requiring cardiopulmonary resuscitation and first aid certifications for issuance of a secondary school diploma" be scheduled for a hearing at your earliest convenience. I have attached the following for your information:

- 1) SB 4
- 2) Sponsor Statement
- 3) Fact Sheet
- 4) ADN Summary
- 5) Letters of Support
- 6) American Heart Association Circulation
- 7) Everyday Hero Stories
- 8) Legislative Research Reports
- 9) Fiscal Info
- 10) Grant Info
- 11) Training Centers
- 12) Support Articles
- 13) Statistics
- 14) Good Samaritan Statutes

If you have any questions please feel free to contact me personally, or my staff, Ruth Keller, at x3879. Thank you for your time and consideration.

SENATOR  
JOHN J. COWDERY

Anchorage

Committees

Chair: Rules  
Chair: World Trade &  
State/Federal Relations  
Vice-Chair: Transportation  
Legislative Council



January – May:  
State Capitol, Suite 101  
Juneau, Alaska 99801 – 1112  
Tel: 907-465-3879  
Toll Free: 888-289-3879  
Fax: 907-465-2069

May – December:  
716 W. 4<sup>th</sup> Avenue  
Anchorage, Alaska 99501  
Tel: 907-269-0222  
Fax: 907-269-0223

Senator\_John\_Cowdery@legis.state.ak.us

## Sponsor Statement

### Senate Bill 4

#### **“An Act requiring cardiopulmonary resuscitation and first aid certifications for issuance of a secondary school diploma.”**

SB4 confirms the importance of basic first aid knowledge to sustain life until professional technicians arrive at the scene of an emergency situation. Upon reflection of such tragic situations as 9/11 and the more recent tsunami disaster, the necessity to be prepared is evident. Homeland security would necessitate a strategy of emergency preparedness. What better way to prepare our youth to respond in a decisive educated manner than with CPR/first aid training?

This bill is being introduced after the tragic stabbing and death of Eric Kalenka on Feb.27, 2004 at a Taco Bell drive-through in Anchorage, Alaska. Multiple stab wounds, loss of blood, and possible shock were the elements that extinguished this young man's life. Applying direct pressure to the wounds, elevating them above the heart, then applying pressure at the arterial points above the wounds, and treating for shock may have saved his life. Basic first aid and CPR training could mean the difference between life and death, making bystanders active citizens prepared to respond in a crisis.

The American Heart Association estimates that more than 95 percent of cardiac arrest victims die before reaching the hospital. If every community could achieve a 20 percent cardiac arrest survival rate, an estimated 40,000 more lives could be saved each year. This could be your mother, brother, neighbor, friend surviving because someone reacted with a life-saving technique they learned at their local high school.

While this bill requires a certification in basic first aid and cardiopulmonary resuscitation before graduation at the high school level, it does not discredit such programs as the Aniak Volunteer Fire Department's Dragon Slayers, Kotzebue High School's Emergency Trauma Technician Program, and Anchorage School

District's King Career Center ETT and EMT-1 Programs. It allows for the recognition of such completed programs to meet stated requirements. As a very diverse landmass, Alaska has locality issues that most other states don't have to deal with. This implementation would empower the young adults of our communities to make a life saving difference now and in the future.

This legislation is key to promoting a well-prepared populace, reducing morbidity and mortality for all citizens in Alaska.



## Alaska State Legislature

**Senate Majority** Web: [www.akrepublicans.org](http://www.akrepublicans.org)

---

**Sponsor:** Senator John Cowdery  
**Current Version:** SB 4  
**Contact:** Ruth Keller, 465-3879

### Fact Sheet for: Senate Bill 4

**Short Title:** REQUIRE CPR FOR HIGH SCHOOL GRADUATION

**Summary:**

- Makes certification in basic first aid and cardiopulmonary resuscitation a requirement for high school graduation, and directs school districts to provide such training.

**Benefits:**

- Aids in sustaining the life of a victim until a professional emergency technician can respond.
- Promotes a well-prepared populace in the event of a terrorist attack or natural disaster.
- Prepares students to respond appropriately in situations they are likely to encounter in after-school jobs such as babysitting.

**Background:**

- SB 4 was introduced in response to last year's tragic murder of Eric Kalenka, who bled to death after being stabbed in the leg following a fender-bender in the drive-through lane of a Taco Bell. Kalenka's death could have been prevented had his companion or witnesses to the accident been trained in basic first aid.

SENATOR  
JOHN J. COWDERY

Anchorage

Committees

Chair: Rules  
Chair: World Trade &  
State/Federal Relations  
Vice-Chair: Transportation  
Legislative Council



January – May:  
State Capitol, Suite 101  
Juneau, Alaska 99801 – 118  
Tel: 907-465-3879  
Toll Free: 888-269-3879  
Fax: 907-465-2069

May – December:  
716 W. 4<sup>th</sup> Avenue  
Anchorage, Alaska 99501  
Tel: 907-269-0222  
Fax: 907-269-0223

Senator\_John\_Cowdery@legis.state.ak.us

**Background Submittal for Senate Bill 4 from ADN articles:**

“The stabbing took place on Feb. 27 at the Taco Bell at 2351 East Fifth Ave. Charging documents say Kalenka and a woman were at the drive-through window around 3:15 am when Morrell drove up behind them and struck their rear bumper.”<sup>1</sup>

“Kalenka approached Morrell about the fender-bender. Witnesses say Morrell was aggressive toward Kalenka, at one point grabbing him in the area of his chest.”<sup>2</sup>

“Then Kalenka yelled, “He’s stabbing me.” according to court records. Doucet, who was in line behind Morrell, pulled Morrell away. Kalenka returned to his Subaru, and Christine Montague, Kalenka’s close friend, later told police she could smell blood.”<sup>3</sup>

“Police found Kalenka in the Subaru.”<sup>3</sup> “Kalenka was in his car, unresponsive.”<sup>2</sup> “The officer lifted the leg, saw heavy bleeding and “seven to eight stab wounds” and started lifesaving measures, according to court documents.”<sup>3</sup>

“Medics took Kalenka to an Anchorage hospital, where he was pronounced dead.”<sup>3</sup>

“Dr. Franc Fallico, acting chief medical examiner for the state, stated, “That blood vessel in the leg...can leak enough blood in a matter of seconds or minutes that the person dies of shock from blood loss.”<sup>1</sup>

---

<sup>1</sup> O’Harra, Doug. “Drive-Through Dispute Turns Deadly.” *Anchorage Daily News*, 28 February 2004, Record Number: 440580102/28/04

<sup>2</sup> Brant, Tataboline. “Man is Indicted in Fatal Stabbing.” *Anchorage Daily News*, 9 March 2004, Record Number: 448971703/09/04

<sup>3</sup> Pesznecker, Katie. “Victim’s Pals Fill Court Room.” *Anchorage Daily News*, 29 February 2004, Record Number: 441386702/29/04



**American  
Red Cross  
of Alaska**

alaska.redcross.org

235 E 8<sup>th</sup> Avenue, Suite 200  
Anchorage, AK 99501  
907. 646. 5401 voice  
907. 276. 1465 fax

The Honorable John Cowdrey  
State Capitol, Room 101  
Juneau, AK 99801-1182

February 2, 2005

RE: Support SB 4 "An Act requiring cardiopulmonary resuscitation and first aid certifications for issuance of a secondary school diploma"

Dear Senator Cowdrey:

Last year a young man was stabbed and died. If there had been someone at the scene who had been trained in basic first aid, he might have survived.

In 2003 a high school student had seizures. His teachers restrained him while he was seizing. The force they used killed him. Had they been trained in the appropriate response to this emergency, the boy would still be alive.

You now have the opportunity to create a better-prepared, safer state. By passing SB 4, you will not only be giving high school students the skills they need to save a life, you will also be giving them the necessary knowledge that they will need in an emergency, and with certification, you will be giving them valuable job skills.

As part of the American Red Cross Adult CPR and First Aid Training, students will learn to recognize an emergency, check the scene for safety, check a victim for consciousness, call 911 and care for the conditions they find.

With passage of SB 4, we can have more stories like the four-year-old girl who fell on a pencil. Fortunately, her teacher knew not to remove the pencil because it might be stopping the bleeding. The EMS system was activated, and the girl survived.

With just a few hours of training we can prepare our children for the most common emergencies they would face and we can start them on the path to being prepared for any disaster.

I am in support of Senate Bill 4. We respectfully request this bill include language which requires the high standards that the American Red Cross or its equivalent has for their curriculums. Therefore, I encourage you to include the following "**...that each student be certified in American Red Cross basic first aid and cardiopulmonary resuscitation (CPR) or equivalent before a diploma may be issued to the student.**"

For reference, please note that the State of Alabama requires American Red Cross CPR for all students and the States of Louisiana, North Carolina and Rhode Island require both American Red Cross CPR and First Aid for all students.

Sincerely,

Joe B. Mathis, CEO  
American Red Cross of Alaska  
907. 646. 5414 voice  
mathisjo@usa.redcross.org

Southern Region  
**EMERGENCY**  
Medical Services Council, Inc.

January 18, 2005

Senator John Cowdery  
State Capitol, Room 101  
Juneau, Alaska 99801-1182

Dear Senator Cowdery,

Thank you for the consideration of public comment regarding the pending legislation for Senate Bill 4. This legislation has key importance in the reduction of morbidity and mortality for all citizens in Alaska. We in emergency medical services fully support the need to deliver life-saving care with the shortest delay. This bill goes a long way to reaching that goal.

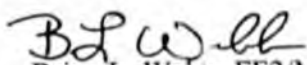
The bill as written, functionally serves the purpose above. I would like to clarify points I have made in prior correspondence to your staff. My points are as follows:

1. Your Bill's non-descript nature omits language that a specific organization's program must be used. That thought process is right on the mark, considering what resources already exist.
2. Your bill as written, allows each community the latitude to fairly work this matter out by:
  - a. ensuring local input, with local decisions.
  - b. ensuring the ability of local/regional agencies or individuals to fairly compete in this potential new market, if contracted to do so.
3. The Bill also ensures established continuity of existing programs within communities by:
  - a. providing stability (does not dismantle existing successful programs)
  - b. ensuring program is cost effective (versus new training for staff & contractors)
  - c. supporting local first aid & EMS vendors
  - d. allowing organizations and regions, with programs that exceed proposed basic requirements, the ability to substitute them for graduation requirements. Many programs already exist, and are models for the development of our future first responders. i.e.:
    - i. Aniak Volunteer Fire Department's successful Dragon Slayers program (provides ETT & EMT-1).
    - ii. Kotzebue High School's Emergency Trauma Technician in the School program.
    - iii. Anchorage School District's King Career Center provides programs for ETT and EMT-1. Of note, I am a 1976 alumni of that EMT-1 program. KCC started me in my successful 28-year EMS career.

4. We also continue to struggle with volunteer fire department recruitment statewide. If a local department may offer training that will both assist our youth with graduation requirements and promote volunteerism, then it is win-win for all.

I thank you for the time to convey my thoughts, and look forward to passage of this legislation. If I may be of any further assistance, please do not hesitate to contact me. I may be reached at SREMSC at (907) 562-6449, or via email at [bwebb@sremsc.org](mailto:bwebb@sremsc.org).

Warm Regards,



Brian L. Webb, FF2/MICP

Assistant Regional EMS Training Coordinator

January 6, 2005

Janice Bates  
Anchorage School District  
Health Services  
4600 DeBarr Road  
Anchorage, AK 99519-6614

Dear Janice,

The American Heart Association (AHA) is a leader in the development and training of Emergency Cardiovascular Programs. As Alaska's Regional Manager for AHA training programs I was impressed to learn that the Anchorage School District currently supports the AHA's courses for teachers and nurses. However, I was surprised to learn that students are not required to learn a life saving skill as well. I would therefore like to seek approval for both the American Heart Association's Heartsaver CPR in Schools and CPR for Family and Friends Courses.

It has been proven that if a child learns the importance of a skill and the skill itself by the time they complete high school, they have a good chance of remembering it for the rest of their lives. Ultimately, this could save thousands of lives and empower these individuals to be able to take action in an emergency situation.

The Heartsaver CPR in Schools course teaches adult and pediatric CPR to middle- and high-school students, the warning signs of cardiac arrest, choking and stroke. Students of this course are taught the chain of survival, signs of choking in children, reducing risk of injury and sudden infant death syndrome. The CPR for Family and Friends teaches lay rescuers including school children, parents and grandparents CPR and foreign-body airway obstruction relief, as well as signs of a heart attack, cardiac arrest & stroke.

Enclosed is a booklet providing an overview of the AHA's lay responder courses. The booklet provides information on the course content, course length and the requirements for receiving a course completion card. Also enclosed, a student book for CPR in Schools for you to review--books cost only \$1 through our distributors listed on the back.

Should you require additional information about the American Heart Association's courses please feel free to contact me at 800-562-6718 extension 8667.

Sincerely,

Bobbie Stanage  
Regional Manager, Alaska, Idaho/Montana Regions  
Emergency Cardiovascular Care Programs  
American Heart Association

March 2005

## Anchorage School District POSITION STATEMENT: SB 4

W) 907-742-4322 (F) 907-742-4417  
Wiget\_Larry@asdk12.org

TO: SENATE HESS COMMITTEE  
FROM: LARRY WIGET, DIRECTOR, GOVERNMENT RELATIONS  
SUBJECT: SB 4 - AN ACT REQUIRING CPR AND FIRST AID-  
CERTIFICATIONS FOR ISSUANCE OF A SECONDARY SCHOOL  
DIPLOMA.

While the Anchorage School District appreciates the value of an individual having basic first aid knowledge, we do not support Senate Bill , which requires certification in basic first aid and cardiopulmonary resuscitation (CPR) before graduation at the high school level.

Our schools are focused on increasing academic achievement and the requirements of the No Child Left Behind federal legislation. Our students now must take 22.5 credits, in addition to passing the High School Graduation Qualifying Examination, in order to graduate. **Requiring certification in basic first aid and CPR would impose an unfunded mandate upon our schools that have neither the resources or the space, nor the time within the school day, in which to fulfill this mandate.**

We do not have the certified instructors who need to be recertified every two years, to meet the requirement. Furthermore, the approximately 3,500 students each year that would be required to take the required course would find that their standard first aid certificate is valid for three years, but that their adult CPR/AED certification is valid for only one year.

Certification in first aid/CPR is available from local agencies such as the American Red Cross for those individuals willing to obtain it.

The Anchorage School District opposes requiring basic first aid and CPR certification as a requirement for graduation from high school.

**MATANUSKA-SUSITNA BOROUGH SCHOOL DISTRICT**

Office of Public Information

501 N. Gulkana • Palmer, Alaska 99645

Phone: 907-746-9251 • Fax: 907-761-4076

March 11, 2005

*Senate HESS Committee  
State Capitol  
Juneau, AK 99801*

Dear Members of the Senate HESS Committee:

On behalf of the Mat-Su Borough School District, I would like to comment on proposed legislation to mandate CPR/First Aid as a requirement for a high school diploma (SB4). While we support the need for a citizenry that can respond in times of crisis, we feel strongly that CPR and First Aid training should be a community-based initiative rather than a school-based mandate. We are concerned the underlying cost and logistics of implementing such a mandate would detract from initiatives geared toward improving the teaching and learning of academic subjects.

It is unreasonable to assume the implementation of a Red-Cross approved CPR/First Aid Certification program in schools would be without cost. Districts would be required to set aside professional development time for teachers to be trained and certified as trainers. If such training were scheduled during the school year, it would displace important professional development specifically designed to improve classroom instruction. Any training conducted outside the 180-day school year would require funding to pay for extended contracts. Red Cross CPR/First Aid classes are typically limited to no more than 15 students for every 1 instructor. Class sizes at the high school level average between 26-35 students. Logistically and financially, this creates a problem. Presumably all costs associated with testing materials, the issuance of Red Cross certification cards, and purchase of CPR dummies and necessary cleaning materials will not be the responsibility of the American Red Cross. The necessary funding would be taken from district operation funds.

In Mat-Su Schools, Health is a required course for graduation and is typically completed by students in their ninth-grade year. Our Health curriculum is periodically reviewed by our professional curriculum council to ensure alignment to state and national standards. This curriculum includes instruction in basic first aid, prevention of hazards, and personal safety. The minimum eight-hour training required for Red Cross certification and subsequent testing would demand the dedication of several weeks of classroom instruction solely to that process (please keep in mind that most classes meet for an hour only two to three times per week). As such, students would miss out on other important aspects of the health curriculum as outlined in state and national standards, to include but not limited to:

- Identifying, evaluating, and preventing practices associated with high-risk lifestyles and the control of disease
- Facts about substance use and abuse
- Fitness and nutrition
- Human growth and development, to include emotional health and well-being
- Identifying and evaluating the roles and influences of public and private organizations which contribute to the well-being of communities (i.e. Red Cross)

- more -

*"Developing Productive Citizens for an Ever-Changing World"*

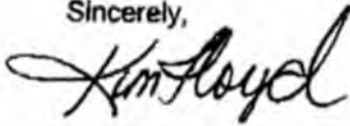
*MSBSD Public Comment - SB 4 p.2*

Our district currently offers EMT I & II courses as electives through our Career & Technical Education programs, along with the coursework necessary for licensing as a Certified Nursing Assistant. While we prepare students for success in these areas, we stop short of mandating testing for professional certification. This remains a personal choice for every student.

While we applaud Senator Cowdery's efforts to improve the safety of Alaska's residents, we are understandably resistant to additional unfunded mandates for schools. We believe CPR/First Aid Certification is best taught to and by community volunteers in a community forum. Further, we strongly oppose any linking of such certification as a requirement for a high school diploma.

Thank you for your consideration.

Sincerely,



Kim Floyd  
Public Information Specialist/Legislative Liaison

SEARCH

DONATE

HELP

CONTACT AHA

SIGN IN

HOME

American  
Asso  
Lea

ADVANCED SEARCH

Feedback

Subscriptions

Archives

Search

Search  
Result

# Circulation

## citeTrack

Let the  
article  
find you!

Published online before print January 5, 2004,  
doi:10.1161/01.CIR.0000109486.45545.AD  
(*Circulation*. 2004;109:278-291.)  
© 2004 American Heart Association, Inc.

AHA Scientific Statement

## Response to Cardiac Arrest and Selected Life- Threatening Medical Emergencies

The Medical Emergency Response  
Plan for Schools: A Statement for  
Healthcare Providers, Policymakers,  
School Administrators, and Community  
Leaders

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

### This Article

- ▶ [Full Text \(PDF\)](#)
- ▶ [All Versions of this Article:](#)  
109/2/278 most recent  
[01.CIR.0000109486.45545.ADv1](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)
- ▶ [Citation Map](#)

### Services

- ▶ [Email this article to a friend](#)
- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)

### PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Hazinski, M. F.](#)

**Key Words:** AHA Scientific Statements • heart arrest • pediatrics • resuscitation • defibrillation

▲ <a href="#">Top</a>
• <a href="#">Introduction</a>
▼ <a href="#">Background</a>
▼ <a href="#">Life-Threatening Emergencies in...</a>
▼ <a href="#">Current Level of School...</a>
▼ <a href="#">School Medical Emergency...</a>
▼ <a href="#">Potential Costs of Proposed...</a>
▼ <a href="#">Legislative Mandates and Funding...</a>
▼ <a href="#">Conclusions</a>
▼ <a href="#">Appendix 1</a>
▼ <a href="#">Appendix 2</a>
▼ <a href="#">References</a>

## ► **Introduction**

This document introduces a public health initiative, the Medical Emergency Response Plan for Schools. This initiative will help schools prepare to respond to life-threatening medical emergencies in the first minutes before the arrival of emergency medical services (EMS) personnel.

This statement is for healthcare providers, policymakers, school personnel, and community leaders. It summarizes essential information about life-threatening emergencies, including details about sudden cardiac arrest (SCA). This statement describes the components of an emergency response plan, the training of school personnel and students to respond to a life-threatening emergency, and the equipment required for this emergency response. Detailed information about SCA and cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) programs is provided to assist schools in prioritizing and preparing for emergencies to maximize the number of lives saved.

Life-threatening emergencies can happen in any school at any time. These emergencies can be the result of preexisting health problems, violence, unintentional injuries, natural disasters, and toxins. In recent years, stories in the lay press have documented tragic premature deaths in schools from SCA, blunt trauma to the chest, firearm injuries, asthma, head injuries, drug overdose, allergic reactions, and heatstroke. School leaders should establish an emergency response plan to deal with life-threatening medical emergencies in addition to the emergency plan for tornados or fires.

This statement has been endorsed by the following organizations: American Heart Association (AHA) Emergency Cardiovascular Care Committee, American Academy of Pediatrics, American College of Emergency Physicians, American National Red Cross, National Association of School Nurses, National Association of State EMS Directors, National Association of EMS Physicians, National Association of Emergency Medical Technicians, and the Program for School Preparedness and Planning, National Center for Disaster Preparedness, Columbia University Mailman School of Public Health. This statement was also reviewed by the Centers for Disease Control Division of School and Adolescent Health.

This statement includes all of the recommendations made in the 2001 Guidelines for Emergency Medical Care in School published by the American Academy of Pediatrics.<sup>1</sup> It is consistent with the position of the AHA statement on use of AEDs in children,<sup>2</sup> the National Association of School Nurses' statement on the use of AEDs in schools,<sup>3</sup> the statement from the National Association of EMS Physicians about the use of AEDs in children,<sup>4</sup> the emergency planning in athletics statement of the National Athletic Trainers' Association,<sup>5</sup> and the American Lung Association Asthma Alert for Teachers.<sup>6</sup>

## ► **Background**

## Magnitude of the Problem

School nurses, athletic trainers, and teachers are often required to provide emergency care during the school day and for extracurricular activities, including sports. In a survey of elementary and high school teachers in the Midwest, 18% of all teachers surveyed indicated that they personally

provided some aspect of emergency care to more than 20 students each academic year, and 17% indicated that they had responded to  $\geq 1$  life-threatening student emergency during their teaching career.<sup>7</sup> A survey of school nurses in New Mexico documented that each year, 67% of schools activated the EMS system for a student and 37% of the schools activated the EMS system for an adult.<sup>8</sup> Unfortunately, data on the type and severity of emergency calls from schools to EMS systems are limited. A review of the medical literature yielded no published reports of the national frequency and causes of life-threatening medical emergencies in schools. Information in the present statement was gathered from the medical literature, regional and statewide surveys, and registries of isolated problems.

School medical emergencies can involve students or adults. All schools have adult faculty and staff, and most schools host large numbers of adults during extracurricular activities (eg, sports events, drama productions, community meetings). As noted above, each year, more than one third of schools may have an emergency that involves an adult and requires activation of the EMS system.<sup>8</sup> The data on adult life-threatening medical emergencies in schools were derived from the most frequent causes of death in adults reported by the National Center for Health Statistics<sup>9</sup> and the most common causes of work-related fatalities.<sup>10,11</sup>

▲ [Top](#)

▲ [Introduction](#)

• [Background](#)

[Life-Threatening Emergencies In...](#)

[Current Level of School...](#)

[School Medical Emergency...](#)

[Potential Costs of Proposed...](#)

[Legislative Mandates and Funding...](#)

[Conclusions](#)

[Appendix 1](#)

▼ [Appendix 2](#)

▼ [References](#)

## ► **Life-Threatening Emergencies in Children and**

<input type="checkbox"/> <a href="#">Top</a>
<input type="checkbox"/> <a href="#">Introduction</a>
<input type="checkbox"/> <a href="#">Background</a>
• <a href="#">Life-Threatening Emergencies in...</a>
<input type="checkbox"/> <a href="#">Current Level of School...</a>
<input type="checkbox"/> <a href="#">School Medical Emergency...</a>
<input type="checkbox"/> <a href="#">Potential Costs of Proposed...</a>
<input type="checkbox"/> <a href="#">Legislative Mandates and Funding...</a>
<input type="checkbox"/> <a href="#">Conclusions</a>
<input type="checkbox"/> <a href="#">Appendix 1</a>
▼ <a href="#">Appendix 2</a>
▼ <a href="#">References</a>

## Adolescents

### Noncardiac Causes of Emergencies

In children and young adults, injuries cause more childhood deaths than all other diseases combined.<sup>9</sup> Unless an injury involves *commotio cordis* (a sudden blow to the chest), injury deaths typically are associated with difficulty breathing or development of shock (low blood pressure) due to blood loss. In such cases, the heart often slows and then stops so that the cardiac arrest is a secondary (rather than a primary or sudden) event.<sup>12</sup> Victims of injuries require early activation of EMS, support of breathing, and control of hemorrhage and are unlikely to need treatment with a defibrillator.

The AHA modified the Adult Chain of Survival to emphasize the prevention of injuries and other causes of death and the need for immediate bystander CPR for children.<sup>12</sup> The links in the AHA Infant and Child Chain of Survival are as follows:

1. Prevention of injury and other causes of cardiac arrest
2. Early CPR
3. Early activation of the EMS system
4. Early advanced care

The Intermountain Injury Control Research Center at the University of Utah compared statewide reasons for EMS dispatch for children 5 to 18 years of age at schools with reasons for EMS dispatch for children at nonschool locations during a 3-year period (see [Table 1](#)).<sup>13</sup> Injuries accounted for a greater proportion

of school-based EMS calls than other EMS calls for children; most school injuries occurred during sports activities, and 11 resulted in permanent paralysis.<sup>13</sup>

View this **TABLE 1. Chief Complaints<sup>a</sup> of School Versus Nonschool EMS Dispatches, State of Utah, 1994–1996**  
table:  
[\[in this window\]](#)  
[\[in a new window\]](#)

During the 3-year study period, the Intermountain Injury Control Research Center documented 3 chief medical complaints for school EMS dispatches for children unrelated to injury: breathing difficulty (18.4%), seizure (16%), and other illness (12.3%).<sup>13</sup> These complaints are consistent with the causes of school deaths reported in the lay press: severe asthma, anaphylaxis (severe allergic reaction), choking, drug overdose, and heatstroke. These causes of arrest require recognition of the emergency and first aid, which may include administration of medications at the scene (eg, use of the victim's inhaler for severe asthma or use of an epinephrine autoinjector for anaphylaxis), cooling of heatstroke victims, opening of the airway, possible CPR (especially rescue breathing), and rapid transport to an appropriate medical facility. These treatments are time dependent. For the child to survive, the school must have a plan to ensure that trained rescuers identify the emergency and act quickly in a coordinated fashion to provide appropriate treatment within a few minutes.

Because injuries are the most common life-threatening emergencies encountered in children and adolescents in or out of schools, teachers, school nurses and physicians, and athletic trainers should know the general principles of first aid (eg, how to ensure scene safety and assess responsiveness, how to use personal protective equipment when in contact with blood or other body fluids, when and how to phone the EMS system, and when it is acceptable to move a victim). In addition, first aid rescuers must be able to control bleeding, recognize

and treat shock, immobilize the spine, warm hypothermia victims, cool heatstroke victims, detect and treat hypoglycemia, support the airway, and provide CPR and use an AED when needed. These skills are taught in 1-day first aid courses that teach first aid, CPR, and AED use.

#### *Children With Special Healthcare Needs*

Children with special healthcare needs have chronic physical, developmental, behavioral, or emotional conditions and require health and related services of a type or amount not usually required by typically developing children.<sup>14-16</sup> These children may need emergency care for acute, life-threatening complications that are unique to their chronic conditions (such as severe asthma or obstruction of a tracheostomy airway), or they may develop progression of underlying respiratory failure or neurological disease. However, approximately half of EMS responses to children with special healthcare needs are unrelated to the child's special needs and include traditional causes of EMS calls, such as injury.

When a child with special healthcare needs or any illness with life-threatening complications attends school, the school nurse should have access to specific medical information about the child's baseline condition, the medical plan of care, the child's current medications, and potential complications or signs of deterioration. The healthcare provider guiding the child's care should provide information to school personnel about emergency actions.

A standardized form, the Emergency Information Form, was developed by the American Academy of Pediatrics and the American College of Emergency Physicians and is available on the World Wide Web.<sup>16</sup> In most instances, the school nurse is responsible for interpreting the Emergency Information Form and developing an individual emergency care plan that is specific to the school environment.<sup>17,18</sup>

The school should have specific instructions about whom to contact for emergencies and when such contact should be made.<sup>18</sup> If the child has a tracheostomy, everyone responsible for the child's care at school should be taught to assess airway patency, clear the airway, and provide CPR with the artificial airway. If the child has asthma, the school nurse and any teacher

responsible for the child's care should be able to recognize wheezing and signs of breathing difficulty and should know to follow the asthma action plan for the child.<sup>6</sup>

If the physician who cares for the child, the child's parents, and the child (as appropriate) have made a decision to limit resuscitation efforts or withhold resuscitation attempts, the physician should write a Do Not Attempt Resuscitation (DNAR) or "no-CPR" order specifically for use in the out-of-hospital setting. The child's primary caretaker, the school, and the EMS systems for the child's home and school should have copies of these orders.

#### *SCA in Children and Adolescents*

SCA is the sudden cessation of cardiac activity so that the victim becomes unresponsive, with no normal breathing and no signs of circulation. Unless the victim receives immediate CPR and other treatment to restore normal cardiac activity, he or she will die. Although the precise incidence of SCA in children is unknown, it is not a leading cause of death in children and young adults.

Response to SCA is a major focus of this statement. Although SCA is relatively uncommon in children and young adults, victims are more likely to survive SCA than prehospital traumatic cardiac arrest if they receive prompt support and treatment.

When SCA does occur in children and young adults, it may be precipitated by ventricular fibrillation (VF) or rapid ventricular tachycardia (pulseless VT). These abnormal heart rhythms in children are typically caused by inherited or congenital cardiac conditions or by acute medical problems that cause inflammation of the heart. Examples of conditions that may be familiar to school nurses, physicians, and parents include long-QT syndrome, hypertrophic cardiomyopathy, abnormal development of the coronary arteries, aortic dissection, myocarditis, and congenital aortic stenosis.<sup>19</sup> Many of these conditions will not be detected during routine screening for school physicals or sports activities,<sup>20,21</sup> so SCA may be the first sign of these problems. Vigorous exercise appears to act as a trigger for lethal arrhythmias.<sup>21</sup>

SCA may also result from *commotio cordis*, a blow to the chest that causes VT or VF. Each year  $\approx$ 5 to 10 cases of *commotio cordis* are reported nationwide for victims of all ages.<sup>21-23</sup>

A statewide survey of SCA in athletes in Minnesota conducted by Maron et al<sup>24,25</sup> was the basis for estimating the risk of SCA in high school athletes, which is thought to be 0.5 to 1.0 per 100 000 high school athletes (or 1 per 200 000 to 1 per 100 000) per year.<sup>21,25</sup> This risk is  $\approx$ 1/100 to 1/200 of the risk reported in the adult population 35 years of age and older.<sup>26</sup> In 1999, an estimated 5 000 000 athletes competed in varsity athletics in 34 486 public and private high schools throughout the United States. Extrapolation from the Maron Minnesota data predicted  $\approx$ 25 to 50 episodes of SCA nationwide among all high school athletes per year.

The National Center for Catastrophic Sports Injury Research (NCCSIR) tracks voluntary reports of serious injuries and deaths that occur during training or competition in male and female high school and college sports.<sup>27</sup> The NCCSIR reports deaths attributable to an injury (direct injury death) and those not attributable to an injury (indirect nontraumatic death). In 2000, the NCCSIR reported 15 deaths of high school athletes nationwide: Twelve deaths were caused by SCA (indirect nontraumatic death), 2 deaths resulted from direct injury with *commotio cordis* (blow to the chest), and 1 death resulted from a brain injury.<sup>28</sup> The 14 reported cardiac deaths among 5 000 000 high school athletes are lower than the 25 to 50 fatalities predicted by the Maron Minnesota data and yield an incidence of 0.28 cardiac deaths per 100 000 high school athletes, or 1 death per 357 000 high school athletes.

Over a 10-year period from July 1983 to June 1993, the NCCSIR reported 126 nontraumatic sports deaths in high school athletes and 34 deaths in college athletes, or an average of 16 reported deaths per year nationwide.<sup>29</sup> Most of these deaths were caused by cardiovascular conditions, especially hypertrophic cardiomyopathy and congenital anomalous coronary arteries. Estimated death rates in male athletes were 5-fold higher than those in female athletes (0.747

versus 0.133 per 100 000 athletes per year;  $P < 0.0001$ ) and 2-fold higher in male college athletes than in male high school athletes (1.45 versus 0.66 per 100 000 athletes per year;  $P < 0.0001$ ).<sup>29</sup>

The NCCSIR database includes only voluntary reports of deaths or injuries at athletic activities sanctioned and sponsored by high schools and colleges. It does not include deaths or injuries that occur during routine class hours, physical education classes, or pickup sporting activities. Despite these limitations, the NCCSIR represents the best ongoing source of data on high school athletic injuries and death.

There is little information about SCA among high school students who do not compete in athletics or about SCA among elementary school students. Although SCA has been reported in nonathletic adolescents during sedentary activities, the risk of SCA appears to be lower in high school students who do not play competitive sports than in athletes.<sup>21,24,30</sup> When the limited data from EMS systems are examined,<sup>31</sup> the risk of SCA in elementary school-age children appears to be much lower than that reported in high school-age students who are not athletes and substantially lower than that reported in high school athletes. Because the Maron and NCCSIR registries provide the most concrete data available, the risk of SCA of 0.5 to 1.0 per 100 000 (or 1 per 200 000 to 1 per 100 000) children and young adults is used for calculations in the present statement. This figure will likely *overestimate* the incidence of SCA, particularly in elementary school children and adolescents who do not participate in athletics.<sup>21</sup>

As in an adult, if a child develops SCA caused by VF or pulseless (rapid) VT, immediate bystander CPR and early defibrillation are needed. AEDs are computerized defibrillators designed for use by lay rescuers to treat SCA. The AED provides voice and visual prompts to guide the rescuer. When attached with adhesive pads to an unresponsive victim in cardiac arrest, the AED analyzes the victim's heart rhythm, determines if a shock is needed, charges to an appropriate shock dose, and prompts the rescuer to deliver a shock. The AED delivers a shock only if VF or rapid VT is present.

The US Food and Drug Administration has now cleared several AEDs for use in children younger than 8 years of age. Two of these devices have been shown to accurately identify VF and rapid VT in young children and are also accurate in identifying pediatric rhythms that do not require defibrillation.<sup>32,33</sup> When used with a designated pediatric pad-cable system, these AEDs deliver an energy dose that is smaller than that delivered with adult pads. The AHA<sup>2</sup> and the National Association of EMS Physicians<sup>4</sup> state that AEDs may be used with CPR for treatment of prehospital cardiac arrest (victims who are unresponsive, with no breathing and no signs of circulation) in children 1 to 8 years of age. The AHA continues to recommend the use of CPR with AEDs for treatment of cardiac arrest in children 8 years of age and older and in adults.<sup>34</sup>

### **Life-Threatening Emergencies in Adults**

#### *Noncardiac Life-Threatening Emergencies in Adults*

In developing the 2000 international guidelines for CPR and emergency cardiovascular care,<sup>11</sup> the AHA and the International Liaison Committee on Resuscitation (ILCOR) identified the leading causes of death in persons 25 to 64 years of age. The 10 leading causes of death are malignancy, heart disease, unintentional injury, suicide, stroke, diabetes, liver disease, human immunodeficiency virus (HIV), respiratory disease (bronchitis, emphysema, and asthma), and homicide. The leading causes of work-related fatalities are transportation incidents (41%); assaults and violence (20%); contacts with objects and equipment, including poisons (16%); environmental exposure (12%); falls (10%); and fires and explosions (3%).<sup>10,11</sup>

Adult workplace emergencies are likely to be representative of life-threatening emergencies among adults who work in schools. Rescuers responding to these emergencies must recognize the condition, notify the EMS system when appropriate, and provide basic first aid until EMS providers arrive. First aid rescuers must know the general principles for all emergencies, such as how to ensure scene safety, how to assess responsiveness, how to use personal protective equipment when in contact with blood or other body fluids, when and how to phone the EMS system, and when it is acceptable to move a victim. In

addition, as noted above, first aid rescuers must be able to control bleeding, recognize and treat shock, immobilize spine, warm hypothermia victims, cool heatstroke victims, detect and treat hypoglycemia, support the airway, and provide CPR and use an AED when needed.

#### *SCA in Adults*

SCA is a leading cause of death for adults  $\geq 35$  to 40 years of age and is the most common cause of death for those  $> 45$  years of age. In the United States each year, SCA occurs with an estimated frequency of  $\approx 1$  per 1000 persons  $\geq 35$  years of age per year.<sup>34-37</sup> These statistics can be used to estimate the risk of adult SCA for any location on the basis of the number of adults aged 35 and older typically present at that location and the number of hours they are present at that location per year (see Appendix 1). Note that the risk of SCA in adults is  $\approx 100$  to 200 times the estimated risk in children and adolescents and those under 35.<sup>21,24-</sup>

26

VF and, much less frequently, pulseless VT are the most common abnormal heart rhythms that cause SCA in adults, although they are not the only rhythms that cause cardiac arrest.<sup>31</sup> VF and pulseless VT are treated with a defibrillator that delivers a shock to the heart. This shock briefly "stuns" the heart, eliminating the abnormal rhythm and allowing the heart's normal rhythm to resume.

Victims of SCA due to VF/VT can survive if bystanders and EMS providers act quickly. Bystanders must be able to recognize cardiac arrest, phone the EMS system, perform CPR, and use the AED. The AHA has depicted these rescue steps of early recognition, early access to the EMS system, early CPR, and early defibrillation as links in the Adult Chain of Survival<sup>38</sup>:

1. Early recognition of the emergency and early activation of the EMS system
2. Early CPR
3. Early defibrillation
4. Early advanced life support

Studies have shown that immediate bystander CPR and defibrillation within minutes provide the best chance of survival from sudden VF cardiac arrest in adults. Survival rates of 50% to 74% have been reported when adult victims of

VF SCA collapse in front of witnesses and receive immediate bystander CPR plus defibrillation within 3 to 5 minutes of collapse. These adult survival rates have been documented in settings such as airports,<sup>39</sup> commercial airlines,<sup>40,41</sup> casinos,<sup>42</sup> and communities with police who are trained and equipped to respond to SCA.<sup>43-46</sup>

- [Top](#)
- [Introduction](#)
- [Background](#)
- [Life-Threatening Emergencies in...](#)
  - [Current Level of School...](#)
- [School Medical Emergency...](#)
- [Potential Costs of Proposed...](#)
- [Legislative Mandates and Funding...](#)
- [Conclusions](#)
- [Appendix 1](#)
- [Appendix 2](#)
- [References](#)

## ► **Current Level of School Preparation for Medical Emergencies**

School nurses, teachers, athletic trainers, coaches, and staff are responsible for the physical well-being of a large portion of the nation's children for many hours each day. Schools now employ fewer nurses, and school nurses often rotate between schools, so some schools are without professional medical coverage for hours or days every week.<sup>7</sup> Much of the responsibility for the physical care of students during a typical school day now rests with teachers, athletic trainers, coaches, and staff. In a random survey of elementary and high school parents and teachers in the Midwest, 80% of parents indicated that they assumed that teachers were adequately trained in first aid and CPR, but one third of the teachers surveyed had no training in first aid, and 40% had never completed a

course in CPR.<sup>7</sup> A survey in New Mexico confirmed that few school nurses and staff had any emergency training.<sup>8</sup>

In a survey of all high schools in Washington State, 80% of teachers thought that CPR training was important, yet 35% of schools provide no CPR training for students.<sup>47</sup> When the schools were asked to identify factors that would be most likely to encourage schools to offer CPR training for students, 24% indicated that funding would be helpful, and 17% indicated that a requirement or credit for CPR training would encourage CFR training.<sup>47</sup>

▲ <a href="#">Top</a>
▲ <a href="#">Introduction</a>
▲ <a href="#">Background</a>
▲ <a href="#">Life-Threatening Emergencies in...</a>
▲ <a href="#">Current Level of School...</a>
• <a href="#">School Medical Emergency...</a>
▼ <a href="#">Potential Costs of Proposed...</a>
▼ <a href="#">Legislative Mandates and Funding...</a>
▼ <a href="#">Conclusions</a>
▼ <a href="#">Appendix 1</a>
▼ <a href="#">Appendix 2</a>
▼ <a href="#">References</a>

## ▶ **School Medical Emergency Response Plan: Recommended Elements**

The goal of the Medical Emergency Response Plan for Schools initiative is to encourage every school to develop a program that reduces the incidence of life-threatening emergencies and maximizes the chances of intact survival from an emergency. Such a program will have the potential to save the greatest number of lives with the most efficient use of school equipment and personnel.

The authors and endorsing organizations of the present statement recommend the following core elements of a school medical emergency response plan:

1. *Effective and efficient communication throughout the school campus:* Establish a rapid communication system linking all parts of the school campus, including outdoor facilities and practice fields, to the EMS system. Establish protocols to clarify when the EMS system and other emergency contact people should be called. Determine the time required for EMS response to any location on campus and establish a method to efficiently direct EMS personnel to any location on campus. Create a list of important contact people and phone numbers with a protocol to indicate when each person should be called. Include names of experts to help with postevent support.
2. *Coordinated and practiced response plan:* Develop a response plan for all medical emergencies in consultation with the school nurse, the school or school athletic team physicians, athletic trainers, and the local EMS agency, as appropriate. EMS and emergency dispatchers (9-1-1 centers) should be made aware of the type of rescue equipment available at the school and its location. Practice the response sequence at the beginning of each school year and periodically throughout the year, and evaluate and modify it as needed.
3. *Risk reduction:* Prevent injuries through safety precautions in classrooms and on the playground. Identify students, faculty, and staff with medical conditions that place them at risk for development of life-threatening conditions, and train and equip personnel to provide the appropriate response for those conditions.
4. *Training and equipment for first aid and CPR:* Ensure that many teachers are trained as CPR and first aid instructors. Train school staff and graduating high school students in CPR. Teachers and staff trained in first aid should, at a minimum, be equipped and able to give first aid for the following life-threatening emergencies until EMS rescuers arrive:

- a. Severe breathing problems, including asthma, choking, and anaphylaxis (severe allergic reaction)
- b. Chest pain and heart attack
- c. Diabetes and low blood sugar
- d. Stroke
- e. Seizure
- f. Shock
- g. Bleeding
- h. Head and spine injury
- i. Broken bones
- j. Burns
- k. SCA
- l. Temperature-related emergencies (heatstroke and hypothermia)
- m. Poisoning

5. *Implementation of a lay rescuer AED program in schools with an established need:* If the school determines that a lay rescuer AED program is needed, school administrators and medical personnel should include the AED program in the school medical emergency response plan and practice and evaluate response to SCA using the AED. EMS and 9-1-1 centers should be notified of the specific type of AED and the exact location of the AED on the schoolgrounds. Rescuers

who are unfamiliar with the school can call 9-1-1 and receive instructions from 9-1-1 dispatchers to find and use the AED. AED programs should have the following elements:

- a. Medical/healthcare provider oversight
- b. Appropriate training of anticipated rescuers in CPR and use of the AED
- c. Coordination with the EMS system
- d. Appropriate device maintenance
- e. Ongoing quality improvement program

A medical emergency response plan must start with development of a good system of communication. It also requires development and coordination of a planned and practiced response, risk reduction, and training and equipment.

#### **Effective and Efficient Communication**

An effective emergency response plan begins with establishment of rapid, effective communication to and from every location on the school campus. This network can be built with cellular telephones, walkie-talkies, alarms, or intercom systems to establish contact with a central location that is responsible for the EMS call. Several such systems may work, as long as the EMS system can be contacted immediately and directed to the site of any emergency without delay. Critical delays will result if teachers or coaches must send a runner from a distant practice field or track to the school office, so this method of communication is not recommended. The local EMS system may be able to provide valuable input in development of the plan.

Every school district and each school should identify persons who will be authorized and trained to make decisions when health emergencies occur. The names, telephone numbers, and locations of these persons should be provided to all staff members, with a protocol indicating when each authority should be called.

All school staff should be taught when to telephone the EMS service (phone 9-1-1), when to phone other school or medical personnel, where to find the emergency equipment, how to clear crowds, and how to direct arriving EMS personnel to all sites on campus. These efforts will ensure that the entire staff is engaged in the response plan.

The lay press has reported unfortunate delays in emergency response when student calls for help are dismissed as pranks. The school must sensitize teachers, staff, and students to the gravity of reports of emergencies. Student reports of emergencies must be taken seriously, and disciplinary consequences must follow any false claims.

### **Coordinated and Practiced Response Plan**

#### *Plan Development*

The school nurse and school or team physicians and athletic trainers should be involved in development of the medical emergency response plan. The plan should specify their participation in the emergency response and in documentation, evaluation, and postevent support of students, teachers, and staff.

The school should coordinate the plan with the local EMS agency and integrate it with the local EMS system. School administrators should invite input from both the emergency medical dispatch system and the EMS system that provides responding units to the school. The local EMS agency should be encouraged to conduct an on-site "preincident" visit to identify problems, such as restrictive passages through the school parking lot or buildings or any areas that are inaccessible to a crew in an ambulance.

Written notification protocols should list the appropriate contact people and their contact telephone numbers and should specify when parents, school district personnel, and the EMS system should be contacted. Forms should be available to document the details of an emergency event. A complete Emergency Information Form should be available for reference during emergencies involving children with special healthcare needs.

The school should give a copy of the final emergency response plan to the local EMS system and local EMS dispatcher. This plan should include the location and type of emergency equipment. The school should notify the local fire/emergency rescue agency if any faculty, staff, or students at the school are dependent on mechanical ventilation or other electrical equipment so the agency is prepared to provide support in the event of a power failure or other emergency. National crisis

plans now require schools to keep detailed floor plans and maps of the school property for use in emergencies. Much of this information can be entered into computer-aided dispatch systems at the 9-1-1 dispatch center and linked to the school's address and telephone numbers. Entering this information will permit 9-1-1 dispatchers to have immediate access to this information during the emergency call.

#### *Plan Practice and Evaluation*

Each school should practice and evaluate the response plan with participation of the school nurse, school or team physicians, athletic trainers, and the local EMS system. This plan should target a collapse-to-EMS call time of  $\leq 1$  minute, provision of first aid and CPR when appropriate, and a collapse-to-first shock time of  $< 3$  minutes for SCA if an AED program is on site.<sup>34</sup>

Designated rescuers should participate in unannounced practice drills on a regular basis (eg, at the beginning of every school year and repeated during the school year) to promote an efficient, organized, and timely response to life-threatening medical emergencies anywhere on the schoolgrounds. These practice drills should include real-time participation by students, staff, and faculty who feign emergency conditions or participate as members of the response or communication team. The drill should use manikins to simulate victims in cardiac arrest. The AHA has created scenario cards that may be used for these practice drills. The scenario cards are available in the AHA instructor materials.<sup>48</sup>

Scenarios are also in the ARC first aid/CPR/AED program instructor materials.

During each practice drill, an observer should record the following:

1. *Critical time intervals:* time from development of the emergency to 9-1-1 call; time from development of the emergency to administration of first aid; time from collapse to bystander initiation of CPR (if indicated); time from collapse in cardiac arrest to delivery of first shock (if an AED program is in place); and time to arrival of EMS personnel at the victim's side.
2. *Availability and function of emergency equipment at the school.*

After each drill, review performance of each component of the plan, and revise the school emergency response plan as needed to improve performance and efficiency.

When a life-threatening medical emergency does occur at the school, administrators should hold a postevent meeting of all involved personnel. This meeting should be scheduled within a few days of the emergency and should provide the opportunity for a frank discussion of what worked, what didn't work, and how to improve the response plan. This will enable revision of the response plan to better serve the next emergency.

Postincident counseling should be available to staff and students whenever a fatal or near-fatal event occurs at the school. Most school districts have designated counseling staff to handle such needs. The school supervisor should identify resource personnel before an emergency arises and should have contact numbers for use in the event of an emergency. The local children's hospital, medical center, community mental health agency, or local EMS agency may be able to provide names of experts.

### **Risk Reduction**

The Medical Emergency Response Plan for Schools should strengthen each link in the Chain of Survival. The first link in the AHA Infant and Child Chain of Survival is prevention of life-threatening events through education about injury prevention and identification, evaluation, and support of children at risk. Some injuries that occur on schoolgrounds result from high-risk behavior that begins at home. Schools should provide injury prevention information to children and families about the importance of age-appropriate restraint devices in automobiles, use of bicycle helmets, use of smoke detectors, and use of trigger locks and lock boxes for firearms stored at home.

Injury prevention in schools requires proper equipment maintenance and supervision of students during shop and laboratory classes, playground time, physical education classes, and team sports. Students and teachers should wear proper safety gear during shop, laboratory, and physical education classes. All

class equipment should be kept in good working order and any dangerous or flammable chemicals stored in locked cabinets.

The ground surface under swing sets, climbing bars and slides, and gymnastic equipment should be sufficiently cushioned to reduce impact and prevent injuries. All playground equipment should be constructed without sharp edges and should be properly maintained.

As noted above, the school should be aware of any children with medical conditions that may have life-threatening complications. If a student has a health problem that could be life threatening, the school nurse should develop an emergency care plan for that child. The child's teachers and the school nurse should be prepared to activate that plan when needed. The school should ask the parents to consult the child's physician to determine if the school should maintain an extra supply of medications (eg, bronchodilator administered by metered-dose inhalers with spacers for children with severe asthma) for use during emergencies or exacerbations. The school must be in compliance with state laws and regulations and school board policies for use of these medications. If appropriate, information about the child's condition should also be conveyed to the local EMS agency.

Routine medical care of many conditions, such as asthma, can modify the course of the disease and make acute exacerbations less likely. Teachers should consult the child's parents and physician to identify and eliminate factors in the classroom or school environment that may act as triggers for asthma or severe allergic reactions.<sup>6</sup>

#### **Training and Equipment for First Aid and CPR**

As part of the Medical Emergency Response Plan, the school nurse and physician, the athletic trainer, and several faculty members should be trained in and equipped to provide first aid and CPR. Ideally, the school should establish a goal to train every teacher in CPR and first aid and train all students in CPR. All students, faculty, and staff should know how to access the EMS system. The

school should maintain a first aid kit, and school staff must know where emergency equipment is stored.

The authors and endorsing organizations of this statement have not specified the number of teachers and staff to be trained in first aid and CPR at each school. There should be a sufficient number of trained faculty, staff, and students, however, to ensure that a trained rescuer can get the appropriate equipment and reach any area of the campus within 90 seconds of the onset of the emergency. Persons trained in CPR and first aid should therefore be carefully selected on the basis of their likely location on the school campus each day, their typical responsibilities, and their likely response interval in the event of an emergency. An office assistant may be able to respond more quickly to an emergency than a teacher who is often off campus for meetings. In a typical school, at least 2 teachers and 2 alternate rescuers will likely be required to ensure coverage for every location and every school day. The school should also evaluate the number of students and adults present on schoolgrounds during afterschool activities, and the plan should cover these time periods if needed.

#### *Training in First Aid and Universal Precautions*

All school nurses, physicians, athletic trainers, and several faculty and staff should be trained and equipped to provide first aid because immediate first aid can prevent a life-threatening problem from becoming a fatal one. Potential rescuers must be able to recognize and provide initial treatment for breathing emergencies such as choking, severe asthma, or severe allergic reaction; injury emergencies such as burns, shock, head or spinal cord injury, or bleeding; neurological emergencies such as seizures and stroke; temperature-related emergencies such as heatstroke and hypothermia; and poisoning. Certified athletic trainers are educated to care for student athletes with sports-related injuries and emergencies.<sup>5</sup> Coaches should be trained to provide CPR (with an AED if indicated) and first aid for common and life-threatening sports-related emergencies.<sup>49</sup>

Every school should comply with precautions to minimize the risk of blood-borne pathogens. In some states, public schools must comply with the Occupational

Safety and Health Administration (OSHA) standards with regard to blood-borne pathogens.

Several courses have been developed in recent years to provide training in first aid, including precautions to minimize risk of blood-borne pathogens. The AHA and ARC have developed first aid courses to teach these essential assessment, knowledge, and first aid skills to workplace rescuers.<sup>50</sup> The University of Connecticut College of Continuing Studies developed the School Nurse Emergency Medical Services for Children (SNEMS-C) Program.<sup>51</sup> The National Standards for Athletic Coaches provide information needed by coaches to deal with sports-related injuries.<sup>49</sup> Visual aids such as first aid posters can be displayed in conspicuous places to remind faculty, staff, and students of critical first aid and CPR skills.

#### *Training In CPR*

CPR training is important for several reasons. First, rapid bystander CPR, particularly provision of rescue breathing, may prevent breathing problems and other emergencies from progressing to cardiac arrest. Second, CPR has been shown to improve the chance of survival in adults and children with cardiac arrest. In one recent study of children who required CPR in the out-of-hospital setting,  $\approx 1$  child was resuscitated by bystander CPR alone for every 7 children who required CPR by EMS personnel.<sup>52,53</sup> Immediate bystander CPR for adults with SCA can double survival.<sup>40</sup>

Because bystander CPR is so critical in improving survival from SCA, the AHA recommends that all high school students be trained in CPR. To facilitate this training, the AHA and ARC developed school CPR courses with course materials tailored for teaching children in a classroom setting.<sup>54</sup> The Maternal and Child Health Bureau has also developed a course to teach CPR in schools.<sup>55</sup> Such training should increase the likelihood of immediate initiation of bystander CPR for victims of SCA and should contribute to improved survival rates. CPR training may also have less quantifiable benefits. For example, CPR training implies an underlying commitment to fellow citizens and may encourage and model a willingness to provide assistance to victims of medical emergencies.

### *Equipment*

Equipment is an important part of any medical emergency response plan, beginning with a first aid kit and CPR barrier devices and may include an AED. First aid and CPR-AED equipment should be carefully selected on the basis of the types of emergencies likely to develop at the school. For example, if football, gymnastics, or diving events take place on campus, a backboard with restraints should be available to immobilize an athlete with suspected spine injury. Epinephrine can be lifesaving for victims with anaphylaxis (severe allergic reaction), such as that resulting from a bee sting, a severe food allergy, or latex allergy. Some states and EMS systems encourage the use of epinephrine autoinjectors for emergency treatment of severe allergic reactions. If state and EMS regulations allow, these autoinjectors can be included in the school's emergency equipment, and staff should be trained in their use. A physician's prescription is required to purchase autoinjectors. To check state regulations about epinephrine autoinjectors, contact the AHA at 1-888-277-5463.

A physician may determine that other medications, such as bronchodilators (medicines that open narrowed airways) administered by metered-dose inhalers with spacers, oxygen, and glucose or glucagon (a rapid-acting hormone for treatment of severe low blood sugar), should be kept at the school for at-risk students or staff. In this case, the student's family or a member of the school staff is responsible for providing the medication. A school nurse must be regularly available to give medications or delegate administration of medications if allowed by local law and school district policy.

School personnel first aid training includes recognition of low blood sugar (hypoglycemia) and administration of a source of rapid-acting sugar. The parent of the diabetic child is responsible for providing the school with such foods as fruit juice, packets of sugar, or a (nondiet) soft drink to be administered by trained staff if the child shows signs of hypoglycemia.

Any equipment is useless unless it is readily accessible in an emergency and rescuers are appropriately trained to use it. First aid and resuscitation equipment should be placed in a central, highly visible, and accessible location near a

telephone, and all school faculty, staff, and students should know where the equipment is stored. If the school is large, it may be necessary to keep duplicate equipment in several areas. Because injuries are most likely to occur during athletic activities, the athletic facilities should be considered high-priority areas for placement of equipment such as the first aid kit and spine backboards.

General emergency equipment should not be placed in a locked office or cabinet because this might delay emergency care. Unfortunately, accessibility will provide opportunities for theft or vandalism of equipment. This problem has been solved in many schools and public places such as airports by the use of mounted cabinets with audible alarms that sound when the cabinet door is opened. These cabinets cost ≈\$250 to \$500.

If medications such as epinephrine autoinjectors, bronchodilators, and glucagon are included in the school medical emergency response plan or a child's emergency care plan, these items should be kept in a location that is readily available to trained rescuers and the school nurse but not accessible by students and the general public. If a student has a healthcare problem that may require the use of emergency medications, the school nurse must develop a plan to make the medication available to the child when needed.

EMS and 9-1-1 centers must know in advance where emergency equipment is kept on school property. This can prevent failure to use available equipment (such as an AED) because responders are unaware of the existence or location of the equipment. If the 9-1-1 center knows where emergency equipment is located on the school grounds, the dispatcher can tell the rescuer where to find the equipment and can instruct rescuers in the use of the equipment before the arrival of EMS personnel.

#### **Implementation of a Lay Rescuer AED Program in Schools With a Documented Need**

To determine the need for an AED program at any location, the ECC Guidelines 2000<sup>34</sup> recommend consideration of lay rescuer AED program implementation in locations with at least one of the following characteristics:

1. The frequency of cardiac arrest events is such that there is a reasonable probability of AED use within 5 years of rescuer training and AED placement. This probability is calculated on the basis of 1 cardiac arrest known to have occurred at the site within the last 5 years, or the probability can be estimated on the basis of population demographics (see Appendix 1); **or**
2. There are children attending school or adults working at the school who are thought to be at high risk for SCA (eg, children with conditions such as congenital heart disease and a history of abnormal heart rhythms, children with long-QT syndrome, children with cardiomyopathy, adults or children who have had heart transplants, adults with a history of heart disease; etc); **or**
3. An EMS call-to-shock interval of <5 minutes *cannot* be reliably achieved with conventional EMS services **and** a collapse-to-shock interval of <5 minutes *can* be reliably achieved (in >90% of cases) by training and equipping laypersons to function as first responders by recognizing cardiac arrest, phoning 9-1-1 (or other appropriate emergency response number), starting CPR, and attaching/operating an AED.

When funds are limited, but there is a desire to establish some AED school programs, priority should be given to establishing programs in large schools, schools used for community gatherings, schools at the greatest distance from EMS response, and schools attended by the largest number of adolescents and adults (eg, high schools and trade schools).

The 5 components of an AED program are

1. Medical/healthcare provider oversight
2. Appropriate training of anticipated rescuers in CPR and use of the AED
3. Coordination with the EMS system
4. Appropriate device maintenance
5. An ongoing quality improvement program to monitor training and evaluate response with each use of the device

If an AED program is established at the school, the AED should be placed in a central location that is accessible at all times and ideally no more than a 1- to 1 1/2-minute walk from any location. The device should be secure and located near a telephone (eg, near the school office, library, or gymnasium) so that a rescuer can activate the EMS system and get the AED at the same time. The EMS system should be notified of the establishment of the AED program, and the emergency medical dispatcher should know the specific type of AED at the

school and where it is located. Several staff members should be trained in both CPR and use of the AED.

Recent federal legislation provides guidance for AED programs in schools. HR 389-PL 108-41 enabled the creation of an information clearinghouse with funds from the AED program in the Public Health Security and Bioterrorism Response Act (PL 107-188). The new law allows creation of a national resource center to provide schools with information and technical guidance to set up AED programs, giving schools access to the appropriate training, fundraising techniques, and other logistics required to make such programs successful. The national resource center is modeled after Project ADAM (Automatic Defibrillators in Adam's Memory), a joint venture between the Children's Hospital of Wisconsin and David Ellis, a friend of the project's namesake, Adam Lemel, who collapsed and died during a high school basketball game. Senate Bill 231 is a companion measure. For information about the clearinghouse, visit <http://healthlink.mcw.edu/article/962141848.html>. For information about establishing an AED program, call the AHA (1-877-242-4277), or visit the AHA website at <http://www.americanheart.org/cpr>.

- [Top](#)
- [Introduction](#)
- [Background](#)
- [Life-Threatening Emergencies in...](#)
- [Current Level of School...](#)
- [School Medical Emergency...](#)
  - [Potential Costs of Proposed...](#)
- [Legislative Mandates and Funding...](#)
- [Conclusions](#)
- [Appendix 1](#)
- [Appendix 2](#)
- [References](#)

## ► **Potential Costs of Proposed School Emergency Response Plans**

The goal of a school emergency response plan is to ensure an organized, efficient, and effective response to life-threatening emergencies. Although the response plan is designed for all life-threatening emergencies, an estimation of program cost per life saved can be made by using the example of the cost per survival of a high school victim of SCA in a school with a medical emergency response plan that includes a lay rescuer AED program. This example will enable calculation using the costs of all potential elements described in this statement: the costs of training 4 teachers to serve as first aid, CPR, and AED rescuers and instructors every 2 years; training half of the student body in CPR and use of an AED every year; establishment of a lay rescuer AED program; and all first aid, CPR, and AED equipment needed.

#### **Estimation of Costs per School**

In 1999 there were 13 369 163 high school students in the United States. These students were enrolled in 23 825 public schools and 10 661 private schools, or a total of 34 486 high schools, with an average of 390 students per school. For this example, an estimated annual incidence of SCA of 0.5 to 1.0 in 100 000 high school students was used.<sup>25</sup> This predicts that there may be  $\approx$ 133 to 266 SCAs in high school students nationwide per year, or 1 event per 259 to 547 schools. Note that this number of cardiac arrests has not been reported, but it is used as a starting number that likely overestimates the number of cardiac arrests in high school students.

The program costs per life saved are estimated by calculating the cost of all equipment plus the cost of training at each school and then multiplying the result by the number of schools required to save 1 life annually. Costs are depreciated over the anticipated lifespan at an annual rate of 3%.<sup>56</sup>

The following assumptions are made to estimate the annual costs of the program (Table 2).

- If students in the high school receive formal CPR training during their freshman and junior years,  $\approx$ 200 students per school (freshman class size tends to be larger than subsequent years) will be trained each year in an average high school.

- At each school, 2 teachers and 2 alternate teachers are trained as first aid plus CPR and AED rescuers and instructors (total of 4 instructors). The provider plus instructor training requires 2 days. The calculated costs include funds for hiring 4 substitute teachers during training. If the teachers are trained on professional development days, substitute teachers will not be required, and the money allocated for substitute teachers is not needed.
- The school medical emergency response plan is developed as part of school faculty (salaried) responsibilities, so no additional costs are incurred for development of the plan, practice drills, and evaluation.
- The healthcare provider who coordinates the medical emergency response plan does so on a voluntary basis.
- The school establishes an AED program and purchases an AED that has been cleared by the US Food and Drug Administration for use in children and documented to be accurate in children. In addition, the school purchases several adhesive AED pads for adults and children plus an equipment pack, at a total cost of ≈\$2500 amortized over 8 years. Note that if the school does not establish an AED program, the \$2500 cost may be subtracted from the costs listed in [Table 2](#).
- The average school purchases 8 manikins, 8 AED trainers, and 2 CPR instructor toolkits. The manikins and trainers are replaced every 6 years, and the instructor toolkits are replaced every 5 years when the AHA revises its resuscitation guidelines and training materials.
- The school purchases and equips a first aid kit (see Appendix 2) with a Mylar blanket, dressings, 2 epinephrine autoinjectors, and bronchodilator inhalers with spacers. The \$300 estimated total cost of the kit is amortized over 10 years (\$30 per year). The medications and some supplies are replaced annually at an estimated annual cost of \$120 (total of \$150 per year). The parents are responsible for the purchase of prescription medications that are routinely used by students at the school.
- The school provides CPR student manuals, CPR cards (credentials), and barrier devices for each student trained and will train half of all students (average of 200 manuals and cards per school) every year.
- The school purchases 2 copies of a CPR reference text for the students each year.
- All training materials are available for use in practice drills. As a result, the practice drills are conducted without additional costs.

View this **TABLE 2. Approximate Annual Costs\* per School for School Medical Emergency Response Plan With Student CPR and AED Education and a Lay Rescuer AED Program**  
[table:](#)  
[\[in this window\]](#)  
[\[in a new window\]](#)

### Estimation of Costs per Life Saved

To determine the potential cost per life saved (premature death prevented), an incidence of SCA of 0.5 to 1.0 in 100 000 high school students per year was used, or 1 episode of SCA annually for every 259 to 547 schools. A successful program should have a goal of saving at least half of the potential victims of SCA (50% survival to hospital discharge),<sup>57,58</sup> or 1 life saved every year for every 518 to 1094 schools. Because each school must invest  $\approx$ \$3065 per year, this would result in a cost per life saved of \$1 587 670 to \$3 353 110 (\$3065 annual cost per school x 518 to 1094 schools per life saved). Note that the actual cost per life saved is probably higher than this number because the predicted risk of SCA reported was for athletes, and that number is probably higher than the actual risk of SCA for all high school students. If fewer students experience cardiac arrest than the number predicted, there will be fewer potential lives saved and a higher cost per life saved. These figures should be reevaluated when more data are available.

These numbers provide only the cost of life saved at the school and do not include the EMS costs or costs of hospital care, implantable defibrillator insertion, or rehabilitative care for the victim. They do not include subsequent lost wages for parents of the victim, the victim, and other family members. These calculations do not consider life-years saved or potential contributions to society by a surviving victim. A child survivor of SCA may live a long life. If the victim of SCA survives neurologically intact and lives for 50 years after the event, then the cost per life-year saved may be very low.<sup>59</sup>

These calculations do not account for the effect on overall public health that would result from training all high school students in the United States to perform CPR. Benefits to society from training a large number of adolescents in CPR cannot be accurately quantified. These calculations also neglect the potential benefit of a school AED program that results in resuscitation of an adult coach or spectator. School insurance pools have recognized the benefits and risk

reduction of having trained personnel and equipment available for life-threatening situations.<sup>60</sup>

A challenge to estimating the cost-effectiveness of this program is the lack of published data on the effectiveness of first aid and CPR training and the use of AEDs in schools. This analysis predicts a 50% survival rate from SCA using published models from adult victims.<sup>57,58</sup> When school emergency response plans are enacted, it will be important to collect data about activation of the plans and outcomes and revise these cost estimates as needed.

An international multicenter trial of lay rescuer AED programs, funded by the AHA, AED manufacturers, and the National Heart, Lung and Blood Institute (NHLBI), is evaluating the effectiveness and cost of lay rescuer AED programs. The trial is a prospective, multicenter, randomized clinical study testing whether volunteer, nonmedical responders can improve survival from out-of-hospital cardiac arrest by using AEDs. The study has just concluded data collection at 24 field centers in ≈1000 community units (eg, apartment or office buildings, gated communities, sports facilities, senior centers, shopping malls, etc) in the United States and Canada. The primary end point is the number of out-of-hospital cardiac arrest victims who survive to hospital discharge. Secondary end points include neurological status, health-related quality of life, cost, and cost-effectiveness. Data collection for this trial was completed in September 2003, and the results should be published shortly.<sup>61</sup>

#### **School Data Collection**

More information is needed about the frequency of life-threatening emergencies, including SCA in schools. Schools must collect or provide reports of emergencies. These reports will have maximum impact if collected and verified using the model of Mason and colleagues.<sup>75,28</sup> Only through the gathering of reliable data can we begin to accurately determine the frequency of life-threatening emergencies and plan the best interventions to save lives.

<input type="checkbox"/> <a href="#">Top</a>
<input type="checkbox"/> <a href="#">Introduction</a>
<input type="checkbox"/> <a href="#">Background</a>
<input type="checkbox"/> <a href="#">Life-Threatening Emergencies in...</a>
<input type="checkbox"/> <a href="#">Current Level of School...</a>
<input type="checkbox"/> <a href="#">School Medical Emergency...</a>
<input type="checkbox"/> <a href="#">Potential Costs of Proposed...</a>
• <a href="#">Legislative Mandates and Funding...</a>
<input type="checkbox"/> <a href="#">Conclusions</a>
<input type="checkbox"/> <a href="#">Appendix 1</a>
<input type="checkbox"/> <a href="#">Appendix 2</a>
<input type="checkbox"/> <a href="#">References</a>

## ▶ **Legislative Mandates and Funding for School Medical Emergency Response Plan**

Legislative efforts to save the lives of children who develop life-threatening emergencies at schools should support an approach that is most likely to save the greatest number of lives. A planned program should be required, as should appropriate training and equipment.

Unfunded legislative mandates, particularly those that address the purchase of equipment rather than programs of planned response, will limit effectiveness and place a substantial burden on school budgets. Many school budgets are already stretched to provide basic education, achieve student test score goals, and meet the needs of a wide range of students, including those with special healthcare and learning needs. Unfunded mandates for emergency care in schools are likely to be met with minimal effort that does not include the development of planned and practiced responses and the training and retraining that are most likely to save lives. Policymakers must work with schools to ensure that long-term solutions are enacted to be sure that programs are sustained indefinitely. Local and state policymakers should support an immediate response to life-threatening medical emergencies with the following priorities for policy and appropriations:

1. Establishing an efficient and effective campus-wide communication system for each school
2. Developing a coordinated and practiced medical emergency response plan with the school nurses, physicians, athletic trainers, and the EMS system, with appropriate evaluation and quality improvement
3. Reducing the risk of life-threatening emergencies by identifying students at risk and ensuring that each has an individual emergency care plan and by reducing the risk of injury and disease triggers at the school
4. Training and equipping teachers, staff, and students to provide CPR and first aid
5. Establishing an AED program in those schools with a documented need

Note that some schools throughout the United States have implemented some components of the medical emergency response plans without the use of public funds. Fundraising for such activities can take many different approaches, including sponsorship by local organizations (eg, Rotary Club, Parent-Teacher Association) and student activities (eg, car washes, bake sales). Such programs do not ensure predictable coverage for the greatest number of students, however.

- [Top](#)
- [Introduction](#)
- [Background](#)
- [Life-Threatening Emergencies in...](#)
- [Current Level of School...](#)
- [School Medical Emergency...](#)
- [Potential Costs of Proposed...](#)
- [Legislative Mandates and Funding...](#)
- [Conclusions](#)
- [Appendix 1](#)
- [Appendix 2](#)
- [References](#)

## ► **Conclusions**

On any given day, as much as 20% of the combined US adult and child population can be found in schools. Life-threatening emergencies in schools are relatively uncommon, but when they do occur, they require a planned, practiced,