



Memorandum

TO: Public Safety Finance
Strategic Support Committee

FROM: Darryl Von Raesfeld
Fire Chief

SUBJECT: HEART SAFE CITY PROPOSAL

DATE: September 6, 2007

Approved

Ray Winer

Date

9/6/07

RECOMMENDATION

The San Jose Fire Department recommends the City of San Jose adopt the goal of becoming a **Heart Safe City**. The Department also recommends a Task Force be formed to identify partnerships, both public and private, to support the concept and define the key elements of a Heart Safe City. The Fire Department is proposing to take the lead in establishing the Task Force which would report back to City Manager within six months.

Improving cardiac safety in the City of San Jose can be accomplished using the current training and experience of the San Jose Fire Department in conjunction with expansion of existing programs. Two fundamental elements should be the focus of the program:

1. **Prevention** –reduce cardiac medical emergencies through education and training.
2. **Response** –improve outcomes subsequent to a cardiac event through public participation.

BACKGROUND

Heart disease is the leading cause of death in the United States for both men and women and is the underlying cause of death in approximately one out of every three deaths in the United States. The following data illustrates the scope of the problem faced by the San Jose Fire Department (FY 0506):

| | | |
|-----------------------------|--------|----------------------------------|
| Total Incidents | 73,775 | |
| EMS Incidents | 48,678 | 66% of Total Incidents |
| Cardiac-related Incidents | 3,645 | 7% of EMS Incidents |
| Cardiac Arrest Incidents | 771 | 21% of Cardiac-related Incidents |
| Patients Improving in Field | 91 | 12% of Cardiac Arrests |

Although no clear standard exists defining a Heart Safe City, review of Heart Safe City Programs in Seattle and San Diego indicate San Jose already possesses several program elements found in those cities.

CHAIN OF SURVIVAL*

There are four links in the Chain of Survival: 1) Early Access, 2) Early Cardiopulmonary Resuscitation (CPR), 3) Early Defibrillation, and 4) Early Advanced Care.

1. Early Access

Recognize an Emergency.

First, witnesses must recognize the emergency. Everyone should be able to recognize the warning signs of a heart attack, cardiac arrest, stroke, or choking. Anyone who is unresponsive should receive emergency care. Heart attack, cardiac arrest, stroke and choking can each cause the victim to be unresponsive. Although many conditions — not just cardiac arrest — can cause unresponsiveness, all unresponsive victims will benefit from activating the Chain of Survival.

Call 911.

As soon as an emergency is recognized, call 911. When a bystander calls 911, let the dispatcher ask questions. While the dispatcher interviews the caller, he or she will enter the data on a computer. The information given will then be relayed to responding paramedics.

2. Early CPR

Begin Cardiopulmonary Resuscitation (CPR).

CPR is the critical link that buys time between the first link (call 9-1-1) and the third link (use the Automatic External Defibrillator [AED]). The earlier the patient receives CPR, the greater his or her chance of survival. CPR keeps oxygenated blood flowing to the brain and heart until defibrillation or other advanced care can restore normal heart action.

Dispatcher-Assisted CPR and Defibrillation and Enhanced 9-1-1.

In San Jose, emergency dispatchers are taught how to help callers give emergency care. With help from the dispatcher, callers can give CPR (and use an AED). Instructions are basic and simple, but they will help the victim until EMS personnel arrive. CPR needs to be started immediately!

3. Early Defibrillation

Use the Automated External Defibrillator (AED) to Treat Ventricular Fibrillation.

Many sudden cardiac arrest victims are in ventricular fibrillation (VF). VF is an abnormal, chaotic heart rhythm that prevents the heart from pumping blood. Victims must be defibrillated immediately to stop VF and allow a normal heart rhythm to resume. The sooner defibrillation is delivered with the AED, the better the victim's chances of survival. Several studies have documented the effects of bystander CPR and the effects of time-to-defibrillation on survival from sudden cardiac arrest (SCA).

* American Heart Association

For every minute that passes between collapse and defibrillation, survival rates from witnessed VF SCA decrease 7 to 10 percent if no CPR is provided. When bystander CPR is provided, the decrease in survival rates is more gradual and averages 3 to 4 percent per minute from collapse-to-defibrillation. CPR can double or triple survival from witnessed SCA at most intervals to defibrillation.

4. Early Advanced Care

Transfer to Advanced Care.

The fourth link in the Chain of Survival is advanced care. This link is provided by highly-trained Fire Department and ambulance paramedics. Paramedics provide advanced life support in addition to defibrillation and CPR, thus maximizing the chances the heart will respond successfully to treatment.

SAN JOSE SERVICE LEVELS

1. Early Access

San Jose Fire Communications operates as an “enhanced 911” public safety access point, allowing call takers to identify and verify the caller’s location and phone number automatically, thus ensuring emergency resources can be dispatched even if the caller is disconnected or otherwise prevented from completing the request for service. In addition, Fire Communications is an “Accredited Center of Excellence” due to its high level of compliance with medical dispatch protocols, high rate of accuracy in correctly identifying the nature of medical emergencies, and rigorously-applied ongoing quality management program. Finally, SJFD utilizes the Medical Priority Dispatch System (MPDS) to provide post-dispatch and pre-arrival instructions (e.g., CPR, Heimlich maneuver, etc.), which can be essential to a patient’s survivability.

2. Early CPR

San Jose Fire Department personnel train and certify approximately 1,000 citizens and City employees in AED/CPR/First Aid each year. In addition, approximately 25,000 to 40,000 people per year are certified as CPR providers in San Jose by training programs conducted by the Red Cross, American Heart Association, as well as corporate and for-profit training programs.

All 750 sworn members of SJFD are EMTs and more than 300 firefighters are Paramedics. EMTs are trained to the Basic Cardiac Life Support (BCLS) level, while Paramedics are certified in ACLS (Advanced Cardiac Life Support) and PALS (Pediatric Advanced Life Support).

3. Early Defibrillation

Since 2004, the number of AEDs deployed throughout the city has increased from 43 to 77. By the end of 2007, 20 additional AEDs will be deployed throughout the San Jose library system. In contrast, the City and County of San Diego through Project

Heart Beat has coordinated the deployment of more than 3,000 defibrillators since launching its program.

4. Early Advanced Care

San Jose Fire Department has at least one firefighter/paramedic on every on-duty engine and truck. Every engine and truck is equipped with a Lifepak Defibrillator/12-lead heart monitor as well as a full complement of cardiac drugs. These engine and truck companies are deployed among 31 fire stations located strategically throughout the city. Within two years, four more fire stations will be activated, which will bring the Department much closer to its goal of being at the scene of an emergency within eight minutes of the communication center receiving the request for service. Finally, five STAR (Supplemental Transport Ambulance Resource) Cars can provide ambulance transport for patients needing immediate delivery to a hospital.

PROGRAM GOALS

PREVENTION

The first line of defense against cardiac emergencies is prevention; and the first principle of prevention is to raise public awareness of the health threat posed by heart disease. Dissemination of this material could be accomplished in several ways. New material need not be created, but rather, existing material could be made available through:

1. Electronic Media

General information about heart disease could be provided. In addition, links to American Heart Association (AHA), American Red Cross (ARC), Center for Disease Control (CDC), as well as other entities can be established.

2. Printed Media

AHA, ARC, and AED-manufacturer printed materials can be distributed through community centers, schools, libraries, employee meetings, and the San Jose Fire Department Public Education Division.

3. Education

Expand and improve education and awareness efforts to reach all segments of the population: private citizens, students, employees, and seniors.

RESPONSE

The primary goal is to assure prompt action by bystanders, family members, friends and emergency first responders. In the case of sudden cardiac arrest, the key to survival is the time between the victim's collapse and the early administration of CPR and defibrillation.

1. Early Access

Improve awareness and understanding of the signs and symptoms of heart attacks and other causes of unresponsiveness so citizens can recognize a cardiac emergency more quickly and activate the emergency response system sooner. Train citizens to better understand emergency call-taker questions and provide appropriate responses.

2. Early Cardiopulmonary Resuscitation

An achievable five-year goal is to increase annual CPR training by 50%.

3. Early Defibrillation

The City of San Jose will soon have more than 90 AEDs deployed throughout the city. A worthy goal is to increase the number of AEDs by 10% per year for the next five years. The count is of AEDs in City buildings, we need to inventory AEDs in private buildings. This can possibly be accomplished through are Fire Prevention Inspection program.

4. Early Advanced Care

Work with the medical community to identify new technologies appropriate to use in the field. Identify safe and effective alternate deployment methods for distributing emergency resources for maximum effect.

BUDGET IMPACT

Funding sources need to be identified to support program administration and training activities. However, there are numerous grants available (government as well as private foundations) for Public Access Defibrillation programs. These grants cover such topics as program development, instructor preparation, instructional materials and public education, direct training delivery, and equipment purchases. Properly developed and packaged, corporate sponsorships are also a viable funding mechanism.

The final program design as developed by the Task Force will determine what, if any, impact the Heart Safe City program will have on the City budget.

SUMMARY

It is essential we partner with outside agencies, both public and private, to develop the framework for designating San Jose as a Heart Safe City. Community participation is essential for success of the San Jose Heart Safe City Task Force. Key participants will likely include the American Heart Association, American Red Cross, area hospitals, school district representatives, AMR, County EMS, Chamber of Commerce, civic-minded corporations, as well as other community and service organizations.

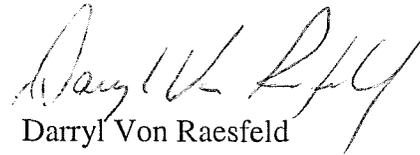
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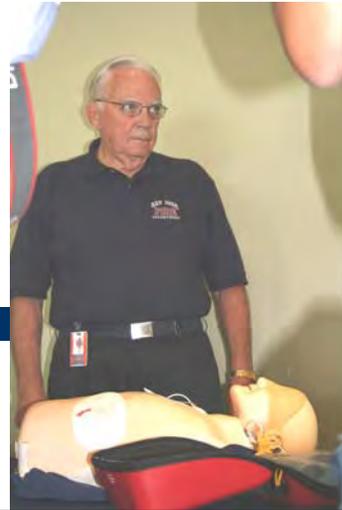
Finally, San Jose earning the designation of a "Heart Safe City" will support and reinforce its title of "Safest Big City in America."

A handwritten signature in black ink, appearing to read "Darryl V. Raesfeld". The signature is written in a cursive, flowing style.

Darryl Von Raesfeld
Fire Chief

“Heart Safe City” Update

What it means...



Background

- Heart disease is the leading cause of death
- Cardiac-related incidents in San Jose (FY05-06):
 - 3,645 or 7% of EMS incidents
 - 771 cardiac arrests last year
- No specific criteria for designation as “Heart Safe City”



Background

American Heart Association's "Chain of Survival"



- Early Access – Recognize and dial 911
- Early CPR – Recognize need and begin CPR
- Early Defibrillation – Use Automatic External Defibrillator (AED)
- Early Advanced Care – 8 minute response of Advanced Life Support (ALS)

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San Jose Service Levels

How's our chain?

- ☑ Early Access
 - Enhanced 911
 - Emergency Medical Dispatchers (EMD) provide CPR and AED phone instructions
- ☑ Early CPR
 - SJFD trains approx. 1,000 citizens/employees per year
 - 25,000 – 40,000 trained each year by AHA, Red Cross, and corporate programs

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San Jose Service Levels

How's our chain?

☑ Early Defibrillation

- 100+ AEDs deployed to date in public facilities
- Unknown number of AEDs in private facilities

☑ Early Advanced Life Support (ALS)

- Paramedic on every first responder unit
- Pediatric Life Support (PALS) and Advanced Cardiac Life Support (ACLS) trained
- ALS within 8 minutes for 78% of responses

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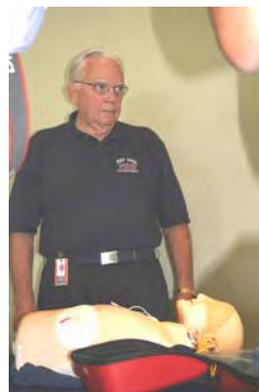
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Program Goals

Prevention – The First Line of Defense

- Electronic Media
- Printed Media
- Direct involvement in public education



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Program Goals Response

- Improve “Early Access” through increased awareness and understanding
- Improve “Early CPR” by increasing training
- Improve “Early Defibrillation” by increasing the number of deployed AEDs
- Improve “Early Advanced Care” by improving the deployment and management of resources



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Recommendations

- Establish a task force to:
 - Define “Heart Safe City” objectives
 - Identify program options and recommendations for:
 - Organization and governance
 - Funding (Partnerships with private sector)
- Use SJFD resources in conjunction with future program expansion to focus on:
 - Prevention – reduce cardiac emergencies
 - Response – improve public participation and SJFD response

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Thank You



Questions?

