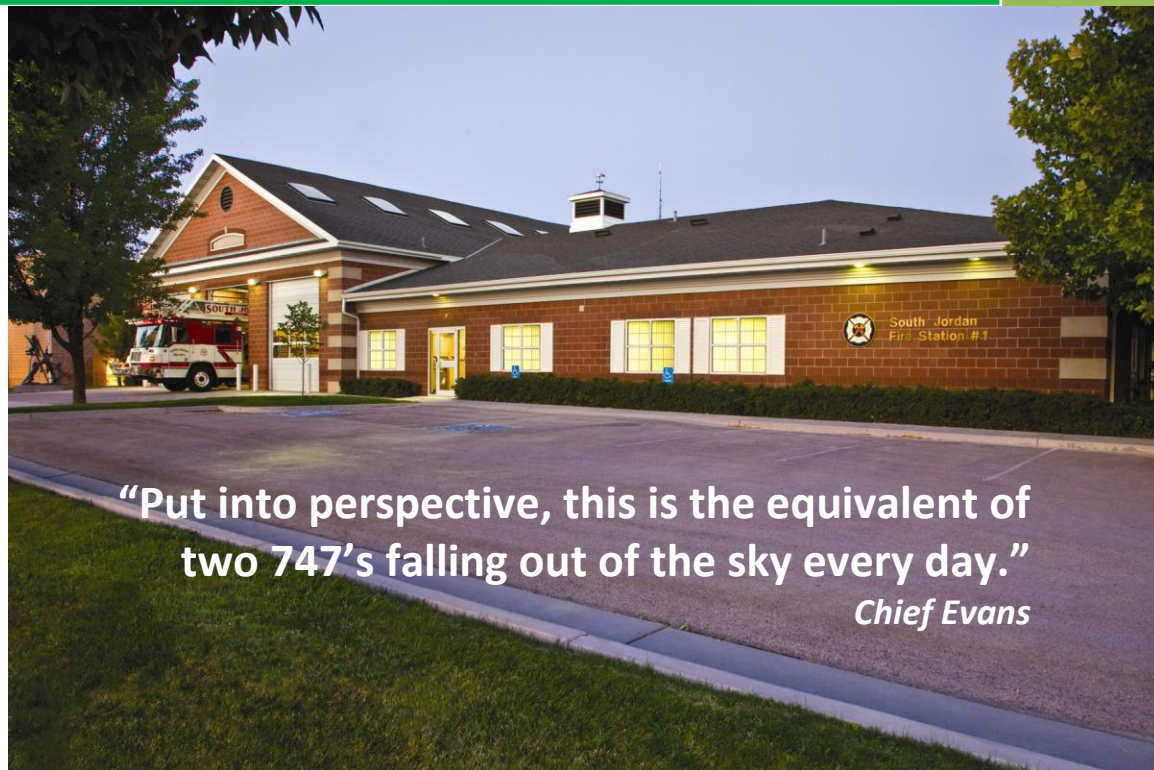


South Jordan City
1600 West Towne Center Drive
South Jordan, Utah 84095
(801) 254-3742
www.sjc.utah.gov

W. Kent Money, Mayor

John H. Geilmann, City Manager

Project Cardiac React



Project Leader

Chris Evans, Fire Chief
(801) 891-1362
cevans@sjc.utah.gov

South Jordan City Fire Department
10758 South 1700 West
South Jordan, Utah 84095

Presenters

Chris Evans, Fire Chief

Additional presenter to be determined

Keep the Beat – Project Cardiac React

Synopsis

Despite major advances in medical technology and emergency medical care, coronary heart disease continues to be the nation's leading cause of death.ⁱ It claims more lives each year than lung cancer, breast cancer, prostate cancer, fires, firearms, and AIDS combined. It knows no boundaries and as such impacts individuals of all age, gender, race and social status. While no community is exempt from this problem, the good news is every community has the ability to do something about it.

The numbers are staggering; in 2007, approximately 1.2 million Americans suffered a heart attack, of those about 425,000 died; more than 325,000 died from Sudden Cardiac Arrest (SCA) before they ever reached the hospital or while in the emergency room, and of the estimated 700,000 people who had a stroke, about 150,000 did not survive.ⁱⁱ

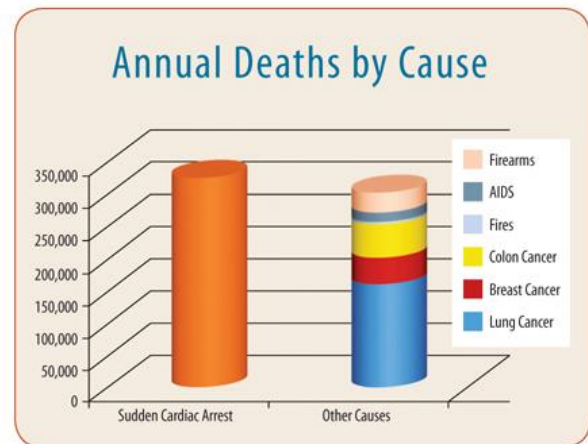
Heart Disease & Stroke

In the United States, each year about

- ❖ 700,000 people suffer a stroke
- ❖ 1.2 million Americans will experience a heart attack; about 425,000 will not survive
- ❖ 325,000 Sudden Cardiac Arrest (SCA) deaths occur out-of-hospital or in the emergency room

Over the past few decades Americans have invested billions of dollars in fire prevention and as result, the death toll from fire in the U.S. has been reduced to less than 6,000 people each year. Today, cardiovascular disease claims more lives every few days than fires do in an entire year.ⁱⁱⁱ In fact, in considering SCA alone, about 900 people die every day out of the hospital or in the

emergency room. Put into perspective this is the equivalent of two 747's falling out of the sky every day. Sadly, only about 5% to 8% of people who experience a SCA survive.^{iv} Fortunately, with the implementation of a few key strategies, every community has the ability to make a difference and save lives. According to the American Red Cross, with widespread implementation of public access defibrillators alone, more than 50,000 lives can be saved in the United States each year.^v



Through our experience with Project Cardiac React, in South Jordan City we have learned first-hand that communities will have a greater impact on the problem when they implement a public access defibrillator program along with other key strategies such as those included in South Jordan City Project Cardiac React.

Project Cardiac React is unlike any other program you will find in the Country. It is a community initiative that has been specifically designed to reduce heart damage, improve the quality of life, and increase survivability of individuals who have a heart attack, sudden cardiac arrest, or stroke while in South Jordan City. The program engages employees from nearly every City department, as well as residents

Keep the Beat – Project Cardiac React

and employees of local businesses to include them as a part of our emergency response team for a cardiovascular emergency.

While prevention is preferred, history has clearly demonstrated if we continue to focus on prevention alone little will change and hundreds of people will continue to die needlessly each day. As such, the solution designed and implemented by South Jordan City is comprehensive and includes activities in about ten different areas including but not limited to the following:

- An on-going community awareness campaign
- Widespread community training
- A Public Access Defibrillator (PAD) program
- A link to the local emergency medical dispatch system
- First responders and advanced life support with heart safe enhancements
- Definitive care that includes pre-hospital providers in the cardiovascular & stroke response team
- Modern cardiac survival laws and ordinances
- A quality assurance program
- A sustainability plan

As indicated, the program goal is to reduce heart damage, improve the quality of life, and increase survivability of individuals who experience a heart attack, sudden cardiac arrest or stroke while in South Jordan City.

To support the goal, Project Cardiac React has the following desired outcomes:

- ♦ At least 90% of the time, residents activate the 911 system for cardiovascular related emergencies in lieu of going to the hospital by a privately owned vehicle.
- ♦ At least 80% of the time, on a witnessed cardiac arrest, CPR is initiated in less than two minutes.
- ♦ When medically indicated, call-to-defibrillation time for a witnessed SCA is five minutes or less at least 80% of the time.
- ♦ On-scene time of emergency responders is less than fifteen minutes at least 90% of the time for ST Elevated Myocardial Infarction (STEMI) and stroke patients.
- ♦ When medically indicated, call-to-drug time for thrombolytic therapy is within the AHA standard at least 90% of the time.
- ♦ When medically indicated, call-to-balloon time is within the AHA standard at least 90% of the time.
- ♦ Improve the survival rate for witnessed SCA patients from 7% to 30% or greater.
- ♦ Inspire others and where feasible, provide resources to aid others with the implementation of similar programs within their community.

During the summer of 2006, Chief Evans began to develop the vision for Project Cardiac React. It quickly became clear that the solution would require an innovative

Keep the Beat – Project Cardiac React

approach and may take some time to develop and implement due to the scope of the project and associated expenses. The vision was developed, priorities were established, the vision was shared with stakeholders, and our employees as well as others outside of the City were engaged; as a result, the program quickly began to move from a vision to reality.

Implementation began in July of 2007. It has been phased in over a two year period as resources and funding allows. Today, we have implemented nearly every aspect of the original vision and are now beginning to expand into new areas.

The primary obstacles included time, money, and a lack of support by critical stakeholders within the community.

One of the first challenges was obtaining support from key individuals within the City. When the concept was informally presented it was not well received. In fact, the City Manager at the time was not in favor of moving forward with the program. As a result, additional time and effort was put into educating and obtaining buy-in from stakeholders. Following this, most embraced the concept however some were skeptical and did not believe we could pull it off due to the scope and start up cost of the program. In a short period of time we began to see positive outcomes in several areas of the program and today we enjoy tremendous support from our stakeholders.

As you can imagine it takes a significant amount of time to develop a program of this magnitude from the ground up. We were able to overcome it by engaging employees from multiple departments and at all levels within the organization. We have not cut or otherwise compromised any existing programs or services and the City has not

added any additional personnel as the result of this program.

The start-up cost was estimated at more than five hundred thousand dollars. This included equipment, software and other professional services. Through the use of grants, donations of money, equipment, software and in-kind services, public-private partnerships, and the use of existing funds from our normal operating budget, the implementation cost for the entire program was fully funded over a two year period. About eighty percent of this was provided for through grants, donations and partnerships. We have enjoyed tremendous support from a number of local businesses as well as other agencies and organizations outside of our community.

While the program was recently implemented, and some occupancies have until July of 2010 to comply with certain aspects of the program, we are well on our way to meeting the desired outcomes as outlined herein. Project Cardiac React has already reduced heart damage, increased survivability and/or improved the quality of life for several individuals within South Jordan City. We have several case studies that can be presented to demonstrate the power of Project Cardiac React and the impact it will have on the lives of others. While we have yet to realize the full potential of the program, it is already saving lives!

Keep the Beat – Project Cardiac React

Innovative/Creativity

Project Cardiac React is one the most comprehensive community based pre-hospital cardiovascular initiatives in the Country. It is innovative both in scope and approach. It is a model for other communities to follow. The inspiration for the program came from several local residents who survived a sudden cardiac arrest, more than two decades of personal observations while working in various aspects of public safety, and information obtained through extensive research.

The comprehensiveness of the program and involvement of the City are just two of the factors that set this program apart from other

“heart safe” initiatives. According to Sharon Brockett, American Heart Association Community Strategies Manager, “The South Jordan City Heart Safe Program is far and away ahead of any other heart safe program in the Western States Affiliate”.

Factors that make this program innovative include but are not limited to the following:

- It involves a wide variety of strategies related to prevention and the treatment of a heart attack, sudden cardiac arrest, and stroke.
- The initiative includes a collaborative effort involving multiple departments within the City, residents, business leaders, local hospitals, the emergency medical dispatch center, State Bureau of Emergency Medical Services, State Legislature, and local elected officials to name a few.
- Public-private partnerships are used to support the program.
- Most of the start-up expenses were provided through grants, donations and public-private partnerships.
- Public access AEDs are required for certain occupancies regardless of occupant load and all other existing and new public and private buildings with an occupant load of greater than one-hundred fifty people.
- City employees provide FREE support to assist local businesses and residents with establishing and maintaining an effective PAD program. Not only does this provide consistency within our community, but it can also save each business thousands of dollars.



Keep the Beat – Project Cardiac React

- The initiative involves the use of new technology and numerous service upgrades.
- To receive certain patients from South Jordan City Ambulances, hospitals have been required to enhance current services, implement new services or programs, and include pre-hospital providers in their cardiovascular team. Patients with a cardiovascular emergency are now transported to the closest appropriate facility.

When a person calls 911 for a cardiovascular emergency, they get few choices at that point. Community leaders have pre-determined what ambulance service will respond, the level of service to be provided by personnel on the ambulance, and if it is a true emergency the hospital to which the patient will be transported too. As such, when the customer does not get a choice, it better be nothing but the best. Patient outcomes are directly related to decisions made by the elected officials and other key individuals within the community long before the resident dials 911. In South Jordan City we get it, and as such, Project Cardiac React is just another example of our commitment to “astonish the customer”.

Citizen Outcomes

Whereas the program has been implemented over a two year period, and some businesses have until July of 2010 to comply with certain aspects of the program, we have yet to realize the full benefit of our efforts. However, we have already experienced positive outcomes within the community and beyond as the result of Project Cardiac React.

To date, most of the outcomes have been related to individuals who experience a heart

attack while in South Jordan City. We have a number of case studies that will show how the program has saved several lives and/or otherwise improved the quality of life for persons who have experienced a heart attack or cardiac arrest while in South Jordan City.

We have a fairly extensive list of outputs that have been accomplished over the past two years as well. A copy of which is available for your review upon request. It is through these outputs that we will enjoy greater success within the community in the future.

Several other communities within our area are now beginning to implement various aspects of the program. Further, we have received inquiries and requests for information from individuals across the Country.

Below you will find just a few of the comments that have been made about South Jordan Project Cardiac React.

“This collaborative program demonstrates our continued commitment to providing the best medical care,” said Dr. Bart Johansen, South Jordan City Fire Department Medical Director and Emergency Physician at Jordan Valley Medical Center.

Fred Lampropoulos, Chairman and CEO of Merit Medical Systems, Inc. wrote, “this initiative is a forward thinking plan which will help provide an important safety net for the citizens of South Jordan City. You are to be commended for your thoughtful effort in this regard.”

Keep the Beat – Project Cardiac React

Referring to a recent AED ordinance adopted by the South Jordan City Council, Dan Mohrbacher of AED Advocates wrote, “it is the most comprehensive AED ordinance I have seen to date internationally. You are going to save a lot of lives with this”.

“This program will make a difference in the lives of South Jordan citizens and is a true model for other communities” stated Sharon Brockett, Community Strategies Manager for the American Heart Association.

Results and Real World Practicality

While the frequency may vary depending on the size and demographics of a given community, as is the case in South Jordan City, most are likely to find that cardiovascular emergencies is one of the most frequent emergency calls that occurs within their community. Additionally, today a high percentage of patients still drive themselves to the hospital in lieu of calling 911 for cardiovascular emergencies. Cardiovascular disease is the leading cause of death in this Country and as such is likely to be the leading cause of death in many communities across the United States. Some accept it as a way of life and make assumptions that little can be done about it. This simply is not true.

Project Cardiac React is applicable to every community in this Country. Further, certain aspects of the program are applicable to many businesses or other occupancies. Just as smoke detectors, fire sprinklers and other fire safety related standards are now a minimum standard in occupancies throughout our Country, in the future the strategies found in Project Cardiac React will also become the minimum standard of care for a community.

Every community has residents and visitors whose life will somehow be impacted by a heart attack, cardiac arrest or stroke. Due to the scope and approach of the program, there is something in Project Cardiac React for every community regardless of size or location.

While at first glance the program may seem overwhelming to some, we have shown that by prioritizing the project, establishing effective partnerships, and engaging existing employees and others within the community it can be efficiently implemented. Some communities may have the capacity to implement it within a year or two while others may require more time. However, if they don't start nothing will change; and residents and visitors within their community will continue to die a premature death that in some cases could have been prevented.

The presentation is applicable for business leaders, elected officials, city administration and others who may serve as a champion to inspire others to develop, implement and/or manage a similar program within their community.

In addition to inspiring leaders to implement similar initiatives within their community, we are able to provide them with many of the tools or resources needed to do so. Our program material has been well organized and consolidated on a single CD that will be provided free of charge to attendee's.

Case Study Presentation

The presentation is intended to increase awareness of the problem and potential solutions, demonstrate the need for similar programs in every community, provide real life examples of the impact it is having on the lives of others, inspire and motivate

Keep the Beat – Project Cardiac React

attendees to become a champion, and provide an example of how one community has taken the program from a vision to reality.

A PowerPoint presentation will be used to assist with the presentation. Further, every attendee will be provided with a CD that contains the research material and all program material used in the development,

implementation, and maintenance of South Jordan City Project Cardiac React. The CD contains over one hundred forms, spreadsheets, contracts, presentations, research papers and other related material. All material is provided without condition and as such attendees are welcome to adjust the material as needed to meet the needs of their community or occupancy.

ⁱ Kung, Hoyert, Xu, Murphy. *Deaths: Final Data for 2005.* Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. National Vital Statistics Reports, Volume 56, Number 10, April 24, 2008.

ⁱⁱ American Heart Association, American Stroke Association. *Know the Facts, Get the Stats 2007*. 55-1041, December 2006.

ⁱⁱⁱ Lazar, Richard. *Legislative Strategies for Modernizing U.S. AED Laws.* December 2006.

^{iv} Heart Rhythm Foundation. *Sudden Cardiac Arrest Key Stats.*
<http://www.heartrhythmfoundation.org/facts/scd.asp> (accessed June 2008).

^v Gillespie, Bonnie Jean. *New Study Results Underscore Need for AEDs in Public Places.* American RedCross.
www.redcross.org/news/hs/cpraed/021022aed.html (accessed July 2007).