

EXCELLENCE IN  
 **FIRE**  
SERVICE-BASED  
**EMS** AWARDS  
PROGRAM

2011-13 BEST PRACTICES



MedicAlert®  
FOUNDATION



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F O U N D A T I O N

Dear Fire Service-Based EMS Advocates and Providers,

For the third straight year, the Excellence in Fire Service-Based EMS Awards Program has shined a spotlight on exceptional innovation by fire departments across our country. Established in 2010 by the Congressional Fire Services Institute (CFSI) and the MedicAlert Foundation, the Excellence Awards recognize outstanding achievements in emergency medical services by fire departments throughout the nation.

The Excellence Awards program was designed to achieve a dual purpose. The award serves as recognition of fire departments for developing innovative programs and procedures that have improved the quality of services provided to their local communities. The award also has a strong educational component by showcasing the best practices for other departments to review and implement and to enhance the care of the EMS services they provide.

Departments apply with the understanding and knowledge that all, or part, of the information they submit will be shared with fire departments across the country to encourage widespread consideration of these best practices. The awards are given to one department from each type of service: volunteer, career and combination.

The attached publication features a compendium of best practices taken from the applications received from the inception of the Awards Programs. We believe that this information can be beneficial for departments that are seeking ideas for improving their EMS systems.

We encourage you to read this compendium and to share it with your colleagues. Perhaps it will serve as a catalyst for change or new ideas intended to enhance your department's EMS program.

Moreover, we encourage you to consider applying for the Excellence in Fire Service-Based EMS Award if your department has developed a unique and innovative program that has improved emergency medical services in your community. Information about the awards program is available on both our websites – [www.cfsi.org](http://www.cfsi.org) and [www.medicalert.org/CFSI](http://www.medicalert.org/CFSI). If selected as an award recipient, your department would be recognized at the annual National Fire and Emergency Services Dinner held in Washington, DC before some of our nation's highest ranking political leaders and 2,000 leading fire service officials.

On behalf of our organizations, we thank you for your commitment and dedication to public safety.

Sincerely,



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*Pictured from left to right: Chris Neal, CFSI Board of Directors; Captain Paul Sloane; EMS Chief John Krumenacker; Andrew Wigglesworth, MedicAlert Foundation*

## 2013 BEST PRACTICES CAREER FIRE DEPARTMENTS

### **Miami-Dade Fire Rescue (MDFR) (2013 Excellence in Fire Service-Based EMS Award Recipient)**

By air, land or sea, Miami-Dade Fire Rescue (MDFR) serves 2.2 million residents with over 1 million annual visitors in a region covering 1,905 square miles.

MDFR responds to more than 200,000 medical aid calls each year and is recognized as one of the most cutting edge pre-hospital 9-1-1 emergency medical care providers in the country, conducting and participating in medical studies that help shape and improve patient outcomes as well as the future of EMS throughout the nation. Given its annual call volume, MDFR's EMS Divisions renewed its commitment to ensure employee safety when addressing exposures to blood or airborne pathogens by expanding and redesigning the 24/7 infection control program.

The Infection Control Program was designed to provide rapid treatment,

supportive education, psychological support and continuity of medical care to emergency responders. Protocols developed in the program allow for rapid triage, immediate administration of post exposure countermeasures, direct access to lab results and control of source results. Also, MDR's Infection Control Program works in concert with the Miami-Dade Department of Risk Management to share best practices, and align and streamline employee infectious disease exposure programs with MDR's; significantly reducing exposure risk and safeguarding patients from risk exposure.



*Pictured from left to right: Chris Neal, CFSI Board of Directors; Karen Kingmon, Board Commissioner; Captain Shaughn Maxwell; Fire Chief Ed Widdis; Andrew Wigglesworth, MedicAlert Foundation*

## **Snohomish County Fire District 1 (2013 Excellence in Fire Service-Based EMS Award Recipient)**

Fire Service-Based EMS providers must keep pace with the latest advances in pre-hospital 9-1-1 emergency medicine. They must routinely concentrate on doing what is most important in achieving consistent positive results for the patient. The way to achieve consistent positive results is by applying consistent application of best practices.

The Snohomish County Fire Protection District No. 1 is the largest independent regional fire department in the state of Washington, serving a 45-square-mile area just north of Seattle with a population of nearly 200,000, including residents of four suburban cities. Of the 19,000 emergency calls Fire District 1 receives each year, more than 77 percent are for medical emergencies. To handle this high EMS call volume, all EMT firefighters in Fire District 1 respond to medical calls as well as to fires.

Snohomish County Fire District 1 developed an EMS checklist to ensure that evidence-based critical interventions are occurring when specific clinical conditions are encountered. Their EMS checklists do not replace or supersede standard protocols; rather they highlight critical areas of protocol that must not be missed. Through the use of these checklists, the department is enabling each of their EMS providers to be experts in applying the best available pre-hospital medical science to make consistent, positive differences in patient outcomes.

Checklists can be small or large. Fire District 1 now is using small checklists for simplicity and ease of use by being:

- Precise and to the point
- User-friendly
- Practical
- Able to highlight critical steps

The checklists are designed to provide the EMS providers with the ability to take all necessary field actions that are compatible with standards of care protocols. These checklists are already producing consistent actions in the field despite a host of on-site variables. Avoiding potentially significant mistakes before a critical-care patient arrives at a hospital is the main goal in introducing the unique practice of providing checklists. And to ensure that the checklists are achieving their intended objectives, the EMS Division conducts comprehensive reviews for checklist compliance by EMS providers, and the results are conclusive: they are making a positive difference.

## Los Angeles Fire Department

On August 3, 2010 the Los Angeles City Council and Mayor approved a new Emergency Medical Service (EMS) Field Data Capture and Billing System for the Los Angeles Fire Department (LAFD). The system was designed to enable EMS personnel to capture and record electronic Patient Care Reports (ePCRs) using new handheld devices. Implementation of the system would enhance the security of patient care documentation (in accordance with the Health Information and Technology for Economic and Clinical Act), while maximizing available budgetary reimbursement for ambulance transport.

Recognized by many as the most significant improvement in LAFD EMS in a generation, the ePCR program is improving patient care by transmitting vital medical information in real time from emergency scenes to receiving facilities prior to patient arrival. A partnership with the Hospital Association of Southern California is enabling LAFD to transmit patient data using the existing HASC ReddiNet system which provides the immediate delivery of patient care information to receiving hospital emergency departments.

In addition to the enhanced level of care being provided to the patients and better safeguards for patient records, the ePCR program continues to demonstrate its success in other ways. Transport invoicing is much more efficient, reducing reimbursement to the city from 30-45 days to an average of 5-7 business days. During the first year of implementation, the city of Los Angeles generated an additional \$12.8 million in revenue as a result of these program efficiencies.

## Natick, Massachusetts Fire Department

Designated as a “Heart Safe Community” by the Commonwealth of Massachusetts in 2004, the Natick Fire Department has taken significant steps to improve survival from sudden cardiac arrest (SCA) in their community. The effort was first launched in the 1980’s when management and labor developed a multi-faceted program of delivering EMS with a broad range of partnering organizations and groups in Natick. The program evolved, offering

CPR training to citizens who became part of the “response team” while forming partnerships with other municipal agencies to train public employees in CPR and AED use. AEDs were being installed in municipally-owned buildings as part of this public safety effort. Today, all municipal buildings and recreation facilities are equipped with AEDs and trained personnel.

Since their initial efforts, the Natick Fire Department has gone further in teaming-up with corporations and businesses, encouraging them to become a part of their “response team”. Math Works, a leading developer of mathematical computing software for engineers and scientists headquartered in Natick, allowed the fire department to train their employees in CPR/AED training during regular work hours. Today, the Math Works’ facility is equipped with trained individuals as well as multiple AEDs.

Recognizing the benefits of being a “Heart Safe Community”, the town of Natick continues to broaden CPR training to more members of the community with the support of the fire department. Now all youth athletic coaches are being taught CPR and basic first aid. And through a grant from the MetroWest Health Care Foundation, CPR/AED training is being offered to all high school freshmen and juniors. During the months of January and February, 2013, over 700 students were trained and certified. In addition, all police patrol cars in Natick are equipped with AEDs; ambulances are fitted with ‘Auto-Pulse’, while paramedics are able to provide ‘hypothermic post-cardiac arrest’ therapy.

The EMS service delivered by Natick Fire Department embraces partnerships with medical professionals, the business community and other local government agencies to enhance the delivery of emergency medical services to the citizens of Natick.

## Sacramento Metropolitan Fire District

The Sacramento Metropolitan Fire District (Metro Fire) provides emergency services to over 640,000 people within a 417 square mile service area. Like many fire departments across the country, Metro Fire felt the impact of the economic recession. Significant decreases in property tax revenues forced



the department to close six engine companies, even though the call volume in 2012 reached the highest level in the department's history. In addition to these response issues, due to changing demographics within the area, Metro Fire understood the need for a more diversified workforce that more closely reflects the diversity of the Sacramento population.

Recognizing the need to address budgetary constraints, increased work load, and affirmative action goals, Metro Fire took significant steps to change their service delivery model. First, the department implemented a Single Role Paramedic Program (SRPP) that transitioned five contract ambulances used to augment the EMS transport system by adding these single role fire-based medic units. The change created a more cost effective system, maximizing efficiencies through this conversion from a fixed station deployment model to a system status management model (SSM). Second, the department hired 44 new emergency medical technicians (basic EMT) and paramedics utilizing limited term contracts. During the contract period, the personnel underwent training to advance their skills and achieve higher ranks (EMT > Paramedic > Firefighter/Paramedic). The department also created a state-of-the-art training program for these new EMS professionals, utilizing multi-media technologies for conducting realistic patient care scenarios. With the cooperation of local physicians, Metro Fire created a mock emergency room which allowed the EMTs and paramedics to run simulated 911 calls from inception through the transfer-of-care to hospital personnel.

The use of single-role EMTs and paramedics has paid huge dividends for Metro Fire. The department estimates that the SRRP program has saved a projected \$2.5 million in net annual revenue. Turn-out times for single-role units are shorter because the crews work 12-hour shifts and remain mobile throughout the system. In addition, the department reported that the hiring of new EMT's increased opportunities for women and minorities to enter the fire service profession.

## San Antonio Fire Department

Operational leaders and medical directors of San Antonio Fire Department EMS, alongside other regional EMS and hospital leaders, came together to

address major concerns of discrepancy in the quality of delivery of emergency medical care to citizens and visitors of the city suffering from heart attacks and strokes. Committees were formed to help address the issue and problems were outlined with solutions for standardized care created. The San Antonio Fire Department, along with several EMS agencies, signed Letters of Attestation, essentially outlining guidelines for providing optimal pre-hospital care, and also required each hospital in the area to provide the outlined standard care before SAFD would transport patients to that hospital. Coordination between SAFD and hospitals also helped reduce door-to-balloon time as hospitals now activated their cardiologists and catheterization labs based on the paramedics' determination of STEMI in the field.

Pre-hospital STEMI care was improved as SAFD included 12-lead EKG performance in the field, extensive paramedic training for recognition of clinical and EKG signs of a STEMI, and transmission of 12-lead EKGs to the receiving hospitals in order to provide appropriate medical care for all STEMI patients. Pre-hospital care of stroke patients is standardized as well, as SAFD paramedics have undergone extensive training of stroke recognition, including the Cincinnati Stroke Scale, to determine if a patient meets "Stroke Alert" criteria. If positively identified, paramedics provide aggressive treatments and send patients directly to "Stroke Center" hospitals to provide immediate head CT and lab evaluations based on the paramedics' and neurologist evaluations within 15 minutes of patient arrival at the emergency department. As a result of their efforts, The tPA administration rate in San Antonio in 2012 was more than double the reported national rate of tPA administration.

As of December 2012, compliance with key performance indicators has improved to over 95% – a two-fold increase within a short period. Almost half of patients in San Antonio with an acute heart attack will receive an emergent heart catheterization procedure within 90 minutes from the time they call 911. In addition, in August 2012, paramedics correctly identified patients meeting stroke criteria 91% of the time, the on-scene time of 20 minutes or less was met 73% of the time and dispatch-to-ED time of 40 minutes or less was met 71% of the time. In addition, TPA administration rate for all patients identified as "stroke alert" was 38%. Also, the aggressive approach by SAFD has led to an 8% increase in the survival of non-traumatic cardiac arrest patients.

# Sandy Springs Fire Department

Sandy Springs Fire Department responds to over 11,000 calls a years with 136 firefighters assigned to 4 stations equipped with 9 fire rescue response vehicles and 5 dedicated ambulances.

Believing in strong community engagement, the Sandy Springs Fire Department continues to initiate numerous outreach programs that have raised greater awareness and involvement in public health and safety. Each year, department personnel offer CPR and AED training to approximately 1,000 community residents and workers. Public vehicles are equipped with AED's, as are parks and historical sites. As a result of these and other efforts, Sandy Springs has maintained a 59% bystander CPR percentage, well above the national average. Sandy Springs also provides fire safety and prevention programs to all schools within their community and offers children's birthday parties in the stations to raise awareness of fire safety among young children.

Training and technology are vital components to Sandy Springs Fire Rescue's service model. It is a model that nonetheless evolves around solid BLS care. By focusing on the basics of care such as CPR – which utilizes the Lucas 2 chest compression device and good basic airway management – Sandy Springs has experienced a solid and measurable increase in cardiac arrest survival rate. Through programs such as therapeutic hypothermia, EKG Transmission, STEMI alerts and CVA alerts, the department has leveraged technology to expand and increase the care brought to it residents. And training is the key to administering these life-saving technologies. Sandy Springs Fire Rescue provides a minimum of 48 hours of EMS training per year on shift and an additional 96 hours of training on a volunteer basis. These hours are separate from the 40+ hours of department-wide fire training that takes places.

Sandy Spring's forward-thinking approach has led to improved EMS treatment that utilizes pre-arrival instructions for heart attacks, strokes, serious hemorrhage and even anaphylaxis. Also, Sandy Springs' 911 systems allows citizens to log in and create a profile that lists specific medical conditions and allergies, home diagrams, and the location of children's rooms or pet information onto a free online service, thus saving 911 responders valuable time in providing EMS treatments.

Additionally, Sandy Springs has partnered with local health agencies in providing in-house specialty training in topics such as STEMI recognition, pediatric trauma, CVA, geriatrics, and neurological trauma, all of this done in conjunction with agreements to allow personnel to expand their knowledge and skill levels by shadowing on-duty physicians.



*Pictured from left to right: Chris Neal, CFSI Board of Directors; Lt. Robert Tobin; Captain Elizabeth Sanford; Assistant Chief John Kinsley; Chief Steve Lohr; Andrew Wigglesworth, MedicAlert Foundation*

## 2013 BEST PRACTICES COMBINATION FIRE DEPARTMENTS

### **Montgomery County, Fire & Rescue Services (2013 Excellence in Fire Service-Based EMS Award Recipient)**

Montgomery County Fire and Rescue Services established an Emergency Cardiac Care program (ECC) that took proactive steps which have significantly improved Advanced Life Support treatment for patients with ST Elevation Myocardial Infarctions in response to recommendations from the American College of Cardiology. These recommendations include the use of percutaneous coronary interventions (PCI, which is more commonly known as angioplasty) within 90 minutes of arrival at the hospital. The need to manage such patients at the highest level possible is an issue common to all fire departments responsible for the delivery of EMS care.

Part of the ECC program included the implementation of the LifeNet system,

allowing paramedics to transmit a patient's first diagnostic EKG directly to receiving hospitals, enabling them to bypass the emergency department and transport patients directly to the cardiac catheterization lab to have immediate access to angioplasty procedures.

Since the inception of the program the MCFRS has been able to improve overall treatment of patients experiencing a STEMI in several notable ways. Of the 167 cases, they have achieved the 90 minute door to catheterization 91% of the time which is well above the 75% national average.

## Donnelly Rural Fire Protection District

In 2007, the Donnelly Rural Fire Protection District (DRFPD) experienced a multi-agency, multi-jurisdictional incident that forced immediate evacuation of all residents in the affected area (upward of 250 residents). The department encountered significant problems during the incident in collecting important information that would aid in the response efforts – information that listed the number of residences in the affected geographic area, including the number of permanent residence. Without reliable information, it was difficult to develop a notification system that would help with the evacuation.

Having gained important knowledge from the incident, the Donnelly Rural Fire Protection District decided that a solution was needed to prevent similar problems from occurring again. The solution was a Mobile Risk Assessment (MRA) program, which now provides DRFPD/EMS with significantly faster response capabilities to emergencies. The MRA program contains a data set of valuable information readily available to responding agencies through the use of current technology and county records. The data set will reduce delay times and allow response agencies to gain access to important information that will:

- Immediately identify how many homes are in a specific geographic area
- Establish ingress and egress routes more efficiently
- View driveways of each home site and view an actual picture of each home

as well as identify the nearest water sources to the property

- Access the contact information for homeowners or residents
- Determine any special needs of residents such as physical disabilities or health-related issues

In 2007, using county funds, the program was expanded throughout the county – an area covering over 3,733 square miles and consisting of 9,862 full-time residents and a large number of visitors.

The MRA document is a live document, stored electronically and consistently evolving and updating. All data is updated every five years, with 20% of the data being updated each year. DRFPD reports a ten-fold increase in resource deployment efficiency. The MRA programs enable them to locate exact addresses and driveways and determine while in route both ingress and egress. In addition, the system can alert response vehicles of special hazards associated with the property and the type of home construction – all vital information that can reduce risks and injuries to response personnel.

## Friendswood Volunteer Fire Department

Since 1973, the Friendswood Volunteer Fire Department EMS Division has been providing emergency medical services for the city of Friendswood that spans 21 square miles and has a population of approximately 35,000 residents. The department is recognized throughout the region for its achievements in cardiac care, taking a proactive approach in identify solutions to potential challenges.

One such challenge was a lag time in Cardiac patients getting into the Cardiac Catheterization Labs. In response, the fire department instructed medics to provide double-lumen Intravenous catheters in the field, administer Heparin in the field, and send 12-Lead ECGs via telemetry. This enabled multiple entry ports for the various medications and procedures introduced in the lab and allowed for Emergency Department physicians to get an early look at ECG tracing. Conducting these three critical steps prior to hospitalization has resulted in a significant reduction in patient preparation time at the hospitals, thereby initiating life-saving treatment faster than otherwise would be possible.

The fire department has received considerable recognition from area physicians for its delivery of aggressive pre-hospital care.

Priding itself on community service, the Friendswood Volunteer Fire Department encourages active participation by its members in community programs. The department created a "Kids Kare" program that offers immunizations to children who otherwise would not be able to receive them. Since 1999, over 10,500 children in the Friendswood community have received over 16,000 vaccinations. The program has expanded to include, Photo Safety ID kits, education materials on safety, health, and nutrition. In addition, the fire department offers child safety seat inspections and installations. And with the support of financial grants, FVFD has been able to provide 60 car seats to families to replace car seats that were deemed unsafe for children.



*Pictured from left to right: Assistant Chief Dan Stubbs, Assistant Chief Mary Cameli and Chief Harry Beck*

## 2012 BEST PRACTICES CAREER FIRE DEPARTMENTS

### **Mesa (AZ) Fire and Medical Department (2012 Excellence in Fire Service-Based EMS Award Recipient)**

In 2006, the Mesa Fire and Medical Department had ten engine companies each responding to over 55,000 calls with each engine handling a minimum of 3,000 calls. Due to the high call volume, these units were unable to respond to calls in their areas 25% of the time - those calls were handled by the next closest units, thereby extending response times. Of the 55,000 calls in 2006, 76% were medical in nature.

To address this challenge, Mesa Fire and Medical Department developed a plan to dispatch a two-person Transitional Response Vehicle (TRV) in peak times to respond to low-level emergency medical calls. Working in concert with the leadership of the Mesa firefighters' union, city management and the city



council, the first TRV was dispatched to calls staffed with a paramedic and an Emergency Medical Technician (EMT). Mesa has seen an 11 percent increase in availability for response from the Advanced Life Support (ALS) paramedic unit stationed with a TRV, and the response times for the ALS units have improved.

Due to the success of the initial unit, the Department now deploys three TRVs. The units have enabled the department to reduce response times and high call volumes, as well as dispatch the most appropriate units to incidents. This important innovation is evolving into specialized TRVs that will operate with the addition of a Physician's Assistant providing for enhanced triage, treatment and transportation capability. The Department is carefully piloting treat and release protocols, as well as assuring the patient is taken to the most appropriate facility for care. This effort is intended to help reduce overcrowding in the emergency rooms, reduce overall medical costs and assure the patient is receiving the most appropriate care possible.

## Bedford (NH) Fire Department

Bedford is located just west of Manchester, New Hampshire, with a population of 21,203 and a daytime transient population of approximately 80,000. The Bedford Fire Department covers 32 square miles from its single station (a second station is scheduled to open in 2013) and provides ALS mutual aid to at least seven surrounding communities. Of the 28 full-time firefighters, 16 are paramedics, 11 are intermediates and one is basic. With a focus on better service to the community, Bedford Fire Department implemented a Quality Assurance Quality Improvement (QAQI) program, a unique and innovative approach for enhancing emergency medical care to the citizens of Bedford and surrounding communities.

The QAQI program institutes a system of checks and balances with reviews of all patient care reports (PCR) by two, and sometimes three, levels. The shift mate completes the first review on the day the report is written. Within four to eight days of report origination, an audit group, led by a senior paramedic, reviews the report for completeness and for quality and protocol violations. If the report lacks information, the report writer is issued an audit form requesting the missing information. Upon reviewing the PCR, the auditor can

forward the report to the QAQI committee for additional analysis. The goal of this structured process of regularly evaluating knowledge and performance of personnel is to improve patient care with better providers, safer working environments and overall better service to the community.

## Bullhead (AZ) City Fire Department

Responding to the significant cost difference between ground and air ambulance transport, the Bullhead City Fire Department established a ground critical care transport (CCT) capability to handle both inter-hospital transports within the city and interstate transports. In the tri-state area of Arizona-Nevada-California, ground ambulance transport averages 750-900 calls per month, while air ambulance averages 50 calls per month. State and local protocols govern local emergency medical services (EMS) ground capabilities and currently limit what drugs and equipment paramedics may use. Oftentimes, stable, but ill, patients requiring a single infusion of an IV drug not covered by these protocols are forced to be flown to distances as short as ten miles at great expense.

Requests from hospitals for ground transportation are required by local protocols to go first to the local EMS provider. The local hospital in Bullhead City requests transport from the Bullhead City Fire Department first; thus, limiting competitors. Since surrounding EMS providers have no plans to establish CCT, the Bullhead City Fire Department is also the closest EMS provider to service the other area hospital in Fort Mohave. In Arizona, the cost of ground ambulance charges are regulated by the State Department of Health Services; federal law prohibits states from any involvement in setting air ambulance rates. The Bullhead City Fire Department calculated all the factors involved in providing CCT and determined that the return on investment of providing the best possible care at the most reasonable cost to patients favored ground. This analysis and modifications in transport procedures by the Bullhead City Fire Department has resulted in increased revenues with CCT while providing affordable and quality service to its patients.

## Chattanooga (TN) Fire Department

With 19 fire stations covering 155 square miles, the Chattanooga Fire Department (CFD) serves the fourth largest populated city in the state of Tennessee. In 2011, CFD responded to more than 16,500 emergencies, including 6,000 emergency medical calls. With strong leadership from its EMS coordinator, CFD has significantly increased the level of emergency medical care in recent years.

In the early 2000's, CFD initiated a pilot program to train CFD first responders on the application of the Combitube during respiratory emergencies. The program was developed by the EMS coordinator with guidance from the local medical director. Upon receiving approval from the state's EMS Medical Director and Board, CFD began to train all CFD firefighters on the Combitube's application. The success of the pilot evolved into a basic skill set for all fire responders in Tennessee and marked the first time in the state's history that a first responder could establish and control a patient's airway. Lives have been saved as a result of this program.

To enhance the overall level of emergency medical care provide by the Department, the EMS coordinator gained state certification to teach the state-licensed EMT-IV curriculum to recruits. The Department established a goal to provide full EMT-IV level care to the community once an adequate number of recruits underwent the training. Every recruit is now trained to the EMT-IV level. The department also has one of the highest first-time pass rates for EMT-IV students in the state. Each apparatus now averages at least two EMT-IV firefighters, and carries life-saving IV equipment and medicines, including epinephrine, D50, IV solutions, albuterol, baby aspirin and nitroglycerin.

The Chattanooga Fire Department has reached numerous milestones beyond the aforementioned in advancing the level of pre-hospital care. In 2003, the department introduced pulse oximeters into its cache of EMS equipment; in 2005, it regained its status as an American Heart Association Training Center; and in 2006, it became a training center for Advanced Cardiac Life Support and for Pediatric Life Support. All of these achievements reflect the Chattanooga Fire Department's commitment to enhanced emergency medical services for the citizens of Chattanooga.

## Goodyear (AZ) Fire Department

In 2011, the Goodyear Fire Department launched a mentorship program for both aspiring and active paramedics. The goal of the program is to increase the success rate of aspiring paramedics and to enhance the skill level of active paramedics deficient in certain areas. The program focuses on the four phases of a paramedic's career: aspiring paramedics, in-class paramedics, post-class paramedics and paramedics already in the field.

For aspiring paramedics, mentor support is provided to develop the necessary skills for completing the entrance testing requirements. Once accepted into the program, mentors support students through the testing phases. After certification as paramedics, the mentors assist new paramedics in transitioning to field operations and adjusting to local protocols applicable to the Goodyear region.

Mentors also play a vital role in helping field paramedics struggling with performance issues. After identification of the performance issues, an action plan is developed outlining a program for improvement with benchmarks for achieving success. The success of the program relies on trust between mentors and paramedics. A structured program of training ensues and paramedics are rated and critiqued on learning and implementing the new skills. Additionally, paramedics are tasked with achieving additional benchmarks identified in the action plans and are tested in written exams and through demonstration of learned skills. As this process continues to develop and has more participants, the success of the program will be measured both by reaching the benchmarks identified and continued performance improvement in the field.

## Howard County (MD) Dept. of Fire and Rescue Services

The Howard County Department of Fire and Rescue Services launched a campaign to upgrade and prioritize operations in order to provide the highest quality of care for every patient and to afford the best safety systems for its fire and rescue staff. The goal of the EMS program is to improve patient

outcomes through compassionate care and innovative programs. To meet this goal, the fire department implemented the latest innovations in cardiac arrest, community CPR and ST-Segment Elevation Myocardial Infarction (STEMI). Serving a community located on the outskirts of two of the 25 most populated cities in the country – Washington, D.C. and Baltimore, Maryland – the Howard County Department of Fire and Rescue Services is recognized for its dedication to improving the quality of care by continually employing cutting edge methods while maintaining a level of excellence in current services.

While focused on patient-centered programs, Howard County Department of Fire and Rescue Services also implemented some new innovations, emphasizing the safety of firefighters/EMTs. Among these programs is the National Fallen Firefighters Foundation's (NFFF) "Everyone Goes Home" program. The Department is the first in the State of Maryland to commit to training all employees on "Courage to be Safe" and the "Seatbelt Pledge." The Howard County Department of Fire and Rescue Services has taken a holistic approach designed to not only make state-of-the-art improvements in their EMS delivery system, but also implement programs directed at maintaining the safety of the EMS responders.

## Memphis (TN) Fire Department

The Memphis Fire Department, with more than 500 firefighters/paramedics and more than 1,100 EMTs/firefighters, responded to 106,698 EMS calls and transported 75,342 patients in 2011. The department is now an all ALS system with all 56 engine companies from 56 different fire stations ALS-capable and staffed with a minimum of one firefighter/paramedic. Additionally, all 33 ambulances are ALS-capable.

Within the last year, MFD was able to achieve a 911-to-balloon time for STEMI patients of 78 minutes 100 percent of the time. All firefighters/paramedics are taught to read 12-Lead EKGs and recognize STEMIs. With the addition of 15 LUCAS mechanical CPR devices, the Memphis Fire Department has improved CPR and circulation during resuscitation of cardiac arrest victims, resulting in a Return-to-Spontaneous-Circulation (ROSC) of 16.7 percent of all cardiac arrest victims. (The national average is approximately 5 percent). The Memphis

Fire Department has an aggressive EMS training program and is the only department in the U.S. accredited by the Continuing Education Coordinating Board for Emergency Medical Services to issue continuing education units for training. Every firefighter since 1992 has had to become an EMT and since 2007, every firefighter hired has to become a paramedic. All the training is provided in-house by fire department instructors.

The Memphis Fire Department has established two multi-casualty Task Force engine houses that, if deployed, include a 24-foot multi-casualty trailer filled with medical supplies and a bus capable of carrying 18 stretcher patients and the walking wounded. To respond to special situations where patient access and egress may be limited, such as the six mile trail that runs through the city, the Department purchased an Alternative Support Apparatus (ASAP) mini ambulance. The Department has also achieved an average response time for a first responder on the scene of a medical emergency of four minutes or less 90 percent of the time.

The Memphis Fire Department continues to demonstrate excellence as a fire service-based EMS system administratively, operationally and clinically, while striving to set an example for other fire service-based EMS systems to follow.

## Sandy Springs (GA) Fire Rescue

The Sandy Springs Fire Rescue Department serves a diverse community of 99,000 with four stations located throughout the city. Since the department was established in 2006, the primary goal has been providing a state-of-the-art system for medical emergencies. Recognizing the value of community involvement, the department has trained more than 4,800 residents in CPR and AED-use since 2007. In addition, it has placed more than 156 AEDs throughout the city.

In 2009, the city launched a pilot program for inducing hypothermia on post-cardiac arrest patients, the first department in the metropolitan Atlanta area to perform the procedure. The city also established a state-of-the-art regional 911 center, which has reduced call processing and response times for the department. Since 2010, residents can pre-register in the 911 system

and input personal data that will give responding crews access to pertinent patient life-saving information such as medical history and medications. In 2010, the department purchased four Lucas-2 devices located at each station on the ALS units.

A longtime advocate of community education, Chief Jack McElfish developed the “Learn It...Before You Need CPR” pocket cards for community residents. These cards utilize Quick Response Code technology, allowing the public to use mobile communication devices to download information to assist in the recognition and treatment of sudden cardiac arrest.

According to statistical data, survival rates went from 8.8 percent in 2009 to 18.8 percent in 2010. Another important statistic is the increase in bystander-CPR performed on cardiac arrests. In 2009, bystander-CPR was performed in 53 percent of cardiac arrests. In 2010, the figure increased to 59 percent (the national average both years was 27 percent).

The Sandy Springs Fire Rescue and Emergency Medical Services Department is committed to delivering the best in quality emergency medical services to its citizens.



*Pictured from left to right: Chief of the Department Anthony Ryan, Selden FD and Bill Jenaway, President of the Board of CFSI*

## 2012 BEST PRACTICES VOLUNTEER FIRE DEPARTMENTS

### **Selden (NY) Fire Department (2012 Excellence in Fire Service-Based EMS Award Recipient)**

Selden Fire Department has undertaken a number of key initiatives to advance their EMS response and to minimize reliance on mutual aid. This includes assigning all members to shifts on the ambulance squad. The ambulance squad program has been a resounding success, covering 100 percent of calls without calling for mutual aid.

The department's commitment to provide exceptional care to the community is evident by its response to the changing demographics in its region. Recognizing that the town has a growing aging population that requires frequent ALS intervention, the Selden Fire Department added new volunteer paramedics and EMT CCs, and developed a funding strategy



for ensuring members receive the highest level of training in critical care. In addition to the training, the department outfitted eight Advanced Life Support volunteer responders with Zoll monitors, drug bags, EMS supplies and radios, and positioned the units around town in a model designed to shorten response times.

This commitment to enhanced emergency medical services has earned the Selden Fire Department the Excellence in Fire Service-Based EMS Award in the volunteer category.

## Egbertsville (NY) Hose Company

The Egbertsville Hose Company has found a way to increase its community presence and interaction with the public at events, all while providing emergency medical care - and it's getting positive feedback. The firefighters are responding to medical emergencies in crowded situations via two specially-outfitted all-terrain bicycles. The rescue bikes, which are lightweight and equipped with lights and sirens, are designed specifically for emergency medical use. The 24-speed bikes are loaded with defibrillators, oxygen and first-aid supplies. The bikes enable firefighters to gain quick access to injury victims in large crowds and to provide initial life support until more help arrives. The bikes are also providing public relations benefits by allowing firefighters to interact with the community and share what they do as volunteer firefighters.

## Liberty Township Fire Department, Powell (OH)

The Liberty Township Fire Department, led by the EMS coordinator, established a web-based registry of residents with special needs in Delaware County, Ohio to ensure that trained personnel respond to the calls and address these special needs-residents. The Special Needs Registry covered the entire county and included 13 fire-based EMS agencies, one county EMS agency and five out-of-county fire service-based agencies with jurisdictional boundaries within the county. Since the county commission officially adopted the registry, more than 500 entries have been made. Initial examination of these entries revealed that public safety was not fully trained to provide treatment for all entries. Therefore, local jurisdictions would elicit experts in the medical community to provide training so that proper care could be provided. Disaster preparedness plans were developed, including mapping layers created by the Geographic Information Systems department, to enable public safety responders to identify within seconds where special needs individuals lived within the county and how they might be impacted in a catastrophic event.

This program began as an EMS coordinator's desire to improve emergency medical services to people with special needs in the county after learning from the mother of a special-needs child that routine paramedic treatments could have harmed or killed her young child. It is now being implemented throughout the state as a result of legislative action. Public entities in the state of Ohio can now use up to \$25,000 from the cell phone tax given to local 911 centers to purchase hardware and software to establish registries similar to the Delaware County system.





*Pictured from left to right: Battalion Chief Phillip W. Underwood and Chief Donnie West*

## 2012 BEST PRACTICES COMBINATION FIRE DEPARTMENTS

### **Center Point (AL) Fire District (2012 Excellence in Fire Service-Based EMS Award Recipient)**

The Center Point Fire District is recognized as one of Alabama's most advanced Fire Service-Based EMS Departments. Advances in EMS training and participation in research and development programs earned Center Point the 2012 excellence award.

Center Point covers 60 square miles and serves a population of 65,000. In 2011, the department responded to more than 7,000 incidents and most of those were EMS-related. To ensure prompt medical response, especially during special events, Center Point has a Paramedic Bike Team equipped with medical supplies to treat trauma, as well as respiratory and other types of emergencies. And, as of March 31, 2012, all Center Point Fire Department

EMTs and paramedics are required to obtain and maintain National Registry Certification and meet biannual National Registry continuing education requirements.

Among its many programs to enhance emergency medical services, Center Point has a partnership with the University of Alabama Birmingham (UAB) Medical School in a “Ride Along” program. UAB medical students perform rotations on ALS transport units where they gain valuable knowledge in pre-hospital emergency care. The department also participates in the Resuscitation Outcomes Consortium (ROC). This unique 10-city, National Institute of Health (NIH)-funded network is defining state-of-the-art EMS by conducting clinical trials of out-of-hospital cardiac arrest and major trauma. The department holds the distinction of participating in the ROC program for the past seven years, a testament to its high standard of performance and commitment to state-of-the-art emergency care.

The citizens served by the Center Point Fire District have greatly benefited by the department’s steadfast commitment to advancements in emergency medical services – and statistics bear that fact. The most significant statistic is the 10.5 percent cardiac survival rate reported in 2011 compared to 2.7 percent in 2007. Center Point prides itself on progress and leadership, and they have certainly proven those distinctions with their enhancements in emergency medical services.



*Pictured from left to right: Northwest Fire/Rescue District Battalion Chief of EMS Sean Culliney, Northwest Fire/Rescue District Fire Chief Jeff Piechura, MedicAlert Foundation Board Chair Mary L. Dean, Senator John McCain, Northwest Fire/Rescue District Battalion Chief Brad Bradley*

## 2011 BEST PRACTICES CAREER FIRE DEPARTMENTS

### **Northwest Fire/Rescue District (AZ) (2011 CFSI/MedicAlert Award Recipient)**

With ten stations to serve explosive growth, the Northwest Fire/Rescue District (NWFD) serves a 140 square mile area surrounding Tucson and the adjacent metro region of Pima County, Arizona. Always striving to enhance the delivery of service for the community, NWFD undertook a needs-assessment survey in conjunction with the University of Arizona to establish benchmarks and institute continuous quality improvements. NWFD realizes that community-based medicine will be the future of the department and the community.

To address the need for consistent and uniform training for all urban, suburban and rural stations, NWFD has turned to high-fidelity technologies. Using an iStan manikin from Medical Educational Technologies, the

department has provided innovative and qualitative training to all stations. The department has also realized the benefits of telemedicine for distance-learning. Based on the department's needs, an organic relationship developed with the Arizona Simulation Technology and Education Center at the University of Arizona's College of Medicine and the Arizona Telemedicine Network has bridged the challenges for distance learning for both pre-hospital and hospital personnel. The natural evolution of pre-hospital EMS training has taken steps to standardize patient care and provide regional training with multiple geographically-diverse locations in real time.

Utilizing the extensive capabilities of advanced technologies, like telemedicine and simulation, as tools for pre-hospital EMS training, EMS personnel are able to perform high-risk invasive medical procedures without actual patient contact or risk of exposure to communicable diseases. In December 2010, a mass-casualty trauma exercise coupled with the National Incident Management System (NIMS) refresher training for battalion chiefs was conducted to produce stressors over and above "the norm" and allow multiple units on scene to problem-solve and work through any complications.

Less than a month later, on January 8, 2011, during a public meeting with Representative Gabrielle Giffords, several lives were lost in a massive shooting. The Northwest Fire/Rescue District responded and later credited the mass casualty simulation drill as the exact training that prepared NWFD for the real incident.

NWFD will continue to embrace high fidelity medical training both locally and regionally in order to maintain a standard that continues to meet the growing needs of the community.

## Henrico County (VA) Division of Fire

The Henrico County Division of Fire is a 575-member all-hazards career department operating out of 20 fire stations serving a diverse urban, suburban and rural population of more than 300,000. The Division of Fire (DOF) is the primary EMS agency providing first response on all suppression apparatus and advanced life support transport, utilizing 14 paramedic-level ambulances. Mental illness is involved in about 20 percent of all EMS calls. Although most of these incidents are resolved with relative ease, a number of them test all components of the public safety team including fire, law enforcement, mental health and the local health care community.

In 2006, several key stakeholders from police, fire and mental health departments began to investigate best practices in response to citizens in crisis due to mental health. In 2008, the Henrico County Crisis Intervention Team (CIT) was established to ensure the best possible outcomes for these citizens. The Henrico County CIT incorporates local fire-based EMS resources as part of the service model.

Recognizing the valuable expertise in medical issues offered by the Henrico County Division of Fire, the county's public safety agencies turned to the DOF to play a critical role in shaping the Crisis Intervention Team. The Division of Fire members offer expertise in medical issues that frequently precipitate, contribute to or exacerbate a crisis attributed to mental health. Fire service-based EMS providers offer law enforcement officers additional options for restraint, including medical monitoring and chemical restraint. This well-practiced multi-disciplinary response has already proven effective in improving safety for the public and responders. Effective crisis intervention leads to fewer unnecessary incarcerations and hospitalization stays, supports community-based solutions for consumers leading to an improved quality of life, and reduced liability for the involved agencies.

The basis for all CIT training is creating a mindset of treating people with mental illness with respect. To date, Henrico CIT has trained over 296 personnel. All Division of Fire lieutenants and captains who hold medic certifications, including all on-duty EMS Field Supervisors, have received 40 hours of training as CIT responders to give Henrico County 24-hour coverage for crisis calls.



# Memphis (TN) Fire Department

The Memphis Fire Department is a progressive fire-based EMS system with over 400 firefighter/paramedics and 1,100 EMT/firefighters. On any given shift, 40-46 of the engine or ladder companies are advanced life support (ALS)-capable. Moreover, every paramedic or EMT in the department is a firefighter.

Patient care is the primary focus of the Memphis Fire Department. One statistic that underscores this fact is a Return of Spontaneous Circulation of 16.7% for all cardiac arrest patients (the national average is 5%). The department also has an aggressive STEMI program. The average time from door-to-balloon is 46 minutes for every call, and the average time from a 9-1-1 call to balloon is 87 minutes. The department also has an induced hypothermia program for resuscitated cardiac arrest victims that has proven invaluable towards patients' full and complete recovery.

EMS training is both innovative and extensive. Since 1992, all firefighters have to become EMTs and as of 2007 they have to become paramedics. The department conducts out-of-the-box training, including a first-in-the-country procedural anatomy lab with complete non-embalmed cadavers utilizing high risk/low frequency lifesaving procedures; gross anatomy lessons combined with standard and new technology treatment modalities, methodologies and equipment. The department's EMS Quality Management Office offers an innovative Field Training Officer (FTO) program for new employees. The department is also the first fire department in the U.S. to conduct Six Sigma Quality Management Training for key personnel to enhance clinical and system challenges, and it continues to improve response and care for pediatric patients through joint programs with area hospitals.

The Memphis Fire Department's fire-based EMS System is leading the way in educating and exercising the region in disaster readiness initiatives.

## NY City Fire Department's Emergency Medical Service

The New York City Fire Department's Emergency Medical Service (FDNY-EMS), the largest EMS system in the nation with approximately 3,300 uniformed EMS personnel, is the first fire service-based EMS system in the country to implement a hypothermia treatment protocol for cardiac patients. In January 2009, FDNY-EMS launched Phase I of Project Hypothermia which involved FDNY-EMS transporting cardiac arrest patients experiencing a return of spontaneous circulation (ROSC) only to hospitals where medical personnel could administer hypothermia treatment. In 2005, only 10 hospitals in New York City administered hypothermia treatment; now 46 of the city's 48 hospitals administer the treatment. The results of this change have been dramatic. Twenty percent more post-ROSC patients survive to hospital admission, while discharge rates for such patients have increased by 30%, and nearly 70% of surviving patients now leave hospitals neurologically intact.

In late summer of 2010, Phase II was initiated with all ALS paramedics receiving specialized training to administer hypothermia treatment immediately to all cardiac arrest patients on the scene or en route to the hospital. Since this procedure is now protocol, all patients receiving this treatment must be transferred to a participating hospital so that hypothermia treatment can be continued.

New York City hospitals participating in this effort are required to report data regarding the results of hypothermia treatment to FDNY-EMS. As a result, FDNY has developed a comprehensive data registry that will allow it to further refine the use of this treatment in New York and around the world. All ALS ambulances were outfitted with portable refrigerators to store six one-liter bags of normal saline that is cooled to just above freezing. Implementation of this procedure has proven to be safe, cost-effective and successful as a pre-hospital treatment. To record the results of hypothermia treatments as a basis for making enhancements, the FDNY-EMS developed a comprehensive data registry that participating hospitals are required to report data.

## Sandy Springs (GA) Fire Rescue Department

The Sandy Springs Fire Rescue Department serves a community of 98,000. The city's government leaders consider public safety a top priority and strongly advocate for the latest advances to enable delivery of the highest quality care to the citizens of Sandy Springs. To gauge the progress of the Sandy Springs Fire Rescue programs, the city leaders compared local statistics against national averages for out-of-hospital cardiac arrests and found better than average results across the board. The initiatives that earned Sandy Springs Fire Rescue high marks include training and awareness in CPR and AED use.

Sandy Springs Fire Rescue has focused its efforts on the care of cardiac arrest patients, emphasizing approaches that enable patients to resume pre-arrest quality of life neurologically intact. Among these approaches is inducing hypothermia on cardiac arrest patients as a "neuro-protective treatment strategy." The Sandy Springs Fire Rescue personnel are trained to provide hypothermia treatment to patients in the field to minimize the chances of neurological injury and improve the outcomes for the patients. Implementation of a state-of-the-art regional 9-1-1 center has helped reduce call processing and response times, further reinforcing the city's commitment to excellent emergency care for area residents. Sandy Springs has also emphasized CPR training for bystanders. Since 2007, the department has trained more than 4,500 residents in CPR and AED uses, and placed more than 154 AEDs in the city. The Sandy Springs Fire Rescue Department recognizes the benefits of community involvement in keeping their residents safe.

## Broward County (FL) Sheriff's Office Dept of Fire Rescue

The Broward County Sheriff's Office Department of Fire Rescue is the largest accredited fire-based EMS provider in the country. The accrediting agency is the Commission on Accreditation of Ambulance Services or CAAS. Concerned with the existing treatment procedures for sudden cardiac arrest victims, the EMS Division was determined to find alternative approaches for improving the cardiac arrest treatment strategy. The EMS Division's goal was to increase staff effectiveness, improve cardiac arrest survivability, deliver more victims to the

emergency department with Return of Spontaneous Circulation (ROSC) and keep pace with changing science while reducing the risk of injury to the responders. Turning to evidence-based science, the EMS Division created, and continually updates, EMS web-based protocol systems to keep current on the latest changes in pre-hospital care and effective treatments for cardiac arrest patients.

To reinforce this commitment, the EMS Training Division developed and implemented a training and mentoring program emphasizing a team approach with each member delegated individual care responsibilities in each cardiac arrest case. The Regional AED program was a key factor in the development of this treatment model. An investment was made in the latest equipment for cardiac arrest patients designed to increase the number of resuscitations and, ultimately, survival rates, including the ResQPod® and the Zoll AutoPulse Non-Invasive Cardiac Support Pump. The team studied protocols across the country, closely examining the emerging process of induced hypothermia that has been shown to increase survivability and to protect the brain for better neurological outcomes in cardiac arrest survivors. The new processes adopted by the Broward County Sheriff's Office Department of Fire Rescue have resulted in a 29% to 51% ROSC success rate in cardiac arrest patients and decreased risk of injury to firefighters and paramedics.

## Sun City West (AZ) Fire District

The Sun City West Fire District demonstrated its commitment to providing excellent patient care by establishing an innovative 100% Quality Assurance (QA) by Peer Review and Administrative Oversight process. The focus of this initiative was to ensure that Emergency Medical Services was employing the best and most current practices and identifying existing training gaps and filling those voids with adequate training programs. Dissatisfied with procedures used by many departments, the Sun City West Fire Department developed a framework based on a designed QA process of peer review using electronic charting and pre-established QA teams.

With the goal of meeting 100 percent chart audit, the Sun City West Fire District process is comprised of five simple components: (1) utilize an electronic charting (ePCR) vendor that allows ad-hoc reports and “scrubs” protected health information from viewed charts; (2) establish a written QA

process detailing procedures; (3) ensure team members are listed in a file and HIPPA/PHI education is documented; (4) be consistent on the process approach; and (5) identify the mechanism for mitigating future occurrences through training or protocol changes.

The process of spreading the review across three peer-review teams – utilizing alternate shift members to review charts that are kept anonymous to avoid identification of individuals – has resulted in a culture of excellence with participating individuals motivated to advance their own care modalities by pursuing additional training. These individuals were identified by department leaders as candidates for promotion which encouraged greater participation. The result of implementing the QA100 practice was a demonstrated change in performance among the EMS professionals.



*Pictured from left to right: Congressman John Carney, Odessa Fire Company Chief David Aber, Odessa Fire Company President Frank Gant, Governor Jack Markell*

## 2011 BEST PRACTICES VOLUNTEER DEPARTMENT

### **Odessa (DE) Fire Company (2011 CFSI/MedicAlert Award Recipient)**

The Odessa Fire Company is a volunteer fire, rescue and EMS agency located in southern New Castle County, Delaware. Odessa did not have an ambulance service until 1998, when an increase in population warranted the need for the service. The department currently operates two units that run 24/7 in conjunction with the local Advanced Life Support service.

Odessa stresses training and certification for all its members. Each member must maintain both state and national credentials in order to ride in an ambulance. In addition, all new members of the department must participate in First Responder training while existing members are encouraged to obtain the training.

Safety of both the patient and the responder is a primary concern for the department, and this is clearly evident in the design of both ambulance units. Purchased in 2004, each unit is equipped with a Holmatro battery-operated vehicle extrication/cutting tool. This allows ambulance personnel to gain access to trapped victims if rescue apparatus is late to arrive on the scene. Both units are also equipped with Stryker Power Pro automated stretchers for ease of lifting patients into the units. In 2009, the department purchased two Zoll Auto Pulse units using Impact Fee money (funds allocated to the department from the building of new homes). These devices enable continuous chest compressions on heart attack victims while the responder remains seated in a moving ambulance.

In 2010, Odessa purchased a new ambulance, this one featuring many new safety designs. The unit has seats facing forward. The department installed a three-point harness rather than a five-point to encourage usage. Safety items including indicator lights in the patient compartment to signal turns and braking were also installed, as were video cameras to monitor traffic on the sides of the vehicle as well as on the back.

Odessa also has led an effort to place carbon monoxide patient monitors throughout the state. This effort resulted in being awarded a \$420,000 regional Assistance to Firefighters Grant that enabled the department to purchase 150 Masimo RAD-57 units to be placed across the state. This gave the state of Delaware the ability to detect toxic carbon monoxide levels in firefighters.

While Odessa is a small company when compared to others in the state, it is a giant in providing the highest level of both patient and responder safety.



*Pictured from left to right: Friendswood Volunteer Fire Department Captain Roy Hunter; Friendswood Volunteer Fire Department Chief Lisa Camp; Friendswood Volunteer Fire Department Captain Andrew Chalk*

## 2011 BEST PRACTICES COMBINATION FIRE DEPARTMENTS

### **Friendswood (TX) Volunteer Fire Department (2011 CFSI/MedicAlert Award Recipient)**

The Friendswood Volunteer Fire Department serves a 21 square mile area with an estimated population of 29,000. Staffing four stations, the department has more than 90 volunteers and a paid day crew on duty during the week. The Friendswood Volunteer Fire Department is committed to delivering high quality pre-hospital patient care and community-wide emergency response. To help improve the recovery rate of patients after an emergency, Friendswood uses cutting edge technologies such as the Induced Cooling by EMS (I.C.E) protocol to reduce the effects of Post Resuscitation Encephalopathy. After a thorough study found limited side effects from the use of induced hypothermia on Post Resuscitation of Spontaneous Circulation (ROSC) patients, the Friendswood Volunteer Fire Department developed a



comprehensive protocol using induced hypothermia as part of a multifaceted approach to optimize neurologic resuscitation on ROSC patients.

Another proactive enhancement initiated by the Friendswood Volunteer Fire Department that has significantly reduced the amount of time required for patient preparation is training medics to perform at least three critical first steps in cardiac patient care. Having medics start double-lumen IV catheters, administer Heparin and send 12-Lead ECGs via telemetry all while in the field, the catheterization team is able to begin definitive, life-saving treatment sooner. The Friendswood Volunteer Fire Department is also taking a leadership role in emergency disaster planning by participating in and sponsoring conferences and drills in disaster management. The department is actively engaged in community activities that promote public safety and injury prevention including free immunization clinics and community CPR training.

## Brooklyn Park (MN) Fire Department

The Brooklyn Park Fire Department is the busiest non-career fire department in the state of Minnesota, protecting a community of 75,000 in a 27 square mile area. Recognizing the growing and changing complexion of the region, the Brooklyn Park Fire Department undertook an aggressive reorganization beginning in July 2007 aimed at providing residents and visitors with excellent medical response services. Achieving and maintaining a successful transformation required a comprehensive, ongoing strategy and implementation of numerous initiatives.

Investing in a 24x7 staffing model, Brooklyn Park employs six paid-on-call (POC) firefighters each day and three at night to provide immediate response capabilities. These part-time POC firefighters, who are paid an hourly wage while on shift, consistently meet or exceed the NFPA standard for response time on medical calls. The redesign of staffing and apparatus deployment, using small vehicles and two-person rescue crews, has significantly reduced both fuel costs and capital expenses, and allows the department to deliver patient care in areas previously not reachable. The entire department staff is certified to the EMT-B level, including four EMT-Ps and 61 EMT-Bs. Moreover, EMT-B certification is a requirement for employment.

The department has forged a strong working relationship with a primary advanced life support provider. This relationship has proven very beneficial on a number of levels, including exchange programs for any used medical supplies, EMT assistance during transport of critical patients, training partnerships between the two entities and a station modification creating an ambulance bay and separate quarters for the medics.

Realizing that this is an ongoing process, the department initiated executive-level meetings to assess progress and ensure current goals are meeting changing demands. Additionally, practices have been instituted to achieve better oversight and consistent performance and an awards program was launched to recognize achievements.

## Cherokee County (GA) Fire-Emergency Services

The Cherokee County Fire-Emergency Services underwent many changes this past year to improve the level of emergency care for the citizens of Cherokee County. First, the department changed how the dispatch center processes medical calls, significantly reducing the average time for dispatching emergency medical crews by one minute and twenty seconds.

To improve the quality of care for cardiac arrest victims, the Cherokee County Fire-Emergency Services implemented the Therapeutic Hypothermia Protocol. Each ambulance is now equipped with an Engle cooler that keeps IV fluid at 39 degrees centigrade and a freezer cooler filled with ice packs for further cooling. The post-resuscitated patients are transported to facilities that have heart catheterization programs that can continue cooling the patients upon arrival.

These are just two of the significant changes implemented by the Cherokee County Fire-Emergency Services to enhance the delivery of emergency medical services for its residents.

## Goodyear (AZ) Fire Department

In 2008, the Goodyear Fire Department and West Valley Hospital developed the “Door to Balloon” Time Reduction Project to increase patient survivability and improve health and wellness of acute heart attack patients. The transmission of 12-Lead ECGs in the field and reduction of “door-to-balloon” times below the national stated average of 90 minutes are the core elements of the program.

When a patient experiences chest pains, a 12-Lead ECG is initiated on the scene by the Goodyear Fire EMTs and Paramedics. The 12-Lead ECG is immediately transmitted by a Philips MRx heart monitor and a cell phone, which is part of the paramedic’s equipment, to West Valley Hospital. This pairing sends the 12-Lead information directly to the emergency department via Bluetooth technology. An emergency department nurse receives the 12-Lead ECG from the paramedics to start a “chest pain rapid response” and the cardiac response team at the hospital is mobilized – all done before the patient arrives at the ED.

By working collaboratively, the Goodyear Fire Department and West Valley Hospital are able to impact positively patients’ lives by reducing the amount of time it takes to open their occluded cardiac vessel. While the national standard is 90 minutes, the Goodyear Fire Department and West Valley Hospital have consistently lowered that number to an average of 74 minutes.



Established in 1989, the Congressional Fire Services Institute (CFSI) is a nonprofit, nonpartisan policy institute that works with Members of Congress in promoting fire and life

safety issues. Working with other national fire service organizations, the CFSI focuses its attention on issues that benefit all first responders. Members of the Congressional Fire Services Caucus, the largest caucus in Congress, look to CFSI for guidance and information to enhance their level of understanding about the challenges and needs of our nation's fire and EMS communities.

## **Congressional Fire Services Institute (CFSI)**

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More than 50 years ago, MedicAlert Foundation pioneered the use of medical IDs and systems to relay vital medical information on behalf of its members to emergency responders to ensure faster and safer treatment. Today, MedicAlert provides the functionality of an e-health information exchange through an innovative combination of a unique patient identifier linked to a PHR and a live 24/7 emergency response service. MedicAlert medical IDs alert emergency personnel to a member's primary health conditions, medications or implanted devices. In addition to its 24-hour emergency response service, MedicAlert also provides family and caregiver notification so that members can be reunited with their loved ones. MedicAlert services are available around the world through a network of international nonprofit affiliated organizations licensed by the Foundation.

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