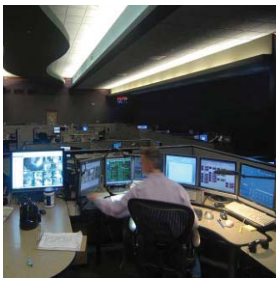
Public Health - Seattle & King County

Division of Emergency Medical Services

2014 Annual Report

to the King County Council

Public Health
Seattle & King County

Medic One/Emergency Medical Services (EMS) serves nearly 2 million people in King County and
provides life saving services on average **every 3 minutes**.

Each year, approximately **1 out of 10** of our residents will use our Medic One/EMS system.

Every year **the Medic One/EMS System saves thousands of lives**:
In 2013 firefighters responded to more than 172,000 calls in King County.
In 2013, paramedics responded to more than 46,000 calls for
advanced life support in King County.

Compared to other cities, cardiac arrest victims are 4 to 5 times more likely to survive.
In 2013, Seattle & King County achieved a **62% survival rate** for cardiac arrest.
This is currently among the highest reported survival rates.

Strong, effective medicine is the hallmark of the regional Medic One system.

Introduction

We are pleased to present to you the Emergency Medical Services (EMS) Division 2014 Annual Report, as required by King County Ordinance #12849.

As the first year of the new six-year Medic One/EMS levy period, 2014 is a year of new programs, new research, and a renewed commitment to equity of care in a socially and fiscally responsible manner for all. The 2014 Annual Report introduces a new, abbreviated format that is more clear and concise, and highlights accomplishments achieved during this initial year of the 2014-2019 Strategic Plan and levy.

The EMS system of King County is simultaneously old and new. With cardiac arrest survival reaching an astonishing high rate of 62.3%, it's clear that this region's mature and well tested system continues to succeed in its mission of providing superior emergency medical care. As we continue to monitor and improve over this next levy period, the results will provide insight as to where we are headed, but will be measured in the context of previous achievements.

In shortening the report, we had to choose just what to highlight. Programs not chosen for highlighting are just as impressive and are available for your review on our web site. You will still find representative examples of major success, section by section, and the measures of performance for we have become known for the world over. In 2015 and beyond, we will again build upon this performance as more exciting and innovative programs are tested to be certain we serve all our citizens, including the most vulnerable among us to the best of our ability.

I express thanks to each person within our EMS system for their individual efforts and commitment towards excellence. Thanks also to the collective efforts of all our providers that make it possible for this regional system to achieve such impressive, sustained and recognized accomplishments.

David Fleming, MD
Director & Health Officer
Public Health - Seattle & King County

Jim Fogarty
Division Director
Emergency Medical Services

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Commonly Used Acronyms

EMS - Emergency Medical Services
ALS - Advanced Life Support
BLS - Basic Life Support
EMD - Emergency Medical Dispatch
EMT - Emergency Medical Technician

ACKNOWLEDGEMENTS

The Emergency Medical Services (EMS) Division would like to thank all of the individuals who contributed to the EMS 2014 Annual Report, including managers of the various EMS projects and programs included in the report, **Leonard Roberts** and the **Seattle Fire Department**, and the EMS Division data analysis team of **Carol Fahrenbruch, Jamie Emert, Dan Henwood, Sofia Husain, Dmitry Sharkov** and **Ben Stubbs.**

The EMS Division would also like to thank **Drs. Leonard Cobb, Michael Copass,** and **Michael Sayre** of the Seattle Medic One program for their collaborative efforts in partnering with the EMS Division.

CREDITS

Editors:	Helen Chatalas and Michele Plorde, EMS Division
Design:	Ann Doll, EMS Division
Financial Report:	Cynthia Bradshaw and the EMS Division Finance Team
Photos:	Jennifer Blackwood, Shelby Sprake, the Medic One Foundation, and the EMS Division

Executive Summary

2014 marks the first year of the new six-year Medic One/EMS levy period, and the 34th year since voters passed the first regional levy voters in 1979. As indicated by the 84% approval rate from this last November's general election, public support for the system remains exceptionally strong, as do their expectations of their world renowned emergency medical system.

With the new levy span comes the renewed commitment to continue to improve an already excellent system. The established components that have contributed to the system's success – the highest standards of medical training, effective partnerships, continual quality improvement, innovation and leadership – remain firmly cemented at its foundation. However, the region has also developed a new set of tools that it can leverage to strengthen our system. There are new initiatives to focus on repeat callers and reduce the inappropriate use of EMS services; innovative programs to increase economic and quality improvement opportunities for BLS agencies; re-scoped programs to broaden the reach and meet emerging needs of the system; and finally, regionally endorsed performance measures to assess the clinical, operational, financial and programmatic aspects of the system and ensure it is continually improving.

The EMS Division has traditionally viewed its annual report as the main avenue for keeping stakeholders well-informed of EMS programs and successes. This year's report offers highlights from the past year, allowing for a more focused and concise review of our operations. These are innovative programs that have made great strides, brought significant value to our system, or may be "up and coming" strategies that the public would want to learn about and follow.

In conjunction with the new role of the annual reports, the EMS website will now be the primary source of information regarding our many varied programs in the region. We are hoping this will better demonstrate the breadth and depth of our system, and enable us to share updated information more quickly. While each program may not be featured every year in the annual report, they are equally important and beneficial to the daily operations of our system.

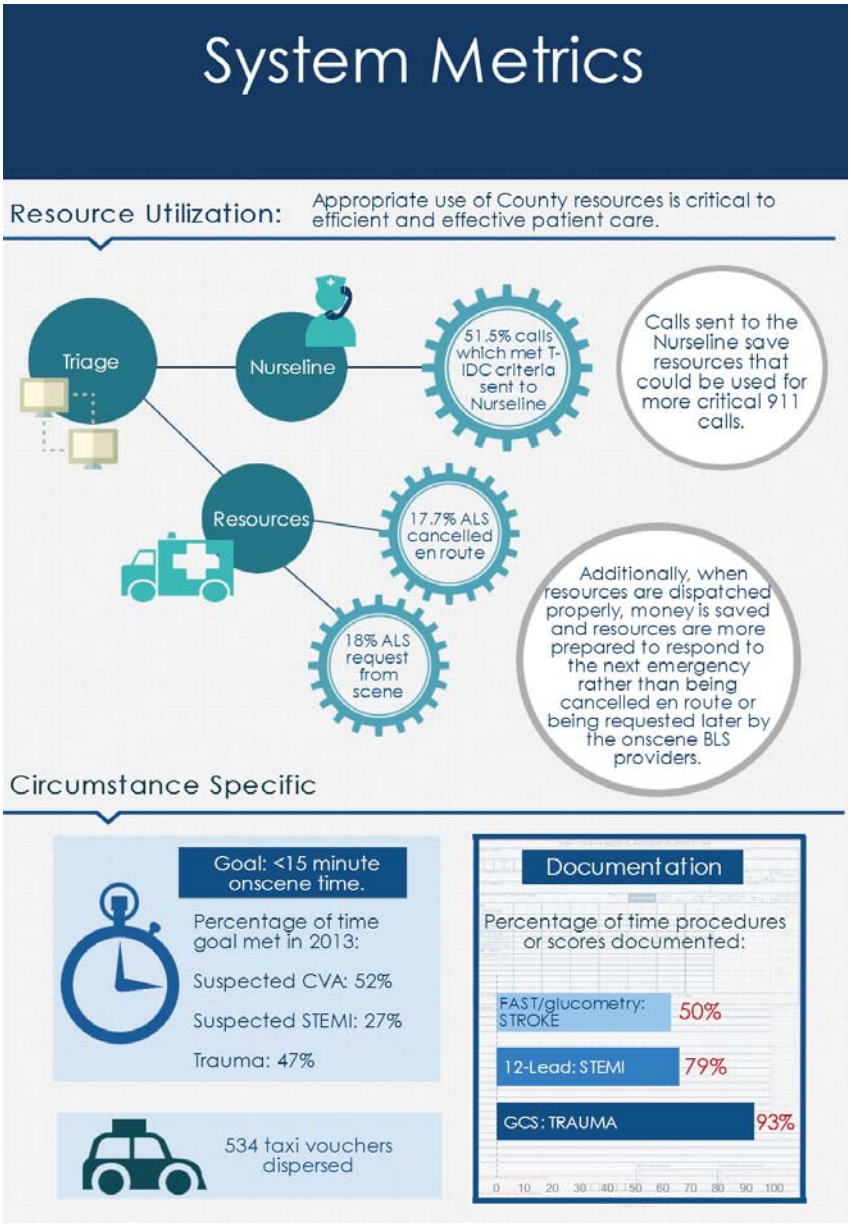
http://www.kingcounty.gov/healthservices/health/ems.aspx

Any time you call 9-1-1 for a medical emergency, you are using the Medic One/EMS system.

Executive Summary

Similar to some of the other changes, this is the first year the EMS Division is reporting on a newly minted set of performance measures. The region identified these specific measures as a means of gauging the overall effectiveness of the Medic One/EMS system of King County. Extending across all EMS programs, these measures assess the clinical, operational, financial and programmatic aspects of the system. Some of these measures were already well known, such as cardiac arrest survival rate and adherence to medical protocols; for others, the data collection process was already in place, but not necessarily reviewed or reported annually. Finally, new measures were identified that required a strategy for how best to collect the data, and create targets and ranges in order to implement them.

The EMS Division plans to report on these performance measures on an annual basis and examine from year to year how our programs impact the outcomes. Please refer to Appendix J: EMS Performance Measures for more detailed information.



2013 data are the baseline against which future years will be compared.

System Overview

Any time you call 9-1-1 for a medical emergency, you are using the Medic One/EMS system. This internationally-renowned regional system provides service to the residents of Seattle and King County, responding to an area of 2,134 square miles and serving a population of over 1.9 million. The system is managed by the King County Emergency Medical Services (EMS) Division and relies on complex partnerships with fire departments, paramedic agencies, EMS dispatch centers, and hospitals to make the program seamless and successful.

The Medic One/EMS System in King County is distinctive from other systems in that it **(a) is medically based, (b) is regional,** and **(c) uses tiered out-of-hospital response.**

(a) The medical model is the core of the EMS program in King County. In essence, it asserts that direction and practice must be derived from the highest standards of medical training and medical care. Accordingly, the EMS Division strives for emergency medical care that is founded on the highest standards of training, best medical practice, scientific evidence, and close supervision by physicians experienced in EMS.

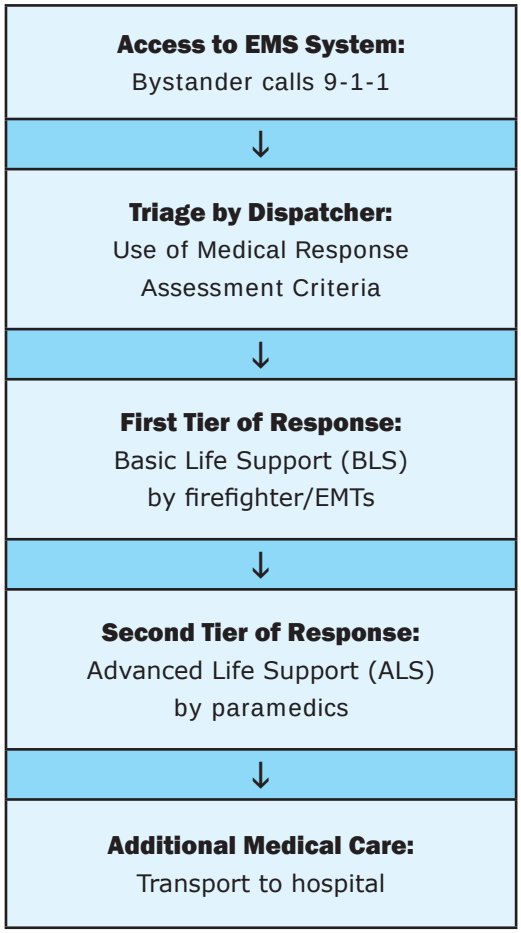
The leadership of the Medical Program Director ensures the success and the ongoing medical quality improvement of the EMS system. Mickey Eisenberg, MD, PhD, has filled this role for the past ten years. His substantial responsibilities include writing and approving medical protocols, approving all initial Emergency Medical Technician (EMT) and continuing EMT medical education, undertaking new and ongoing medical quality improvement activities, and initiating disciplinary actions when necessary.

To support the best possible outcomes of care, Dr. Eisenberg oversees continual medical quality improvement activities, such as the review of every cardiac arrest event for the past 35+ years and patient protocol compliance audits. The result of this ongoing quality improvement is enhanced patient outcomes and a steadily rising cardiac arrest survival rate, currently among the highest reported in the nation.

(b) Regional partners sustain uniformity and consistency across the entire EMS system. Dr. Eisenberg coordinates policies and procedures among the Medical Directors of the region's six paramedic programs: Drs. Michael Copass and Michael Sayre of Seattle; Dr. Jim Boehl of Bellevue; Dr. Adrian Whorton of Redmond; Dr. Gary Somers of Shoreline; Dr. Tom Rea for south King County; and Dr. Sam Warren of Vashon.

System Overview

EMS Tiered Response System



Dr. Eisenberg also works closely with the Central Region Trauma Council and the EMS Advisory Committee which provides key counsel to the EMS Division on regional Medic One/EMS policies and practices in King County, including major governance issues, strategic plan implementation, and other proposals.

(c) A tiered response system in King County ensures the most appropriate care provider responds to each 9-1-1 call. There are five major components in the tiered regional Medic One/EMS system:

Universal Access: A patient or bystander accesses the Medic One/EMS system by calling 9-1-1 for medical assistance. Bystanders' reactions and rapid responses to the scene can greatly impact the chances of patient survival.

Dispatcher Triage: Calls to 9-1-1 are received and triaged by professional dispatchers who determine the most appropriate level of care needed. Dispatchers are trained to provide pre-arrival instructions for most medical emergencies and guide the caller through life-saving steps, including Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED) instructions, until the Medic One/EMS provider arrives.

Basic Life Support (BLS) Services: BLS personnel are the "first responders" to an incident, providing immediate basic life support medical care, using advanced first aid and CPR/AED to stabilize the patient. Staffed by firefighters trained as Emergency Medical Technicians (EMTs), BLS units arrive at the scene in under five minutes (on average). BLS contributes significantly to the success of the Medic One/EMS system.

Advanced Life Support (ALS) Services: Paramedics provide out-of-hospital emergency medical care for critical or life-threatening injuries and illness. Paramedics respond on average to about a quarter of all Medic One/EMS calls.

Transport to Hospitals: Once a patient is stabilized, it is determined whether transport to a hospital or clinic for further medical attention is needed. Transport is most often provided by an ALS agency, BLS agency, or private ambulance.

System Overview

The Medic One/EMS system operates in a coordinated partnership among numerous stakeholders across King County to provide high quality pre-hospital medical care. Dispatch 9-1-1 calls are received by one of five dispatch centers in Seattle and throughout King County. Following medically approved emergency dispatch triage guidelines, dispatchers determine the level of care needed.

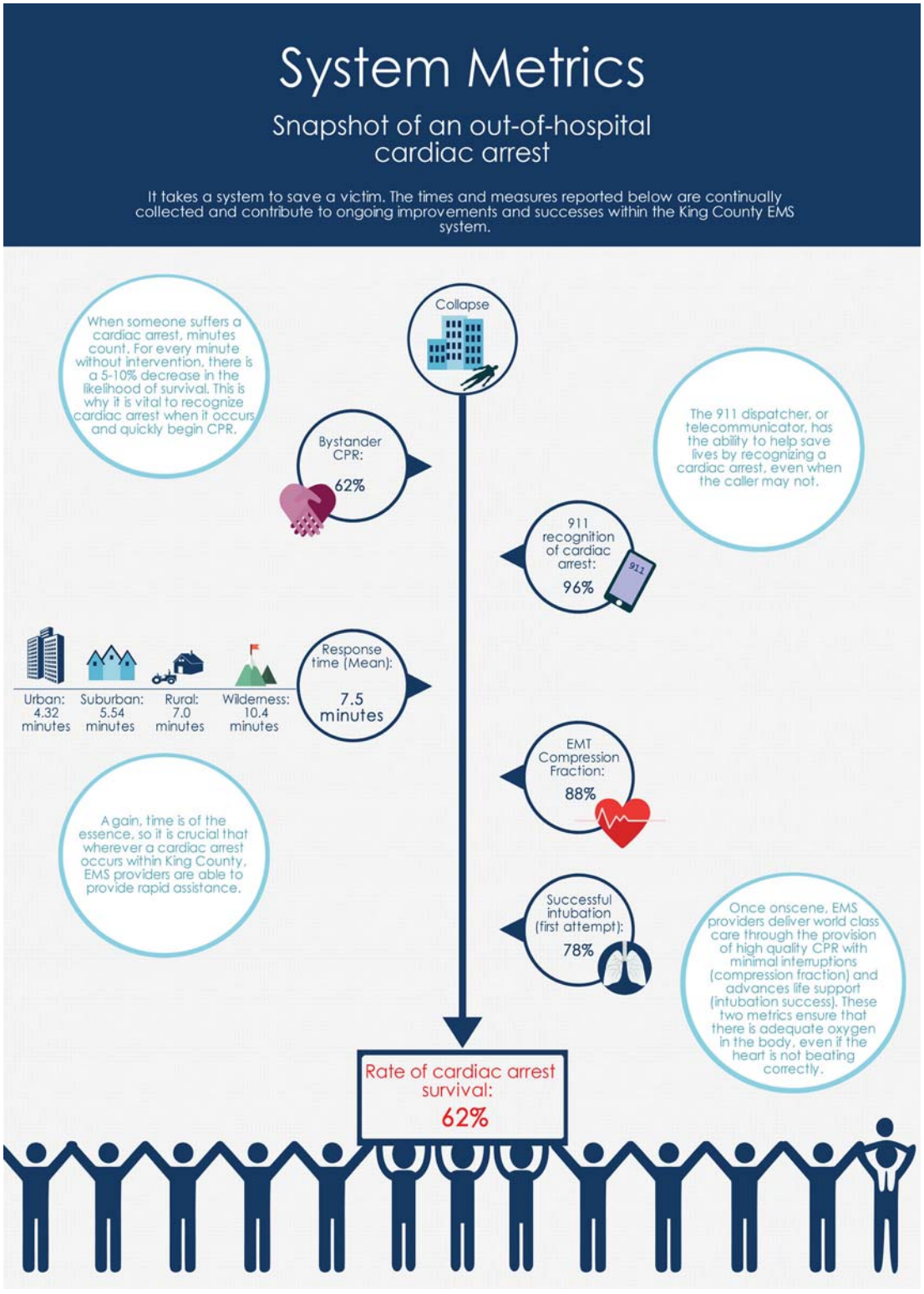
Basic Life Support (BLS) or rapid, first-on-scene medical care, is provided by over 3,700 Emergency Medical Technicians (EMTs) employed by 30 fire-based agencies throughout King County. EMTs receive more than 140 hours of basic training and hospital experience with additional training in cardiac defibrillation (electrical shocks) given to restore a heart rhythm. EMTs are certified by the State of Washington and are required to complete ongoing continuing education to maintain certification.

Advanced Life Support (ALS) services, or regional paramedic services, are provided by six agencies operating 26 ALS units throughout King County: Bellevue Fire Department (4 units), Redmond Fire Department (3 units), Seattle Fire Department (7 units), Shoreline Fire Department (3 units), King County Medic One (8 units) and Vashon Island Fire & Rescue (1 unit). In addition, a contract with Snohomish County Fire District 26 brings ALS services to the Skykomish/King County Fire District 50 area, from Baring to Stevens Pass. Paramedics arrive second on the scene and provide out-of-hospital emergency care for serious or life-threatening injuries and illness. Examples of out-of-hospital procedures include airway control, heart pacing, and dispensing of medicine. Paramedics receive over 2,500 hours of intensive training through the University of Washington/Harborview Medical Center Paramedic Training Program and are required to complete continuing medical education to maintain certification.

The EMS Division manages the core Regional Services that support the key elements of the system. They are essential to providing the highest quality out-of-hospital emergency care available. Regional coordination ensures pre-hospital patient care is delivered at the same standards across the region, regional policies and practices reflect the diversity of needs, and local area service delivery is balanced with centralized interests. Examples include:

- Uniform training of EMTs and dispatchers
- Regional medical control and quality improvement
- Injury prevention programs
- Regional data collection and analysis
- Regional planning for the EMS system
- Financial/administrative management

The EMS Division also manages innovative projects and operations called Strategic Initiatives designed to improve the quality of Medic One/EMS services and manage the growth and costs of the system. Regional Strategic Initiatives have allowed the Medic One/EMS program in King County to maintain its role as a national leader in the field and have been key in the system's ability to manage its costs.


System Metrics
Snapshot of an out-of-hospital cardiac arrest
It takes a system to save a victim. The times and measures reported below are continually collected and contribute to ongoing improvements and successes within the King County EMS system.
When someone suffers a cardiac arrest, minutes count. For every minute without intervention, there is a 5-10% decrease in the likelihood of survival. This is why it is vital to recognize cardiac arrest when it occurs and quickly begin CPR.
Collapse
Bystander CPR: 62%
The 911 dispatcher, or telecommunicator, has the ability to help save lives by recognizing a cardiac arrest, even when the caller may not.
911 recognition of cardiac arrest: 96%
911
Response time (Mean): 7.5 minutes
Urban: 4.32 minutes
Suburban: 5.54 minutes
Rural: 7.0 minutes
Wilderness: 10.4 minutes
EMT Compression Fraction: 88%
Again, time is of the essence, so it is crucial that wherever a cardiac arrest occurs within King County, EMS providers are able to provide rapid assistance.
Successful intubation (first attempt): 78%
Once onscene, EMS providers deliver world class care through the provision of high quality CPR with minimal interruptions (compression fraction) and advances life support (intubation success). These two metrics ensure that there is adequate oxygen in the body, even if the heart is not beating correctly.
Rate of cardiac arrest survival: 62%

EMS Division Programs Overview

The Emergency Medical Services (EMS) Division of Public Health - Seattle & King County is dedicated to increasing survival and reducing disability from out-of-hospital emergencies in the county by providing the highest quality patient care in the pre-hospital setting. To accomplish this, the Division adheres to a medical model of integrated regional Medic One/EMS services, a philosophy of cooperative decision making, and the development of innovative strategic initiatives that address the demand for services and encourage system efficiencies. All EMS Division programs are designed to enhance these efforts and are developed through strong partnerships with other regional EMS agencies and innovative leadership in the emergency medical field.

Directing the EMS Division in managing the regional system is the Medic One/EMS 2014-2019 Strategic Plan, approved by the King County Council in June 2013, and voters in November 2013. Built upon the system's successful medical model and regional approach, the Plan establishes policy directions, outlines the development of new or enhanced programs and initiatives, and presents a financial plan to support the Medic One/EMS system through the span of the levy period.

The EMS Division plays a significant role in developing, administering and evaluating critical EMS system activities. It provides the core support functions that emphasize the uniformity and standardization of direct services provided by the system's partners. These programs help tie the regional medical model together by providing consistent regional medical direction, standardized EMT training and continuing medical education, standard EMS training for emergency dispatchers, centralized data collection, paramedic service planning and analysis, along with financial management of the regional EMS levy fund. It is far more medically effective and cost efficient for the EMS Division to manage these functions than to have each local response agency develop, implement and administer its own such programs.

This section usually summarizes the EMS Division's primary programs and activities, including King County Medic One. However, this year's report differs in that it highlights some of the Division's many successful programs, while the rest of the program descriptions are posted on the EMS webpage. **http://www.kingcounty.gov/healthservices/health/ems.aspx**

It is well known that the regional system depends on a complex partnership of providers, all of whom recognize the strong value for residents in maintaining the tiered response system. The EMS Division acknowledges the extraordinary efforts of all the EMS partners involved in implementing established programs and developing new programs. The time, expertise and collaborative efforts required of the EMS community demonstrate exactly why the EMS system in King County is so successful and serves as an international role model.

It is more effective and efficient for the EMS Division to manage regional functions rather than have local response agencies implement and administer their own programs.

CPR & Public Access Defibrillation

Cardiac arrest is one of the most life-threatening of all pre-hospital medical emergencies. Numerous clinical studies have demonstrated that patients who receive early cardiopulmonary resuscitation (CPR) and early defibrillation have a significantly improved chance of survival from cardiac arrest. The EMS Division offers a number of programs to provide CPR and Automated External Defibrillator (AED) training to residents of King County, while also working to place these devices in public locations and encourage the public to register their AEDs.

CPR & Public Access Defibrillation (PAD)

Every year, more than 300,000 Americans die from sudden cardiac arrest, a condition in which the heart unexpectedly stops beating. It can happen anywhere, to anyone, at any time - even to those with optimal heart health. And when it occurs, seconds count.

Numerous clinical studies have demonstrated that patients who receive early cardiopulmonary resuscitation (CPR) and early defibrillation have a significantly improved chance of survival from cardiac arrest. Research has also demonstrated that rapid defibrillation after cardiac arrest is the most critical factor for improving survival.

Introduced nearly 30 years ago, AEDs administer an electrical shock to a sudden cardiac arrest victim's failing heart to restore a normal heart beat. Studies have shown a 70-80% chance of survival if an AED is used within minutes on a victim of sudden cardiac arrest. For many, a shock from an AED is the only chance for survival.

RAMPART

Regional Approach to Municipal Public AED Registry and Training

AEDs placed in high incidence/high risk locations provide a greater opportunity for citizens to act as Community Responders and provide CPR and defibrillation prior to the arrival of EMS units. Trained responders, public education programs, and accessible AEDs have been a critical factor in helping Seattle and King County reach the current sudden cardiac arrest survival rate of 62%. (Survival data for witnessed, VF cardiac arrest, see page 42.)

RAMPART allows the EMS Division to partner with cities to purchase and place AEDs in public settings and train city/county employees on their use. The EMS Division maintains the Public Access Defibrillation (PAD) Registry and encourages cities to seek out and identify unregistered AEDs in their communities.

CPR & Public Access Defibrillation

State law RCW 70.54.310 requires that AED owners notify the local emergency medical services about the existence and the location of their defibrillator. In King County, this information is collected through registration of the AED. Owners of an AED should visit www.kingcounty.gov/aed to register their device(s). When AEDs are registered, dispatch centers alert callers to the nearest AED location, leading to early defibrillation and, quite possibly, saving a life.

Owners of an AED should visit www.kingcounty.gov/aed to register their device(s).

The goals of RAMPART are to 1) expand the King County and city AED programs by increasing the number of AEDs in the PAD Registry; 2) provide incentives and guidelines for purchase and best placement of AEDs in high risk/high incidence locations; and 3) promote AED training for the workforce of King County and the cities within King County.

Five cities successfully implemented the program as a pilot in 2010. The program has since expanded to include the majority of cities in King County (23 total in 2014).

Cities Participating in the RAMPART Program

2010	2011	2012	2013	2014
5	12	16	18	23

Participating cities receive funding based on the number of employees and the number of registered devices currently in the AED Registry within their city boundaries. The funding formula provides an incentive for cities to search out unregistered AEDs and encourage the owners to register. Funds are used to purchase AEDs to be placed in public settings, and to provide CPR/AED training to city employees.

There are currently

3,007

AEDs registered in King County

Emergency Medical Dispatch

Emergency Medical Dispatchers (EMDs) in King County play a vital role in the EMS continual Chain of Survival as the first point of contact with the public. Trained by the EMS Division in Criteria Based Dispatch, they triage calls, using specific medical criteria that are based on signs and symptoms, to send the proper level of care with the proper urgency. Dispatchers also provide pre-arrival instructions for most medical emergencies and guide the caller through life-saving steps – including Telecommunicator-Assisted Cardiopulmonary Resuscitation (CPR), Choking and Emergency Childbirth – until the Medic One/EMS providers arrive. Studies have shown that telecommunicator-assisted CPR increases the likelihood that the patient will survive a sudden cardiac arrest event.

EMD Awards

Every year, the EMS Division is honored to recognize the outstanding and critical work of its valued partners, the 9-1-1 emergency medical call-receivers and dispatchers throughout King County.

The 2014 award recipients **Robyn Keeton** and **Scott Castonguay** (at left) are from Valley Communications Center (Valley Com) and **Ethan Trimble** and **Megan Hestir** (below right) from NORCOM. Ms. Keeton received her award for exemplary handling of a critical EMS incident. Robyn was able to stay on the line with a suicidal woman who was calling from an unknown location. She worked carefully to unravel clues and determine the woman's location so she could get help to this patient. Her swift action, coupled with her ability to remain focused, was a key component in this rescue event. Mr. Castonguay and Mr. Trimble received their awards for sustained exemplary performance for their hard work and dedication to the community they serve. Ms. Hestir received her award for exemplary handling of a critical Emergency Medical Services incident. Ms. Hestir spoke to a child whose father was unconscious and in need of immediate medical help. Megan stayed patient and calm while providing the very scared child with CPR instructions over the phone.

The 2014 awards were presented during National Telecommunicator week in April, offering an opportunity to thank not only the award recipients but all of the emergency medical dispatchers serving the citizens of King County. It is because of their commitment to quality patient care and the maintenance of a critical system that we are able to sustain this world-class system of pre-hospital care.

Injury Prevention

Injury is the leading cause of death for those under 45 years of age. While for the elderly, emergency departments treated 2.4 million nonfatal fall injuries in 2011, more than 689,000 of these patients had to be hospitalized. By 2020, the annual direct and indirect cost of fall injuries is expected to reach $67.7 billion (in 2012 dollars) as compared to $30 billion in 2010. In 2010 the U.S. population of older adults ages 65 and older stood at about 40 million; by 2030, their numbers are expected to increase to more than 72 million. The EMS Division has invested considerable time and effort into building long term relationships with fire departments, community agencies and organizations that work toward the common goal of reducing older adult fall injuries and death through a combination of public awareness campaigns and direct intervention programs.

Expansion of the Fall Prevention One Step Ahead Program:

The Centers for Disease Control and Prevention recommends various ways in which older adults can remain independent and reduce their chance of a fall by exercising regularly, asking doctors or pharmacists to review their medicines, having their vision checked and making changes in their homes to increase their mobility and prevent injury. Hospitalizations accounted for nearly two-thirds of the costs of nonfatal fall injuries and emergency department treatment accounted for 20%. On average, the hospitalization cost for a fall injury is $34,294 (in 2012 dollars).

The One Step Ahead fall prevention program aims to reduce reoccurring falls. The program offers adults 50 years and older a home safety assessment to identify fall hazards, install fall prevention safety devices, offer education about staying safe in the home, and relay information about other community resources. Those eligible must have called 9-1-1 for a fall incident, received a “high risk” of fall assessment by a healthcare professional, or been referred by an emergency department (ED), social worker, physician, physical or occupational therapist, or home healthcare professionals.

Since the inception of the program in 2003, there have been 1,194 program participants enrolled (as of 4th quarter 2013), of which approximately 78% had experienced a fall prior to the intervention. 80% of the fallers who completed the evaluation did not have a fall after the intervention, as compared to the Pilot Study where 58% did not fall after the intervention.

The EMS Division’s current goal is to increase enrollment by 3%, which would be 177 participants. To do this, the Division is seeking new partnerships and encouraging a greater number of referrals from hospital emergency departments, primary care clinics, home healthcare agencies, social workers and discharge nurses. The Division is also looking to expand the program to include Seattle residents through a partnership with the Central EMS and Trauma Care Council.

Center for the Evaluation of EMS

The Center for the Evaluation of Emergency Medical Services (CEEMS) has been conducting research studies since 1987. These studies are aimed at improving the delivery of pre-hospital emergency care and advancing the science of cardiac arrest resuscitation through collaboration between the EMS Division and academic faculty from the University of Washington. Funding for these activities comes from private foundations, state agencies, and federal institutions. Achievements made by this collective effort continue to improve outcomes from sudden cardiac arrest and advance evidenced-based care and treatment.

EMT Injury Prevention Grant

Emergency medical responders have historically high rates of musculoskeletal (MS) injuries. The EMS Division and the University of Washington collaborated in a study identifying the range of influences associated with back injuries to develop a program targeted at pre-hospital care providers to reduce such risks.

In the years 2011 and 2012, three participating departments had an average of 47 injuries. The calculated injury rate was 0.40 injuries per 100 incidents, and 29.12 injuries per 100 responders. The leading injury locations were hand/arm, lower back (L-spine) and knee.

Based on these findings, it was recommended that (1) a peer-led wellness and fitness committee should administer a comprehensive injury prevention program; (2) the program should incorporate "worksite health promotion" activities of mixed-routine exercises with primary emphases on cardiovascular exercises and stretching, along with a healthy eating program; and (3) occupational safety and health activities of technique reminders and skill building workshops should be incorporated into the program, as well as cardiovascular disease interventions and stress reduction.

Center for the Evaluation of EMS

Telecommunicator – CPR Course (T-CPR)

The King County EMS Division has developed a comprehensive telecommunicator-CPR course to provide basic training to dispatchers in rapid recognition of cardiac arrest and timely delivery of telephone CPR instructions. Course content reflects best practices consistent with international resuscitation guidelines. The curriculum promotes recognition of cardiac arrest within one minute of receiving the 9-1-1 call, starting chest compressions within two minutes of the call, and identifying 90% of all cardiac arrests.

The T-CPR curriculum is a web-based 3-hour module rich in audio-visual media, dispatch recordings of actual 9-1-1 calls, and interactive quizzes and scenarios. The content is organized to (1) teach how to recognize cardiac arrest by asking the right questions, (2) effectively coach the caller to perform CPR, (3) anticipate and manage potential missteps and challenges, and (4) respond to special circumstances such as rescue breathing, use of an automated external defibrillator, and language barriers.

The EMS Division has partnered with the Association of Public-Safety Communication Officials (APCO), the world's largest emergency dispatch training organization, to provide this training course. The course will be hosted on the APCO website to ensure a broad reach to 9-1-1 dispatchers, locally, nationally and internationally.

Medical Quality Improvement

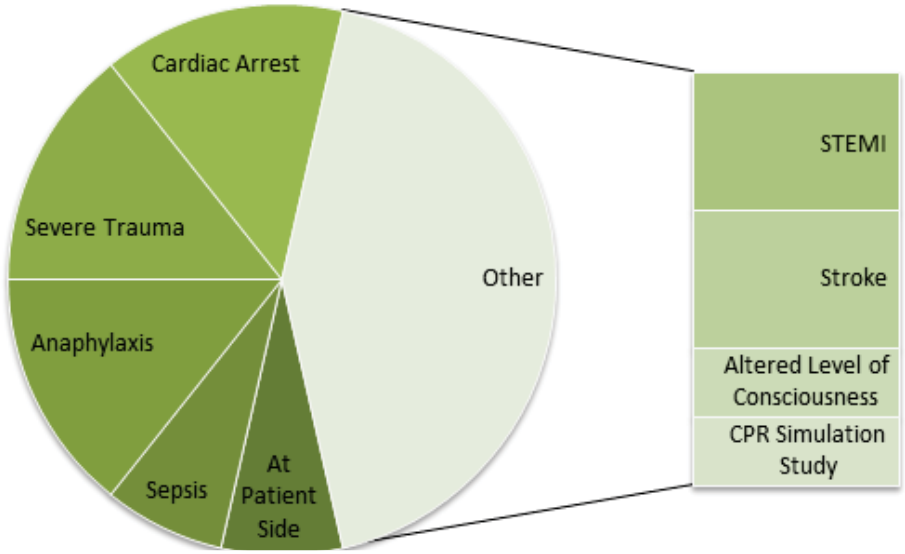
The Medical Quality Improvement (QI) section conducts programmatic, scientific, and case-based evaluation of the EMS system to improve the quality of EMS patient care in King County. To advance the science of resuscitation and EMS care, it partners with investigators in the EMS Division and at the University of Washington on research projects. This allows for productive and unique collaboration across the academic and operational EMS community, the results of which improve care, outcomes, and subsequently, the health of King County residents.

Historically, the Medical QI section has undertaken a broad range of activities to develop and expand critical evaluations of pre-hospital care. The following section provides a brief background of the Medical QI section and details core QI programmatic activities and research collaborations.

EMS Quality Improvement Reports

"Measure and Improve" is the motto which has led to King County EMS becoming the exceptional system that it is today. Delivering high quality patient care requires systematic evaluation and assessment of EMS responses to identify areas for improvement. Since 2011, the Medical Quality Improvement (QI) section has been conducting a series of QI audits to assess BLS and ALS responses to various critical conditions. The results of these audits are distributed to all King County medical directors, fire department chiefs, training officers, dispatch center leaders, and hospital cardiac and stroke coordinators to encourage a culture of evaluating and improving patient care.

2013 QI report topics



In 2013, the Medical QI Section aligned QI report topics with the 2013 Training Goals established for EMTs and paramedics. The goals and reports focused on cardiac arrest, anaphylaxis, sepsis, trauma and reporting 'at patient side' time. The figure above shows the distribution of QI report topics in 2013.

QI reports will monitor the progress toward reaching the 2014 Training Goals, which focus on high-performance trauma, clinical documentation, intra-muscular epinephrine administration by EMTs, and reporting 'at patient side' time. The Medical QI section will also present reports on other topics of interest, including trend analyses, intricacies of the data that KCEMS collects from EMS agencies, and summaries of research studies completed by the Division.

The QI reports highlight the exceptional care that King County EMTs and paramedics already provide to patients. The continuous review of specific medical conditions and treatments enhances efforts towards improving patient care and developing a more effective and informed EMS system.

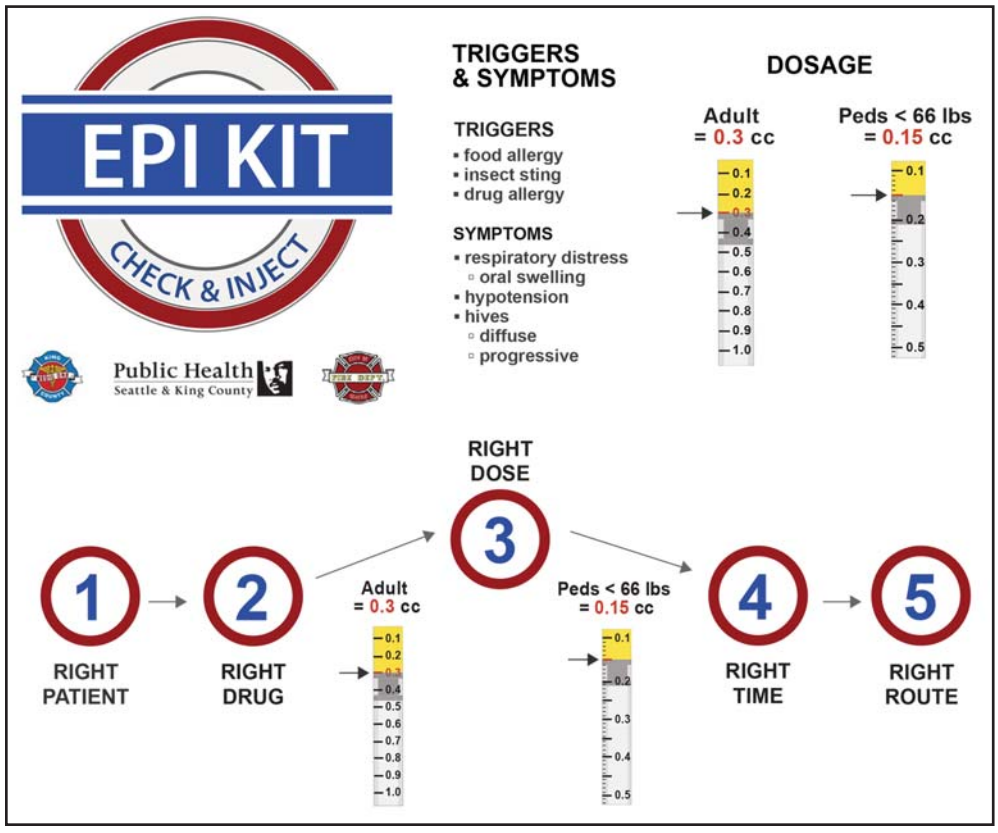
Medical Quality Improvement

EMT Treatment of Anaphylaxis

Anaphylaxis is a serious, life-threatening immune response to allergens such as insect stings, certain foods, latex, or medications. Its symptoms can range from swelling, hives, hypotension, dilated blood vessels, and respiratory distress to anaphylactic shock, loss of consciousness or death. Treatment with intramuscular epinephrine rapidly and effectively reduces symptoms, so if patients do not have an epinephrine auto-injector of their own, they should initiate an EMS response by calling 9-1-1 immediately. King County EMTs treated anaphylaxis with EpiPens® (anepinephrine auto-injector) until April 2014, when they began administering the medications via needle and syringe.

In 2011 the Medical QI Section conducted the first retrospective review of the use of EpiPens® by King County EMTs in 2009 and 2010. The review indicated a possible over-use of EpiPens in some cases. In response to this finding, KC EMS worked with training officers to develop targeted trainings on appropriate EpiPen use. Complete documentation of patient care was also emphasized to allow thorough evaluations of EpiPen use. Continued review of each EpiPen use in the County showed that all subsequent EpiPens were administered appropriately. King County EMTs have shown marked improvement in recognizing epinephrine indications and in documenting patient care.

Due to the increased cost of auto-injectors, King County EMS providers now draw the correct dosage of epinephrine using a needle and syringe and administer it intramuscularly. This change has saved the County a significant amount of money.



Despite the change in mode of epinephrine administration, the indications for its use and the requirements around documentation will remain the constant and will continue to be carefully monitored by the Medical QI and Professional Standards Sections. These evaluations are instrumental in maintaining the high level of care that EMS personnel provide to King County residents.

Administration

The Administrative Section provides financial and administrative leadership and support to internal and external customers to ensure integrity and transparency of the EMS system. It engages with regional partners to implement the EMS Strategic Plan, uses best practice in the financial management of EMS levy funds, participates in countywide business improvement processes, and ensures the continuity of business in collaboration with EMS stakeholders. Administration also provides essential support to all the EMS Division sections that direct a multitude of regional programs, including contract management, personnel-related activities, budget preparation, and day-to-day operational activities.

2013 Audit

The King County Auditor conducted an annual EMS audit between 2009-2013 as part of the 2007 Medic One/EMS levy approval package. While the primary mandate was a financial compliance audit, the Auditor's Office included performance-oriented review each year. The final year's report reiterated that the EMS Division continues to manage its funds according to the regionally adopted financial plan and policies.

The EMS Division continues to manage its funds according to the regionally adopted financial plan and policies.

Like in previous years, the 2013 audit examined the EMS Division's financial practices and compliance with council-adopted levy policies and financial plan. Unique to this year's audit was the review of the major drivers accounting for an increase in overhead charges to the EMS levy fund, and how the EMS Division allocated overhead within the division. Staff also returned to a recommendation from a previous audit concerning performance measures and outcomes. A final task was to assess the timeliness of contract reimbursements to EMS partners.

The review demonstrated that the EMS Division continues to manage its financial operations in accordance with the EMS levy financial plan and policies. The auditor found that overhead charges to EMS and its programs were distributed in a manner consistent with best practices, although the EMS Division may need to draw on reserves to accommodate increases resulting from a shift in the overhead allocation methodology. Finally, the review acknowledged the Division's undertaking, as recommended in the 2010 audit, to more conclusively identify and communicate the efficiencies that Strategic Initiatives provide the system. It recognized that there were greater accountability and transparency of the benefits, but found that cost savings were not consistently quantified. In addition, subsequent to the inquiries made by the Auditor, the County already changed the payment terms for invoices, accelerating the timing of payments and diminishing cash flow problems for EMS partners.

The region expects - and deserves - accountability in the use of EMS levy funds. These 2009-2013 audits were shown to be powerful tools in demonstrating to the public that their tax dollars were being used appropriately and with integrity. Since the first audit in 2009, the EMS Division has implemented ten out of the 13 recommendations. Of those three remaining, two are in progress and one is not due for implementation until 2016. The EMS Division has also adopted performance based contracts for the provision of EMS-related services for its partners. Based upon the positive reviews from past audits, two audits have been scheduled for the 2014-2019 levy span.

King County Medic One

King County Medic One (KCM1) is one of the six Advanced Life Support (ALS) providers in the regional EMS system. It serves approximately 520 square miles of south King County, an area with a population now close to 725,000 people. In calendar year 2013, KCM1 responded to 14,406 calls for this advanced care, including pediatric patients, mass casualty, motor vehicle crashes, and cardiac emergencies.

KCM1 works in south King County as part of a coordinated system of effective emergency care that includes 9-1-1 emergency dispatch, basic life support care by fire departments, advanced life support care by KCM1, and hospital based care. KCM1's 72 paramedics work side-by-side with local fire department personnel to provide the highest quality, cost-effective emergency medical care to those in need, 24 hours a day, every day of the year.

To achieve this coordinated care approach, paramedic units co-locate with fire stations whenever possible, to promote a team atmosphere. This cost-effective strategy also eliminates the need for separate facilities. Physicians provide medical oversight for clinical care decisions and actively participate in strategic planning decisions that guide the KCM1 organization. The "medical model" that incorporates a tiered response strategy has resulted in the best-trained, most experienced paramedic providers, who in turn serve as a critical and integral component of emergency care in King County. This system of care practiced throughout King County consistently achieves the highest benchmarks of EMS care and is recognized worldwide.

Practicing for the Unthinkable

King County Medic One (KCM1), in partnership with regional law enforcement, has taken the lead in preparing for the unthinkable - an active shooter in a crowded public or educational venue. Through the "Care Under Fire program, KCM1 and enforcement developed the Basic Trauma Care for Educators (BTCFE) training program. Responders of every type - from classroom teachers to school security and administration personnel - are trained to provide basic medical care "under lockdown", or in an area that has not yet been cleared by the Police Officers for EMS personnel entry. Police officers escort fire fighters and EMS personnel into the school "warm zones" to immediately treat patients. The Tahoma School District, the Port of Seattle and a few others have been early embracers of this program, and have already practiced under realistic conditions with demonstrable improvements in time.

The program has been so well received that other King County areas are adopting the concepts. The Bellevue Fire and Police Departments are coordinating expanding this program to school districts in the North and Eastern part of King County. Additionally, fire service and police agencies have partnered to update and implement a comprehensive strategy for all first responders that could be involved in such events.

An example of the training can be viewed here:
http://www.youtube.com/watch?v=D8LjifULst8&feature=em-share_video_user

King County Medic One

Later this year, King County Medic One will join all of South King County Fire and Police Departments in a multi-agency, multi-discipline large scale Rescue Task Force training. This will entail training 3,000 Fire, EMS and law enforcement personnel on scenes that are not deemed "secure" by law enforcement due to logistical and tactical complexities. This first-ever multi-agency, multi-discipline training was developed and approved by all specialties involved and is anticipated to last between five and six months.

Key attributes of this program, as opposed to other programs, is the simple, practical and focused practice of tasks and procedures when faced with such events. For many years, schools have practiced how to deal with fires with mandatory fire drills. Not a single fire-related death has occurred since the early 1950's but shooting-related deaths within the educational systems nationwide have reached an enormous proportion. According to the NYPD Active Shooter Study, there have been 545 people injured or killed in school-related shootings in the US from 1990-2013. The reality of the violence within educational facilities facing our educators daily is why this solutions-based program has been so well received and grown in popularity.

An associated benefit of this program is that many of the concepts can be used elsewhere - at work or home and for any type of hazards that might create a medical crisis. Preparations are currently underway within the EMS Division with King County Medic One leading the effort in expanding the program, modifying it as needed for specific sites so that all of King County can be prepared.

Schools practice fire drills.
No fire related deaths have occurred since the early 1950's.

However, shooting deaths in educational systems have significantly increased.

Professional Standards

The Professional Standards section provides initial training, continuing education, instructor education and oversight of the recertification process for nearly 3,800 Emergency Medical Technicians (EMTs) in King County. Through communication and coordination among EMS stakeholders, this section develops the curricula that ensure the training and education programs meet agencies' needs and Washington state and national requirements. As the liaison between the Washington State Department of Health and the 30 EMS/fire agencies in King County, Professional Standards relays continuing education, certification, and regulatory and policy changes to EMS agencies.

Check & Inject

Anaphylaxis is a severe allergic reaction that, if untreated, may result in death. The most commonly-used method for treating anaphylaxis is by administering epinephrine to rapidly reduce the symptoms. Washington State statute requires that all ambulance and aid services have epinephrine in their emergency care supplies, and that EMTs be trained in its administration.

The device used by EMTs has been the EpiPen® auto-injector. These devices come in adult and child doses and ambulance or aid vehicles must carry one of each. Their shelf life is approximately 12-18 months.

EMS agencies have been concerned about the price of autoinjectors. In 2012, the average cost of an EpiPen was $111, and the cost to EMS agencies in King County for auto injectors was $95,000. That same year, only 22 autoinjectors were used by EMTs to treat patients meeting anaphylaxis treatment criteria.

With autoinjectors being cost prohibitive (the price reached $250 in 2014), the EMS Division's Professional Standards Section reviewed alternative methods for administering epinephrine. The interest in returning to the traditional method of administering epinephrine via syringe sparked the creation of the "Check and Inject" kit (or "Epi Kit"), which King County EMS providers (outside Seattle) are now using. These small kits contain the supplies needed to administer at least two emergency doses of epinephrine to an adult or child, a syringe, a minimal amount of epinephrine to reduce the chance of over medication, and a check list to follow in identifying and administering the drug.

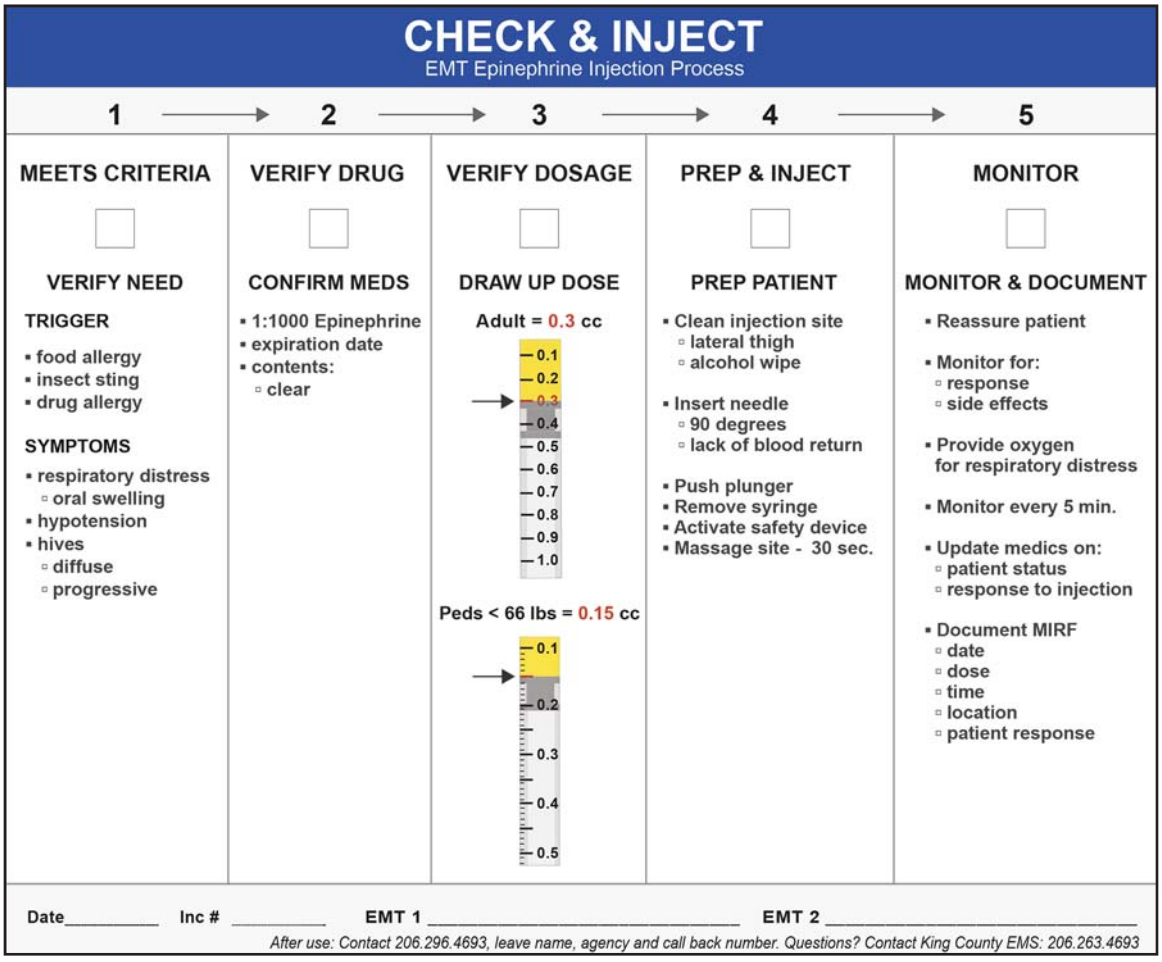
Agencies are pleased with the significant cost savings the kits provide.

Professional Standards

In addition, EMTs receive advanced training and testing tailored to recognizing and giving epinephrine with a needle and syringe.

As of April 1, 2014, 22 kits have been used and the Epi Kits have been well received by EMTs who expressed that the training they received increased their confidence in using the kit. A review of the use of EPI Kits indicates that EMTs are correctly identifying patients that have signs and symptoms of anaphylaxis, and are administering epinephrine consistent with protocols. With a price of $15 per kit and $4 to replace expired epinephrine, agencies are pleased with the significant cost savings the kits provide. The program has garnered national attention, and will be recognized at the Asthma and Allergy Foundation of America's 2014 national meeting.

Moving forward, the EMS Division intends to continue training new EMTs in the use of the kit, as well as support those already trained with ongoing education and skill review.



2014-2019 Strategic Initiatives

The Medic One/EMS 2014-2019 Strategic Plan contains specific Strategic Initiative projects designed to improve EMS services, manage growth of the EMS system, and contain costs. The following section describes the two retooled initiatives, three new initiatives and CMT pilot planned for the 2014-2019 levy span.

A. Retooled Strategic Initiatives

1. BLS Efficiencies

Background

This Strategic Initiative continues key projects from the 2008-2013 Better Management of Non-emergency Calls Strategic Initiative. With a focus on providing cost-effective and appropriate response and transport, this Strategic Initiative will encourage strategies to manage current demand and expected future growth in request for BLS assistance.

Description

The strategic goals for BLS Efficiencies include improving the quality of care while also gaining system efficiencies and containing costs.

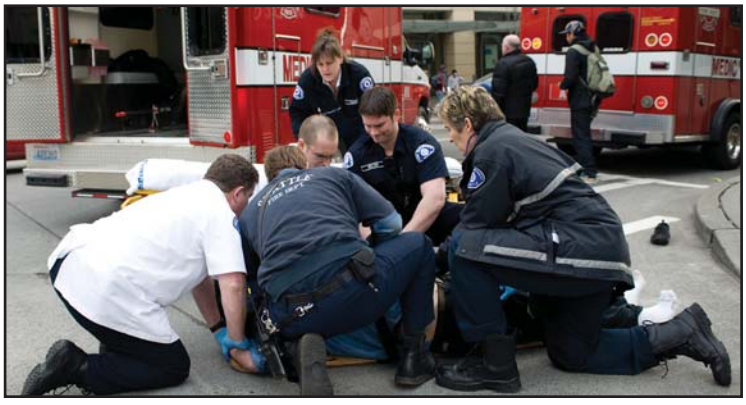
Objectives

Specific objectives for this Strategic Initiative include:

- Evaluate and reduce unnecessary EMT requests for medics from scene.
- Re-tool ADAPT, increase Taxi Transport Voucher option, work with clinics to accept patients transported by EMS.
- Evaluate and minimize unnecessary BLS transports.
- Study potential to expand EMT scope of practice to accommodate emerging community needs; providing EMTs with more knowledge skills, training to make more effective and confident decisions at scene, with a focus on minimizing unnecessary transports.

Results

Several previous Strategic Initiative BLS Efficiencies programs have become on-going regional programs, including the Community Medical Technician and Taxi Transport Voucher projects.



Next Steps

The BLS Efficiencies Strategic Initiative continues to develop quality programs aimed at managing both the current demand on the system and plan for growth.

2. EMS Efficiency and Effectiveness

Background

During the 2008-2013 levy, Efficiency and Effectiveness (E & E) funds were available to pursue projects that sought to improve patient care, manage the growth in paramedic services, and develop system efficiencies and cost savings. The Community Medical Technician pilots and the Taxi Transport Voucher program were two E & E projects that demonstrated potential to positively impact the EMS system. In the 2014-2019 levy span, funds will continue to be available for projects aiming to increase efficiency and effectiveness of the regional King County EMS system. A strong evaluation component focusing on performance measures, system outcomes, standards, or other metrics will be included in each project.

Description

The revamped Strategic Initiative will provide additional focus on performance measures, outcomes, and metrics. Funds will support a range of continuous improvement projects and include "grants" to EMS organizations. Each project will have high level goals of improving quality of care while gaining efficiencies and containing costs.

Objectives

Proposed projects would be reviewing, evaluating, and/or piloting system performance and opportunities to improve system performance and outcomes. Evaluation studies could focus on continuous improvement activities, other metrics, as well as piloting new concepts. Each project would have a strong evaluation component.

EMS Agencies could apply to use funds for specific studies or pilots. These would require detailed performance measures and evaluation at a level equivalent to King County's performance evaluation requirements. These projects would be done in conjunction with a project sponsor/project manager from the EMS Division and results would be reported to the EMS Advisory Committee and could be included in the EMS Annual Report and/or budget.

Objectives of the expanded program are to:

- Promote efficiencies.
- Promote agencies innovation and involvement in efficiencies.
- Promote strong performance measurements and cost savings measurements related to these efficiencies.
- Collaborate with departments that actively want to manage call volumes and other activities related to improving operational efficiencies and effectiveness.

Results

In the first round of proposal reviews, the EMS Division received three proposals and elected to fund two of the projects.

The Bellevue Fire Department C.A.R.E.S. program objective is to reduce repeat low-acuity 9-1-1 calls by linking clients to appropriate medical, social, and/or community services. Addressing issues before they become acute is a key step in reducing reliance on emergency medical services and leaves essential fire department resources available to respond to urgent medical and fire calls. The study will evaluate client satisfaction, reduction of non-emergent 9-1-1 calls by C.A.R.E.S. clients, methods to increase referrals by firefighter/EMTs, among many others, and will convene a "high utilizer" group with multiple stakeholders such as hospital systems, EMS, social services, and behavioral health.

The Hope Academy is partnering with the EMS Division on a project that aims to encourage effective and efficient 9-1-1 communications and interaction with communities that have significant numbers of low-English proficiency individuals. The project will focus on the Somali communities of King County but will seek to identify best practices that can extend to many other language groups and communities in King County. The primary objective for the first part of the program is to develop a 9-1-1 outreach and educational activity with direct input from the Somali community members, the Vulnerable Populations Action Team, as well as fire, EMS, and other 9-1-1 entities. The study will focus on elements of the system that improve communication between the community and 9-1-1 services, including the utilization of language interpreter services and increased knowledge of 9-1-1 and EMS services in particular. Additionally, the project offers an opportunity to expose Somali youth to the EMS workforce as a potential career opportunity, including dispatch and EMT work.

B. New Strategic Initiatives

Next Steps

The EMS Division will review submitted proposals multiple times each year during the levy. Specific dates to submit proposals will be announced by the EMS Division. At the conclusion of each funded project, reports on the project will be available and presented to the EMS Advisory Committee for review. Successful projects may be considered for regionalization or funding during future levy periods.

1. Regional Records Management System (RMS)

Background

During the Medic One/EMS 2014-2019 levy planning process, Stakeholders realized that increasing the total BLS allocation was not reasonably possible, and instead supported delivering programs on a regional basis to help reduce BLS costs and improve effectiveness.

Description

The Regional Records Management System (RMS) Strategic Initiative is designed to reduce BLS agency costs by transferring the administrative and financial responsibility of paying for patient care record software to the EMS Division.

Objectives

- Objective #1: Encourage use of a singular record management system for EMS records (Measurement: % of records from singular regional vendor).
- Objective #2: Reduce total cost of managing EMS records via one contract (Measurement: Estimated cost savings).

Results

- Worked with consultant to conduct two regional meetings with EMS agencies to discuss a regional records management system for EMS records.
- Developed a scope of work with corresponding deliverables for the regional RMS contract.
- Developed a transition plan for EMS agencies.

Next Steps

Continue to encourage use of a singular RMS for EMS records.

2. BLS Lead Agency Strategic Initiative

The BLS Lead Agency Strategic Initiative is a component of the region's on-going the strategy to better support BLS through reduced costs and improved effectiveness. It is a concept to designate limited number of BLS lead agencies to develop appropriate ways to apply the successful approach of regional ALS (in terms of provision of services, quality improvement methods, procurement, cost containment and standardization) to the system's BLS services.

As envisioned, a BLS Lead Agency would better engage several small BLS agencies on a local level and result in increased quality improvement, a greater depth of knowledge and proficiency among BLS crews, and more comprehensive interaction with other lead BLS agencies and the EMS Division. The value and mutual impacts on agencies and outcomes (economic and medical) would be assessed.

The Medic One/EMS Strategic Plan calls for the hiring of a consultant to develop the scope of work and corresponding deliverables. This is anticipated to occur in late 2014 for a program start date in 2014.

2014-2019 Strategic Initiatives

3. Vulnerable Populations

Background

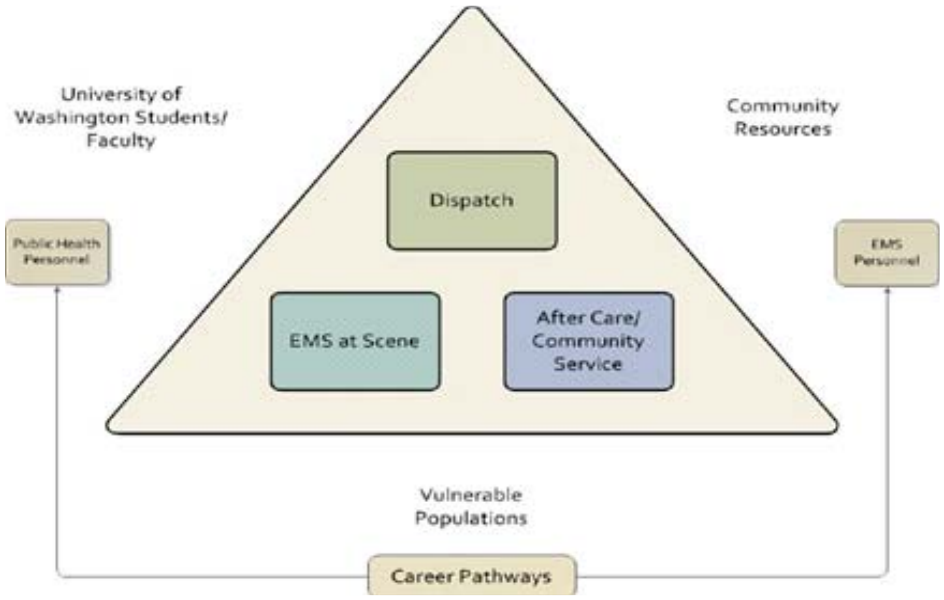
There are significant disparities in health status and access to health care in King County. Poverty, discrimination, and limited English proficiency (LEP) affect access to health care and insurance coverage. Also, uninsured individuals disproportionately turn to EMS for health care services, and as such, EMS providers are at the front lines in providing care to those most in need.

Description: The EMS Vulnerable Populations Strategic Initiative (VPSI) is a collaboration between the EMS Division, Public Health – Seattle & King County, fire departments, community-based organizations, and the University of Washington. The goal of VPSI is to conduct programmatic, scientific and case-based evaluations to ensure that the interface between EMS and vulnerable populations is of the highest quality.

VPSI activities are focused on ensuring:

1. successful communication between vulnerable populations and 9-1-1 dispatch
2. best practices for at scene care of vulnerable populations
3. follow-up care and community services for vulnerable populations

Vulnerable Populations Strategic Initiative Diagram



Objectives

- Develop strong collaborative relationships between VPSI activities and the University of Washington by connecting students to the practice community via capstone, thesis and practicum opportunities related to VPSI.
- Identify needs and develop strategies for system-wide changes that will improve EMS care for vulnerable populations.
- Build a sustained approach to career paths in EMS for under-served, vulnerable populations.
- Cultivate ongoing partnerships with existing agencies, networks and programs that are serving vulnerable populations in King County, Washington.

Results

- Created a Vulnerable Populations Oversight Committee representing various stakeholders to oversee initiative progress and advise program leaders.
- Conducted outreach to regional partners and established a 2014 work plan, including specific pilot projects and a UW student program capstone.
- Established a partnership with the Vulnerable Population Action Team (VPAT) to include 9-1-1 education and outreach activities.
- Initiated coordination with other regional efforts with parallel objectives (Transformation Plan, Accountable Communities of Health).
- Conducted a regional needs assessment of EMS agencies to assess challenges associated with EMS service delivery to vulnerable populations.

Next Steps

- Continue to develop and implement specific pilot projects.
- Conduct evaluations of early implementers.
- Continue to coordinate with other regional efforts.

2014 Project Work Plan	
EMS Agency Projects	**Community Projects**
Seattle FD: Elder Abuse and Neglect	Somali Community: Dispatch, At-Scene, Community Referral, Work force
Shoreline FD: Mental Health Patients	Chinese + Cambodian Communities: Dispatch, At-Scene
Renton Fire: Heart Month/Fire 2020	ESL Classes: Emergency Preparedness + 9-1-1 Education
South King Fire: At-Risk Fallers	9-1-1/CPR Training and Education in Senior Centers
Fire District #20: Partner with Somali Community	CPR Training for At-Risk and LEP Youth
Kent Regional Fire Authority: TBD	Dispatch Training on LEP Communication

2014-2019 Strategic Initiatives

Community Medical Technician (CMT)

Background

The Community Medical Technician (CMT) is an emergency medical services (EMS) model that provides local fire departments and communities an efficient and effective response to low-acuity or non-emergent medical 9-1-1 calls. The current CMT pilot model is staffed with one skilled firefighter/EMT responding in an SUV to patients with low-acuity needs. Since these units are not eligible for dispatch to more serious medical emergencies, CMTs are free to spend more time discussing the patient's non-emergent medical or other social needs. The CMT model coordinates with other existing regional programs, such as the Regional Fall Prevention program and community services that are available at no cost to residents.

Two previous pilots of the CMT model tested this alternative response model for medical calls and set the stage for providing a wider range of services for the public – including referrals to community-based health or medical organizations and preventive health visits to encourage improved connection with local services. During the most recent levy planning process, stakeholders recommended continuing the program but positioning CMT units in a regional manner, much like the approach used for the placement of medic units.

Description

Planning for the third pilot of the CMT program is ongoing and focuses on a regional model that provides a wider geographic area for the CMT unit to cover to maximize the benefit of the alternative response. Decisions on the actual placement of units will be made based on call volume estimates, agency participation and agreement, and current BLS vehicle use.

The CMT is another example of an EMS program that provides the highest quality of care for individuals needing EMS services; in addition, the efficient utilization of resources allows other emergency responders to remain available to respond and also contains costs.

Objectives

CMT Project Mission:

- Provide an alternative, cost-and resource-efficient EMS response to low-acuity, non-emergent patients who call 9-1-1 for help.
- Evaluate, identify, and provide referral to patients who would benefit from follow-up medical treatment or social service assistance, reducing their need for future EMS assistance. Includes using existing free resources in the community.

Results

Highlights of the CMT Pilot II are available in the 2013 Annual Report. A complete program evaluation is also available through the EMS Division. Results of the pilot will be submitted for publication in a peer-reviewed journal.

Next Steps

The EMS Division is engaged in a year-long planning process with fire departments throughout King County. The placement of the CMT unit deployed in early 2015 will be known by fall 2014. Analysis of low-acuity call volumes, geographic reach within the CMT response times, and discussions with multiple fire departments illustrate many potential locations that will offer residents and fire agencies an efficient and effective resource for responding to low-acuity 9-1-1 medical calls.

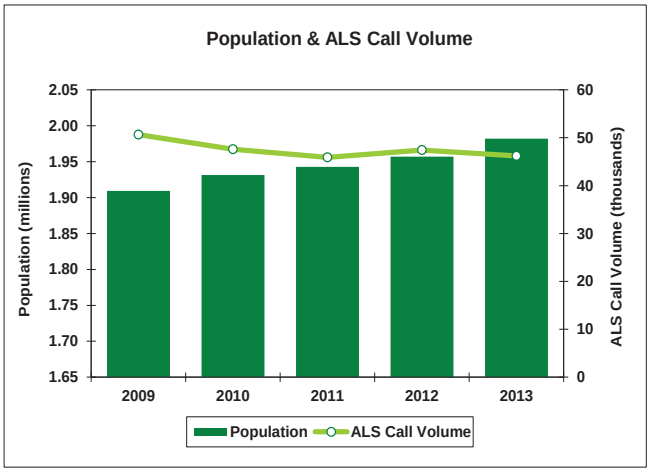
In addition, the EMS Division recently concluded work with a University of Washington School of Public Health graduate student to develop a short training session for the next CMTs. The training will focus on providing CMTs with additional knowledge, training, and skills to engage with individuals more effectively. CMTs are unique among health care professionals in that they visit with individuals in their place of residence and are witness to the myriad factors influencing physical and mental health. These influencing factors can become barriers to good health, and individuals facing challenges connecting with health services may rely on emergency medical services. CMTs will not only provide care for the reason they contacted 9-1-1 but also look for other opportunities to connect with care and reduce future need for EMS for low-acuity reasons.

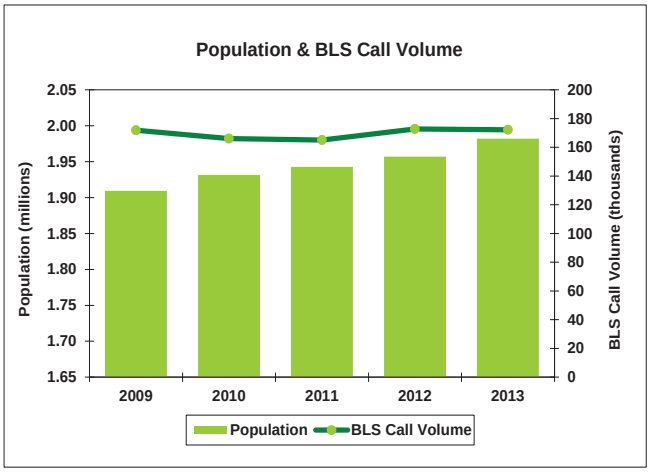
Significant efforts will be made to comprehensively evaluate the regional CMT units. Compared to previous CMT pilots that have had defined start and end dates, CMT units deployed during this levy period will continue once implemented. The evaluation of the units will shift to an ongoing effort to analyze data and work to continuously improve the CMT program. The evaluation will allow important questions surrounding CMT response, referral and follow-up, improved utilization of EMS resources, and cost savings to be answered in time for planning for the next levy.

Summary of 2013 EMS Statistics (Seattle and King County)*

Population	Seattle-King County	% Growth (Annualized)
1980	1,269,898	
1990	1,507,305	1.87%
2000	1,737,034	1.52%
2010	1,931,249	1.12%
2013	1,981,900	0.87%

Population has historically been closely correlated to EMS growth. The rate of population growth in King County continues to decline. The two graphs below depict the population growth relative to both ALS and BLS call volume patterns and reflect call volumes continuing to hold steady. Note that the scales for population and call volumes are different in the tables below.



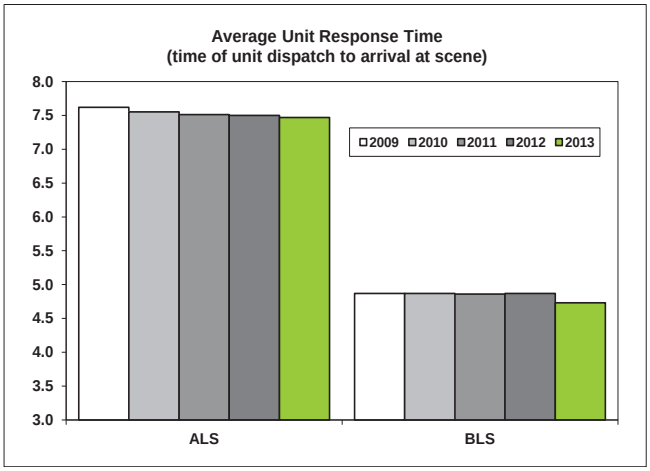


*EMS data uses a fully integrated King County and Seattle dataset. In some instances, totals differ due to missing values.

Response times are defined as follows:

Total - the time of call received at dispatch center to the time of arrival at the scene

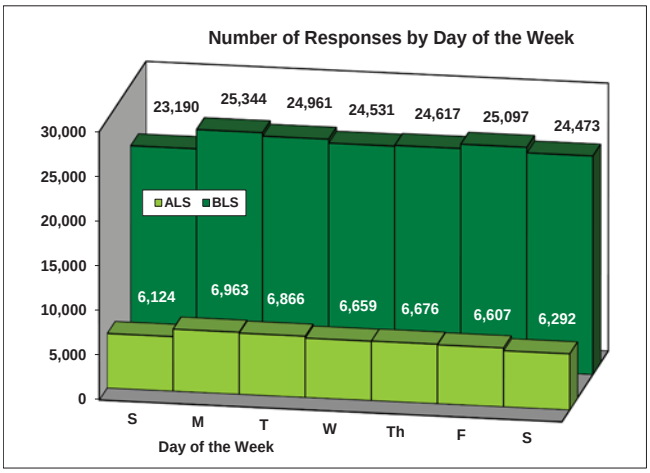
Unit - the time of unit dispatch to time of arrival at the scene.

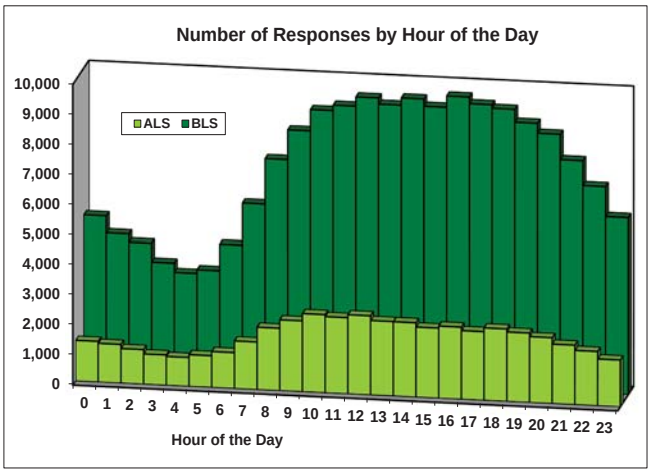


Characteristics of Responses

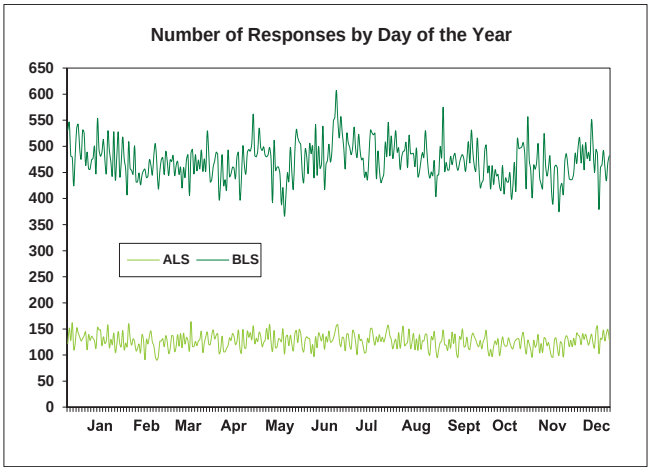
Operations

Service	ALS		BLS	
Number of Responses	46,187		172,213	
	Total RT	**Unit RT**	**Total RT**	**Unit RT**
Average Response Time	11.3	7.5	5.7	4.9
6 minutes or less			66.4%	76.5%
8 minutes or less	34.9%	64.8%		
10 minutes or less	52.5%	81.4%		
12 minutes or less	65.3%	90.1%		
14 minutes or less	74.1%	94.5%		
Cancelled Enroute Calls	8,166 (17.7%)		6,265 (3.6%)	





The average BLS unit response time has remained the same from last year indicating a stable environment. Average ALS response times also follow the same pattern. The three graphs located above and to the right reflect the patterns of ALS and BLS response during the day, the week, and throughout the year. As indicated in the Day of Year graph, there is a notable difference in range of BLS responses per day over time (~375-600 calls) in comparison to ALS responses (~100-150 calls).

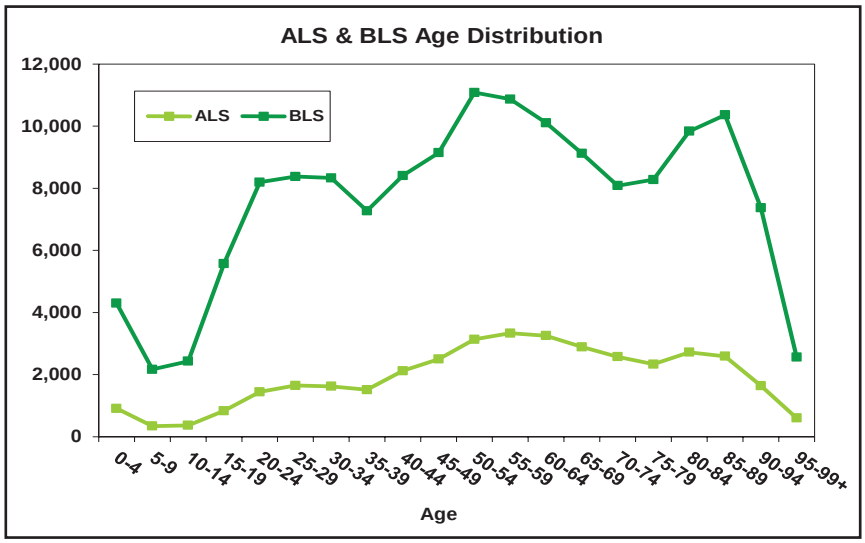


Characteristics of Responses

The following information reflects a variety of statistics that characterize the types of both BLS and ALS calls, including a comparison of age groups, types of medical complaints, where incidents take place, and patient transport information. Paramedics providing advanced life support are more likely to attend to older patients for cardiac conditions, while EMTs often attend to trauma in young adults.

Responses by Age Group

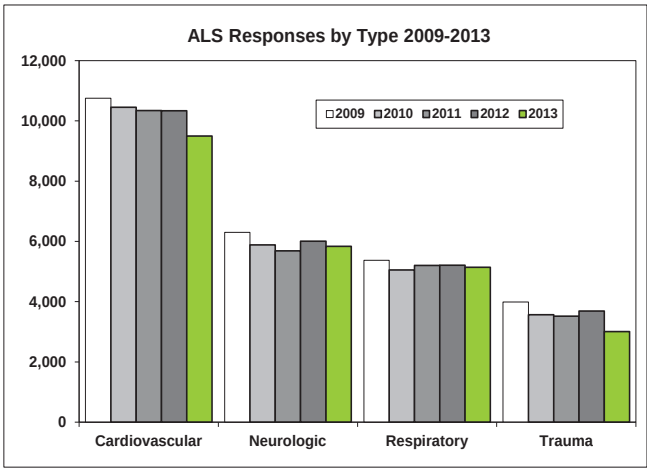
	ALS	BLS
0-4 yrs	909 (2.4%)	4,295 (2.8%)
5-9 yrs	342 (0.9%)	2,167 (1.4%)
10-17 yrs	765 (2.0%)	5,378 (3.5%)
18-24 yrs	1,876 (4.9%)	10,814 (7.1%)
25-44 yrs	6,904 (18.0%)	32,383 (21.3%)
45-64 yrs	12,220 (31.9%)	41,200 (27.1%)
65-84 yrs	10,505 (26.6%)	35,321 (23.3%)
85+ yrs	5,003 (12.4%)	20,289 (13.4%)
Total	**38,351**	**151,847**

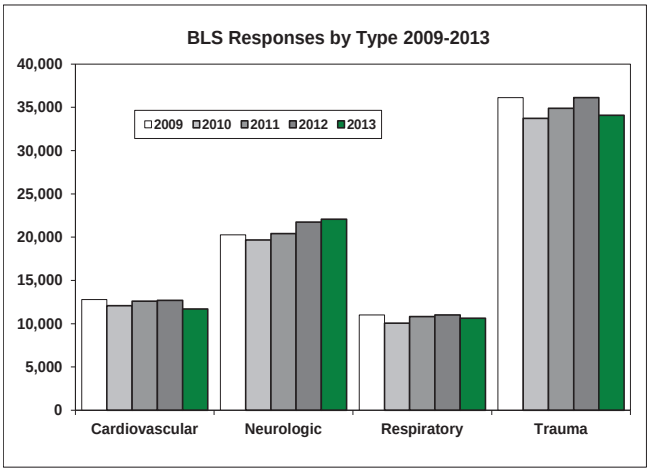


Although ALS and BLS personnel each respond more frequently to particular types of calls (i.e. cardiac calls for ALS and trauma for BLS), the EMS community serves a wide variety of medical emergencies. This requires not only an in-depth knowledge of specific invasive medical procedures but also requires a considerable breadth of knowledge and skills for diagnoses and management.

Responses by Medical Type

	ALS	BLS
Cardiovascular	9,500 (25.5%)	11,705 (8.4%)
Neurologic	5,840 (15.7%)	22,075 (15.8%)
Respiratory	5,142 (13.8%)	10,642 (7.6%)
Trauma	3,007 (8.1%)	34,081 (24.3%)
Alcohol/Drug	1,965 (5.3%)	8,006 (5.7%)
Abdominal/Genito-Urinary	1,904 (5.1%)	11,808 (8.4%)
Metabolic/Endocrine	1,532 (4.1%)	3,614 (2.6%)
Psychiatric	1,211 (3.3%)	8,177 (5.8%)
Anaphylaxis/Allergy	500 (1.3%)	1,216 (0.9%)
Obstetric/Gynecological	433 (1.2%)	1,127 (0.8%)
Other Illness	6,187 (16.6%)	27,623 (19.7%)
Total Medical	**37,221**	**140,074**





Characteristics of Responses

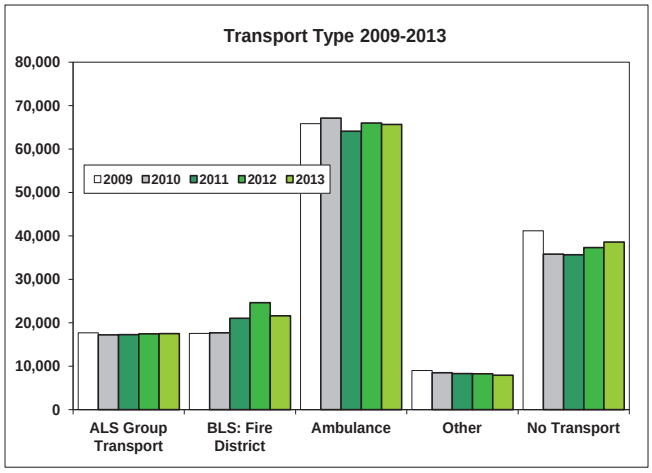
Similar to the variation reflected in the types of responses EMS agencies provide, EMS personnel respond to a variety of physical settings, again requiring a versatility of skills. For example, providers may respond to settings where they need to interact with other medical professionals or need to deliver patient care on a busy street or highway. Alternatively, EMS personnel respond to public settings where they may need to not only deal with the patient but also the public. This response sometimes requires cooperation and collaboration with other public safety personnel such as police officers and security guards.

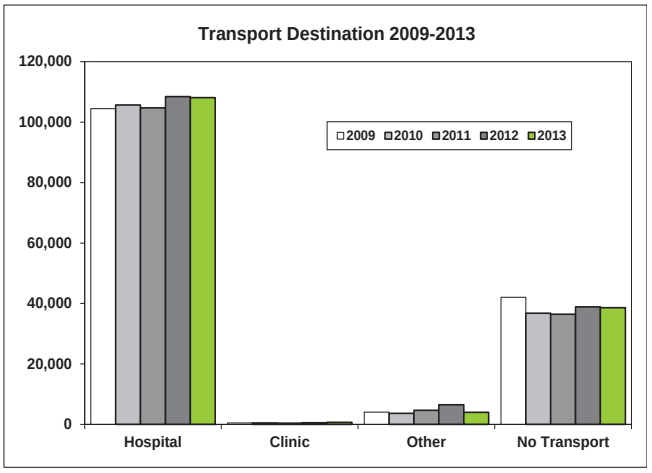
Incident Locations

Incident Locations	ALS	BLS
Home/Residence	23,229 (58.9%)	82,593 (55.8%)
Nursing Home/Adult Family Home	3,268 (8.3%)	11,610 (7.9%)
Clinic/MD Office	2,188 (5.5%)	3,760 (2.5%)
Other/Unknown Location	12,101 (29.0%)	50,024 (33.8%)
Total	**39,448**	**147,987**

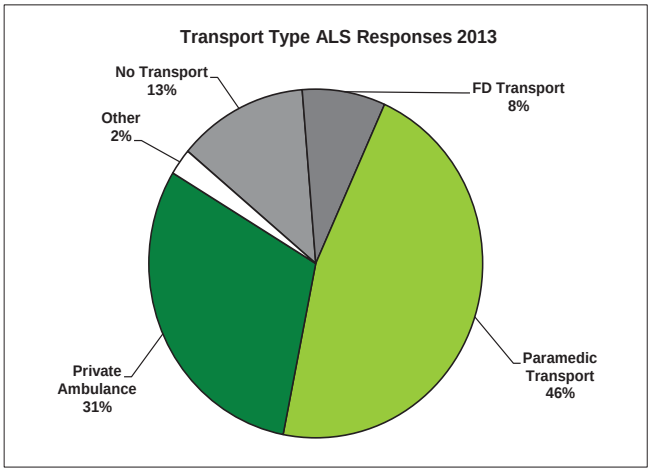
Transport Type and Destinations

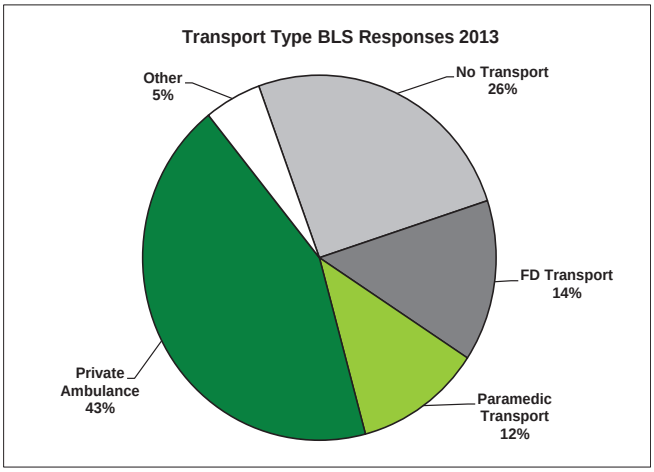
An important component of providing EMS care is appropriate triage. EMS personnel use their skills and knowledge to match the clinical need of the patient with the most appropriate transport and destination plan. The figures below reflect the transport trends over the past five years.



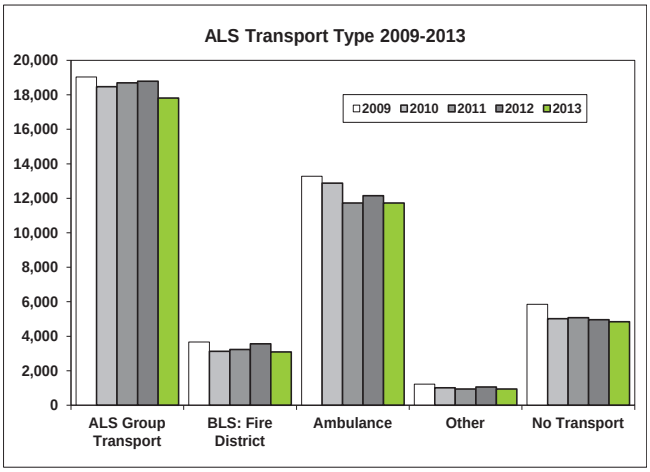


Transport Type			Transport Destination	
ALS Transport	17,448 (11.5%)			
ALS Air	50 (0.0%)		Hospital	108,122 (71.4%)
BLS - Fire District	21,602 (14.3%)		Clinic	690 (0.5%)
BLS - Ambulance	65,653 (43.4%)		Other	3,972 (2.6%)
Other	7,906 (5.2%)		No Transport	38,618 (25.2%)
No Transport	38,587 (25.5%)			
Total	**151,246**		**Total**	**151,402**





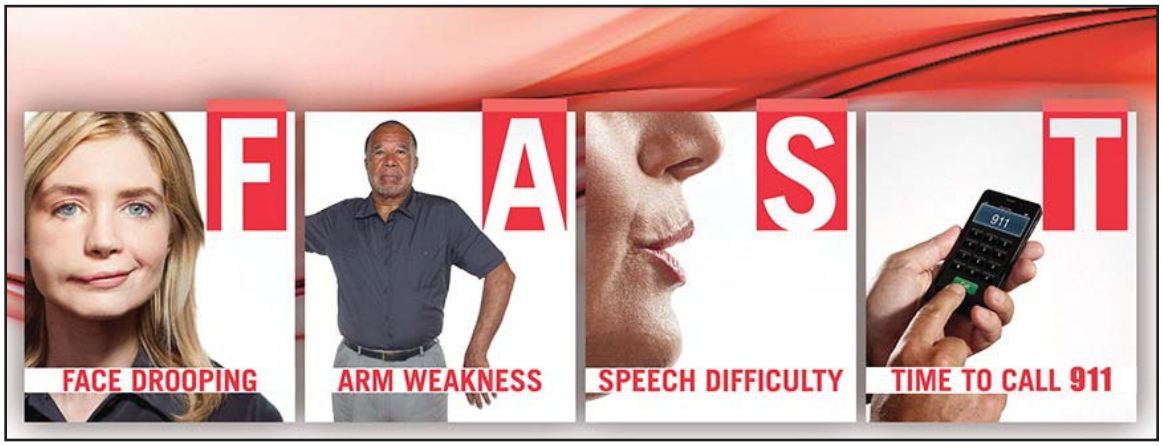
ALS Transport Type	
ALS Transport	17,762 (46.3%)
ALS Air	49 (0.1%)
BLS - Fire District	3,086 (8.0%)
BLS - Ambulance	11,725 (30.5%)
Other	937 (2.4%)
No Transport	4,840 (12.6%)
Total	**38,399**



Public Health Highlight:
Performance Goals for Stroke

Why is the Treatment of Stroke 'Time Critical'?

Stroke is a medical emergency caused by an acute disruption of the blood supply within the brain. Unless the stroke is treated quickly, patients could face permanent neurological and cognitive impairment, or worse, death. According to national guidelines, the preferred treatment for ischemic stroke—the most common type of stroke—is tissue Plasminogen Activator (t-PA) administered intravenously within 3 hours of symptom onset, though that window might be extended to 4.5 hours under certain circumstances. Unless the patient arrives to the hospital in a timely manner, then t-PA may no longer be a treatment option to dissolve the blockage. Thus, the rapid and effective treatment of stroke relies not only on the patient recognizing the symptoms and seeking emergency medical treatment, but also on a coordinated system of care designed to best respond to such a patient.



Use the FAST acronym to identify a stroke and call 9-1-1 immediately

What Constitutes a Stroke System of Care?

Much like a STEMI system of care (see 2013 Annual Report, p. 64), an effective stroke system of care relies on the seamless coordination between the 9-1-1 dispatch center, Emergency Medical Service (EMS) agencies, and hospital(s) capable of treating an emergent stroke patient. Since patients with stroke often delay seeking medical treatment, EMS can play a critical role in this system by providing:

- Early recognition of stroke using diagnostic tools such as the FAST exam and glucometry checks.
- Rapid transport to the closest stroke treatment hospital; and
- Early activation of the stroke alert system, which allows hospitals to prepare their stroke care teams for the arrival of the patient.

Stroke patients who utilize the 9-1-1 system (as opposed to private transportation) have been shown to have shorter treatment times and better health outcomes. Various performance metrics may be used to evaluate the effectiveness of any given stroke system of care, and thus it is important to employ processes for data collection, analysis, and feedback to both hospitals and EMS agencies.

How does King County EMS assess the Stroke System?

In 2012, King County EMS (KCEMS, excluding Seattle) ran a pilot Stroke Quality Improvement (QI) program with one local hospital to link stroke hospital registry data with prehospital records to evaluate the prehospital-to-hospital continuum of care. While encouraging, the results of the pilot provided impetus for establishing an ongoing clinical audit of stroke patient outcomes throughout the county. Starting in 2013, the majority of stroke treatment hospitals in King County agreed to partner with KCEMS in a region-wide QI program for the purpose of assessing and improving upon the stroke system of care.

This Stroke QI program also allows the Central Region of Washington (i.e. King County) to meet the requirements of RCW 70.168.150, mandating a state-wide Emergency Cardiac and Stroke (ECS) System of Care. The EMS Division continues to collaborate with the Washington State Department of Health's ECS Technical Advisory Committee by providing data analysis for performance measures to meet ECS-recommended system goals (see http://www.doh.wa.gov/ECS for further information).

Methods

Hospitals submitted "Get With the Guidelines- Stroke" registry data, such as final diagnosis, treatment, and discharge status, to KCEMS for all EMS-transported stroke patients in King County. For the year 2013, 12 hospitals submitted data for the 1st Quarter, and 15 hospitals submitted data for 2nd, 3rd, and 4th Quarters. For each quarter, KCEMS then linked the hospital data to prehospital records to analyze for various stroke system quality of care indicators.

Results

Preliminary data analyses revealed that a total of 679 EMS-transported, hospital-confirmed stroke patients linked to KCEMS prehospital records for the year 2013. Ages of stroke patients ranged from 14 to 101 years, with an average around 75 years. Females accounted for approximately 55% of patients and were affected at a slightly higher age than males, by about 5 years. (Note: This age distribution correlates to previous findings in King County among EMS-suspected stroke patient population. See 2011 Annual Report, p. 80.)

Ischemic strokes accounted for anywhere from 59% to 76% of strokes, depending on the quarter. Among the 679 linked patients, a total of 286 patients arrived within the recommended treatment time window to potentially receive t-PA in the event of ischemic stroke. Among those, 76 met eligibility requirements and subsequently received t-PA. The longest time delays were found in the time it took from the onset of symptoms until the patient called 9-1-1. EMS can help to reduce hospital Door-to-CT times by activating the stroke alert system. Analyses for recommended performance time goals for "On Scene" and "Door to CT" are summarized on the next page.

Public Health Highlight:
Performance Goals for Stroke

Conclusions

These preliminary data represent a first region-wide snapshot for the stroke system of care in King County. EMS was close to meeting the Washington state and national recommendations for "On Scene" time of less than 15 minutes, with trending toward improvement by the end of 2013. Feedback on summary data has been provided to all local King County stakeholders, and processes for enhancement have been initiated.

EMS "On Scene" Time Performance Goal*

	Hospital Door to CT Time Performance Goal: ≤ 15 minutes			**Hospital Door to CT Time Performance Goal: ≤ 25 minutes**		
Quarter:	**≤ 25 minutes**	% of Patients meeting Goal	# of Patients	Median Door-to-CT Time	% of Patients Meeting Goal	# of Patients
Q1-2013	16.9 minutes	45%	(n = 73)	20 minutes	61%	(n = 67)
Q2-2013	19.1 minutes	37%	(n = 92)	24 minutes	55%	(n = 69)
Q3-2013	16.0 minutes	46%	(n = 63)	21 minutes	62%	(n = 66)
Q4-2013	15.3 minutes	59%	(n = 66)	19 minutes	72%	(n = 76)

*Note: Results are preliminary and subject to change.

Stroke QI Goals for 2014 and Beyond

In 2014 and beyond, EMS will aim to expand the number of EMS-to-hospital data linkages by including Seattle proper, as well as add in private ambulance data to assess On Scene time for those not transported by KCEMS agencies. Overall, through the development of this regional Stroke QI program, King County EMS remains dedicated to providing the best quality care for stroke patients in King County.

1. Jauch ED, Saver JL, Adams HP, et al. Guidelines for the Early Management of Patients with Acute Ischemic Stroke: A Guideline for Healthcare Professionals from the American Heart Association / American Stroke Association. Stroke. 2013;44:870-947.
2. Ekundayo OJ, Saver JL, Fonarow GC, et al. Patterns of Emergency Medical Services Use and Its Association With Timely Stroke Treatment: Findings From Get With the Guidelines – Stroke. Circ Cardiovasc Qual Outcomes. 2013;6(3):262-9.

Cardiac Arrest Statistics

Seattle and King County have compiled cardiac arrest statistics for over 40 years. The following are data from the combined registries. A cardiac arrest is defined as a pulseless, breathless state for which cardiopulmonary resuscitation (CPR) is required. The data reflect EMS-treated cardiac arrests for patient 2 years of age and older due to all causes except trauma. Survival is defined as discharge from the hospital alive.

Total Number of Cardiac Arrests for which resuscitation was attempted:

Year	2009	2010	2011	2012	2013
Cardiac arrests	1,072	1,069	1,047	1,134	1,135

2013 Highlight: Survival to Hospital Discharge Based on Arrest Before or After Arrival of EMS Personnel and Initially Monitored Cardiac Arrest Rhythm:

	Number treated	Number Survived To Hospital Discharge	Percent Survived
Arrest Before Arrival of EMS:	1003	198	20%
Ventricular Fibrillation/ Tachycardia (VF/VT)	247	126	51%
Asystole	410	15	4%
PEA	210	37	18%
Not Shockable, but unknown if PEA or asystole	129	17	13%
Unknown	7	3	43%
Arrest After Arrival of EMS:	132	37	28%
Ventricular Fibrillation/ Tachycardia (VF/VT)	32	16	50%
Asystole	15	5	33%
PEA	60	13	22%
Not Shockable, but unknown if PEA or asystole	23	3	13%
Unknown	2	0	0%
Total	1135	235	21%

Cardiac Arrest Statistics

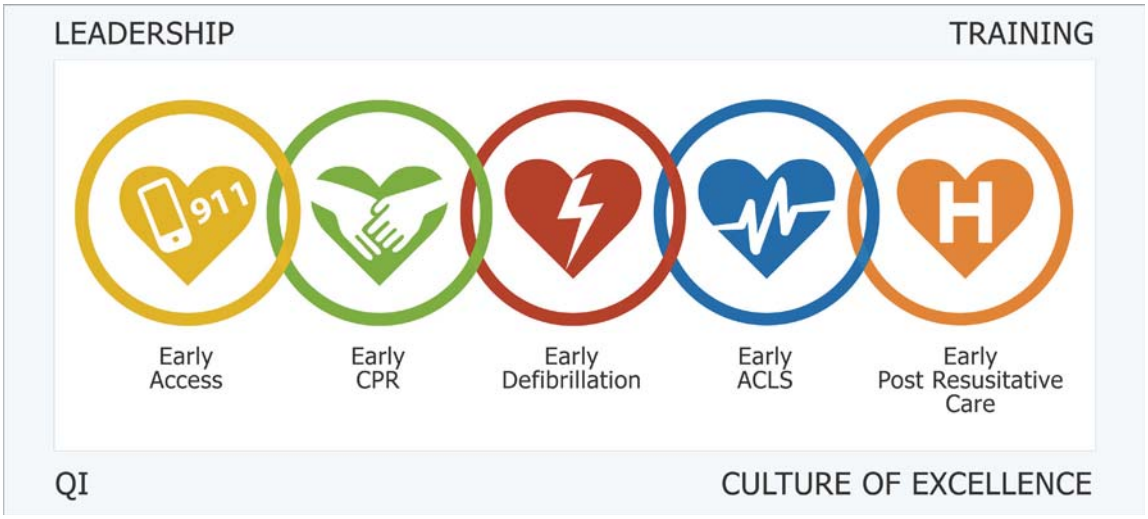
Survival to Hospital Discharge for Arrests due to Heart Disease, Witnessed by Bystanders (Excludes EMS-witnessed), with an Initial Rhythm of Ventricular Fibrillation:

Year	2013	2009-2013
Survival Rate	97/156 (62%)	482/910 (53%)

CPR Initiated by Bystanders, Limited to Arrest Before Arrival of EMS Personnel:

Year	2009	2010	2011	2012*	2013
Bystander CPR	531/934 (57%)	520/946 (55%)	498/919 (54%)	648/983 (66%)	691/1003 (69%)

*Note: in 2012, King County began reporting this statistic based on review of the dispatch recording, which accounts for the increase compared to previous years.

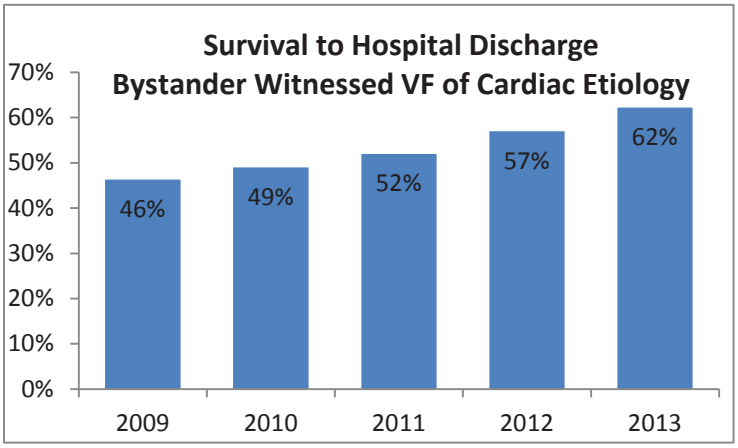


"Together, the chain and frame of survival form a complete and comprehensive system of care. Together, they nurture, sustain and define the King County EMS system."

-Dr. Mickey Eisenberg

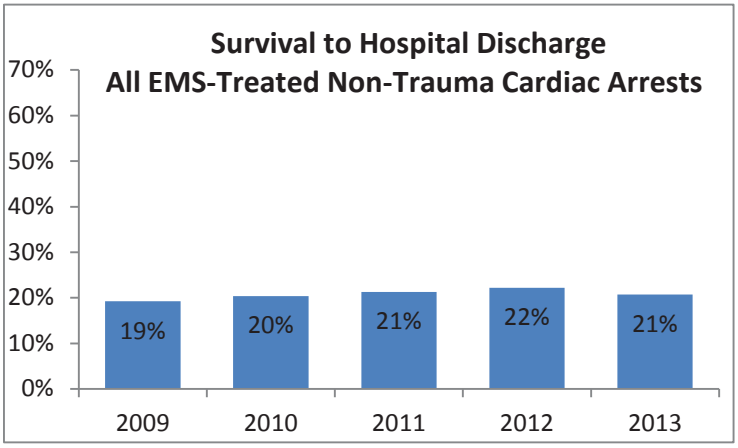
Cardiac Arrest Highlight:
A 5-year snapshot

The rate of survival from non-traumatic out-of-hospital cardiac arrest (OHCA) in King County has been consistently rising. OHCA survival rates are usually defined as survival to hospital discharge and are limited to a subset of patients who arrested before EMS arrival, with an initially monitored cardiac rhythm of ventricular fibrillation or pulseless ventricular tachycardia (VF/VT),whose arrest was witnessed and was due to heart disease (the so-called Utstein criteria). These patients have the greatest chance of survival and allow comparisons between different EMS systems.



The graph on the top left shows survival rates in King County for this subgroup of patients for the past five years. In 2013, the rate surpassed 60%. This is the highest reported survival rate in the world and is truly remarkable when compared to other major cities in the United States: New York – 5 %; Chicago – 3%; and Detroit – 0%.

The reasons for success in King County can be traced to the efforts of citizens, telecommunicators, EMS personnel and hospital providers. For example, 69% of these patients will get bystander CPR before EMS arrives on the scene and half of those get CPR because telecommunicators provide instructions to bystanders. EMS providers are trained to provide state of the art care, including “high performance CPR”, a highly choreographed team effort with emphasis on continuous chest compressions with consistent rate and depth. Hospital providers provide interventions that have been shown to improve survival rates, including hypothermia protocols or cardiac catheterization when necessary.



The graph on the bottom left shows survival for all EMS-Treated cardiac arrests that were not caused by traumatic injuries. This shows that, despite continued improvement in the treatment of patients who meet the Utstein criteria, overall survival from OHCA has remained relatively constant. This is because patients not identified by the Utstein criteria are more likely to have a longer “down-time” before receiving treatment and are less likely to respond to cardiac defibrillation. However, King County EMS is committed to testing new treatments and implementing system changes to continue to improve the odds of survival in this difficult to treat group.

The question then becomes, with improved performance and continued innovation, how high can the survival rate go? Perhaps only time will tell.

EMS Funding and 2014 Financial Plan

The EMS levy is a regular property tax levy, subject to the limitations contained in Chapter 84.55.010 RCW. Levy funds are restricted by RCW and can only be spent on EMS-related activities. The levy growth is limited to a 1% increase for existing properties, plus assessment on new construction.

EMS levy funds are collected throughout King County and managed by the EMS Division for the region, based on RCW 84.52.069 Emergency Medical Care and Service levies, and policy guidelines outlined in the 2008- 2013 and 2014-2019 Medic One/ EMS Strategic Plans. King County EMS funds are spent on four main areas: Advanced Life Support (ALS), Basic Life Support (BLS), Regional Support Services, and Strategic Initiatives

The inter-local agreement between King County and the City of Seattle allows for EMS levy funds collected within Seattle to go directly to, and be managed separately by, the City. This section of the Annual report pertains to the EMS fund within the remainder of King County (referred to as the KC EMS Fund), and excludes the City of Seattle.

The following section highlights the KC EMS Fund. Information on grants, donations, and entrepreneurial projects included in the Public Health Fund is included at the end of this section. This report summarizes the 2008-2013 Medic One/EMS levy financials, and includes information on the new 2014-2019 Medic One/EMS levy.

Introduction

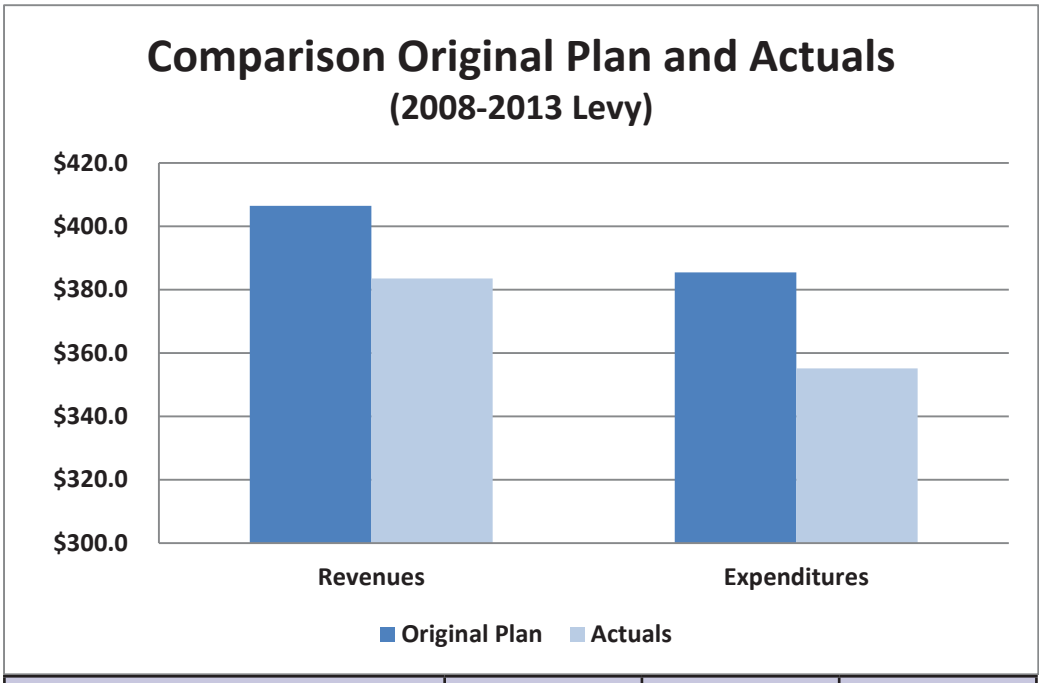
The 2014 Annual Report reviews the financial activity during the 2008-2013 EMS levy and previews the first fiscal year of the new 2014-2019 EMS levy. It compares 2008-2013 EMS levy "actuals" against the original plan, and confirms the analysis and assumptions that support key programmatic and financial decisions guiding the 2014-2019 Strategic Plan. The section on the 2014-2019 levy updates the financials and assumptions associated with the new levy. While these information updates are preliminary, they support the financial assumptions made during the levy planning process.

2008-2013 EMS Levy

One key challenge the region faced financially during the 2008-2013 EMS levy period was the large drop in Assessed Valuations (AV) not envisioned when the levy was planned in 2006. For the first time in the history of the levy, actual funds raised by property taxes decreased over the six year levy period. To address this significant change, the region collaboratively developed several strategies to effectively lower expenditures without negatively impacting key services and outcomes. These included:

- Realigning resources to promote efficiencies and provide value to EMS partners;
- Continuing to manage use of resources – particularly ALS and BLS call volumes;
- Developing reserves and designations to cover ALS costs as recommended by King County Auditor's Office;
- Using reserves prudently;
- Reviewing operational and business practices for efficiencies with a focus on reducing expenditures; and
- Eliminating the addition of two planned 12-hour medic units in 2012 and 2013.

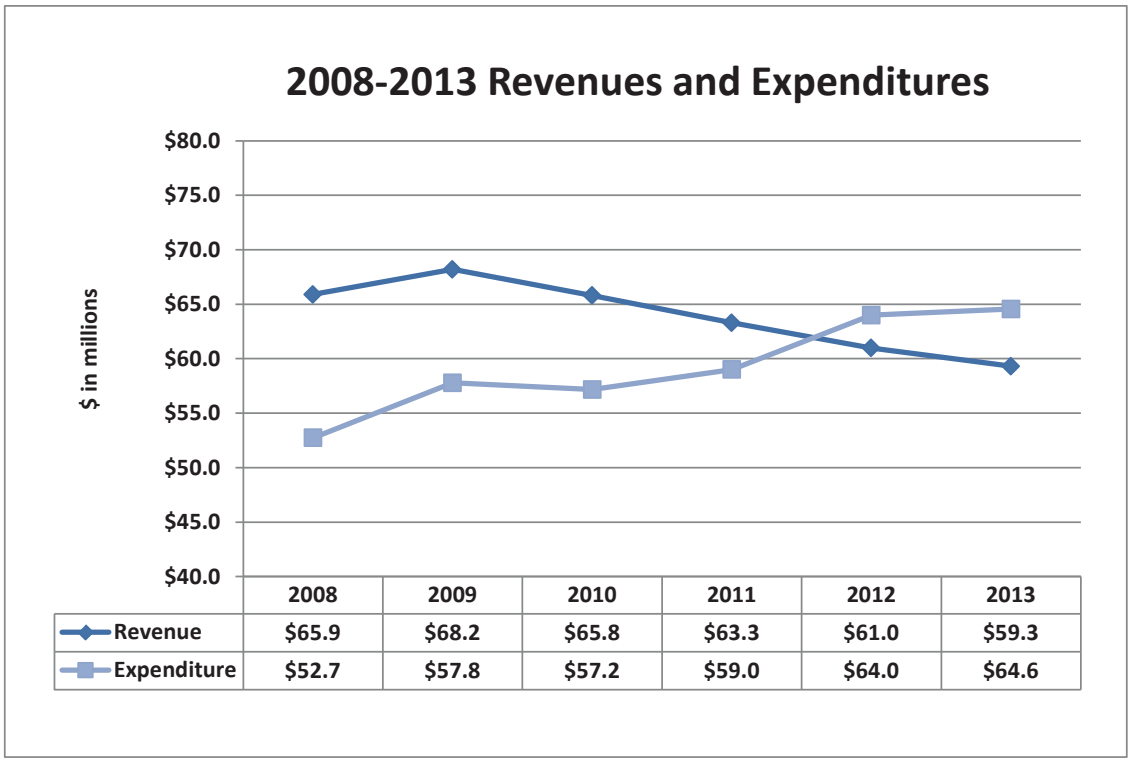
These strategies allowed for system efficiencies that resulted in expenditures currently forecast at $30 million less than originally planned, offsetting revenues at $23 million less than originally planned. In addition to managing expenditures to reduce revenue levels, the region stretched itself to save funds, thereby reducing the initial rate for the Medic One/EMS 2014-2019 levy by a penny ($.01/$1,000 AV).The following chart and table compare planned revenues and expenditures to actuals for the 2008-2013 levy period. It shows significant reductions in both revenues and expenditures while reserve levels were slightly increased.



	Original Plan	Forecast	Difference
Revenues	$406.5	$383.3	($23.2)
Expenditures	$385.5	$355.2	($30.3)
Reserves & Designations	$22.7	$25.4	$2.7

EMS Funding and 2014 Financial Plan

Similar to previous levies, property taxes collected early in the levy period covered expenditures in the last years of the levy period.



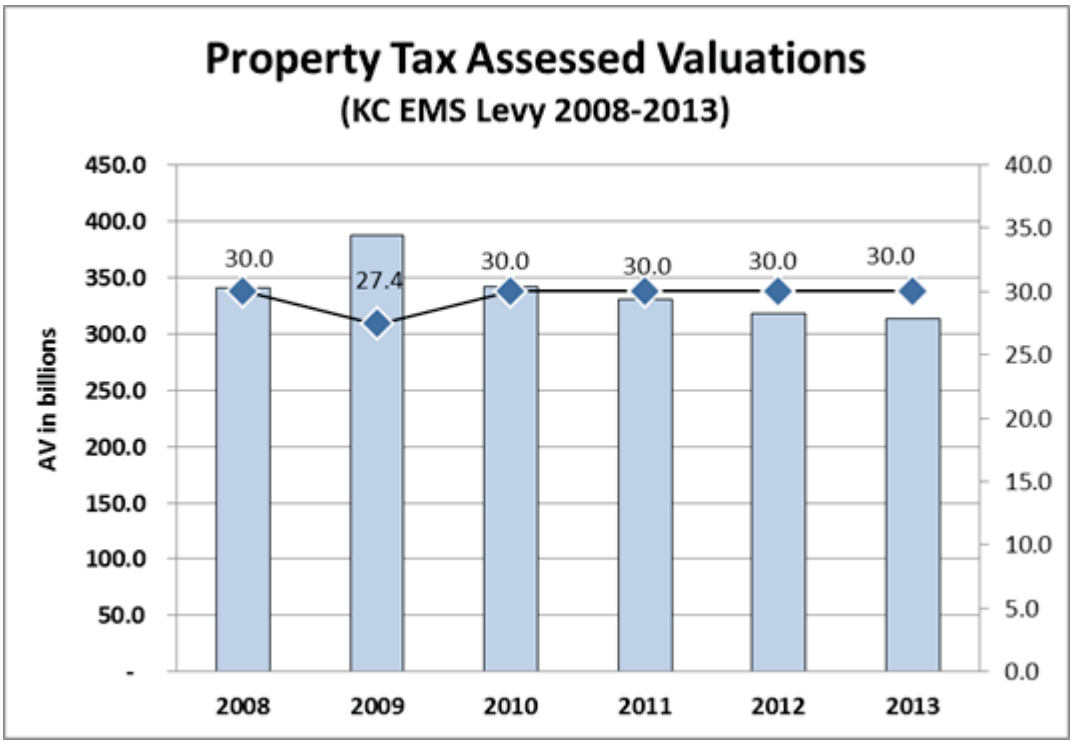
	2008	2009	2010	2011	2012	2013
Revenue	$65.9	$68.2	$65.8	$63.3	$61.0	$59.3
Expenditure	$52.7	$57.8	$57.2	$59.0	$64.0	$64.6

1. Revenues

The primary revenue supporting the KC EMS Fund comes from property taxes, although miscellaneous income, interest earnings, and fees for reimbursable services contribute a small amount to the fund.

REVENUES	2008	2009	2010	2011	2012	2013	Average
Property Taxes	98.2%	98.6%	98.4%	98.7%	98.8%	98.8%	98.6%
Charges for Services	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Interest and Other Income	1.0%	1.1%	1.3%	1.0%	0.9%	1.0%	1.0%
General Fund	0.6%						0.1%

The 2008-2013 EMS Financial Plan was developed in 2006 and 2007. Consistent with forecasts from that time period, it did not anticipate the economic downturn and, therefore, did not assume any decreases in AV. Instead, it assumed modest growth in property values and a one-percent limit on revenues from existing properties. The chart below shows changes in Assessed Valuations for the levy period.

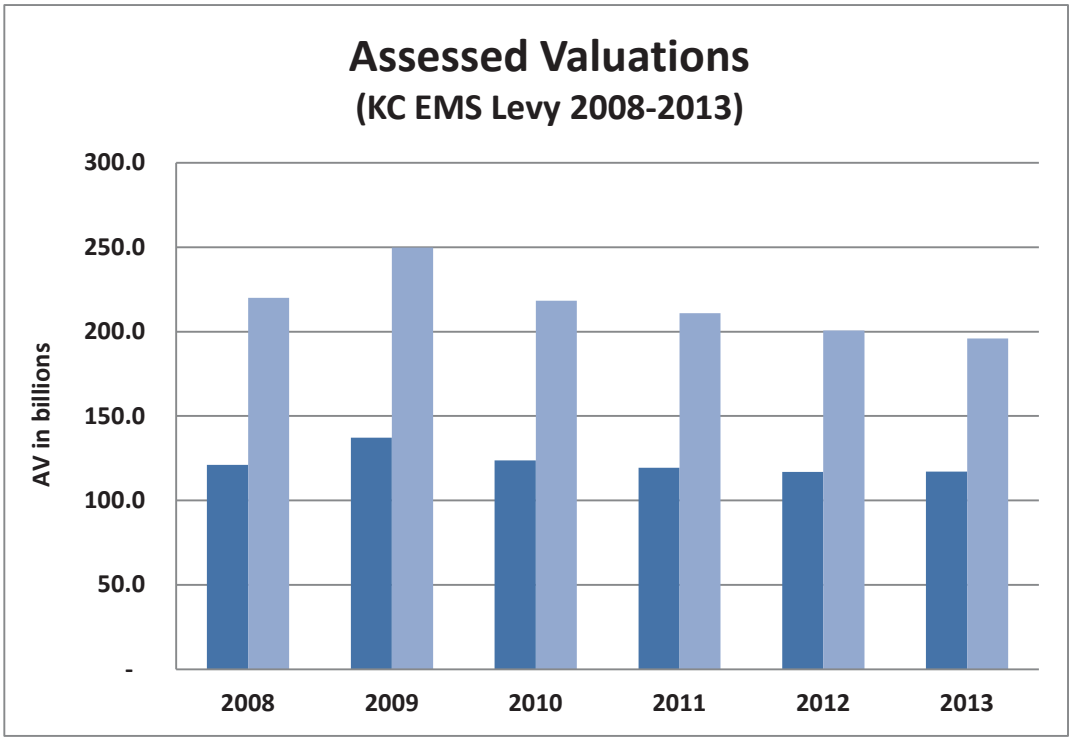


Total AV decreased approximately 20% from 2009 through 2013. 2013 AV was 8% less than 2008 AV.

In addition, the original levy financial plan assumed a stable division of levy revenues between the KC EMS Fund and the City of Seattle, based on the proportional distribution of assessed valuation (35.6% City of Seattle and 64.4% KC EMS Fund).

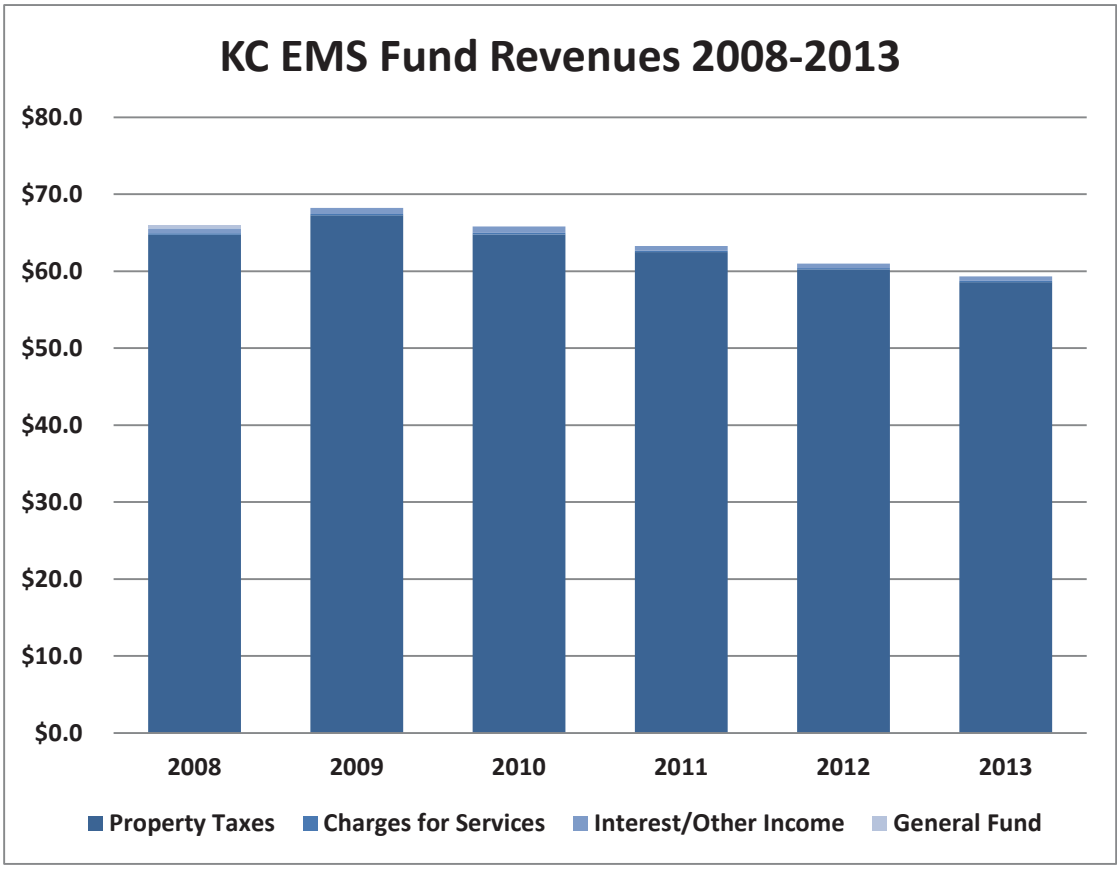
Beginning in 2010, the division of revenues between the City of Seattle and KC EMS Fund began changing. The estimated KC EMS Fund proportion of the levy has reduced from 64.5% in 2008 to 62.6% in 2013. The following graph and chart shows the distribution of property taxes between the KC EMS Fund and the City of Seattle.

EMS Funding and 2014 Financial Plan



$ in Billions	Taxable Assessed Valuation						
		2008	2009	2010	2011	2012	2013
	City of Seattle	121.0	137.2	123.7	119.4	116.8	117.0
	KC EMS Fund	220.0	249.7	218.3	211.0	200.8	195.9
	Total	**341.0**	**386.9**	**342.0**	**330.4**	**317.6**	**312.9**
	% KC EMS Fund	64.5%	64.5%	63.8%	63.9%	63.2%	62.6%
	% City of Seattle	35.5%	35.5%	36.2%	36.1%	36.8%	37.4%
	Change in AV		13.5%	-11.6%	-3.4%	-3.9%	-1.5%

These reductions in property tax assessed valuations (AV) and the increase in the Seattle proportion of total assessed valuations resulted in lowered revenues for the King County EMS levy fund. The following chart and table shows the revenues for the KC EMS Fund for the 2008-2013 levy period.



REVENUES	2008	2009	2010	2011	2012	2013	2008-2013 Total
Property Taxes	$64.7	$67.3	$64.8	$62.5	$60.2	$58.6	$378.1
Charges for Services	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$1.1
Interest/Other Income	$0.6	$0.8	$0.8	$0.6	$0.6	$0.6	$4.0
General Fund	$0.4						$0.4
Total	**$65.9**	**$68.2**	**$65.8**	**$63.3**	**$61.0**	**$59.3**	**$383.5**

Discussions with analysts attribute part of this change to greater reductions in AV for residential than commercial properties (with Seattle having a larger percentage of commercial properties than the area covered by the KC EMS Fund).

EMS Funding and 2014 Financial Plan

2. Expenditures

EMS levy revenues support the following major EMS activities related to direct service delivery or support programs:

• Advanced Life Support (ALS) Services:
- Receives over 60% of EMS funds
- Uses a compound inflator that considers the different inflators for labor, pharmaceuticals, equipment and benefits
- Uses a standard unit cost allocation consisting of an operating and equipment allocation
- Eligible for use of reserves

• Basic Life Support (BLS) Services:
- Receives approximately 24% of EMS funds
- Distributed to individual agencies based on an allocation that includes the assessed valuation of the district and demand for services (call volume)

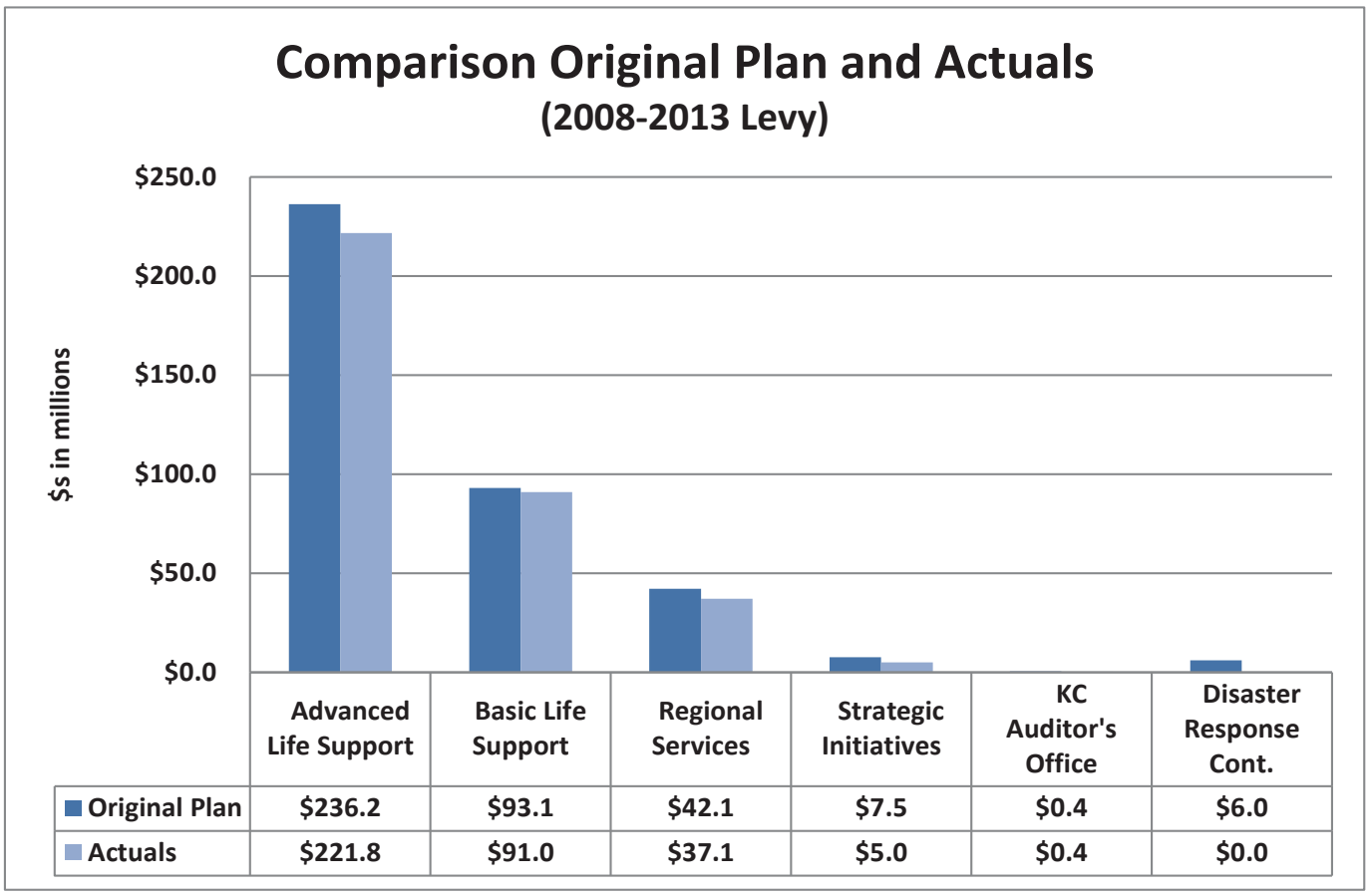
• Regional Support Programs:
- Receives approximately 10% of EMS funds
- Supports eight major areas – Professional Standards, Community Programs, Emergency Medical Dispatch, Operations, Regional Medical Control/QI, Management & Finance, Infrastructure, and Overhead and Indirect costs.
- Uses CPI inflator

• Strategic Initiatives:
- Funded with lifetime budgets
- Budgeted amount by year is adjusted to reflect changing cash flows based on project needs (2-3% of EMS funds)

• Audits
- Increased financial review and audits by the King County Auditor's office complement and augment the oversight and accountability of the King County EMS Fund.

• Contingencies
- Related to ALS Wages and Disaster Relief

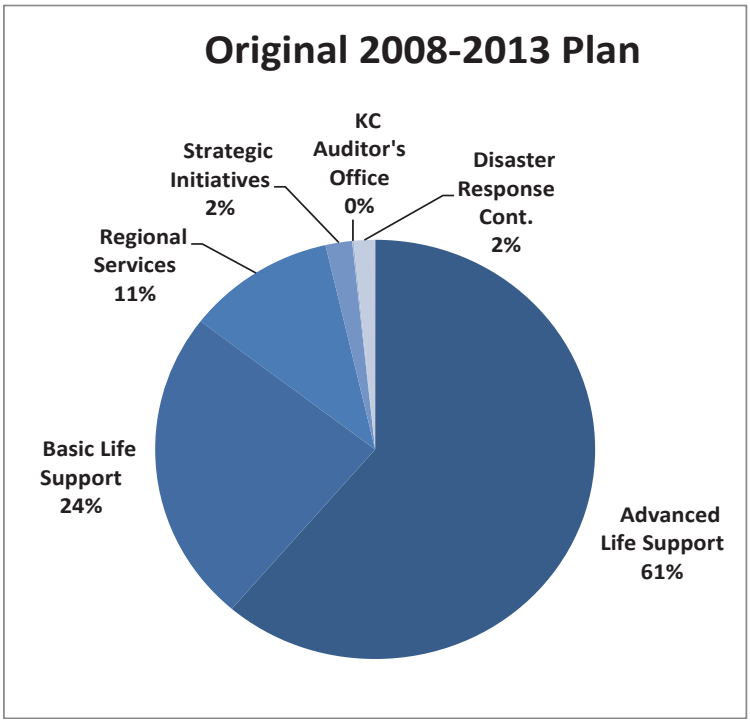
The following charts show planned and actual expenditures for the 2008-2013 levy:



	Advanced Life Support	Basic Life Support	Regional Services	Strategic Initiatives	KC Auditor's Office	Disaster Response Cont.
Original Plan	$236.2	$93.1	$42.1	$7.5	$0.4	$6.0
Actuals	$221.8	$91.0	$37.1	$5.0	$0.4	$0.0

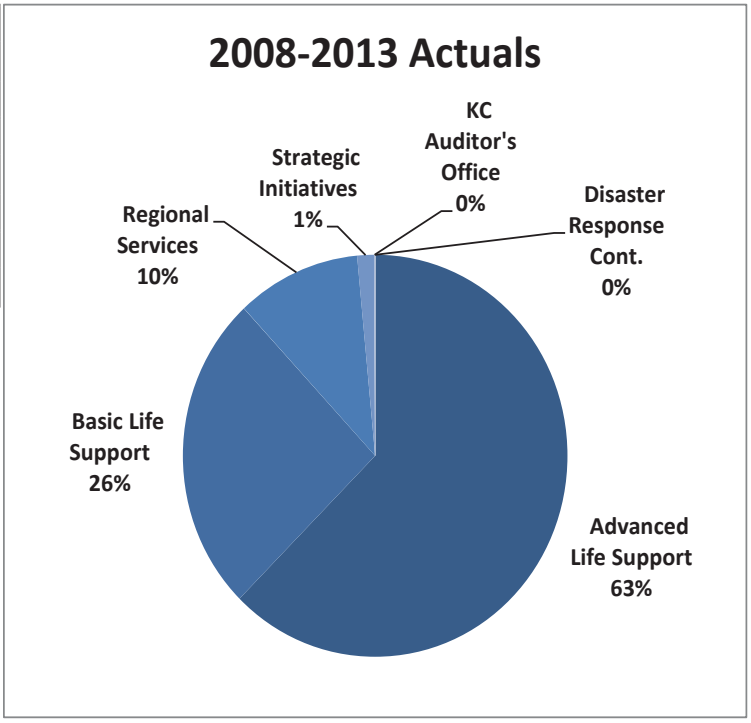
EMS Funding and 2014 Financial Plan

The following charts and tables show both planned and actual expenditures for the main levy areas:



EXPENDITURES	Original Plan	Actuals
Advanced Life Support	$236.2	$221.8
Basic Life Support	$93.1	$91.0
Regional Services	$42.1	$37.1
Strategic Initiatives	$7.5	$5.0
KC Auditor's Office	$0.4	$0.4
Disaster Response Cont.	$6.0	$0.0
Total	**$385.5**	**$355.2**

EXPENDITURES	Actuals
Advanced Life Support	$221.8
Basic Life Support	$91.0
Regional Services	$37.1
Strategic Initiatives	$5.0
KC Auditor's Office	$0.4
Disaster Response Cont.	$0.0
Total	**$355.2**



All areas spent less than planned during the 2008-2013 levy period. A portion of the underspending is due to the fact that economic indices, and specifically CPI were less than forecast.

• The reduction in BLS reflects that actual CPI was less than planned for the levy period.

• While ALS providers did access reserves during the levy period, reductions were due to lowered inflation, elimination of planned new units related to call volume management, and planned savings (using program balances) to cover future costs including an outstanding labor agreement, added paramedic students and other costs.

• Regional Services aggressively managed expenses to manage costs and increase efficiencies. In addition, several programs focused on managing growth of demand in ALS and BLS services.

• Several Strategic Initiatives underspent by finding more efficient ways of accomplishing goals

The following chart shows the difference between the original plan and actuals by area:

EXPENDITURES	Original Plan	Actuals	Difference	Change
Advanced Life Support	$236.2	$221.8	($14.5)	-6%
Basic Life Support	$93.1	$91.0	($2.1)	-2%
Regional Services	$42.1	$37.1	($5.1)	-12%
Strategic Initiatives	$7.5	$5.0	($2.6)	-34%
KC Auditor's Office	$0.4	$0.4	($0.1)	-13%
Disaster Response Cont.	$6.0	$0.0	($6.0)	-100%
EMS EXPENDITURE TOTAL	**$385.5**	**$355.2**	**($30.3)**	**-8%**

Based on refining EMS needs and project scopes, and pushed by the economic challenges of the 2008-2013 levy period, Strategic Initiative budgets continued to be refined, and - where possible - reduced in this levy period (particularly to adjust to lowered revenues). Actual expenditures for the 2008-2013 levy period were just under $5 million.

EMS Strategic Initiatives -- Life to Date Results (2008-2013)							
	2008	2009	2010	2011	2012	2013	Total
Emergency Medical Dispatch SIs	$319,096	$386,789	$406,431	$398,927	$305,220	$360,245	$2,176,708
Injury Prevention SIs	$161,890	$168,242	$153,774	$139,922	$123,728	$138,133	$885,689
Public Access Defibrillation	$76	$402	$3,134	$49,954	$109,443	$5,570	$168,579
Interactive Enhancements to EMS Online	$8,150	$57,740	$127,070	$12,015	$96,053	$179,619	$480,647
Enhanced Network Design (SEND)	$101,996	$16,297	$13,200	$284,610	$56,514	$164,334	$636,951
All Hazards Emergency Mgmt Preparation							$0
EMS Efficiencies & Evaluation Studies	$0	$0	$129,587	$10,155	$320,749	$171,324	$631,815
Levy Planning				$1,441	$4,806	$0	$6,247
Total	**$591,208**	**$629,470**	**$833,196**	**$897,024**	**$1,016,513**	**$1,019,225**	**$4,986,636**

EMS Funding and 2014 Financial Plan

3. EMS Contingencies, Reserves and Required Fund Balance

The 2008-2013 levy added contingencies related to ALS Wages and Disaster Relief, along with reserves to cover unanticipated inflation, vehicle costs/chassis obsolescence, risk abatement, and potential millage reduction (to potentially lower the rate for the next levy).

Based on comments from the King County Auditor related to fully funding ALS costs, EMS led a regional process to identify possible expenses that fell outside of the unit allocation. This information was used to revise existing reserves and develop new reserves that would be available to cover potential expenses not included in the ALS allocation. New reserves were added for Dispatch/Communications, Facilities, Excess backfill for paid time off (PTO), and Paramedic student training, and the salary contingency was converted to a salary reserve. In addition, amounts set aside within existing reserves were revised.

The region identified eligible use of reserves with use triggers, agency responsibilities (including cost sharing), how triggers were determined, how reserves were costed, and how reserves could be expensed. To access reserves, the proposed use must be reviewed and approved by both the Financial Subcommittee of the EMS Advisory Committee (EMSAC), and EMSAC itself. If approval levels are above funds appropriated by the King County Council, council approval would need to be secured before distributing funds to agencies. As part of the 2012 budget process, the King County Council approved these new reserves and access to the reserves.

Provider/Program Balances: Provider/Program balances are operating allocations that agencies and regional services choose to set-aside for future years' needs. All agencies contributed to their balances in 2013 anticipating future year expenditures.

ALS Provider Loans: Two agencies have taken out provider loans. The financial plan reflects repayment of these loans at the end of 2013

Designations from 2002-2007 Levy: Earlier in the levy period, these funds were used for two tenant improvements related to medic quarters and to cover the difference between actual dispatch costs and the amount included in the allocation (prior to the establishing dispatch reserves). The remainder of these funds was used to supplement the 2014 BLS Allocation to match the 2013 BLS allocation.

Reserves: Five reserves were used in 2013 as shown in the Use of Reserves and Designations table on the next page. These include use of reserves to cover dispatch costs where actual costs exceeded amounts in the allocation, use of the ALS Retirement Liabilities Reserve to cover the last payment of the Department of Retirement Services invoices related to converting King County Medic One paramedics from the PERS to the LEOFF retirement system, use of Paramedic Student reserve to cover partial costs of students above amounts included in the allocation at Bellevue, use of Facility reserve to cover facility costs related to the paramedic spaces at the new North Bend fire station, and use of Call Volume Reserves to cover costs associated with need to cover area in the NW portion of KCM1 when the regular paramedic unit was temporarily moved south to accommodate an unplanned temporary facility closure.

The following table shows use of reserves and designations from both the current and the 2002- 2007 levy periods, as of July 2012:

Uses of RESERVES AND DESIGNATIONS						
	2009	**2010**	**2011**	**2012**	**2013**	**Total**
Reserves (2008-2013)						
Diesel	171,903					**171,903**
Vehicle/Chassis	201,751		389,381			**591,132**
Salary/COLA1			336,542			**336,542**
Dispatch			229,463	234,072	239,426	**702,961**
Facility					250,000	**250,000**
Paramedic Students					261,882	**261,882**
Call Volume Reserve					215,707	**215,707**
ALS Retirement Liabilities				3,203,225	105,229	**3,308,454**
Subtotal	373,654	-	955,386	3,437,297	1,072,244	**5,838,581**
Designations from 2002-2007 Levy						
Facility Tenant Improvements	150,000	190,914				**340,914**
Dispatch		258,018				**258,018**
Subtotal	150,000	448,932	-	-	-	**598,932**
TOTAL	523,654	448,932	955,386	3,437,297	1,072,244	**6,437,513**

[1] Limited to 2011 only.

Fund Balances: EMS Financial Policies require a fund balance of 6% of revenues. The current fund balance is above the minimum requirement. The amount above required fund balance is earmarked to lower the 2014-2019 Medic One/ EMS levy rate.

EMS Funding and 2014 Financial Plan

The following chart shows contingencies, designations and reserves:

Reserves & Designations	2013 Actuals
Designations	
Provider/Program Balances	10,046,501
ALS Provider Loans	0
KCM1 Equipment Replacement	1,015,437
Designations from 2002-2007 Levy	230,842
2008-2013 Strategic Initiatives to 2014	565,194
Reserves for Unanticipated Inflation	
Diesel Cost Stabilization	90,000
Pharmaceuticals/Medical Equipment	447,576
Call Volume/Utilization Reserve	510,066
Reserves	
Salary Reserve	320,000
Excess Backfill for PTO	400,000
Paramedic Student Training	310,000
Dispatch/Communications	206,343
Medic Unit/Chassis Obsolescence	550,619
Facilities	800,000
Risk Abatement	2,200,000
Outstanding ALS Retirement Liability	770,363
Millage Reduction	6,941,654
TOTAL RESERVES AND DESIGNATIONS	**25,404,595**

As part of the 2014-2019 Medic One/EMS levy planning process, Regional Services/Strategic Initiatives (RS/SI) pledged $2.8 million of accumulated program balances and budget reductions toward reducing the 2014-2019 levy rate. The $10 million in Provider/Program Balances (under "Designations" above) includes that reduction, allowing the funds to flow into fund balance to cover expenditures for the next levy period.

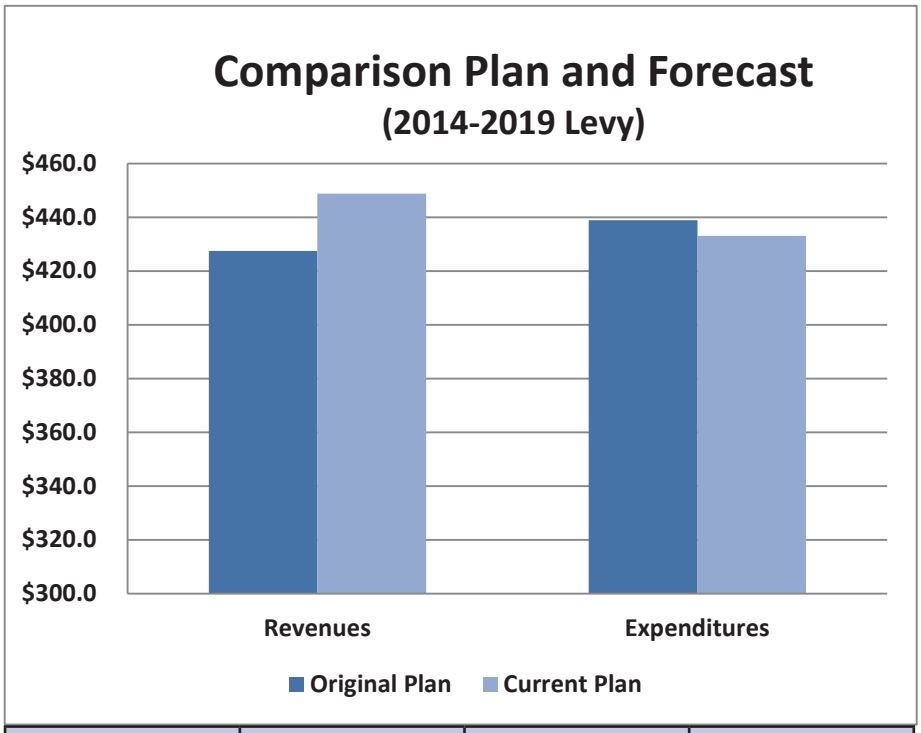
The $7 million in the millage reduction reserve was also used to "buy down" the 2014-2019 levy rate. The $2.8 million pledge from RS/SI combined with the $7 million millage reduction reserve contributed almost $10 million toward reducing the rate of the 2014-2019 levy.

2014-2019 EMS Levy

The 2014-2019 levy is based on continuing key services from the previous levy, with revised and/or decreased expenditure levels as appropriate, and incorporating additional services into an amount that is lower than if the current plan had continued into the 2014-2019 levy period.

Although only six months into the current levy, planned expenditures and revenues are showing similar trends to the last levy period. Revenue projections are up by $21.3 million while expenditure projections are down by $5.8 million.

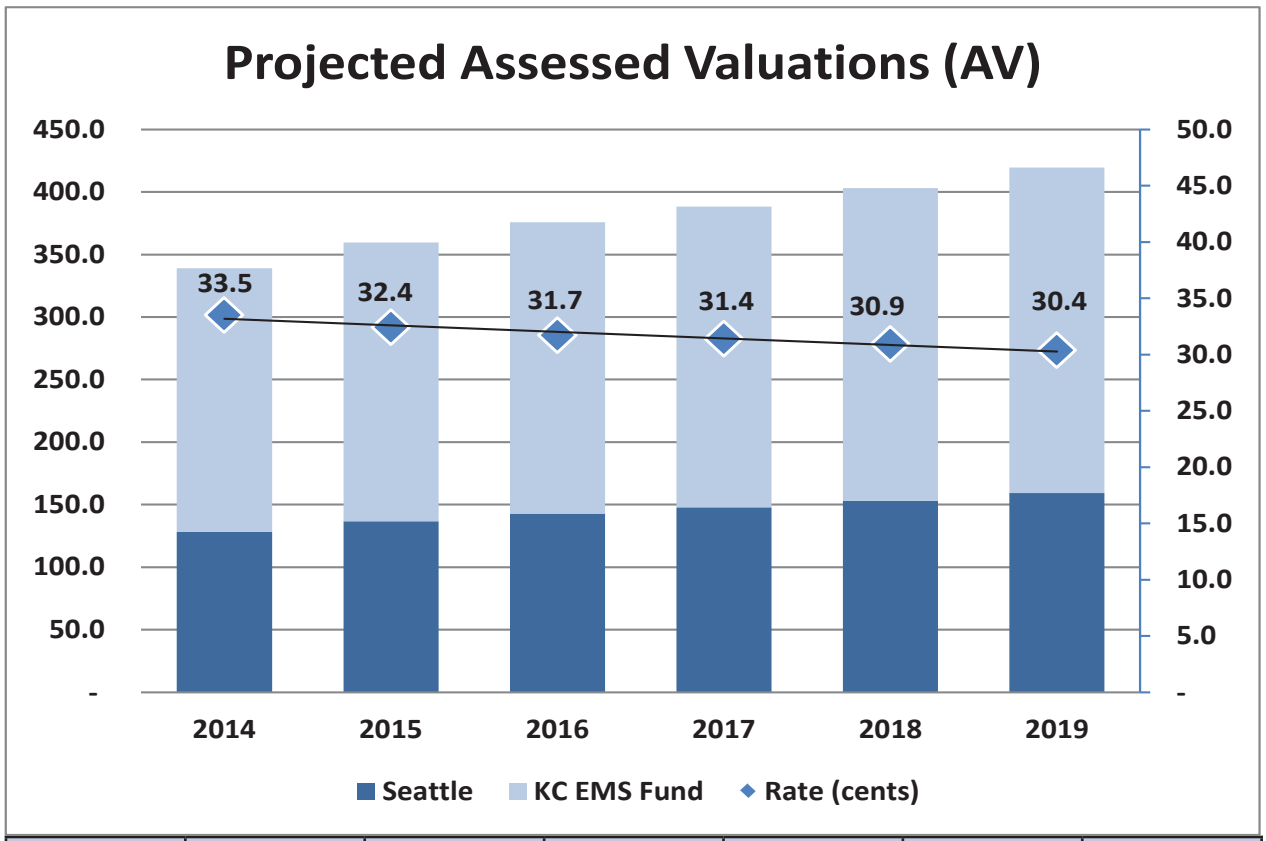
Property taxes continue to be the main source of revenue supplemented by a small amount of interest income, reimbursements, and other income. Over 99% of revenue is related to taxes and associated income related to property taxes.



2014-2019	Original Plan	Current Plan	Difference
Revenues	$427.6	$448.9	$21.3
Expenditures	$438.9	$433.1	($5.8)
($s in millions)			

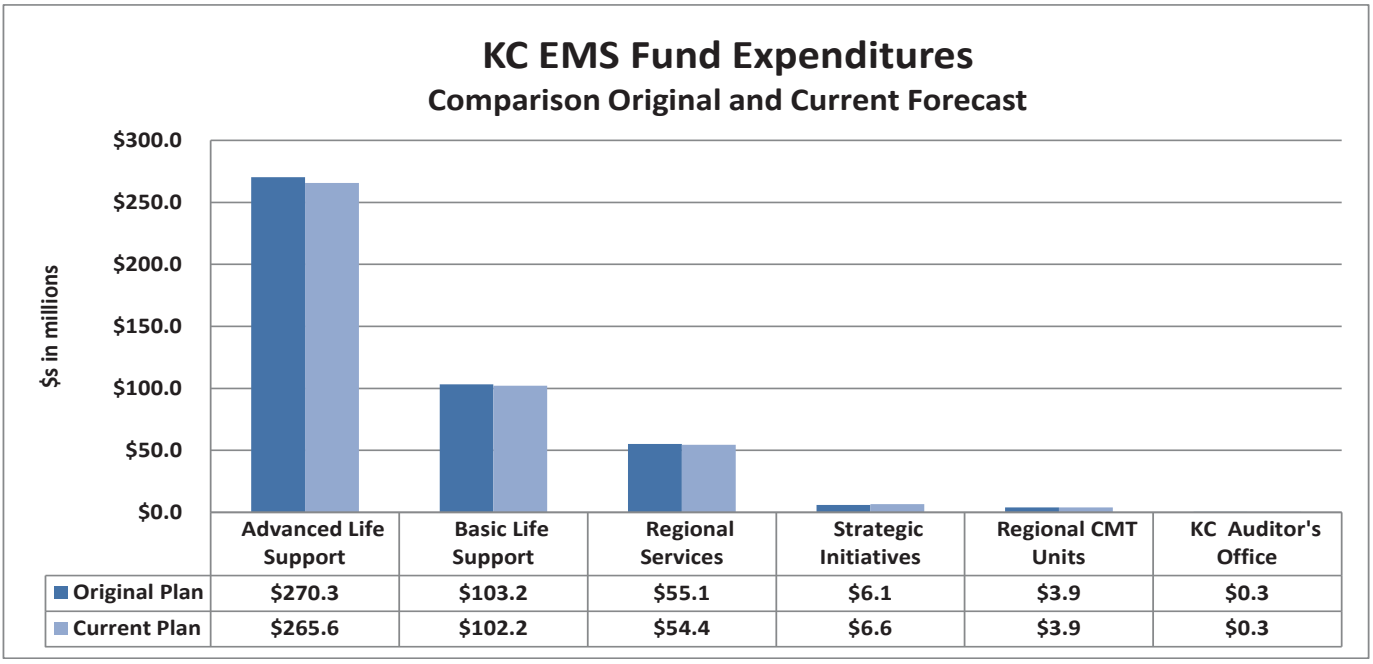
EMS Funding and 2014 Financial Plan

Due to the economic downturn and depressed Assessed Valuations (AV), the 2014-2019 levy rate was set at 33.5 cents (including a one cent "buy-down" from the 2008-2013 levy). AV is projected to increase at a rate higher than the limit factor of 1% throughout the levy period with the levy rate decreasing from 33.5 cents/$1,000 AV to 30.4 cents/$1,000 AV in 2019.

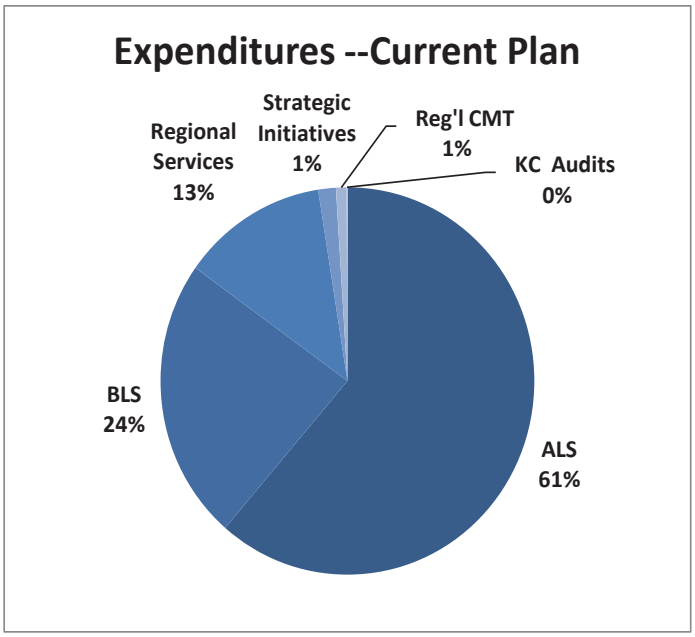


(in billions)	2014	2015	2016	2017	2018	2019
Seattle	128.21	136.80	142.95	147.74	153.06	159.35
KC EMS Fund	210.72	222.73	232.73	240.64	249.96	260.22
Total	**338.93**	**359.52**	**375.68**	**388.38**	**403.02**	**419.57**

Expenditure projections are slightly down due to lowered economic indices. Current Strategic Initiative expenditures include carryover of some emergency medical dispatch (EMD) and data management (SEND) projects from the 2008-2013 levy period.



The primary focus of the levy continues to be on fully funding ALS units. BLS was projected at the same level as planned in the 2008-2013 levy. The incorporation of previous Strategic Initiatives into Regional Services has increased its portion of the total expenditures.



Program Areas	Current Plan
Advanced Life Support	$265.6
Basic Life Support	$102.2
Regional Services	$54.4
Strategic Initiatives	$6.6
Reg'l CMT	$3.9
KC Audits	$0.3
Total	**$433.1**

EMS Funding and 2014 Financial Plan

Reserves were revamped for the 2014-2019 levy period by collapsing 12 separate reserves into four ALS reserves – ALS Capacity, ALS Equipment, ALS Operational, and the ALS Risk Abatement reserves. CMT Reserves and a cashflow reserve related to King County Assessed Value changes were added. In addition, due to uncertainties related to overhead and infrastructure costs, Regional Services is allowed to access the ALS Operational Reserve to cover expenses if they are higher than planned. The following table show the new reserves and some of their individual elements.

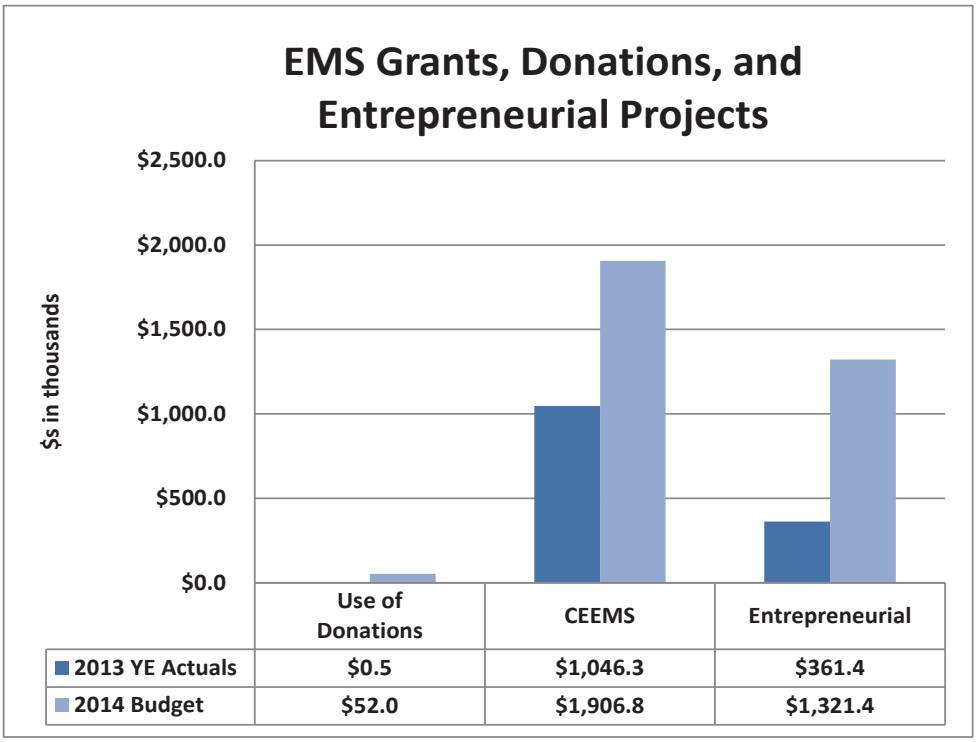
2014-2019 Reserves	2014	2015	2016	2017	2018	2019
ALS Capacity Reserves						
Placeholder for additional capacity					918,000	2,291,000
Facility Renovations		400,000	400,000	400,000	400,000	400,000
Facility Renovations		667,700	667,700	667,700	667,700	667,700
ALS Equipment Reserve	488,900	488,900	488,900	488,900	488,900	488,900
ALS Operational Reserve*						
Costs in Excess of Allocation	394,700	394,700	394,700	394,700	394,700	394,700
Excess PTO (funded at 2 FTEs)	243,200	243,200	243,200	243,200	243,200	243,200
Extra Paramedic Students	244,000	244,000	244,000	244,000	244,000	244,000
Outstanding Retirement Liability	100,000	100,000	100,000	100,000	100,000	100,000
ALS Risk Abatement Reserve						
Costs not covered by Risk Pools	1,324,400	1,324,400	1,324,400	1,324,400	1,324,400	1,324,400
Unplanned vehicle replacement	185,600	185,600	185,600	185,600	185,600	185,600
CMT Unit Reserve	0	0	383,990	731,181	1,500,305	1,500,305
KC AV Reserve (Cash Flow)	1,545,305	1,545,305	1,545,305	1,545,305	1,545,305	1,545,305
TOTAL RESERVES	**12,226,434**	**10,509,840**	**8,953,092**	**7,900,283**	**9,587,407**	**10,960,407**
*Can also be used by Regional Services to cover increased infrastructure, indirect and overhead costs.						

EMS Grants, Donation, and Entrepreneurial Projects (Public Health Fund)

The EMS Division, through the EMS Grants Group and the Center for Evaluation of Emergency Medical Services (CEEMS) located in the Public Health Fund, has been very successful in competing for research grants. The two major grants for 2013 included a five-year $1.3 million grant from the Medtronic Foundation awarded in 2011 to implement the HeartRescue Flagship Program. It aims to improve outcomes from sudden cardiac arrest throughout Washington state by focusing on community, pre-hospital, and hospital response levels of care. The other came from the Life Sciences Discovery Fund Agency, which in 2009 awarded a $2.6 million four-year grant to support the Program to Integrate Technology and Cardiac Arrest Resuscitation (PITCAR). PITCAR includes a collection of projects aimed at developing and advancing new technologies to improve the treatment of out-of-hospital cardiac arrest. The LSDF grant will end in August of 2014; the Medtronic grant continues into 2015.

The EMS Grants Group concentrates on research grants that usually do not obligate the EMS program to fund future services. The results of these research grants have been incorporated into existing EMS services and have affected interventions, protocols and standard operating procedures used in the field. The EMS Division is evaluating ongoing continuation of activities initiated through EMS Grant Group and CEEMS as part of the planning process for the next levy period.

The EMS Online Entrepreneurial Project provides online training to agencies outside King County as a subscription service. The project was based on the interest of the outside agencies, a response to the King County Executive's Entrepreneurial Project initiative, and included legal review and approval. The expenses incurred in providing the service outside of King County are covered by revenue from the subscription program. In addition, subscription revenues are used to make enhancements above those funded by the EMS levy.

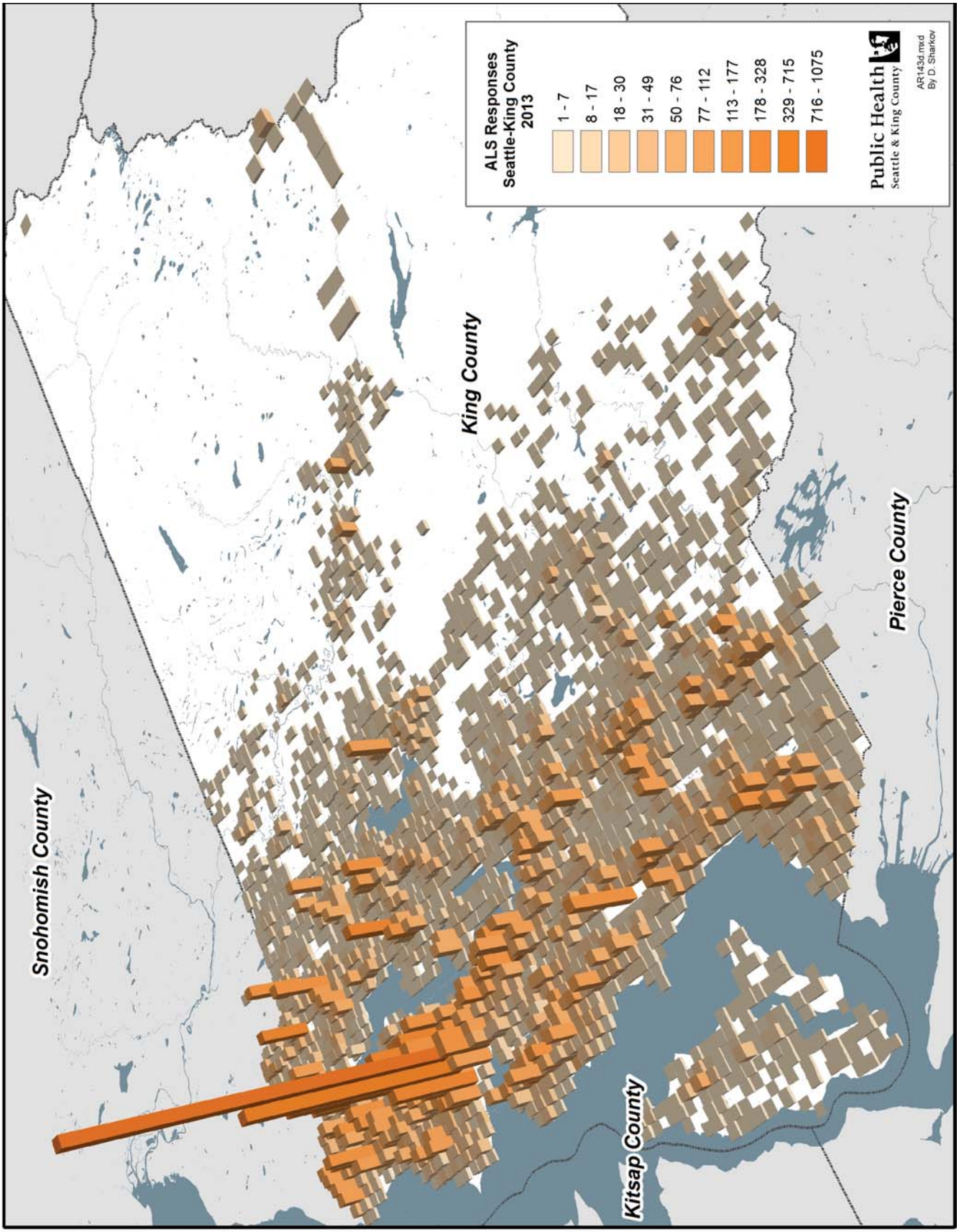


	Use of Donations	CEEMS	Entrepreneurial
2013 YE Actuals	$0.5	$1,046.3	$361.4
2014 Budget	$52.0	$1,906.8	$1,321.4

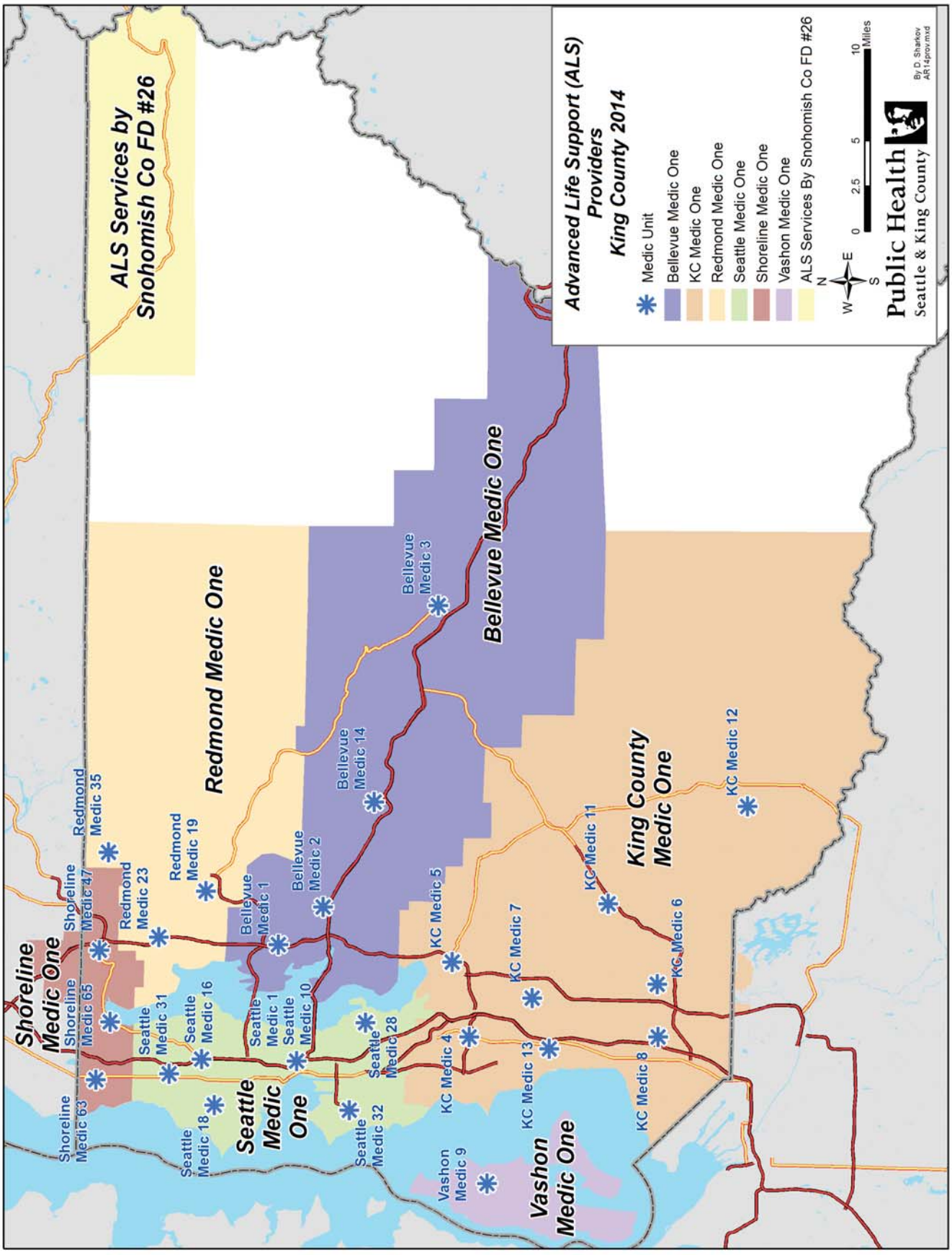
Conclusions

While the EMS Levy Fund faced significant challenges during the 2008-2013 levy period (primarily related to reduced revenues from reduced property tax assessments), through aggressive management the region not only reduced expenditures without significantly affecting programs but also was able to save funds were used to reduce the rate for the 2014-2019 Medic One/ EMS levy. This is a significant accomplishment and was only achieved through regional cooperation and hard work by EMS Chiefs, project managers and other staff. The economic challenges of this levy period showed the ability of the region to work together in successfully managing the EMS system. Preliminary indications are that the assumptions made in planning the 2014-2019 levy were sound.

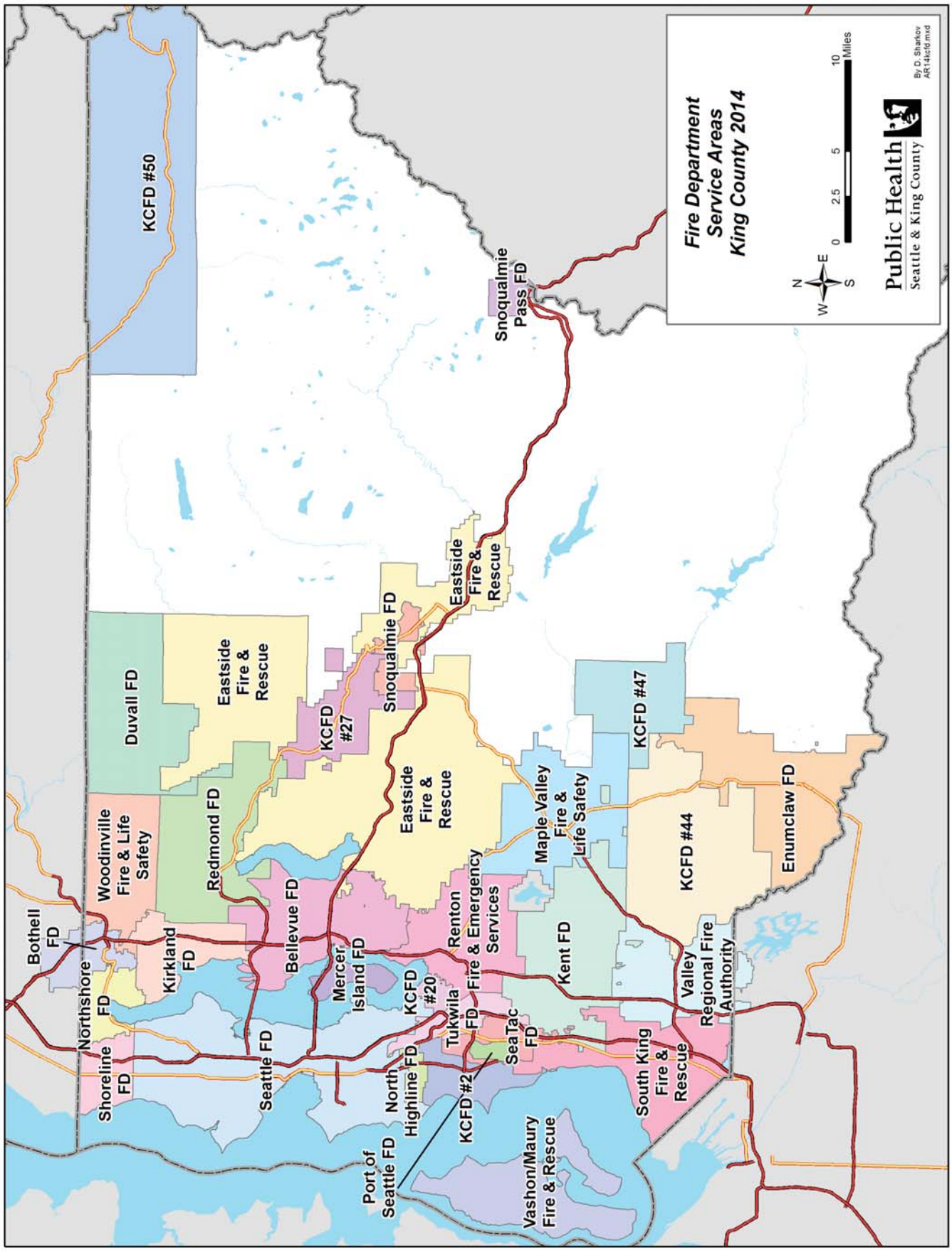
Appendix A: Regional Map of 2013 Total ALS Call Volume



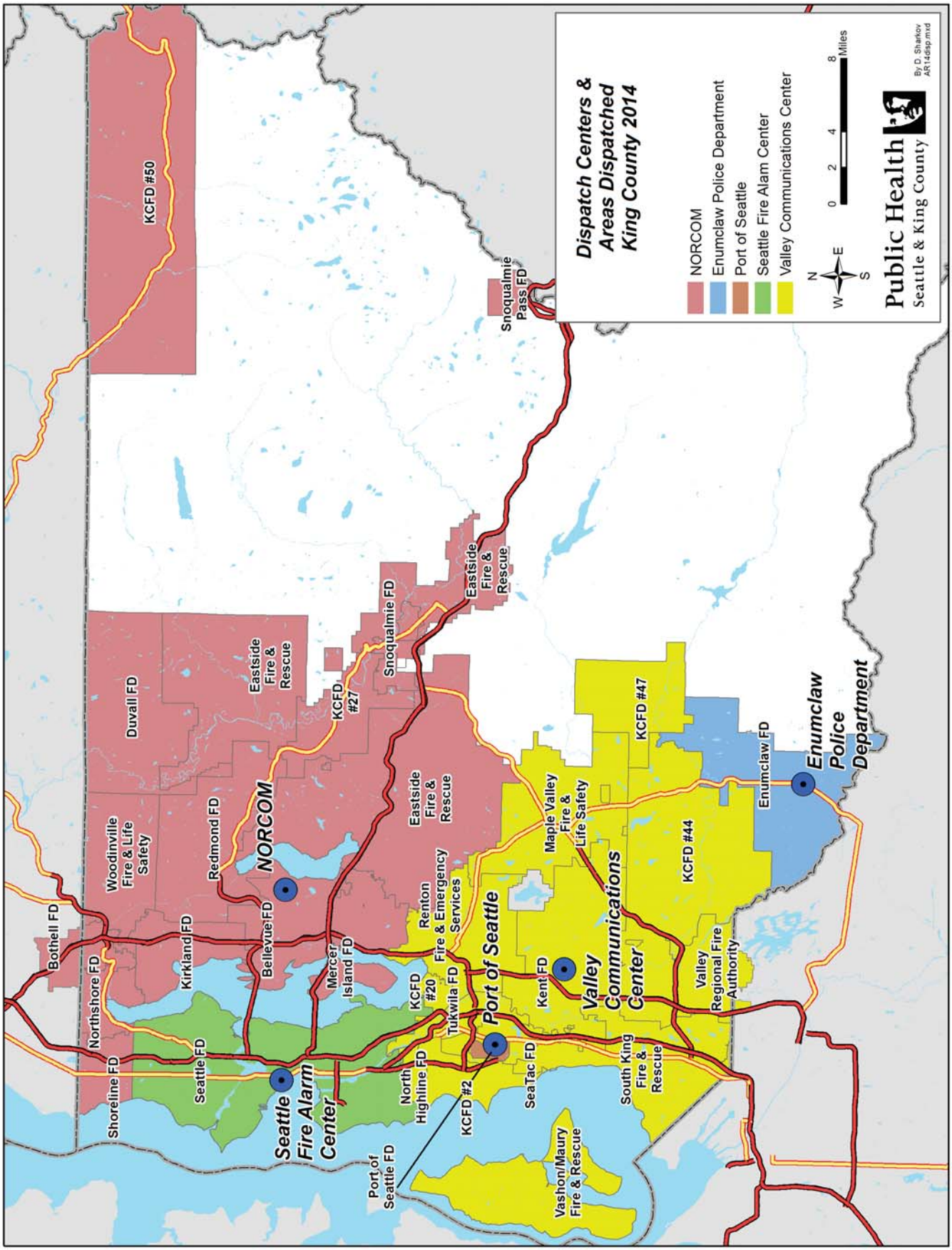
Appendix B: Regional Map of ALS Provider Areas



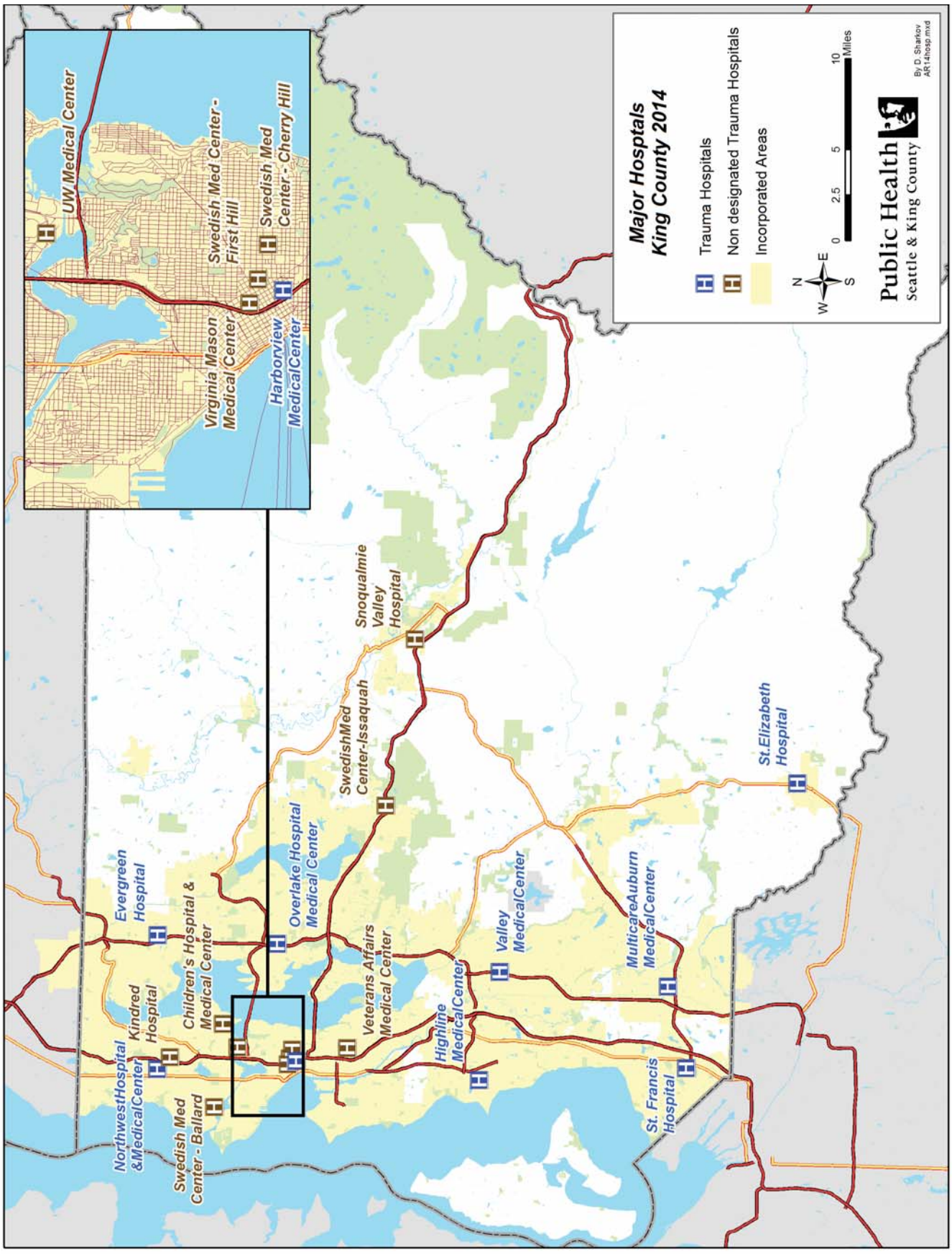
Appendix C: Regional Map of BLS Provider Areas



Appendix D: Regional Map of Dispatch Center Service Areas



Appendix E: Regional Map of EMS Hospitals



Appendix F: Map of Public Access AEDs

Appendix G: 2014 EMS Advisory Committee Listing

Name	Representation	Title/ Organization
Jim Fogarty, Chair	KC Emergency Medical Services	Director, EMS Division
Gill Glass	Ambulance Service	AMR, Operations Manager
Matt Cowan	ALS Providers - Shoreline	Chief, Shoreline Fire Department
Al Church	BLS in Cities > 50,000	Chief, South King Fire & Rescue
Michael Sayre, M.D.	Seattle Medical Program Director	Medical Program Director, Seattle Medic One
Wayne Corey	Citizen Representative	
Gregory Dean	ALS Providers – Seattle	Chief, Seattle Fire Department
Tommy Smith	ALS Providers - Redmond	Chief, Redmond Fire Department
Mickey Eisenberg, M.D.	EMS Medical Program Director	Medical Program Director, KCEMS
Mark Risen	ALS Providers - Bellevue	Interim Chief, Bellevue Fire Department
David Fleming, M.D.	Public Health - Seattle & King Co.	Director & Health Officer
John Herbert	ALS Providers - KC Medic One	Medical Services Administrator, King County Medic One
Jon Kennison	KC Fire Commissioner's Assn. - Rural	Fire Commissioner, Shoreline
Hank Lipe	ALS Providers - Vashon Medic One	Chief, Vashon Island Fire & Rescue
Doug McDonald	Labor - BLS	EMS, Renton Fire Department
Steve Perry	Labor - ALS	Paramedic, KC Medic One
Mark Peterson	BLS in Cities > 50,000	Chief, Renton Fire Department
Alan Reed	Health Care System	Manager, Medical Support Services, Group Health
Lora Ueland	Dispatch	Valley Communications Center, Director
John Rickert	KC Fire Commissioner's Assn. - Urban	Fire Commissioner, South King Fire & Rescue
Jim Schneider	BLS in Cities >50,000	Chief, Kent Fire & Life Safety
Adrian Whorton, M.D.	Chair, Medical Directors' Committee	Medical Director, Redmond Medic One

Appendix H: EMS FUND 1190 Revenue/Expenditures Summary

	2011 Actual	2012 Actual	2013 Actuals
BEGINNING FUND BALANCE	38,627,394	42,906,269	39,955,361
REVENUES			
Property Taxes	62,464,631	60,022,536	58,582,620
Grants	1,738	28,860	1,208
Charges for Services	170,361	188,858	157,152
Interest Earnings/Miscellaneous Revenue	572,461	717,125	454,524
Other Financing Sources	52,442	28,737	109,887
Transfer from Current Expense Subfund		0	
EMS REVENUE TOTAL	**63,261,633**	**60,986,116**	**59,305,391**
EXPENDITURES			
Advanced Life Support Services (12)	(36,753,633)	(41,484,555)	(40,019,713)
Basic Life Support Services	(15,154,163)	(15,396,394)	(15,871,030)
Regional Services	(6,070,339)	(6,010,426)	(7,576,579)
Strategic Initiatives	(897,024)	(1,016,513)	(1,019,225)
Use of Designations			0
Disaster Response Contingency			0
Use of Reserves			0
King County Auditor's Office	(90,512)	(80,245)	(66,986)
EMS EXPENDITURE TOTAL	**(58,965,671)**	**($63,988,133)**	**($64,553,533)**
GAAP Adjustment	($13,696)		
Unrealized Gain/Losses		$51,109	($220,811)
Assume Disaster Relief not Used			
Journal Entry Error	($3,391)		
Subtotal	(17,087)	51,109	(220,811)
ENDING FUND BALANCE	**$42,906,269**	**$39,955,361**	**$34,486,408**
RESERVES AND DESIGNATIONS			
Encumbrances			
Reappropriation			
Designations (incl. program balances)	($7,547,458)	($8,629,504)	($10,611,695)
ALS Providers Loans	$469,586	$234,793	$0
KCM1 Equipment Replacement	($2,512,444)	($2,678,020)	($1,015,437)
Designations from 2002-2007 Levy	($230,842)	($230,842)	($230,842)
Journal Entry Error		($3,391)	
Reserves for Unanticipated Inflation	($2,129,821)	($1,944,755)	($1,047,642)
Reserves (incl. millage reduction)	($15,492,136)	($12,859,839)	($12,498,979)
TOTAL RESERVES AND DESIGNATIONS	**($27,443,115)**	**($26,111,558)**	**($25,404,595)**
ENDING UNDESIGNATED FUND BALANCE	**$15,463,154**	**$13,843,803**	**$9,081,813**
TARGET FUND BALANCE	**$3,795,698**	**$3,659,167**	**$3,558,323**
*Double budgeteing and accounting of direct distributed amounts not included.			

King County Medic One Donations			
Fund 6980/Account 06204**	**2011**	**2012**	**2013**
Beginning Balance	$6,931	$9,165	$35,716
Donations	$2,234	$26,551	$17,094
Expenditures		$0	
Ending Balance	$9,165	$35,716	$54,823
** Sources: ARMS dowloads			

Appendix I: EMS Division 2013 Bibiliography

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Appendix J: EMS Performance Measures

Resource Category	Performance Measure	Definition	2013 Results
SYSTEMWIDE	Rate of cardiac arrest survival	% discharge from hospital for all witnessed cardiac arrests due to cardiac etiology in VF/VT. Includes only circulatory arrests of non-traumatic etiology receiving ALS care in patients > 2yo.	62%
BYSTANDER	Rate of bystander CPR in cases of cardiac arrest	% of bystander CPR provided for all cases of cardiac arrest. Includes only circulatory arrests of non-traumatic etiology that received ALS care in patients aged > 2 yo.	62%
DISPATCH	Rate of correctly identified cardiac arrest by telecommunicator	% of confirmed cardiac arrest cases that were correctly identified by dispatcher when provided opportunity to assess	96% (Jan thru Aug 2013)
	Rate of correctly identified resource used by telecommunicator	% of total number of reviewed calls that received correct EMS resource	82%
	Rate of correctly transferred T-IDC calls	% of T-IDC calls that were sent to the Nurseline vs received a BLS response	"T" IDC calls sent to the Nurseline: 51.5%
BASIC LIFE SUPPORT	% that response time standards are met for emergency BLS calls	Urban response areas: Ten minutes or less, eighty percent of the time; Suburban response areas: Twenty minutes or less, eighty percent of the time; Rural response areas: Forty-five minutes or less, eighty percent of the time; Wilderness response areas: As soon as possible.	Urban: 4.32 Suburban 5.54 Rural 7.0 Wilderness: 10.4
	Rate of EMTs documenting FAST and glucometry in stroke patients	% of hospital- and pre-hospital-diagnosed stroke patients for whom FAST exam and glucometry were documented by EMTs on MIRFs	50%*
	Rate that "on scene time" standards are met	% of suspected CVA and suspected TIA patients with < 15 minute BLS scene time	52%*
	Rate of taxi transported patients	% of taxi transports of all BLS transports	0.6%
	Compression fraction during resuscitation attempts	% of time that compressions are actively applied to the chest during the first 20 minutes of the case, until efforts are ceased, or until sustained ROSC is achieved (whichever event comes earliest).	88%*
PARAMEDICS	% that response time standards are met	Respond on average < 10 minutes, and <= 14 min 80% of the time.	<=10 = 81.4% <=14 = 94.5% MEAN = 7.5 min.
	Rate of paramedics using a 12-lead ECG for STEMI patients	% of suspected STEMI cases where paramedics documented the use of a 12-lead ECG	79% *
	Rate that "on scene time" standards are met	% of suspected STEMI patients with < 15 minute on scene time	27%*
	Rate of paramedics documenting Glasgow Coma Scale for trauma patients	% of trauma patients transported to HMC by paramedics where GCS was documented	93%
	Rate of scene time for trauma patients	% of trauma patients taken to HMC by paramedics with < 15 minute ALS scene time	47%
	Rate of successful first attempt intubations	% of successful first attempt intubations	78%
REGIONAL	Rate of cancelled enroute ALS calls	% cancelled enroute ALS calls to all ALS calls	17.70%
	% of calls where no upgrade or downgrade was needed	% of calls where ALS was not cancelled and not requested from scene	66.6% ; RFS 18%
	Rate of ALS requests from scene	% of BLS request for ALS from scene of all ALS calls	18%
	# of paramedic hours above planned 2PM unit staffing	# of paramedic hours above planned 2PM unit staffing	1143 hrs
	Rate of satisfied customers	% satisfied or very satisfied with service as reflected in survey results	Not available

*Results reflect King County data excluding the City of Seattle.

Appendix K: EMS Division Contact Information

Mailing Address: Emergency Medical Services Division
Public Health – Seattle & King County
401 5th Ave, Suite 1200
Seattle, WA 98104
(206) 296-4693 (206) 296-4866 (fax)

Web Address: http://www.kingcounty.gov/healthservices/health/ems.aspx

Specific Program Contacts:

King County Medic One (206) 296-8550
www.kingcounty.gov/healthservices/health/ems/MedicOne.aspx

Professional Standards Programs (206) 263-8054
www.kingcounty.gov/healthservices/health/ems/training.aspx

CPR/AED Training Programs (206) 263-8562
www.kingcounty.gov/healthservices/health/ems/aed.aspx

Emergency Medical Dispatch Programs (206) 263-8636
www.kingcounty.gov/healthservices/health/ems/emdprogram.aspx

Injury Prevention and Public Education Programs (206) 263-8544
www.kingcounty.gov/healthservices/health/ems/community.aspx

Regional Medical Control and Quality Improvement (206) 263-8659
www.kingcounty.gov/healthservices/health/ems/quality.aspx

Center for the Evaluation of EMS (CEEMS) (206) 263-8564
www.kingcounty.gov/healthservices/health/ems/CEEMS.aspx