

JOINT ELECTED OFFICIALS AGENDA ITEM SUMMARY

ACTION: REPORT ON MOBILE HEALTHCARE SERVICES OPTION

Meeting Date: February 24, 2011
Department: Eugene & Springfield Fire Departments

Agenda Item Number: 4
Staff Contact: Randy Groves, Chief

ISSUE STATEMENT

Based on the recommendation #6 of the Joint Elected Officials (JEO) Ambulance Transport System (ATS) Task Force accepted at the December 7, 2009 regular JEO meeting, development of a Mobile Health Care System proposal by December 2010 was specified, followed by a report to elected officials. A decision on the next step is requested.

BACKGROUND

In January 2009, a Central Lane ATS Summit was organized, bringing Joint Elected Officials (JEO) from Eugene, Springfield, Lane County, and Lane Rural Fire/Rescue together with health care officials to discuss the financial status of the ATS and the need to create alternative financial solutions. Staff from each ATS jurisdiction recommended creation of a JEO ATS Task Force to review the issue and recommend potential solutions.

The JEO ATS Task Force was created, began meeting on April 6, 2009 and continued through November 23, 2009. The Task Force presented a report of recommendations to the Joint Elected Officials on December 7, 2009. It included seven recommendations, each requiring various actions to be taken to determine their applicability. Recommendation #6 stated "That work proceed as rapidly as possible regarding provision of a regional mobile health care system, featuring tiered levels of response (and cost) available to patients depending on the nature of the emergency, with a report to elected officials by the end of calendar year 2010."

The City of Springfield sponsored a six-month MHS design and development proposal period beginning in July 2010, with the goal of providing a multi-phase implementation proposal and attracting sponsorship of a national organization with the capacity to carry out the proposal. The International Association of Fire Chiefs (IAFC) has accepted this task.

The biggest challenge remaining is to secure funding from the federal government for implementing and evaluating Mobile Healthcare Services. The proposal has been drafted and shared with staff members of all Oregon congressional offices, which have shown universal support for pursuing funding. Professional consultants for the Lane County United Front, a coalition of local government agencies seeking federal support, have also encouraged pursuing funding efforts. The IAFC will continue advocacy in Washington, D.C. on a limited basis, through an organization known as the Congressional Fire services Caucus. The estimated timeline for funding is 18-24 months.

The nature and complexity of sustaining Phase 1 of the project (preliminary design and development planning) pending federal funding, suggests that “bridge” grant funding be pursued. With concurrence from one or more local governments, Lane Council of Governments (LCOG) has indicated a willingness to pursue future grant funding and development efforts. No further costs to local governments are anticipated.

RELATED CITY POLICIES

City of Springfield Value #3: Results through collaboration.

City of Eugene Value #1: Safe community.

City of Eugene Value #5: Fair, stable, and adequate financial resources.

ELECTED OFFICIAL OPTIONS

1. Discontinue local efforts for Mobile Healthcare Services development.
2. Request that LCOG provide grant funding and development assistance.
3. Provide other direction.

CITY MANAGERS' RECOMMENDATION

Both City Managers recommend Option 2, LCOG assistance, with a report back to elected officials in May or June 2011.

SUGGESTED MOTION

Motion to approve Option 2.

ATTACHMENTS

1. Mobile Healthcare Evaluation Report

FOR MORE INFORMATION

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MOBILE
HEALTHCARE REPORT

**Ambulance Transport System Task Force Staff Report
Joint Elected Officials
Eugene, Springfield, and Lane County**

MOBILE HEALTHCARE EVALUATION

December 20, 2010

**Dennis Murphy
Director of Design & Development
Mobile Healthcare Services Project**

Ambulance Transport System Task Force

Lane County Board of Commissioners
Rob Handy

Eugene City Council
Andrea Ortiz, Mike Clark

Springfield City Council
Dave Ralston, Hillary Wylie

Lane Rural Fire/Rescue Board of Directors
Larry von Moos, Kevin King

The staff and management of Eugene Fire & EMS, Springfield Fire & Life Safety and Lane Rural Fire Rescue are grateful for the many hours spent by Task Force members from April-December 2009 in the development of recommendations for the resolution of financial problems faced by Central Lane County's Ambulance Transport System providers

Introduction

On May 5, 1981 a private ambulance company which had served Eugene-Springfield and Central Lane County for 26 years suddenly ceased operations, leaving local fire departments responsible for the Ambulance Transport System (ATS). The cities of Eugene and Springfield stepped in to provide service and created a long-term, stable, national award-winning system. Lane Rural Fire/Rescue District joined the Central Lane ATS in 2000.

Since initiation of service in 1981, the fire departments have depended on user fees as a primary source of funding for their Ambulance Transport Funds (ATF). In 1986, the FireMed Ambulance Membership was added to provide a low-cost alternative to expensive ambulance bills and raise additional funds from annual membership fees. Currently over 25% of the population are members of this voluntary membership program.

In 2002, the federal Centers for Medicare and Medicaid Services initiated a multi-phase national ambulance fee plan which has systematically reduced ambulance reimbursement by 2010 to less than 50% of previous levels. Since more than 60% of ambulance patients are covered by these plans, the effect on the ATF was to create financial losses and eliminate contingency funds accumulated over many years. Ambulance services throughout the nation are struggling to solve this problem.

In January 2009, a Central Lane ATS Summit was organized, bringing Joint Elected Officials (JEO) from Eugene, Springfield, Lane County, and Lane Rural Fire/Rescue together with health care officials to discuss the status of the ATF and the need to create alternative financial solutions. Staff from each ATS jurisdiction recommended creation of a JEO ATS Task Force to review the issue and recommend potential solutions.

The JEO ATS Task Force was created, began meeting on April 6, 2009 and continued through November 23, 2009. The Task Force presented a report of recommendations to the Joint Elected Officials on December 7, 2009. It included seven recommendations, each requiring various actions to be taken to determine their applicability. Recommendation #6 stated "That work proceed as rapidly as possible regarding provision of a regional mobile health care system, featuring tiered levels of response (and cost) available to patients depending on the nature of the emergency, with a report to elected officials by the end of calendar year 2010."

Following this report is a magazine article discussing the origins of the Mobile Healthcare Services (MHS) concept (Appendix A) and an initial introductory editorial published in the Register Guard (Appendix B).

This staff report addresses the feasibility of recommendation #6, design and development of a Mobile Healthcare Services (MHS) system.

Executive Summary

It is the conclusion of the Joint Elected Officials Ambulance Transport System (ATS) Task Force and the staff of Central Lane ATS provider agencies that no single solution to the Ambulance Transport Fund (ATF) problem is likely to totally resolve the challenge to re-balance the funds. Instead, a combination of solutions is recommended.

The role of fee-based and insurance reimbursement systems such as Mobile Healthcare is to reduce overall expenses, maximize non-tax revenues, and reduce the reliance on taxes for balancing the ATF over the long term. The Task Force and staff agree that emergency ambulance transport has been and continues to be a core function and one of the highest priorities of local government. While every effort should continue to be made to maximize non-tax revenues and reduce expenses, particularly in the current economic climate, preservation of this essential public safety service must also be considered a priority for future tax support.

Mobile Healthcare Services (MHS) are designed around the concept of taking health care to the patient, rather than simply taking the patient to a health care facility. Whenever safe to do so, patients are treated at the site of their illness or injury and released. Through a sophisticated communications system, all vital signs may be transmitted electronically to a medical control center along with video images of the patient, whenever needed. Essentially, it is using mobile telemedicine devices and processes to make house calls. Caregivers will either be nurses or paramedics with special additional training, responding on a non-emergency basis, in small one-person minivans known as Mobile Primary Care Units (MPCU).

Recent studies have estimated that billions of dollars could be saved every year by more appropriately matching the type of care given with the type of care actually needed. Unnecessary EMS 9-1-1 calls and emergency department visits are eliminated. At the same time, routine non-emergency primary care is universally available 24 hours to all persons, resulting in better overall care at lower overall costs.

Current capacity in the Central Lane ATS is adequate for actual emergencies but cannot sustain the continued increase in non-emergency calls. Medicare and Medicaid reimbursement for non-emergency calls is too low to add more ambulances as run volume increases. The solution is to carefully redirect non-emergencies to more appropriate and less costly resources. At the same time, MHS system design calls for increasing the reimbursement for emergency ambulance calls as a financial incentive for local health care providers to initiate more cost-effective MHS systems nationwide. This in turn helps to resolve ambulance funding shortages.

The current EMS system, which consists of first response paramedic fire engines and emergency paramedic ambulances, is integrated with the MPCUs and non-emergency ambulances into a single multi-function MHS system. The 9-1-1 call-taking and EMS

dispatch system is integrated with a non-emergency call-taking and dispatch system known as the MediHelp center. The MediHelp center features the 24 hour services of a triage (call-sorting) nurse that can give advice and help decide the level of care needed.

The key to widespread development and initiation of MHS systems is proof that the results show better access, better care, and lower overall costs. Such proof requires a careful two-year study, known as an “alpha site,” followed by one or more additional one-year studies known as “beta sites.” The alpha site demonstrates feasibility while the beta sites show that the concept can be successfully replicated. National health care reform initiatives are based on efforts to achieve these results and create an ideal environment for the MHS project.

Central Lane County is proposed as the alpha site for the project with Lane Council of Governments coordinating the local effort. Central Lane County ATS providers have previously served in successful alpha and beta site studies for other national demonstration projects. Agreement in concept has been reached with several Lane County health care organizations to support the project by contracting for services.

The City of Springfield sponsored a six-month MHS design and development proposal period with the goal of providing a multi-phase implementation proposal and attracting sponsorship of a national organization with the capacity to carry out the proposal. The International Association of Fire Chiefs (IAFC) has accepted this task.

The biggest challenge remaining is to secure funding from the federal government for the alpha and beta site studies. The proposal has been drafted and shared with staff members of all Oregon congressional offices, who have shown universal support for pursuing funding. Professional consultants for the Lane County United Front, a coalition of local government agencies seeking federal support, have also encouraged pursuing funding efforts. The IAFC will continue advocacy in Washington, D.C. on a limited basis, through an organization known as the Congressional Fire services Caucus. The estimated timeline for funding is 18-24 months.

The nature and complexity of sustaining Phase 1 of the project (preliminary design and development planning) pending funding, suggests that “bridge” grant funding be pursued. With concurrence from one or more local governments, Lane Council of Governments has indicated a willingness to pursue future grant funding efforts.

Mobile Healthcare Services: The Right Care at the Right Time



**MedExpress, an Occupational Injury Response Unit,
provides 24-hour Mobile Primary Care service for non-life
threatening injuries that occur at the workplace.**

1 Health Care Reform Initiative

Health care in the United States is undergoing a series of sea-changes with the recent passage of the health care reform bill. In this dynamic environment, we are proposing federal assistance in reshaping the *access* to our health care system as a means to initiate improvements.

The goals for this project are:

- Improve access to prehospital primary health care for all people
- Improve patient health outcomes
- Lower the overall system cost of health care

This will be accomplished by applying proven models of prehospital health care delivery in new and unique ways that result in a more effective match between the severity of illness or injury and the level and timeliness of care delivered. The vision for this project is to more effectively link public safety and community health in a public-private partnership by redesigning the elements of the existing system into an integrated Mobile Healthcare Services (MHS) system.

2 Definition of the Issue

In the last year, our country has embarked on a journey of health care reform, toward providing all people with access to appropriate health care. This journey of reform also includes improving the delivery mechanism for health care, ensuring that the right care is delivered in the most cost effective manner. Presently, the type of care actually needed and the care provided is often mismatched. Too often, injured or ill people don't have access to the right level of care at the right time. Far too often, the current Emergency Medical Services (EMS) system is inappropriately used to provide non-emergency health care. In other cases, people fail to recognize the seriousness of the illness or injury and hesitate to call for emergency help when they really need it. This results in either over-access or under-access decisions by patients or those near them at the time.

Over-access leads to unnecessary levels of care and expense, overtaxing the limited resources of the 9-1-1 EMS system and Emergency Departments (ED) and a significant increase in uncompensated services. Under-access and resultant delays in care result in more serious patient health outcomes and some may ultimately lead to unnecessary death. All this is occurring at a time when the national economy is challenged and reimbursement for medical care is being systematically reduced.

- ◆ A study by ED physicians reported 30 % of all ambulance transports to EDs were not medically necessary.¹



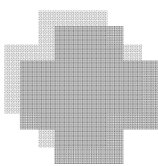
- ◆ This is compounded by people seeking routine primary care who arrive by private vehicle at the ED.
- ◆ In the last decade, the frequency of ED visits has coincided with a decreasing number of EDs and inpatient beds.
- ◆ EDs nationwide are under increasing pressure to provide care for more patients, resulting in crowding, hallway boarding of admitted patients, and ambulance diversions.
- ◆ ED crowding has had multiple other negative effects, including decreased physician productivity and increased waiting times for minor illnesses.
- ◆ Delays in the ED are now also occurring for the treatment of serious problems, as well.²

One study estimates **\$4.4 billion** could be saved by redirecting unnecessary ED visits to less expensive clinics and urgent care centers.³

In addition, EMS systems across the country receive federal funds through reimbursements from the Medicare program. Because the elderly are heavy users of EMS, Medicare represents 50-70% of billings and collections in a typical EMS agency. Those aged 65 and older are 4.4 times more likely to use EMS than younger individuals, and they represent a growing segment of the population. The new Medicare fee schedule significantly reduces Medicare payments to EMS providers, leading to a \$600 million annual shortfall for services provided to Medicare beneficiaries.⁴

Finally, current financial incentives for delivery of emergency and trauma care services are suspected of adding unnecessary costs to the health care system and burdening already overburdened hospital-based providers.

Under the current system a patient with a sprained ankle may be transported by ambulance and treated at the ED incurring substantial costs when a simple splint by an EMT and a car or taxi ride to a primary care provider would achieve essentially the same outcome at a much lower cost.⁵



In short, unnecessary and/or costly trips to EDs - which are often insufficiently reimbursed - are creating a crisis in both the quality and delivery of health care for jurisdictions

throughout the country. The proposed Mobile Healthcare Services (MHS) concept addresses these issues, furthering the objectives of health care reform.

3 Project Concept

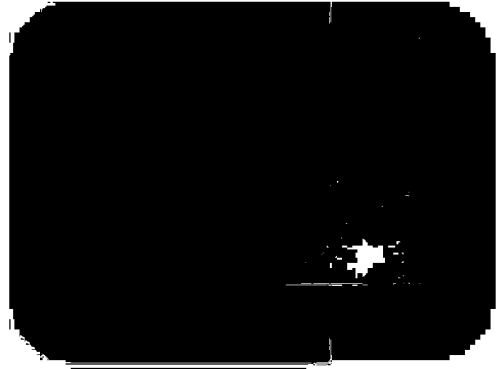
3.1 Purpose

The purpose of the proposed project is to demonstrate how Mobile Healthcare Services can safely redirect non-emergencies away from 9-1-1 and emergency departments into more appropriate and less expensive non-emergency treatment modes. Universal access to 9-1-1 EMS is continued and extended to provide universal access to care for less serious illness or injury, improving the overall health of all people.

By integrating existing EMS elements with non-emergency response capacity in a novel manner, the quality of existing emergency services can be sustained – at reduced cost – while expanding the quality and quantity of primary health care provided to a local population.

Case Study #1

The MediHelp call center receives a call from a local business about an injured employee. The employee has something in her eye that is scratching. A Mobile Primary Care Unit (MPCU) nurse is sent to the worksite. The nurse examines a 23 year old woman who was walking outside the warehouse during her lunch hour when a gust of wind blew debris off the warehouse roof and into her eye. She tried to get it out but only made it worse and started to feel like it was scratching.



Following protocol, the nurse uses eye kit equipment to carefully remove a small piece of dirt that had embedded under an eyelid. Following application of sterile eye ointment, the woman reports that her eye stings and waters a little but doesn't scratch and she can see fine. The nurse gives her written instructions on follow up self-care and a phone number to call if the eye is not totally clear of problems within 24 hours. There are no further consequences and the eye is normal by the following day.

Minor injuries at work can be a very costly issue for employers. Without mobile medical treatment options, often a supervisor or co-worker must transport the injured employee to a clinic or urgent care and provide transportation back when treatment is finished. Many minor injuries can be safely treated and the worker released at the worksite by trained professionals in MPCUs. In this case, the expense of a worker compensation claim is spared and lost work time saved.

3.2 Approach

The Mobile Healthcare Services (MHS) system integrates all aspects of EMS and adds important new features for the management of non-urgent conditions. The goal is to select the least costly and most appropriate level of care required by the patient's condition, while ensuring a high quality of care.

If the system performs well, consumers will enjoy the return of the routine 'house call,' a form of personal health care that may prove to be the missing link in controlling costs.

The MHS system includes the following components, explained in more detail below:

- Fire/EMS First Response Providers (fire departments), Advanced Life Support (ALS/paramedic) Ambulances, Basic Life Support (BLS/EMT) Ambulances
- Emergency and non-emergency call assessment and priority centers (9-1-1 and MediHelp non-urgent)
- Mobile Primary Care Units (MPCU)

- Provider and patient education

The strategy for this national demonstration project is to conduct an ‘alpha test’ and two or more ‘beta tests’ of the MHS system concept. The ‘alpha test’ is designed to demonstrate program viability while the ‘beta test(s)’ are designed to demonstrate that the program can be successfully replicated at other locations in the U.S.

The ‘alpha test’ will be conducted in the Central Lane County, Oregon area and the principal cities of Eugene and Springfield (3,000 sq mi., population 308,200) and will take approximately 2 years. The primary purpose of this selection is previous success with national alpha and beta tests performed here.

The ‘beta tests’ will be performed in multiple sites simultaneously across the U.S.; each test would last for approximately 1 year.

3.3 Fire/EMS First Response, Basic and Advanced Life Support Ambulances

Existing Fire and EMS Services will continue to operate emergency response services to provide the closest immediate care for presumptively serious or life-threatening situations.

These units may include one or all of the following components:

- Basic Life Support or Advanced Life Support first responders (BLS/EMT or ALS/paramedic): usually a fire apparatus, typically a fire engine, staffed with one or more paramedics or EMTs and a complete supply of ALS or BLS equipment.
- Basic Life Support Ambulance (BLS/EMT): equipped with all BLS equipment required by state laws and staffed by a minimum of two basic EMTs. They provide basic care and transportation for patients requiring a stretcher and/or continuing basic care from an EMT. May be provided by Fire/EMS or other type of provider.
- Advanced Life Support Ambulance (ALS/Paramedic): equipped with all ALS equipment required by state laws and staffed by a minimum of two personnel, at least one of whom is a paramedic. They provide advanced care and transportation to the emergency department or between acute care facilities for urgent situations. May be provided by Fire/EMS or other type of provider.

All of these emergency services are available for dispatch directly to the scene or may be requested by any other unit in the MHS system. They may also treat and release or transfer the patient to a Mobile Primary Care Unit (MPCU) or a lesser level of care, if the situation isn’t urgent. Fire/EMS first responders and ambulance transport services are dispatched by an emergency 9-1-1 center; however in the Mobile Healthcare System 9-1-1 call-takers would have the added option of transferring a caller to the non-emergency MediHelp call center, if the call-taker determines that emergency assistance is not necessary.

Case Study #2

The 9-1-1 call center receives a cell phone call reporting that a man staggered across the road and fell down in the median. The man is not moving. The 9-1-1 call-taker routes the call to dispatchers who send an EMS first response paramedic fire engine and police, as well as a paramedic ambulance. The fire engine crew examines a 36 year old man and quickly determines he is

otherwise uninjured. The man says he is homeless but sometimes stays with friends. They disregard the ambulance and speak with police. They then radio for a local mobile drug and alcohol treatment van. The man is transported to a non-profit alcohol treatment/overnight stay facility. After alcohol counseling and an offer of follow up assistance, the man is released the following day.

Instead of the unnecessary interruption of emergency services and expense for ambulance and ED or addition to the uncompensated care burden, the man is referred to the appropriate facility to deal with the problem. Coordination and referral of such cases to social service agencies, rather than traditional medical care is much more efficient and effective.

3.4 Emergency 9-1-1 and Non-emergency MediHelp Call Assessment and Dispatch Centers

A non-emergency (MediHelp) call center would operate in parallel with the existing emergency (9-1-1) center, and may even be housed in the same facility. It is essential that the two centers collaborate closely and develop strong electronic linkages.

The non-emergency call center consists of call-takers certified in emergency medical dispatch and trained in the treatment of non-urgent illnesses and injuries.

The call-takers at the non-emergency center work with a physician-approved software protocol with advice and direction from a nurse triage supervisor. This center answers calls to a highly publicized community phone number for use by people who believe they need medical attention, but not on an emergency basis.

Call-takers would follow the process outlined in the flowchart below (see figure 1).

- *Transfer the call to 9-1-1* – This is always an option; when the call-taker determines that the call is in fact an emergency, the caller is immediately transferred to the emergency center.
- *Transfer the call to the nurse triage supervisor* – This is the option of choice if the call-taker is uncertain as to the nature of the call.
- *Minor illness or injury, only advice needed* – If the illness or injury is of a very minor nature, such as a small burn, the call-taker gives self-help instructions, following a prepared protocol for such common situations. If the problem is more complicated, the call-taker can transfer the call to the nurse triage supervisor for advice, similar to the ‘Ask-A-Nurse’ program.
- *Referral* – If the problem requires follow-up treatment by a physician, but doesn’t need immediate assistance, the caller is referred to his/her personal physician, a community health center/clinic, or a social service agency, such as a drug or alcohol treatment program.
- *Dispatch* – When the problem requires prompt treatment, but isn’t of an urgent nature, the call-taker may dispatch one of several types of non-emergency vehicles to provide assistance
- *Safety Net Feature* – Lay persons frequently underestimate or deny the seriousness of early symptoms from such threats as heart attack or stroke. The MediHelp Center helps guide such patients back into EMS system for prompt treatment. Where people may hesitate to call 9-1-1 thinking (or hoping) the problem is not serious, they are far more likely to call a non-emergency center for advice or treatment. The MediHelp Center promptly transfers such calls to 9-1-1. This results in elimination of deadly delays in treatment.

3.5 Mobile Primary Care Units (MPCUs)

Mobile Primary Care Units (MPCUs) are small, one-person mobile units, ideally mini-vans equipped to transport via wheelchair. These units would be staffed by registered nurses, nurse practitioners, physician assistants or paramedics with special training and an expanded scope of practice.

MPCUs are dispatched to provide care for non-urgent conditions that need assessment and treatment, but may not need follow-up care by a physician. The MPCU is equipped with a limited complement of treatment and diagnostic tools typical of those found in a clinic, and communications equipment to allow the transmission of voice, real-time streaming video of the patient and other medical feedback data to a central receiving station.

Physician-approved protocols guide the MPCU provider team member and physician advice may be requested over cellular or radio. Access to central patient databases is granted for the purposes of directing treatment. The MPCU staff has several options:

- Treat and release. Patients are assessed and treated using advanced care skills and equipment according to the nature of their illness or injury. A limited amount of prescription medicine can be dispensed and, in some cases, prescriptions filled through

physician consultation. If the condition can be safely treated without seeing a physician, the patient is released with advice on how to continue self-treatment and look for signs of any additional problems.

- Treat and refer. If the MPCU staff determines that the patient will need follow-up care, but not urgently, the patient may be referred to a doctor's office or clinic for a regular appointment. In some cases, the MPCU staff may be able to book the appointment on the spot by accessing an appointment database.
- Transport, non-emergency. In cases where the patient requires further treatment soon, the MPCU staff will call for a non-emergency ambulance or wheelchair transport vehicle. If necessary and appropriate, the MPCU can transport the patient.

3.6 Provider and Patient Education

Fire/EMS, ambulance, public safety, communications personnel and community health care providers will be educated on the changes in system design and how it alters the type of care provided. In most cases, the biggest change is the addition of the MediHelp call center and MPCU services. The integration of emergency and non-emergency medical services into a seamless system of call prioritization, telephone and online advice, response, treatment or referral, and transportation if necessary, will require the full-time services of a MHS Education Specialist. The Education Specialist will also provide patient education services.

The concept of a MediHelp Call Center and "house calls" for pressing but non-urgent illnesses or injuries is new to most communities. Through an established and successful EMS community education program model known as FireMed, which includes an extensive media campaign as well as special events and public presentations, the MHS Education Specialist will prepare each community, prior to initiation of services. An ongoing program of community education will maintain and improve communications.

Case Study #3

An 89 year old woman lives in her home alone. Her only relative is her son who lives about 50 miles away. She is experiencing nausea, vomiting and severe dizziness with her new medications. It's Saturday evening and her doctor's office will not open until Monday morning. She was told to take all her pills and not skip any. She wants to take her pills but feels she will faint and become unconscious. She calls her son. He tells her to call 9-1-1 and says he will drive down to see what he can do. He has his cell phone on during the trip.

Following computer protocols, the 9-1-1 call-taker connects the woman with the Nurse Triage (priority sorting) Supervisor in the MediHelp call center. The nurse tells her that it is not uncommon for her new medication to cause some people to feel sick and dizzy. She assures her that it is safe to stop taking the medication

better until she talks to her doctor on Monday. The nurse asks for the doctor's name and tells her that she is able to make an appointment for the woman on Monday morning. Before she hangs up, the nurse tells the woman that she will call her son to tell him that things are under control and then call her back in 30 minutes. If the woman is not feeling better, a Mobile Primary Care Unit nurse will be sent to her house to check on her.

When the nurse calls back, the woman says she is feeling better now and is no longer dizzy. The Triage Nurse checks with the woman on Monday after her doctor's visit. The woman has a new prescription and feels fine.

Without MHS, the 9-1-1 call would have resulted in the nearest paramedic fire engine being sent, followed by an Advanced Life Support (paramedic) ambulance. It is urgent that EMS personnel provide care and transport decisions quickly and become available to handle the next emergency call. As a result, the patient would have been transported to the local Emergency Department (ED) to sort out the underlying problem. This would have resulted in largely the same patient outcome, except that EMS and ED personnel would have been busy with a non-urgent problem and the patient would have received a bill for the ambulance and ED, at an estimated total of \$1,200 to \$2,000, depending on local fees and charges. The woman's son would have made an unnecessary round trip of over 100 miles.

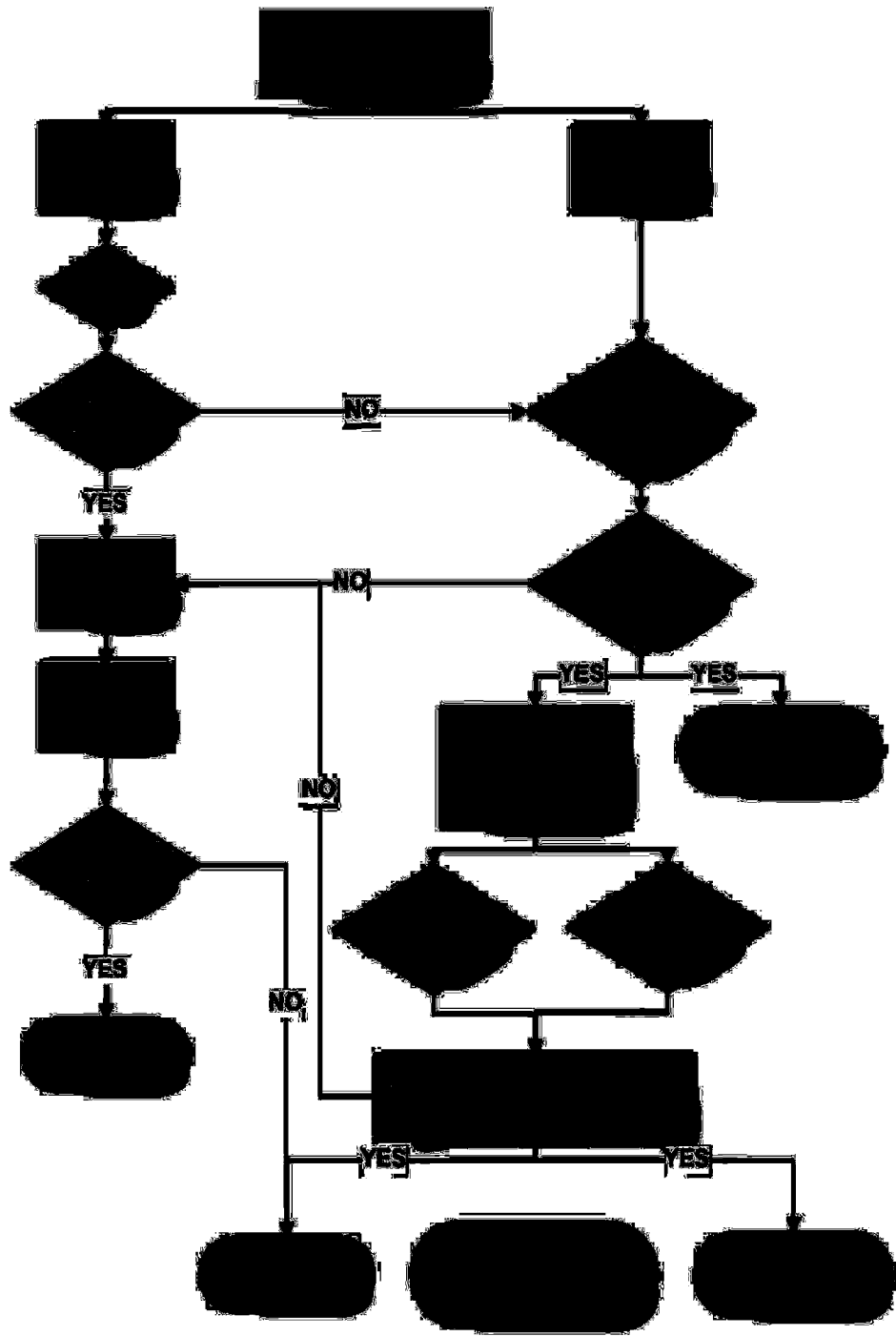


Figure 1: Mobile Healthcare Services Flowchart

4 Proposed Project Team

The roles and responsibilities of the proposed project team are summarized below.

4.1 International Association of Fire Chiefs (IAFC)

The IAFC represents the leadership of over 1.2 million firefighters and emergency responders. IAFC members are the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search and rescue, and public safety legislation.

The IAFC has managed a number of successful projects at the national level which have improved local, regional and national prevention, protection, response and recovery capabilities.

On March 24, 2009, the International Association of Fire Chiefs (IAFC) announced the merger of the IAFC's for-profit subsidiary, Global Public Safety Solutions (GPSS), with Emergency Services Consulting International (ESCi).

Emergency Services Consulting International (ESCi) is the foremost firm providing specialized and high quality fire, police, communications, and emergency medical consulting services to organizations throughout the United States and Canada. ESCi is the nation's leading source of consultation and training for emergency service providers.

The merger between IAFC's for-profit subsidiary and ESCi expands high-quality consulting and education services for the public safety profession and local governments.

IAFC will serve as overall project coordinator and will utilize, as appropriate, its affiliates Global Public Safety Services (GPSS) and ESCi for the management of the project. IAFC will be responsible for soliciting, selecting and coordinating with potential beta sites. ESCi will recruit and coordinate project stakeholders and assess the efficiency and efficacy of the model for potential replication in other jurisdictions.

4.2 Lane Council of Governments (LCOG)

The Lane Council of Governments (LCOG) is a voluntary association of cities, the county and special purpose districts (water, library, education, ambulance and fire) in Lane County, Oregon. LCOG serves as a regional planning, coordination, program development and service delivery organization for those issues which cross jurisdictional boundaries.

LCOG works cooperatively with local, state, and federal agencies and carries out a broad range of activities requested by its members. Half of the LCOG workforce supports senior and disabled service activities, those among the hardest hit by rising medical service delivery costs.

LCOG will serve as the local Project Coordination Agency for the alpha implementation. The former Fire Chief of the Springfield Department of Fire and Life Safety (SFLS) and Chair of the IAFC EMS Section, Chief Dennis Murphy, will be the LCOG lead for this effort. As Fire Chief of SFLS, Chief Murphy partnered with IAFC to pioneer the 'RapidZap' project, fielding rapid cardiac defibrillation capabilities in fire apparatus

across the nation. Chief Murphy also designed and developed the FireMed Program, the largest network of reciprocating air and ground ambulance services in the nation.

Case Study #4

The MediHelp call center receives a call from a woman who says she is concerned about her husband, a 49 year old warehouse worker, who came home after work looking pale and very weak. She thinks he may have other symptoms he is not telling her about. The nurse asks to talk with him but he refuses. The nurse directs dispatch to send an MPCU nurse to the house to check on him.

When the nurse arrives he reluctantly agrees to let her examine him. After a few questions, he grudgingly admits to some pain in his chest and left arm. He is now also sweating and nauseous and experiencing greater pain. The nurse explains that she

Following protocol, she hooks him up to a 12 lead EKG, administers oxygen and contacts medical control, sending patient video along with the EKG and other background information. Medical control reviews the EKG and other findings and concurs that he is having a heart attack. The nurse radios for EMS.

Within minutes, a paramedic fire engine arrives and the nurse works with the crew who starts an IV and administers pain medication. Then a paramedic ambulance arrives to transport the man to the hospital. Based on earlier reports, Medical Control orders thrombolytic ("clot busting") medication to be given on his arrival at the hospital.

After treatment in the hospital, the man is discharged 3 days later. Doctors indicate that his wife's decision to call for help quickly and the early diagnosis and medication and follow up care in the hospital has resulted in prevention of more serious damage and possible death that would have been caused by delayed access to treatment.

Denial of signs of a heart attack is common, particularly in adult males. Some see it as a sign that they can no longer fill the role of being a key provider for a household. Others fear news of a disability or loss of income or don't want their neighbors to see emergency equipment and make a big deal of it. This frequently leads to a delay in access of several hours. Thrombolytic medications are only valuable if given shortly after symptoms begin. In this case, the "fail-safe" nature of the MediHelp call center resulted in catching a serious problem early. The patient is spared the possibility of a disability and lengthy recovery or unnecessary early death and the attending financial consequences.

4.3 Eugene-Springfield Fire Department

The Eugene and Springfield Fire Departments have recently merged their management teams. Together they are a national award winning department, having previously developed and implemented statewide and national EMS projects.

The Eugene Fire Department provides fire, rescue, emergency medical, fire code enforcement, fire investigation, and public education services to the city of Eugene (population 156,634; area 43.4 square miles), and by contract to five adjacent special districts.

The Springfield Department of Fire and Life Safety (SFLS) provides fire protection and medical first response services to the City of Springfield and three nearby water/fire districts (population 61,000; area 18.8 square miles). The SFLS ambulance service area consists of about 2,000 square miles with a population of about 88,250.

The combined Eugene-Springfield Fire Department will provide the EMS support to the demonstration project for the Lane County region. The FireMed Program, a network of air and ground ambulances in the region, will serve as the local Project Management Agency.

4.4 Oregon Health & Science University (OHSU)

Oregon Health & Science University is a leading health and research university that strives for excellence in patient care, education, and research, and community service. As a nonprofit public corporation, OHSU provides health care throughout the Oregon region.

As a leader in research, OHSU earned \$307 million in research funding in fiscal year 2007, and has more than 4,100 research projects currently under way. OHSU disclosed 132 inventions in 2007, many of which open new markets, spin-off businesses and create new opportunities.

Beyond providing critical health care services, quality health care education, and cutting-edge research, OHSU also is a key economic and social force in the Northwest. With an annual budget of \$1.4 billion and more than 12,400 employees, OHSU is Portland's largest, and the state's fourth largest employer (excluding government). OHSU earns \$32 million in gifts, grants, contracts and service funds for every dollar the state invests in OHSU and drives more than \$3 billion in annual regional economic activity.

It is currently proposed that OHSU will direct the research and evaluation portion of this project.

4.5 Cascade Health Solutions and MedExpress

Cascade Health Solutions, a non-profit community-based health care agency, offers services outside of a hospital setting. These services include occupational health, employee assistance, health education and risk management, home health, and hospice.

Cascade Health Solutions operates MedExpress, an Occupational Injury Response Unit, which provides 24-hour service for non-life threatening injuries that occur at the workplace. The units are staffed with EMTs and Paramedics who are trained to assess

and treat injuries. Medics also have phone access to Cascade Medical Associate's emergency/occupational physicians 24 hours a day.

MedExpress provides a 30 minute response time within the Eugene/Springfield area, with follow up visits for injuries treated at the work-site. This minimizes or even eliminates the company's costs of opening a Worker's Compensation claim.

It is currently proposed that Cascade Health Solutions will provide design, development and management oversight of non-emergency Mobile Primary Care Units (MPCUs) and transportation components.

4.6 100% Access Healthcare Initiative

100% Access Healthcare Initiative is a community-based non-profit partnership dedicated to maximizing access to healthcare for all people in Lane County, Oregon. The Initiative's goal is to connect people with no insurance to existing health insurance programs and medical services, and to develop new community-based options where gaps exist.

It is currently proposed that the 100% Access Healthcare Initiative will act as the healthcare stakeholder and inter-agency coordinator. Their Coalition Board includes representatives across the complete spectrum of health care. 100% Access Healthcare Initiative will provide oversight of the medical quality control and medical research organizations and will assess the impact of the project on the uninsured/underinsured.

4.7 Pacific Source Health Plans

PacificSource Health Plans is a major non-profit health insurer in the northwest, serving more than 280,000 people and 6,200 employers. It is currently proposed that PacificSource Health Plans will perform the assessment of health care reimbursement costs and policies for the demonstration project.

5 Implementation

This section describes the proposed implementation for the demonstration project.

5.1 Phase 1: Preliminary Design and Development

During this phase, IAFC and the LCOG Lead will develop the project concept for the Mobile Healthcare Services demonstration project and reach preliminary agreement on the role of various stakeholders and service providers.

Specific steps in this phase include:

- Draft plan development and preliminary budget
- Coordination with Oregon Congressional Delegation and Congressional Fire Services Caucus
- Detail the roles and responsibilities of the various project stakeholders

Case Study #5

A 29 year-old single mother of two is getting ready for work and preparing her children for school and daycare when her youngest falls in the hallway, bumps his head on a stool and vomits. This 5 year old boy has a small bump on his head and won't stop crying. The mother notices the bump and does not know what to do. She has no insurance and is reluctant to move him but feels he needs to go to the Emergency Department. She dials 9-1-1. The call-taker discusses the problem and follows the computer advice to transfer the call to the MediHelp call center to send a Mobile Primary Care Unit (MPCU). The mother is connected to the Triage Nurse who gives her advice on what to do until the MPCU arrives. In 20 minutes, the MPCU Community Health Nurse arrives at the home.

The nurse checks the boy who has stopped crying and sends a video image of him to the Medical Control Center for assessment. The other child is put on the bus for school. The nurse and Medical Control Center concur that there are no findings of a head injury. The nurse gives the boy's mother written instructions for icing the bump and watching for any signs of changes in the boy's condition. She also gives the mother a call-back number, should there be any complications.

After an hour without complications, the mother takes the boy to his grandmother for daycare. Grandmother receives the written instructions and the mother goes to work. There are no further complications.

Without MHS the 9-1-1 call would have resulted in the same unnecessary EMS first response and ambulance ride to the ED as in case #1. The \$1,200 - \$2,000 bill would have been a tremendous burden and quite possibly a bad debt, contributing to the uncompensated care problem for EMS and ED and future credit problems for the mother. The mother would likely have missed an entire day of work. She did not have enough accrued leave time and would not have been paid for the day.

5.2 Phase 2: Alpha Site Implementation

Within six months of confirmed funding, implement the Mobile Healthcare Service system in Lane County, Oregon. All service providers are to be compensated relative to their participation in the project. The evaluation portion of the effort will begin with the Alpha Site Implementation and will be used to guide and adjust both Alpha and Beta implementations. A preliminary evaluation will be completed prior to Beta Site Implementation.

Once the preliminary evaluation has been reviewed and accepted by all Stakeholders, IAFC will begin soliciting, selecting and coordinating with potential Beta sites.

5.3 Phase 3: Beta Site Implementation

Within six months of implementation of Phase 2 Alpha Site, initiate the Mobile Healthcare Services system in two or more additional locations in the U.S.

5.4 Phase 4: Evaluation of Demonstration Projects

Preliminary reports will be issued every six months. Within two years of Alpha Site implementation, a final report evaluating the efficacy of the Alpha and Beta Site demonstration projects for Mobile Healthcare Services will be completed. If outcomes meet project objectives, ongoing funding for the system will be recommended and solicited from healthcare insurers and government funded health care by the end of this phase.

In a report to Congress in 2007 by the National Academy of Sciences, Institute of Medicine entitled "Emergency Medical Services at the Crossroads," the Committee on the Future of Emergency Care in the United States Health System recommended a demonstration project such as Mobile healthcare Services. The committee believes "... CMS (Centers for Medicare & Medicaid Services) should consider using demonstration projects to test various options, to ensure that the models are safe, and to assess whether downstream savings may result. ...CMS should investigate whether Medicare and Medicaid payment methodologies ought to be revised to support payment for emergency care services in the most appropriate setting (including treat and release)..."⁶

6 Costs

The estimated costs outlined below are for a two year Alpha Site Implementation.

Table 1: Estimated Costs for Alpha Site Implementation

Cost Item	Comments	Amount
Program Administration	Personnel services, Medical Control, office expenses and all other overhead	\$580,000
Program Assessment, Evaluation & Quality Control	Medical and financial efficiency and effectiveness	\$320,000
Mobile Primary Care Unit (MPCU)	Estimated 12-15,000 response calls/yr Costs include personnel, vehicles and fuel expenses	\$3,817,000
MediHelp Call Center	Nurse and dispatch personnel, equipment, software, facility lease, etc	\$1,257,000
Ambulance Response Calls	Estimated 12,200 response calls/yr (marginal costs only)	\$1,600,000
MPCU Vehicles & Equipment	8 units, one-time expense	\$321,600
MPCU Mobile Data Transmission System	Video, electronic patient care report, vital signs; 6 units, one-time expense	\$298,800
SUBTOTAL (Year 1)		\$8,194,400
SUBTOTAL (Year 2)	Year 2 shows deduction for one-time expenses	\$7,574,000
TOTAL		\$15,768,400

The additional cost for two separate one year Beta Site Implementations is \$18,027,680. The breakdown of first year costs is the same as the Alpha Site, with the exception of an additional \$1,638,880 for Beta Site flexibility on added MPCU calls in larger jurisdictions.

The total cost for the Alpha and Beta Sites is **\$33,796,080**.

**It is important to note that the goal of the demonstration project is to create savings through elimination of unnecessary expenses from over-access that are greater than the cost of the project.*

7 References

7.1 Points of Contact



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7.2 Endnotes

¹ Gratton MC, Ellison SR, Hunt J, Ma OJ. 2003. Prospective determination of medical necessity for ambulance transport by paramedics. *Prehospital Emergency Care* 7(4):466–469.

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³ RAND Corporation, “Many Emergency Department Visits Could Be Managed at Urgent Care Centers and Retail Clinics,” *Health Affairs*, 29, no. 9 (2010): 1630-1636

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⁵ Institute of Medicine, "Emergency Medical Services at the Crossroads," The National Academies Press, 2007, pp 89.

⁶ Institute of Medicine, "Emergency Medical Services at the Crossroads," The National Academies Press, 2007, pp 89.

The ABCs of MHS

This might be the first time you've heard of mobile health services, but it certainly won't be the last.



By Chief Dennis Murphy
Springfield (Ore.) Fire and
Life Safety

In March 1994, the first-ever EMS Primary Care conference was held at Sand Key Resort near Clearwater, Fla. The conference brought together speakers from around the nation, and even some international guests with new ideas about prehospital care in a managed-care environment.

Attendees learned that EMTs, paramedics and other paraprofessional caregivers in some places provide routine treatment for non-urgent injuries and illnesses, and how these concepts might be applied elsewhere to prevent unnecessary and expensive trips to hospital emergency rooms.

It was at the Sand Key conference that I introduced the term "mobile health services" to describe a system that includes all types of episodic care that may be rendered by non-physicians practicing outside of a hospital, and "mobile health care" to describe these treatments.

By the time of Sand Key II the following year, these terms were in common use, referring to a system designed to deliver just the right mix of emergency and non-emergency medical services to

safely and economically treat the sick and injured and refer them for further care as necessary.

In the future, EMS will likely be absorbed by MHS as a part of a more comprehensive and cost-effective continuum of prehospital care. Those fire agencies that are prepared to take advantage of this transformation have the opportunity to prosper, while those who would rather fight than switch stand to lose. Now is the time for fire chiefs to become involved in planning for MHS to assure that vital community EMS programs continue.

Non-urgent problems

Why does the current system need to change? Most patients who now enter into the 911/EMS system are transported to hospital emergency departments, even though studies show that many of these patients aren't in urgent need of care and could be treated less expensively at clinics or doctors' offices with the same outcome. In fact, a 1992 National Center for Disease Statistics study showed that as many as 61% of emergency-room visits are for non-urgent problems. Some of these patients didn't even need to see a doctor at all.

To control costs, managed care organizations often refuse to pay the emergency department bill for such patients,

and some are even refusing to pay the bill for ambulance service. In addition, some MCOs have established non-emergency telephone screening centers and require their customers to call a separate seven-digit phone number to obtain authorization before accessing care. In time, such efforts are estimated to reduce calls to 911 for EMS by 15-35% or more.

The concept of saving money on health care is good, if it doesn't compromise patient care. However, the effect of a laissez-faire policy by local governments can have serious unintended consequences.

■ Poorly designed non-emergency telephone patient screening systems and MCOs whose screening requirements intimidate their customers result in confusion and delay or failure in accessing 911 and EMS for legitimate emergencies. Lack of quality control in this area can be life-threatening.

■ If local governments provide emergency ambulance service and bill for it, they may lose a large portion of their income as MCOs decline to pay for non-emergency runs, while most EMS overhead costs remain fixed. This may result in service reductions and slower response times.

■ Similarly, if an area is served by a private ambulance company, reductions in revenue may cause the company to cut back emergency services, resulting in slower emergency response times and/or a lower level of care.

■ If the government provides EMS first response by fire apparatus, the elimination of non-urgent medical care makes it more difficult to justify maintaining the current number of apparatus. Again, unfortunately, the fixed overhead cost of maintaining response to legitimate EMS calls, firefighting, rescue and

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related services remains nearly the same even as funding is reduced. If cutbacks are made due to reduced run volume, response to all services is diminished.

In contrast to a strictly hands-off approach, a more responsible position is to learn how economic forces in the health-care industry affect EMS and what can be done to shape an outcome that's right for your community. Currently, MHS systems are in various stages of development in different areas and still can be shaped through participation by informed government officials.

The goal of MHS is to safely redirect non-emergencies away from 911 and emergency departments into more appropriate and less expensive non-emergency treatment modes. With proper design, it incorporates the EMS system in such a way as to preserve the quality of emergency service while creating new opportunities to provide care and to share in some of the money saved.

Since the concept is still very new, various parts of the system are scattered geographically and not yet fully developed. Some of the best examples are in my home state of Oregon, which will be detailed below. Now is the time to get involved, before decisions regarding the future of MHS in your area are made.

MHS system components

The MHS system integrates all aspects of EMS and adds important new features created to deal with non-urgent conditions. The idea is to select the least costly form of care required by the patient's condition, while ensuring that errors aren't made that provide less care than needed.

If the system functions well, consumers will enjoy the return of the "house call," a form of personal health care that may prove to be the missing link in controlling costs. Components listed in terms of ideal design and function are as follows.

1) **Medical quality control.** First and foremost, the MHS system must have physician medical direction for each component. Multiple priority protocols must be established and compliance monitored. Physician advice must be available via radio or cellular to caregivers on the scene as needed for unusual or complicated situations. Routine chart review and patient outcome assessment must be performed.

2) **Education.** Every caregiver must receive specific education suited to his or her new role. Rather than being oriented to temporary care and trans-

portation to the emergency department as is typical in EMS, all personnel must be reoriented to treat and release when possible, to skillfully match the patient's needs with the least expensive form of care required, and when appropriate, to transport to facilities other than the emergency department.

3) **Research and development.** Careful research must be performed before initiating changes, since the relevant legal, operational and financial issues must be addressed. Patient outcomes must be measured in terms of correct treatment, financial savings and customer satisfaction.

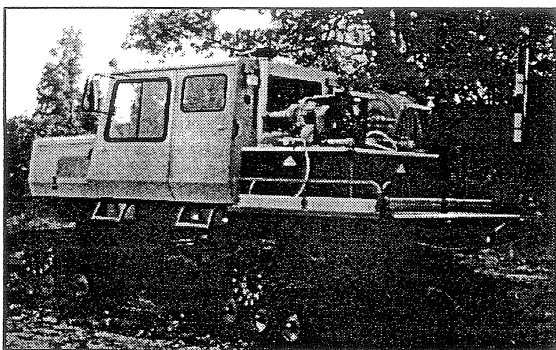
4) **Prevention and early treatment.** Although MCOS talk extensively about the need for citizen education, there is no concerted effort similar to fire prevention education. If even a small fraction of what's spent on EMS were dedicated to prevention and early treatment, much could be accomplished. Since the idea is to prevent illness and injury, the program may be called illness and injury prevention, or I&I prevention. Following the model of fire prevention, fire departments that provide EMS are ideal candidates to integrate this into their programs.

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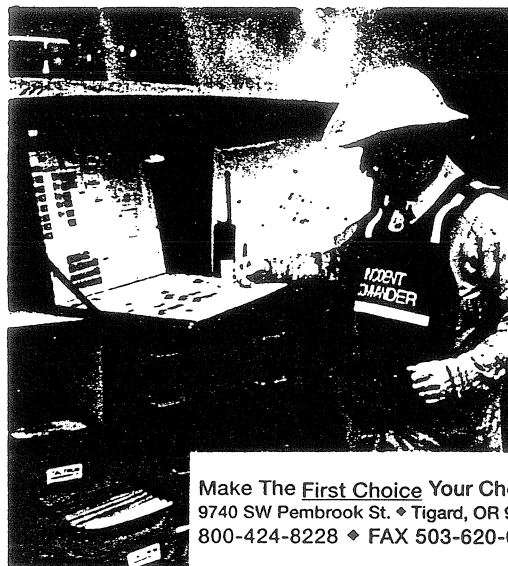
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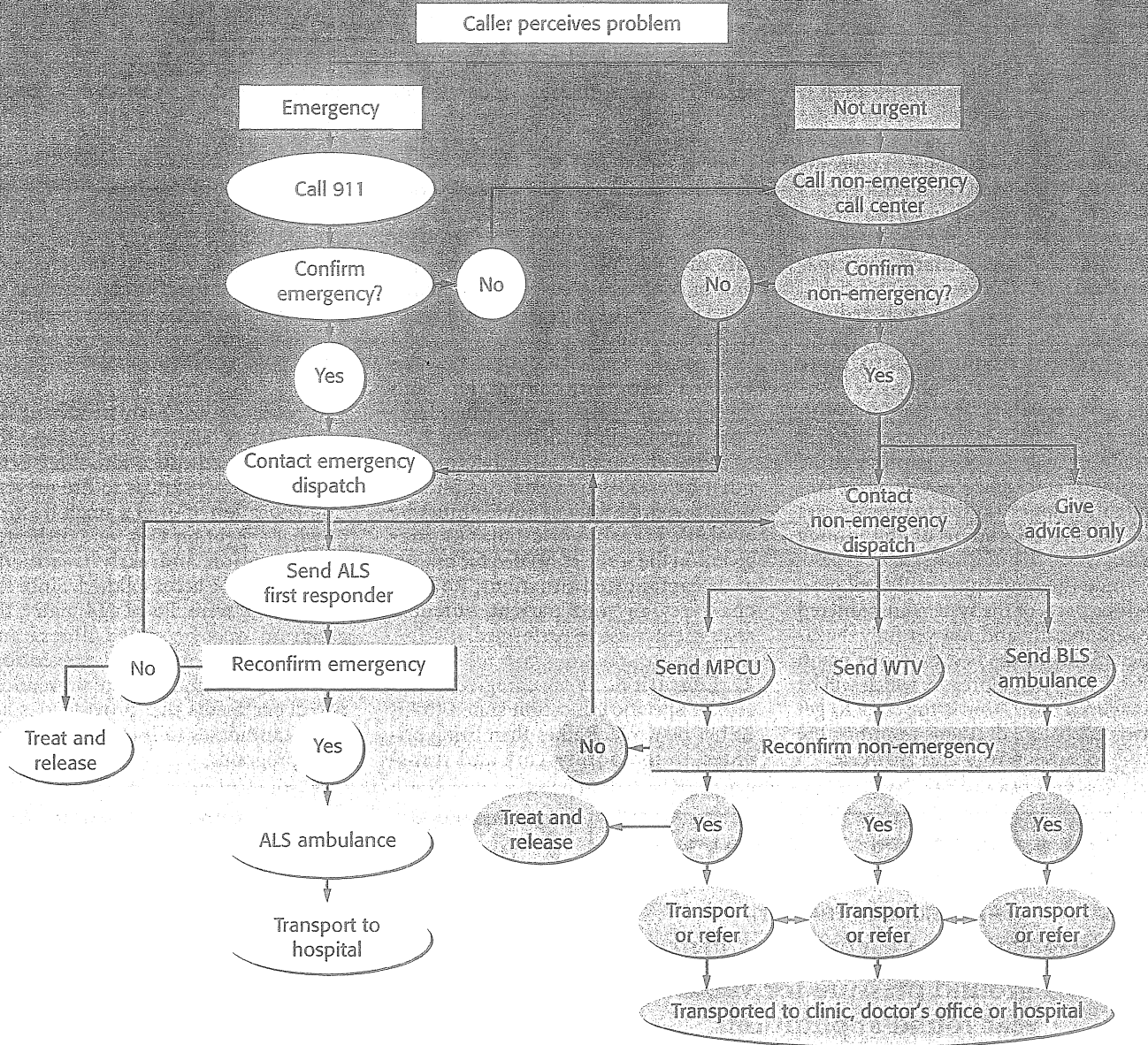
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A mobile health services model



5) **Call-assessment and priority centers.** Call-taking is handled by non-emergency and emergency (911) centers. These two may be housed in the same facility or be separate, but in either case, electronic linkage and close cooperation are essential. The two form the main branches of the MHS system.

The **non-emergency center** consists of call-takers certified in emergency medical dispatch and trained in treatment of non-urgent illnesses and injuries. Call-takers work with a physician-approved protocol plus advice and direction from a nurse supervisor. This center answers calls to a highly publicized, seven-digit community phone number for use by people who believe they may need medical attention but don't need EMS.

As part of a safety net, all callers are

instructed to call back immediately if the patient's condition deteriorates. In addition, the center may handle all calls for non-emergency medical transportation between health-care facilities. Call-takers have several options, depending on the type of call:

- **Transfer to 911.** This is always an option. When the call-taker determines that the call is in fact an emergency, the caller is immediately transferred to the emergency center. If the call-taker is uncertain, the caller is transferred to the nurse supervisor for a decision.

- **Advice only.** If the illness or injury is of a very minor nature, such as a small burn, the call-taker gives self-help instructions, following the prepared protocol. If the problem is of a complicated or uncertain nature, the caller is transferred to the nurse supervisor for

advice. This concept is similar to the popular "Ask-A-Nurse" programs operated by some hospitals.

- **Referral.** If the problem requires follow-up treatment by a physician, but doesn't need immediate assistance, the caller is referred to his or her personal physician or, if the caller has none, to a clinic that will receive him or her. In some cases, an appointment can be made by the call-taker, while in others, the caller will be referred to a social service agency, such as an alcohol or drug treatment program that's prepared to deal with the patient's needs.

- **Dispatch.** When the problem requires prompt treatment but isn't of an urgent nature, the call-taker may dispatch one of several types of non-emergency vehicles to provide assistance (see below). This is particularly useful after

hours and on weekends and holidays, when many people take their problems to emergency rooms only because their regular doctors aren't available. Depending on local system design features, the non-emergency center may dispatch some or all of the types of non-emergency vehicles or may transfer the information to a dispatch center.

MCOS operate their own non-emergency call-taking centers in several major West Coast cities. In Portland, Ore., Kaiser Permanente, one of the nation's largest HMOs, contracts with American Medical Response to handle 24-hour call-taking and dispatch for over 350,000 covered members. An "alternative triage officer" uses priority dispatch protocols to arrange for BLS and ALS ambulances or wheelchair transports as needed.

In an MHS system, the emergency center is identical to that traditionally used for handling 911 calls and dispatching emergency equipment. Emergency call-takers are EMD certified and follow a physician-approved protocol. The main difference from a traditional 911 center is the options available to call-takers.

■ **Advice and emergency dispatch.** When an emergency medical situation is identified, the call-taker gives EMD pre-arrival advice as appropriate and transfers the information to dispatchers for a response.

■ **Transfer to non-emergency center.** When the 911 call-taker determines that emergency assistance isn't needed or is uncertain, the caller is transferred to the non-emergency center. All such calls are first screened by the nurse supervisor to prevent errors in sorting calls.

6) **ALS first responder.** The ALS first responder is usually a fire apparatus, typically an engine, although in less-populated areas this role may be filled by an ALS ambulance. The unit is staffed with at least one paramedic and a complete supply of ALS equipment. It responds as the closest immediate care for presumptively serious or life-threatening situations.

In an MHS system the first responder plays another very important role. Using additional treatment equipment for non-emergency situations, special training and protocols, first responder staff will choose one of the following paths for treatment:

■ **Treat and release.** If the condition is obviously minor, staff will provide care and follow-up instructions to the patients and advise them to call the non-emergency call center back if the condition doesn't remain stable.

■ **Refer to mobile primary care unit.** If

the staff determines that the patient would benefit from follow-up care from the MPCU, particularly if that care may result in a subsequent treat-and-release situation, the call is referred. (More about these units below.)

■ **Refer to other transport unit.** According to the severity of the condition and protocol, first responder staff may transfer responsibility to any other appropriate transport unit.

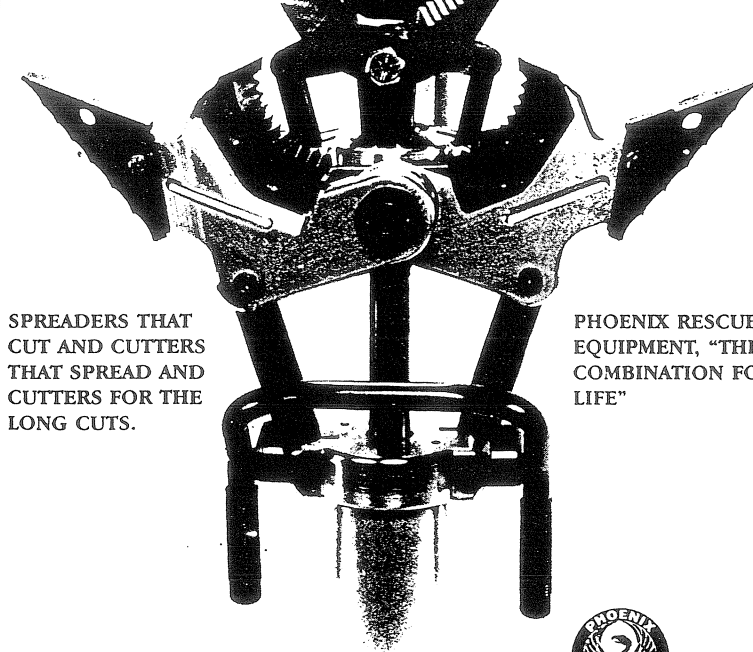
The Oregon Health Sciences University is currently exploring a new program to use ALS engines of four fire departments serving 800,000 people to respond to referrals from nurse call-tak-

ers for on-site patient screening. Under the plan, nurses will refer patients who would otherwise need to be sent to a hospital emergency department or urgent care center. Some patients may be treated and released through an existing community service to save unnecessary expense. OHSU proposes to broker these services to insurance companies and pay the fire departments for their services.

7) **Mobile primary care units.** These are small, one-person mobile units, ideally mini-vans equipped to transport via wheelchair, staffed by registered nurses,

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nurse practitioners, physician assistants or paramedics with special training and an expanded scope of practice. The care-giver is selected based on state laws affecting the practice of each, the cost of wages, availability of applicants and other factors.

MPCUs are dispatched to non-urgent conditions that need assessment and treatment, but may not need follow-up care by a physician. The MPCU is equipped with a limited complement of treatment and diagnostic tools typical of those found in a clinic, and communications equipment to allow the transmission of voice and medical feedback data to a central receiving station.

Physician-approved protocols guide the caregiver, and physician advice may be requested over cellular or radio. Access to central patient databases is granted for the purposes of directing treatment. MPCU staff have several options:

■ **Treat and release.** Patients are assessed and treated using advanced care skills and equipment according to the nature of their illness or injury. A limited amount of prescription medicine can be dispensed and in some cases, prescriptions filled. If the condition can be safely treated without seeing a physician, the patient is released with advice on how to continue self-treatment and look for signs of any additional problems. As part of a safety net, the patient is advised to phone the non-emergency call center if the condition worsens.

■ **Treat and refer.** If the caregiver determines that the patient will need follow-up care, but not urgently, he or she may be referred to a doctor's office or clinic for a regular appointment. In some cases, the patient may be able to book the appointment on the spot by accessing an appointment database. In others, the referral may be to a social services agency or to the hospital emergency department, if urgent. Again, the patient is advised to phone in if the condition worsens.

■ **Transport, non-emergency.** In cases where the patient requires further treatment soon, MPCU staff will call for a non-emergency ambulance or wheelchair transport vehicle (see below). In cases where a further delay may jeopardize the outcome, the patient can be transported in the MPCU.

■ **Transfer care to EMS.** When the MPCU caregiver discovers an emergency condition, he or she begins treatment and immediately calls for an EMS unit. Sometimes this will happen, because even with the best telephone sorting, occasionally an emergency won't be properly reported. The caller may not realize the severity of the condition and therefore

misrepresent the signs and symptoms, or a condition may develop or worsen after the initial call. Even though callers are advised to phone in if the condition deteriorates, not all will do so.

Since 1976, MPCUs have served business and industry in the Eugene-

■

In the future, EMS will likely be absorbed by mobile health services as a part of a more comprehensive and cost-effective continuum of prehospital care.

■

Springfield, Ore., area (pop. 225,000) with prices set on a prepaid annual plan based on the number of employees covered. Today, there are two competing services, each maintained as part of the occupational medicine outreach program of local hospitals.

A similar program is operated by AMR Northwest in Portland, Ore. Kaiser Permanente contracts with AMR for service to 350,000 members and is planning to include MPCU house calls as part of the local Kaiser plan.

8) **ALS ambulance.** This ambulance is equipped with all ALS equipment required by state laws and staffed by a minimum of two personnel, one of whom is a paramedic. They provide advanced care and transportation to the emergency department or between acute care facilities for urgent situations. They're available for dispatch directly to the scene or may be requested by any other unit in the MHS system. They may also treat and release or transfer the patient to the MPCU or a lesser level of care, if the situation isn't urgent.

9) **BLS ambulance.** This ambulance is equipped with all BLS equipment required by state laws and staffed by a minimum of two basic EMTs. They provide basic care and transportation for patients requiring a stretcher and/or continuing care from an EMT.

They may transport the patient to a doctor's office or clinic in addition to an emergency department. They're also available for dispatch directly to the scene or may be requested by any other

unit in the MHS system, and may transfer the patient to a wheelchair transport vehicle if appropriate.

10) **Wheelchair transport vehicle.** WTVs are vans designed to transport patients in a sitting or reclining position in a wheelchair. They're staffed by one basic EMT and equipped with basic medical care supplies. The WTV may provide basic transportation of patients who don't need a stretcher and/or continuing care from a medical attendant.

WTVs are dispatched directly to the scene, according to information received by call-takers using transport protocols or as requested by ALS first responders, MPCUs or ambulance personnel from the scene. Transport may be from the scene of an illness or injury to a health-care facility or between such facilities. As a safety net, WTV staff may request assistance from other units if the condition warrants.

WTVs currently operate in virtually every city in the nation with a population over 50,000. However, only a few use EMTs, as most aren't integrated into a system with a common call-taking and dispatch center. The Kaiser/AMR Northwest contract is one of the few that features an integrated approach for Kaiser-covered members.

Advantages of MHS

There are three main advantages to participating in the development of an integrated MHS system design.

Lower costs. The cost of health care and the resultant cost of premiums are a vital issue. Higher medical costs adversely affect employment, drive up the cost of government, and create an increasing number of citizens who can't afford coverage. By helping to contain costs, MHS can help ameliorate all these problems.

Better local control. A correctly designed MHS system ensures that those who make the decisions about which resources to commit to the patient are held accountable to follow protocols developed by local physicians and scrutinized by local consumers.

Safety net. The development of a system that offers 24-hour advice and treatment at all levels means that far fewer problems will go undetected. For instance, heart-attack victims may be saved by having a non-emergency call center available for reporting what the patient believes is a routine complaint, but which in fact requires a quick transfer to EMS for the correct treatment.

Enumerating the advantages of MHS is well and good, but the next question that naturally arises is, who pays for it? Generally, MHS is funded by those for

whom it saves money, specifically MCOS. These organizations normally negotiate payment on a capitated basis (set fee per month, per person covered). Even though the benefits would seem obvious to MCOS, they aren't used to paying for these services, and performance-based contracts are usually needed to prove the potential for savings.

Indemnity insurance companies currently cover only ambulance service in their fee schedules. Funding of demonstration projects may be negotiated with insurance companies. Otherwise, those services not covered by insurance would be billed directly to the patient. In the case of areas with ambulance subscriptions, the added services could be covered for an additional amount added to the annual enrollment fee.

Medicaid programs may also be willing to contract for more cost-effective treatment for the welfare population, who are often underserved or who go to the emergency room with minor problems since they lack routine medical care by a physician.

It's important to remember that many medical services taken for granted today in insurance coverage were once not included. Mobile health-care charges will also begin to be included

as the system becomes more widespread and better known.

Steps to take

The following are progressive steps for local involvement. If participants cooperate with each step, move to the next.

- Get copies of previous magazine articles on the subject from fire and EMS journals for reference.
- Take an inventory of the MHS components that might be provided as part of fire department programs.
- Determine which components would require a partnership with neighboring fire departments and/or other agencies. Meet with them to determine their interest. If they're cooperative, create a working draft of how a proposed system would operate.
- Inform the executive officer of local government that you propose a feasibility study of MHS. The executive will determine the involvement of elected officials.
- Meet with MCOS and major insurers to determine their level of interest and the possibility of financial commitment.
- Seek input from major local employers to determine their interest.
- Meet with representatives of local health-care facilities and the local physician medical director.

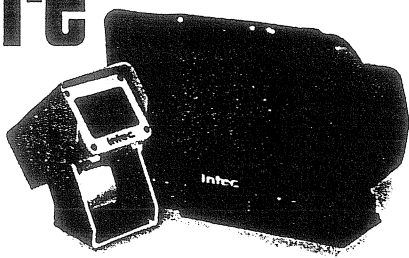
■ Create an MHS task force of all those listed above. Include citizen/consumer representatives and one or more elected officials. Decide who will provide the staff work for the task force and consider hiring a consultant. Assign subcommittees to deal with specific components. Visit one or more sites where MHS is done.

■ Create a mobile health services plan. Negotiate contracts and implement the plan.

Those who get involved during the formative phase of this new movement will be in the best position to shape their future. It's not often that we have the opportunity to participate in the development and delivery of an essential new community program, especially one that may build the sense of value-added customer service in our citizens. This may be it. FC

Dennis Murphy is the chief of the Springfield (Ore.) Department of Fire & Life Safety, as well as president of Unified Medical Systems, a mobile health services consulting firm. He has 30 years' experience in fire and EMS, including EMS management positions in the private sector and state government. Murphy founded the FireMed program, the largest network of reciprocating ambulance memberships in the nation, covering over 45,000 square miles and a population of 1.2 million in Oregon and California. In 1996, the International Association of Fire Chiefs honored him with its James O. Page EMS Achievement Award.

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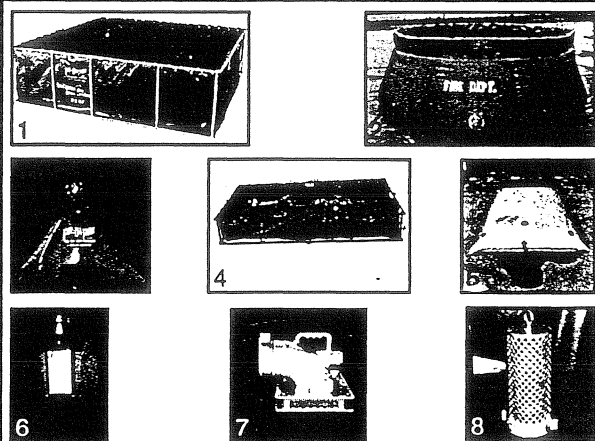
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New system could revive the house call

BY DENNIS MURPHY

For The Register-Guard

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Few people remember when doctors made routine house calls. With rare exceptions over the last 40 years, the only house call available is 911 for emergency medical services.

But most illnesses or injuries do not require paramedics or a trip to the emergency department. Some only need advice on self-help; some can be treated safely and released on site by nurses or paramedics. Others may be treated in a doctor's office or urgent care.

If efforts now under way are successful, self-help advice will be available and routine or primary care may be delivered by Mobile Primary Care Units staffed by a nurse or paramedic on a 24-hour basis.

Design and development has begun on a new system known as Mobile Healthcare Services, which links public safety (911 EMS) with routine primary care response. The goal is improved access for all people, and better health outcomes at lower cost.

The Mobile Healthcare Services project first was proposed to a Joint Elected Officials Ambulance Transport System Task Force. The task force was looking for options to help resolve the current financial threat to ambulance operations.

Task force members noted that 911 EMS calls for service continued to rise, while due to limited financial resources, the number of ambulances available was not keeping pace. One of the solutions is to carefully separate emergency from nonemergency calls and send more appropriate and less expensive caregivers for routine primary care.

The vision for a comprehensive redesign includes a 24-hour "MediHelp" telephone and online self-help advice and response by MPCUs or ambulances as needed. Callers will describe the illness or injury, and a trained call-taker will give advice and send further assistance, if needed.

Depending on the nature of illness or injury, the patient will be treated and released, transported to the appropriate health care facility, or referred to a social services agency for assistance. All persons will be served, without regard for ability to pay.

Lane County's many health care agencies are being asked to become stakeholders and providers in the Mobile Healthcare Services system design and development.

The Lane Council of Governments is assisting in preparing a grant for completion of design and development of the Mobile Healthcare Services plan. Implementation of service delivery will depend on congressional support of funding for a two-year study.

If it performs according to the goal statement, ongoing funding is proposed to be provided by private and government insurance coverage that includes all people.

The return of the house call may prove to be one of the vital missing links in health care reform.

Dennis Murphy is the former Springfield fire chief and developer of the FireMed Ambulance Membership system. His current assignment is to design and develop a Mobile Healthcare System plan proposed for federal health care reform funding.

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