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# The Massachusetts Emergency Medical Services Radio Communications Plan



**Contact for Questions**

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**Acknowledgement**

Emergency Medical Advisory Board (EMCAB) Communications subcommittee, chaired by  
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## 2 Executive Summary

In accordance with M.G.L. c. 111C, §3(b)(23), the Department of Public Health has the authority to “develop and implement a comprehensive statewide EMS communications plan and system, coordinating regional EMS councils, regional plans and systems, in cooperation with other agencies having concurrent jurisdiction.”

The Plan describes the following:

1. **Participants** – the roles and responsibilities of the people and organizations involved with communications increases its effectiveness and efficiency. This section describes the positions and organizations which support, either directly or indirectly, the EMS community.
2. **Infrastructure** – an understanding of the communication infrastructure available and minimum standards for equipment enables effective communication. This section describes and, as appropriate, sets the minimum requirements for communications and information sharing infrastructure available to the EMS community.
3. **Protocols and Regulations** – the proper use of communication infrastructure is an important component to service delivery. This section describes key EMS related response protocols that utilize communication infrastructure.

The Department of Public Health’s Office of Emergency Medical Services and Emergency Preparedness Bureau developed the Massachusetts Emergency Medical Services Radio Communications Plan, based on recommendations of the Communications subcommittee of the Emergency Medical Care Advisory Board (EMCAB).

## 3 Purpose

The Massachusetts EMS Radio Communications Plan provides a framework which describes emergency medical services organizations and their systems so that they may be comprehensively integrated to facilitate quality emergency medical care throughout the Commonwealth for its residents and visitors.

The purposes of the EMS Radio Communications Plan are:

1. Clarify the role of state, regional, and local agencies in planning, implementing, and operating EMS radio communications systems
2. Establish minimum standards with which all ambulance services’ communications and communications equipment must comply, pursuant to 105 CMR 170.380(D) of the EMS System regulations.
3. Identify shared technological features of existing radio communications systems assuring compatibility of users on an intra-state basis and, as far as possible, an inter-state basis
4. Assign unique technical specifications of equipment and systems to minimize sources of interference
5. Provide a reference for agencies and manufacturers who require information concerning EMS radio communications in the Commonwealth
6. Fulfill the Federal Communications Commission requirement established in Title 47 CFR Chapter I, section 90.35(b)

## **The Massachusetts Emergency Medical Services Radio Communications Plan**

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7. Except where noted, this is a statewide plan. There may also be MDPH-approved regional communications plans, which are compliant with the state plan, but provide greater specificity than the EMS Radio Communications Plan.

## **4 Legal Status of Plan**

Under the state's EMS System regulations, all ambulance services' communications and communications equipment must comply with the standards and requirements in the EMS Radio Communications Plan. 105 CMR 170.380(D). Therefore, the EMS Radio Communications Plan has the force of regulation. Furthermore, all EMS Services must follow the State and MDPH-Approved Regional EMS Communications Plans.

Compliance problems shall be addressed by MDPH/OEMS in accordance with its procedures for investigation and enforcement of all allegations of regulatory violations. See 105 CMR 170.705 through 170.795.

## 5 Participants

This section describes some of the key participants in the EMS community for communications.

### 5.1 *Massachusetts Department of Public Health (MDPH) and its Programs, Emergency Preparedness Bureau (EPB), and Office of Emergency Medical Services (OEMS)*

The Massachusetts Department of Public Health (MDPH) is the lead agency statewide for emergency medical services in the Commonwealth. M.G.L. c. 111C, §3. The Department as a whole operates many programs serving the people of the Commonwealth to enhance medical care and overall health. MDPH achieves this mission through investments in infrastructure and programs to prevent and treat illness and medical related hardship.

The Office of Emergency Medical Services (OEMS) is the program within the MDPH that is charged with carrying out the mission of M.G.L. c. 111C, which is to promote a statewide community-based emergency medical services (EMS) system that reduces premature death and disability from acute illness and injury through the coordination of local and regional EMS resources.

Among its many functions, OEMS licenses ambulance services, certifies EMTs and ambulance vehicles, defines the minimum standards for EMT training and accredits EMS training institutions within the Commonwealth. OEMS also develops, implements and enforces regulations, administrative requirements and other policies for EMS in the Commonwealth; develops and updates the Statewide Treatment Protocols governing scope of practice and clinical care of EMTs in Massachusetts, and reviews and approves local service zone plans for EMS delivery in the Commonwealth. OEMS also coordinates and plans EMS communications, MCI (often in conjunction with MEMA, below), organization and response activities. MDPH also licenses hospitals for the service of providing medical control to ambulance services, designates trauma centers and primary stroke service hospitals, and administers numerous federal grants that contribute to the EMS community.

The Emergency Preparedness Bureau (EPB) within MDPH provides guidance and technical assistance about emergency preparedness and emergency management activities. This includes the provision of trainings, drills and exercises for the health and medical community throughout the Commonwealth, the development comprehensive statewide plans to address medical surge and pandemic influenza, the enhancement of coordination between all DPH emergency preparedness programs and the development of additional linkages with programs and activities funded through the Department of Homeland Security (DHS) and the state's Executive Office of Public Safety and Security (EOPSS).

The OEMS website can be found at: <http://mass.gov/oems>, the MDPH website can be found at: <http://mass.gov/dph> and the EPB website can be found at: <http://mass.gov/dph/emergencyprep>.

### 5.2 *Massachusetts Emergency Management Agency*

The Massachusetts Emergency Management Agency (MEMA) is the state agency responsible for coordinating federal, state, local, voluntary and private resources during emergencies and disasters in the Commonwealth. MEMA provides leadership to develop plans for effective response to all hazards, disasters or threats; train emergency personnel to protect the public; provide information to the citizenry; and assist individuals, families, businesses and communities to mitigate against, prepare for, and respond to and recover from emergencies, both natural and man made. MEMA is actively involved in the coordination of Ambulance Task Forces during their mobilization.

The MEMA website can be found at:

<http://www.mass.gov/mema>

### **5.3 *Regional EMS Councils***

The Regional EMS Councils are charged with assisting and supporting MDPH and OEMS in accordance with duties assigned them pursuant to MGL c. 111C §4; the EMS System regulations, at 105 CMR 170.104, and in their contracts with MDPH. EMS Regional Directors are staff appointed by Regional EMS Councils to carry out the duties and functions of the Regional EMS Councils.

Appendix K contains contact information for each Regional EMS Council's offices.

### **5.4 *Central Medical Emergency Direction (CMED) Center***

The Federal Emergency Medical Services System Act of 1973 established the concept of a Central Medical Emergency Direction (CMED) Center. A CMED Center is an organization that provides specialized communications functions to connect hospitals and medical first responders. CMED Centers play a role in monitoring EMS communications by:

- assisting EMS field personnel with communication during emergencies
- managing Medical radio channel usage
- maintain a clear procedure for EMS communications within a region
- connecting EMS field personnel to local Emergency Departments and Medical direction

For the purpose of this document, a CMED Center will have a jurisdiction and a coverage area. A jurisdiction is the geographic area for which the CMED must provide support, while the coverage area is the footprint of radio coverage provided by the CMED infrastructure.

### **5.5 *Ambulance Services***

Ambulance Services are entities licensed by MDPH to provide, as a business or regular activity, whether for profit or not, emergency medical services, emergency response, primary ambulance response, prehospital medical care, with or without transportation, of sick and injured individuals, by ambulance. They are both public and privately owned and are subject to complying with applicable Federal and State laws, regulations, administrative requirements, advisories and MDPH-approved service zone plans.

## **Required Duties**

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1. **Dispatch Communication Capability**

Each ambulance service is responsible for maintaining proper communication capabilities to enable dispatch capability in order to respond to emergency medical events.

2. **Laws and Regulations.** Ambulance services must comply with the following statutes and regulations, as well as with all administrative requirements, advisories, guidelines, etc. This is not a complete list<sup>1</sup>:

- [M.G.L. c. 111C](#)
- 105 CMR 170.000: Emergency Medical Services System
- 105 CMR 171.000: First Responder Training
- 105 CMR 172.000: Implementation of M.G.L. c. 111, section 111C, Regulating the Reporting of Infectious Diseases Dangerous to the Public Health
- [Government Services Administration Ambulance Specification](#)
- Statewide EMS Radio Communications Plan
- Department-approved Regional EMS Communication Plan(s)

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<sup>1</sup> Please see Appendix for link.

### 5.6 *Ambulance Dispatch Center*

Ambulance dispatch centers provide specialized communications functions to support ambulance services. The primary purpose of ambulance service communication is to coordinate a request for EMS, in accordance with the local service zone plan.

The composition and structure of Ambulance Dispatch Centers varies across the Commonwealth. Some are housed within hospitals and support a single ambulance service, while others are a more centralized resource.

#### **Required Duties**

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1. **Recording Communications.** If the service is operating as a PSAP, then it must comply with the State 9-1-1 Department regulations.
2. **Dispatch Ambulances.** Provide dispatch communication for ambulance response requested through the 9-1-1 system. If service is operating as a PSAP, they must follow State 9-1-1 Department regulations (<http://www.mass.gov/Eeops/docs/setb/standards.pdf>)
3. **Communications Coordination.** Comply with the published statewide EMS radio channel plan and its restrictions. Use local channels for radio communications.

#### **Optional Functions**

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- **Non-Emergency Medical Care.** Some ambulance services need dispatch communications for operations not involving emergency medical care. Such communication is acceptable, but must not interfere with communications necessary for emergency calls.

### 5.7 *Fire District Control Center*

The Commonwealth has 15 Fire Districts designated for mutual aid assignment. The following information regarding the Fire District Control Centers is contained within other sections of this document:

- Role within Ambulance Task Force activation (see protocol)
- Radio frequencies utilization (please see Appendix C)

Listing of contact information and membership within Fire Districts, EMS Regions and Homeland Security Regions (please see Appendix D)

### 5.8 *EMS Communications Operator (EMCO)*

EMS Communications Officers monitor communications at the CMED and receive all requests for hospital/casualty management from EMS field units.

**5.9** *Emergency Medical Technicians*

EMTs in Massachusetts are certified by MDPH's OEMS and required to carry out their duties to respond, assess, treat and transport patients in accordance with the state's EMS System regulations, and the Statewide Treatment Protocols. See 105 CMR 170.800.

**5.10** *Hospitals and Medical Directors*

Hospitals must be licensed by MDPH's Division of Health Care Quality to provide Medical Control service to EMS services, pursuant to the Hospital Licensure regulations, 105 CMR 130.1501 to 1504, and affiliation agreements with ambulance services. Medical control physicians include affiliate hospital medical directors and physicians who provide on-line medical direction, all of whom work at hospitals licensed by MDPH to provide medical control and must meet Hospital Licensure regulatory qualifications. While in transport, EMS field personnel often request clinical assistance from Medical Control physicians.

**Required Duties**

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Under the state's Hospital Licensure regulations, each hospital that provides medical control to an EMS service must ensure that its physicians who provide on-line medical direction have, among other qualifications, proficiency in the clinical application of the current Statewide Treatment Protocols, and proficiency in EMS radio communications. See 105 CMR 130.1504.

### 5.11 Ambulance Task Forces (ATFs)

The objective of the Ambulance Task Force (ATF) system is to enable the movement of large numbers of ambulances in an organized manner in support of mass casualty incidents or other major emergency situations, while ensuring that local emergency ambulance service remains fully available. There are fifty-eight (58) ATFs throughout the Commonwealth, providing statewide coverage. Each Ambulance Task Force consists of a Leader, an Alternate Leader, five (5) member ambulances, and an alternate member ambulance.

ATF member ambulances come from both public and private services. There are documents detailing ATF protocols for activation, communication, and roster maintenance.

- Protocols for ATF mobilization are found in the protocol section
- Information about ATF communications infrastructure is found in the infrastructure section

### Required Duties

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Each Task Force member has agreed to the terms described in an MOU which has been distributed and signed by an ambulance service representative.

### 5.12 Regional Medical Coordination Center (RMCC)

#### RMCC

Regional Medical Coordinating Centers, where available, provide coordination during emergency situations which cause patient surge. The primary goal of the creation of this entity and associated processes and plans is to provide coordination for and movement of patients when it appears the needs exceed the present available resources.

The Regional Medical Coordination Center is a multi discipline organization that will meet in emergency situations to:

- Coordinate patient movement throughout disaster area and neighboring regions
- Be the linkage from region to MDPH and MEMA

Participants on the RMCC should include representatives from at least EMS, Hospitals and MDPH's EPB.

## 6 Infrastructure

This section describes the infrastructure and equipment available for use in the Emergency Medical Services arena.

### 6.1 UHF Ambulance Radios

The EMS communications infrastructure will be transitioned under this Plan from a wide band to a narrow band. A transition to narrow band has been mandated by current FCC regulations and will enhance EMS radio communication capabilities between ambulance services and CMED centers.

In order to ensure radio equipment functionality within this new environment, MDPH has established minimum requirements for new radio purchases. These minimum requirements ensure that the equipment used by ambulance services will have the ability to utilize the current and future EMS radio infrastructure.

This transition from wide band to narrow band is an important step in maintaining adequate radio communication. Furthermore, adherence to these radio equipment requirements is critical for the continuation of high quality emergency medical service delivery within the Commonwealth.

This section defines standards established by MDPH for minimum equipment capabilities of U.H.F. two-way radios being purchased for use in ambulances licensed by the Commonwealth. The purpose of this standard is to ensure that all equipment being purchased for use in ambulances have the necessary capabilities to operate on existing and planned ambulance-to-hospital radio channels within the Commonwealth. Additionally the equipment being purchased shall be capable of utilizing public safety interoperability channels when required to do so. These standards define the baseline necessary to maximize the value and impact of funds expended for equipment purchases. All equipment purchased through Federal/State funding shall meet these standards, and it is expected that any equipment purchased by individual providers using other funds shall also meet these standards. This is to ensure reliable ambulance-to-hospital communications throughout the Commonwealth and interoperability with other public safety agencies both within the Commonwealth and nationally. No terminology within this document is to be interpreted to prefer or refer to vendor specific equipment.

#### **Minimum Requirements**

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Ambulances services will be responsible to equip the appropriate vehicles with mobile radios. These radios can be used to dispatch the ambulance to the scene of a medical request and must enable communication with the appropriate CMED Center.

#### **Required Minimum Equipment Capabilities**

The following minimum capabilities are necessary features required to effectively implement reliable ambulance-to-hospital communications, as well as achievement of communications interoperability amongst various public safety agencies.

- Subscriber equipment shall be capable of operation from 450 MHz thru 512 MHz without performance degradation.
- Subscriber radio equipment shall have a channel capacity of 200, or greater.

- Subscriber radio equipment shall have the ability to have its channels programmed into a minimum of 10 zones, each containing a minimum of 20 channels.
- Subscriber radio equipment shall have an alphanumeric display capable of displaying a minimum of 8 characters, used for channel/zone naming.
- Subscriber radio equipment shall be capable of operating on any of the 38 E.I.A. standard C.T.C.S.S. or 83 D.C.S. codes; programmable on a channel-by-channel basis and including the ability to utilize different codes for transmit and receive or the ability for a channel to receive in the carrier squelch mode while transmitting a C.T.C.S.S. or D.C.S. code.
- Subscriber radio equipment shall have, as its maximum transmitter output, a power of between 25 watts and 50 watts. Reduced transmit power levels that are programmable on a channel-by-channel basis are desirable but not required.
- Subscriber radio equipment shall conform to Mil Specifications 810 C, D, E and F.
- Subscriber radio equipment shall be capable of supporting wideband F.M. (25 KHz channel) operation.
- Subscriber radio equipment shall be capable of supporting narrowband F.M. (12.5 KHz channel) operation.
- Subscriber radio equipment shall be equipped with an automatic time-out-timer that will turn off the transmitter, and audibly alert the user, once a predetermined period of continuous transmission has expired; desirable to have timed period programmable on a channel-by-channel basis, but in no event any longer than 90 seconds.
- Subscriber radio equipment shall be capable of supporting conventional analog operation.
- Subscriber radio equipment shall have a minimum receive audio output of 10 watts.

### **Minimum Technical Performance Specifications**

The following technical specifications for subscriber radio equipment have been developed to ensure that the two-way radios being purchased will be state-of-the-art and deliver a reliable service life, for years to come, while being operated throughout the Commonwealth.

#### **Receiver**

- 20 dB Quieting Sensitivity (25 KHz channel) 0.4  $\mu$ V
- 12 dB SINAD Sensitivity (25 KHz channel) 0.3  $\mu$ V
- Intermodulation Rejection 75 dB
- Spurious Rejection 80 dB
- Selectivity (25 KHz channel) 80 dB
- Selectivity (12.5 KHz channel) 65 dB
- Distortion at Rated Audio Output <5%

#### **Transmitter**

- R.F. Power Output (maximum) 25-50 watts
- Frequency Stability 2.5 ppm
- Emission (Conducted & Radiated) -70 dBc
- Deviation Limiting (25 KHz channel) +/- 5.0 KHz
- Deviation Limiting (12.5 KHz channel) +/- 2.5 KHz

#### **General**

- Operating Temperature Range -20° F to +135° F
- Power Supply (nominal) 12 Vdc Negative Ground
- Maximum Current Draw 13 Amperes

### **Definitions and Background**

This section is provided in support of the minimum equipment capabilities outlined in this document. A brief explanation or description of some of the capabilities identified in the first section is provided.

#### **1. Channel Capacity of 200 or Greater**

Channel capacity refers to the number of preprogrammed radio channels (frequencies) that a two-way radio can hold in memory and be capable of receiving and or transmitting on. Note that channel capacity is not necessarily the same as “Zones and Channels” as defined by some equipment manufacturers. Zones and Channels refer to a method for grouping a set of radio characteristics such as transmit and receive frequency pairs into a memory location for ease of operation and recall. This feature is required in support of ambulance-to-hospital communications, and public safety interoperability throughout the Commonwealth and nationally.

#### **2. Channel Display Minimum of 8 Alphanumeric Characters**

A display capable of providing the user with operational state and or condition such as zone/channel is essential for ease of use of large channel capacity radios. This feature is required in support of ambulance-to-hospital communications, and public safety interoperability throughout the Commonwealth and nationally.

#### **3. Adjustable Power Output**

A capability that allows a radio’s transmitter output power to be adjusted, on a channel-by-channel basis, which is typically used to compensate for varying coverage or in some cases to prevent harmful interference to other users.

#### **4. Mil Specifications 810 C, D, E and F**

Designed and tested to meet the U.S. military standards approval for Shock, Vibration, Rain & Dust, ensuring a device’s ability to perform in rigorous work environments such as is encountered in an ambulance.

#### **5. Wideband Operation (25 KHz)**

Capable of operating on a radio channel that occupies a bandwidth of 25 KHz.

#### **6. Narrowband Operation (12.5 KHz)**

Capable of operating on a radio channel that occupies a bandwidth of 12.5 KHz. To help alleviate the severe shortage of radio spectrum allocated to public safety use, the FCC developed an overall (reframing) strategy for using the spectrum in the private land mobile radio (PLMR) services more efficiently.

This strategy created a new narrowband PLMR band below 800 MHz, adopted a transition schedule based on the type acceptance process, and determined that the twenty

PLMR services should be consolidated. It is essential that all equipment purchased be narrowband-capable.

The frequency bands affected by the FCC's strategy are as follows:

- 150-174 MHz - VHF high-band, available nationwide.
- 421-430 MHz - available only in Detroit, Buffalo, and Cleveland.
- 450-470 MHz - available nationwide.
- 470-512 MHz - shared with UHF-TV, available only in 11 cities.

FCC mandated deadlines for narrow-banding are as follows:

- January 1, 2005 - type acceptance of wideband communication equipment ceases.
- January 1, 2011 - licensing of new or modification to, existing wideband communication systems is prohibited.
- January 1, 2011 - Sale of new or imported wideband communication equipment is prohibited.
- January 1, 2013 - Wideband (25 KHz channel) operations on the affected bands must cease.

## **7. Analog**

Conventional analog radios process sounds into patterns of continuously varying electrical signals, which resemble the sound waves, and then transmit the signal on a single R.F. carrier wave for reception and processing by a distant receiver.

## **8. Flash Upgradeable Software/Firmware**

Flash upgradeable refers to a device's ability to receive software updates that correct problems and or improve efficiency without requiring replacement of hardware or return to the manufacturer. Flash upgrades can add capability to a radio, such as enabling encryption or future APCO P25 standards.

## **9. APCO Project 25**

APCO Project 25 (P25) is a set of industry standards for digital mobile radio designed primarily for public safety agencies. The P25 suite of standards involves digital Land Mobile Radio (LMR) services for local, state and national (federal) public safety organizations and agencies. P25 is applicable to LMR equipment authorized or licensed in the U.S., under the National Telecommunications and Information Administration (NTIA) or FCC rules and regulations. P25 compliant systems are being increasingly adopted and deployed. Radios can communicate in analog mode with legacy radios and in either digital or analog mode with other P25 radios. Additionally, the deployment of P25-compliant systems will allow for a high degree of interoperability amongst various public safety entities.

## **10. APCO 25 Digital**

Conventional digital radios process sounds into patterns of electrical signals, which correspond to one of four distinct levels or frequencies, which resemble digits, and then transmit the information on a single R.F. carrier wave for reception and processing by a distant digital receiver.

**11. E.I.A.**

The Electronic Industries Alliance is a national trade organization that includes the full spectrum of U.S. manufacturers. Accredited by the American National Standards Institute (ANSI), EIA provides a forum for industry to develop standards and publications in its major technical areas.

**12. C.T.C.S.S. and D.C.S.**

C.T.C.S.S. (Continuous Tone Coded Squelch System) and D.C.S. (Digital Coded Squelch) are sub-audible selective signaling schemes that are used in most analog two-way radio systems. These signals are transmitted along with the R.F. carrier wave and decoded by receivers. The purpose of these systems is to permit different groups of users on the same radio channel to operate without hearing each other, even though they are within reception range. An example is the network of CMED Centers throughout the Commonwealth. An ambulance calling in to Metro Boston CMED, on MED 4, from the Acton area would most likely be heard by the Northeast and Worcester CMED operators if it were not for C.T.C.S.S. The Motorola name for C.T.C.S.S. is *Private Line (PL)*.

**Optional Recommendations**

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The following lists of capabilities are recommended for ambulance services desiring enhanced radio capabilities. The capabilities listed are not mandatory and do not directly affect communication interoperability capability.

- Subscriber radio equipment should be capable of transmitting a P.T.T. identification that is compatible with *Motorola MDC 1200* signaling.
- Subscriber radio equipment should be capable of being flash-upgraded for APCO Project 25 conventional digital operation.
- Subscriber radio equipment should be capable of dual control head operation (front and rear of ambulance).
- Subscriber radio equipment, installed in the patient area, should be capable of operating with a headset or handset instead of a microphone and speaker.
- Subscriber radio equipment should be equipped with a heavy-duty, externally-mounted, D.C. power filter that will eliminate or reduce interference, caused by the ambulance's electrical/lighting equipment.
- Subscriber radio equipment should be purchased with the maximum extended warranty that the manufacturer offers.

**6.2 CMED Trip Record Tracker**

**Minimum Requirements**

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One of the tasks of a CMED Center is to direct and facilitate ambulance response as they transport patients from the scene of an emergency to a hospital. During an EMS transport, EMTs talk to the CMED Center initially and then to a hospital for the purposes including, but not limited to: medical direction, hospital availability and relay of patient conditions. During this communication, CMED Centers capture information about the transport on a trip record.

Currently each CMED Center uses a different method for tracking this information. These systems do not have a formal name and are not standardized across CMED Centers. For the purposes of this document, the IT solutions that CMED Centers use to capture information during an EMS transport will be called “CMED Trip Record Tracker.”

### **6.3 CMED Operator Position Equipment**

The current CMED Center radio infrastructures, comprised of base stations, switch matrices, and communications consoles, are similar in technology but vary from CMED Center to CMED Center. With the exception of Metro Boston, all of the Regional CMED Centers use Motorola Centracom II Communications Consoles. Boston utilizes a united console and switch matrix manufactured by Penta.

#### **Minimum Requirements**

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##### **Meet BLS and ALS needs of the region**

Each EMS communications system shall provide sufficient medical communications capability to meet the BLS and ALS needs of the region.

##### **Channel Coordination**

The system should provide for sufficient communications capacity to permit advanced units to receive medical control that is free of co-channel interference 80% of the time. In general, this capacity will be added to the system according to the growth of ALS services. The capacity should not be developed to the detriment of the general medical communications needs.

In all cases, utilization shall be as spectrum-efficient as possible while preserving the quality of medical communications.

##### **Frequency Utilization**

Medical communications will utilize VHF and/or UHF radio frequencies. All systems employing UHF shall provide for VHF cross-patching. VHF systems may exist as VHF-only systems but it is desirable to provide for UHF cross-patching when feasible.

### **6.4 Hospital Capacity Website**

#### **Description**

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The Hospital Capacity Website is a system used to capture and report hospital status to the EMS Systems. The system is also used as an inventory resource for hospital bed availability. Hospital bed availability will become increasingly important in deciding where EMS units transport patients, since, on a daily basis, it addresses emergency department overcrowding and, also in the event of a public health disaster, it addresses diminishing health care resources. If the incident is anticipated to require statewide bed availability resources, EPB on-call person may be contacted via numeric pager at (617-647-0343) 24 hours per day, 7 days per week.

#### **Contact Information**

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Please direct questions to the following:

MDPH, Emergency Preparedness Program, Communications Coordinator

## 6.5 *Health and Homeland Alert Network (HHAN)*

### **Description**

As a secure application interfaced with a wide range of devices (e.g. pager, fax, phone, email, wireless), the HHAN provides continuous, secure, bi-directional communication and information sharing in support of aspects of emergency response, including but not limited to, mass casualty incidents, patient surge events or acts of terrorism. HHAN also provides assistance for the following: response planning, educational services, disease surveillance, laboratory reporting, and epidemiologic investigation. The core functionality of the HHAN will provide a secure means to utilize the following:

- a role-based user directory containing the contact information of all appropriate Commonwealth personnel
- user-specific, rapid communication distribution for emergency situations (can alert via phones, fax, email and pager)
- on-line news postings for low priority information dissemination
- on-line training documentation and schedules to ease administrative burden associated with any existing and/or future educational services

### **Contact Information**

Please direct questions to the following:

MDPH, HHAN Administrator at <http://mass.gov/dph/emergencyprep>

For emergency response only, please contact the EPB on-call person via numeric pager at (617-647-0343).

## 6.6 *Regional Mass Casualty Support Unit (RMCSU)*

### **Description**

The EMS community has multiple Regional Mass Casualty Support Units available throughout the Commonwealth. Each RMCSU is a trailer designed to assist in treating approximately fifty (50) adult patients and twenty-five (25) pediatric patients. Collectively, each region has essentially enough supplies to assist in treating approximately 150 casualties.

The trailers are registered to the Regional EMS Councils, who are responsible for maintaining the trailers. The organizations hosting the trailers are contracted to provide staffing for them in the case of a deployment.

### **Trailer Activation.**

See the protocol section for details on the process used to deploy these trailers.

### **Trailer Dispatch Contacts.**

**See Appendix K for Trailer Contacts.**

## 6.7 *Satellite Phones*

Each of the Commonwealth's acute care hospitals with emergency departments, CMED centers and selected partner organizations have satellite phones and accompanying service for use in the event of an emergency. These satellite phones comprise a part of the Hospital Communications Network and enable each of the recipients to communicate via satellite connections that are much more stable and reliable than commercial telephone service. MDPH, hospitals, Regional Directors and CMED Centers can use these satellite phones as an additional method of communication during emergencies, when conventional phone services (landlines and wireless) may be unavailable. Please see Appendix I: 11.9 Protocols.

MDPH intends to deliver special alerts from the MDPH Health and Homeland Alert Network (HHAN) to hospitals via the phone devices.

**Note: The phones provide redundant communications to aid in the dissemination of information to various parties during emergencies.** Please see Appendix I: 11.10 Hospital Contact Numbers.

### Equipment Description

- **1 Globalstar GSP-1600 handheld mobile unit or equivalent.** MDPH has a Globalstar unit for making calls for both hospitals testing, as well as for emergency use as needed. MDPH uses the Globalstar unit to contact hospitals on the same Globalstar network where in-network rates apply.
- **73 Globalstar GSP-2900 Fixed Satellite phones or equivalent.** Assistant Secretary for Preparedness Response (ASPR) participating hospitals have one fixed satellite phone unit and antenna.

Globalstar phones can be interfaced as a trunk line for phone switches, either key systems or PBX. This allows the satellite connection to be accessible from multiple telephone sets within the building. The satellite phone connection can be interfaced to standard phone equipment including cordless telephones and answering machines. Additionally, the Globalstar phones are able to be enhanced to become capable of transmitting data via satellite connection.

**15 MSV phones, MSAT G2 model or equivalent.** A key feature of these units is that they offer push-to-talk capability. EMS Regional Offices, CMED Centers and MDPH locations all have MSV phones.

### Reference materials:

- Each phone includes an installation guide.
- Each phone includes a full instruction manual.

### **6.8 Ambulance Task Force Radio Infrastructure / DCR / FAMTRAC**

#### **Description**

The Ambulance Task Force radios operate on the VHF infrastructure operated by the Department of Conservation and Recreation (DCR). The DCR VHF infrastructure contains nine (9) regional repeater sites, providing statewide coverage.

The map in Appendix L provides a visual representation of the geographic distribution of the repeater sites in addition to the radio coverage area for each.

This radio infrastructure provides statewide coverage so that ambulance leaders within an Ambulance Task Force can communicate as they travel across the Commonwealth.

### **6.9 Ambulance Task Force Radios**

#### **Description**

MDPH, the Department of Fire Services, DCR, and MEMA have collaborated to build out the tower infrastructure and supply radio equipment that uses the VHF (150MHz) frequency range.

To this end, 136 VHF mobile radios (model VX-4204) and accompanying tactical radio cases were purchased in 2005. This radio hardware allows responders to utilize the VHF (150MHz) radio system to communicate while they are moving around the Commonwealth.

Radios were issued to all Ambulance Task Force leaders and alternate leaders. Each Regional EMS Office keeps two radios to serve as replacements for any that need service. The remaining radios have been distributed to the following organizations:

- MDPH – 2 radios

The radio also has features including special signaling protocols and a radio-to-radio cloning feature for dynamic reprogramming which is useful in the event of a large-scale incident.

#### **Contact Information**

Please direct questions to the regional EMS office since they have replacement radios.

### **6.10 MDPH-Approved Regional Communications Plans**

#### **Minimum Requirements**

MDPH-approved Regional EMS Communications Plans augment the State Plan and address the following:

- Call Signs
- Communication Failure Protocols
- Cell Phone Usage
- Hardwire Usage

- Entry Notification
- Medical Control
- MCI Operation
- Usage of Med Channel #9 & #10

### **6.11 Local EMS Dispatch Radio Networks**

#### **Minimum Requirements**

---

In all cases an "EMS channel" identified by this plan is intended for communications of EMS operation. The intent of this policy is to protect EMS traffic from interference by non-EMS users. With a few exceptions noted below, local dispatch radio networks must not use channels designated for EMS within the channel plan located in the appendix.

Two UHF channels may be used for local dispatch with restrictions. In most areas of the Commonwealth, UHF frequency pairs MED 9 (462.950/467.950 MHz) and MED 10 (462.975/467.915 MHz) are in use. Only careful planning will prevent overloading of these two channels, rendering them unreliable for emergency communications.

MED 9 and MED 10 may be used for local EMS dispatch. In all cases development of a MED 9 or 10 systems and its utilization shall be approved by the entity that owns the license and coordinated through the regional EMS. Local EMS dispatch that uses MED 9 or MED 10 shall utilize base stations or base station repeaters (mobile relays) with direct control (such as by hard-wire) equipped for repeater disable.

Mobile relays that are free-standing with access by only mobiles, portables, or control stations are not acceptable. CTCSS or a similar technology shall be used (carrier activated systems are not acceptable).

Utilization of MED 9 or 10 shall be restricted to emergency medical operations. Non-emergency and non-medical uses shall take place on other appropriate channels. Utilization of the channel for messages related to the efficient administration of EMS shall be kept to an absolute minimum.

### **6.12 Hospital Phone Network**

#### **Description**

---

Each EMS Region may have alternative communication systems identified in their regional communication plan. Please refer to the regional communication plan for guidance.

## 7 Radio Communication Protocols

This section describes some chosen protocols used within the EMS community. Most of the protocols represent a high-level outline that each region may use as a guide; however, each region may have protocols that deviate from those of this plan. Those regional specific protocols should be included in an appendix to this document. Furthermore, Radio Systems utilized to contact CMEDs must be compliant with the published EMS Radio Channel Plan.

### 7.1 Call Sign Identification

The call sign scheme will be determined at a regional level until a statewide scheme is agreed upon.

However, at a minimum, the call sign must include a designation for the town of the ambulance (either text or number) and then a designation for the actual ambulance itself.

### 7.2 Typical 9-1-1 Call Response

This section describes the high level protocol used to respond to call. This protocol is a general description –**regional communications plan** may include protocols that deviate slightly.

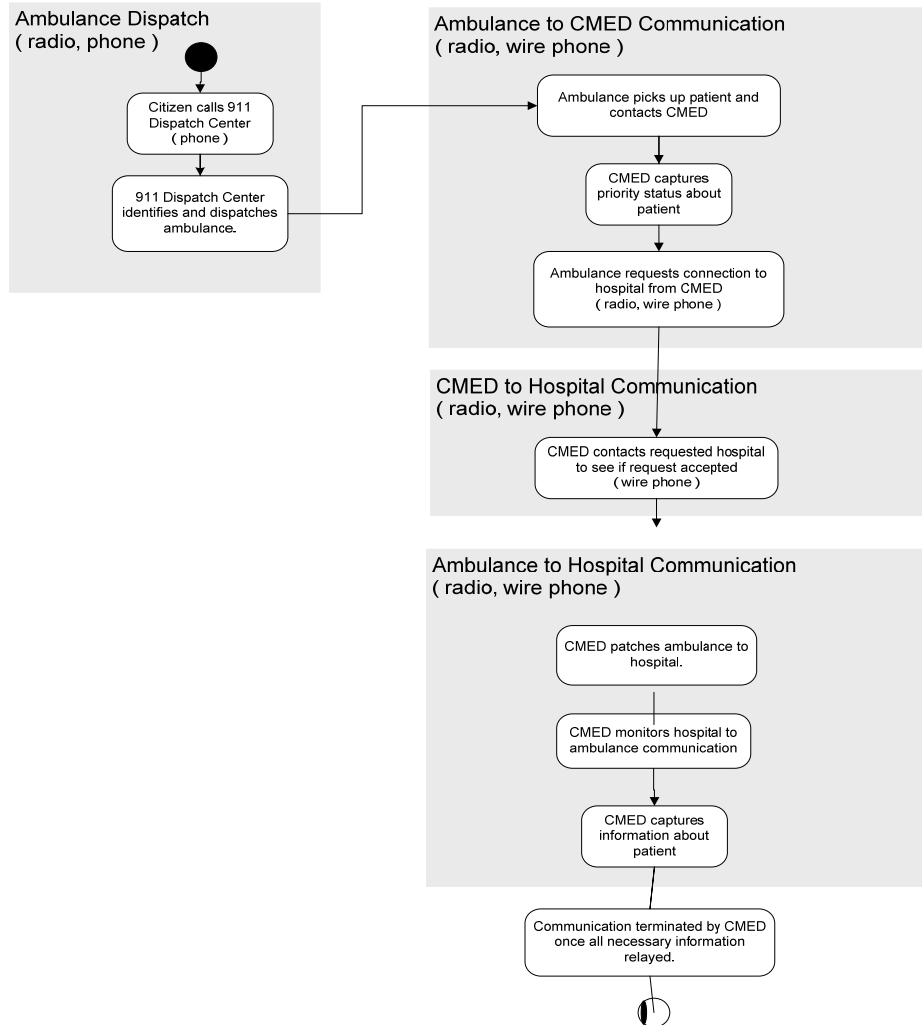
#### Participants:

- Dispatch Center
- Ambulance
- CMED
- Hospital

# The Massachusetts Emergency Medical Services Radio Communications Plan

<b>PROTOCOL</b> Project: Massachusetts Emergency Medical Services Communication Manual Use Case: Routine 911 Call Actor(s): Ambulance, CMED, Hospital Last Updated: February 8, 2006	
--	--

Use Case Pre-conditions: 1) Ambulance is dispatched to the scene of a 911 call. Use Case Post-conditions: 1) Response to 911 call complete.
--



## 7.2.1 Citizen calls 9-1-1 Public Safety Answer Point (PSAP)

EMS effectiveness hinges on the ability of citizens to rapidly access appropriate EMS resources. The general public must be able to recognize a medical emergency and then rapidly call the telephone number for the local EMS agency. The most effective route is the universal emergency number 9-1-1. The second best route is a ten-digit number established by local authorities for EMS, fire and police access.

Ambulance services that provide primary EMS response to a jurisdiction with 9-1-1 shall utilize that system for EMS access. This shall include 9-1-1 advertising as required by 105 CMR

170.265(B). All other services shall comply with 105 CMR 170.265 using a ten-digit access number.

### 7.2.2 Public Safety Answering Point (PSAP) contacts Ambulance Dispatch Center

Public Safety Answering Points (PSAPs) may forward requests for medical services to Ambulance Dispatch Centers, which in turn dispatch the appropriate EMS units and field personnel in response. Both telecommunicators must log information regarding the event.

### 7.2.3 9-1-1 Dispatch Center identifies and dispatches ambulance

After answering a call, the 9-1-1 Dispatch center will dispatch an ambulance and any other resources to the scene, in accordance with the local service zone plan. Each Region of the Commonwealth executes 9-1-1 and ambulance dispatch differently.

### 7.2.4 Ambulance picks up patient and contacts CMED

EMTs must initiate communication with the hospital through the CMED center, by hailing the center on the common calling channel of the CMED radio network. EMTs shall not contact hospitals directly via cell phone.

### 7.2.5 CMED captures priority status about patient

Standardization of terminology provides greater efficiency of CMED for the purpose of coordinating patient transport activities. Patients are triaged and assigned the following designations – ***Priority One through Priority Four***:

#### **PRIORITY ONE** (Immediate Life Threatening)

*Immediately connect to medical control request, override other traffic as needed.*

*Examples are:*

- Cardiac Arrest
- Unstable Cardiac
- Major Head Injuries
- Multiple Trauma
- Unstable GI Bleed
- Acute Pulmonary Edema
- Respiratory Arrest
- Airway Obstruction
- Anaphylaxis

#### **PRIORITY TWO** (Life Threatening)

*Connect as soon as possible to receiving facility.*

Examples are:

- Suspected Cardiac
- CVA
- Coma (unknown etiology)
- Unstable Trauma
- Unstable Medical (e.g., hypoglycemia)
- Symptomatic Cervical Injuries
- Suspected Fractures/Dislocations of Joints

**PRIORITY THREE** (Non-Life Threatening)

*Connect to receiving facility as soon as med channel is available.*

Examples are:

**Stable Trauma:**

- Minor Lacerations and Soft Tissue Injuries
- Suspected Minor Fracture without Circulatory or Nervous System Compromise

**Non-Acute Medical Complaints**

**PRIORITY FOUR** (Stable)

*Connect only if no other traffic requires a channel.*

Examples are:

- Interagency Transfers
- Direct Admissions

**7.2.6 Ambulance requests connection to hospital from CMED**

Transporting EMS units call a regional CMED Center to request a communications patch to a hospital's emergency department. The CMED Center then designates and assigns an available communications channel and updates it as required. Once the patch is activated, ambulance personnel have a dedicated communications link with the medical control point. The system configuration allows efficient dynamic assignment of base stations/frequencies and the coordination of EMS resources.

**7.2.7 CMED patches ambulance to hospital**

See flow chart on page 27 for detail description.

**7.2.8 CMED monitors hospital to ambulance communication**

See flow chart on page 27 for detail description.

### 7.2.9 CMED captures information about patient

See flow chart on page 27 for detail description.

### 7.2.10 Communications terminated by CMED once all necessary information relayed

- Age
- Sex
- Chief Complaint
- Date
- Time
- Unit
- Hospital arriving
- Priority
- Base

## 7.3 *Ambulance Task Force Activation*

### Summary:

This section describes the high-level protocol used to activate an Ambulance Task Force. This protocol is used state-wide for all Ambulance Task Force activations.

### Participants:

- Incident Command
- Local Dispatch Center
- Mutual Aid District Control Centers (sending and receiving)
- MEMA
- EPB
- District Mobilization Coordinators
- Regional EMS Executive Directors
- Ambulance Task Force leader(s)
- Ambulance Task Force members

### Infrastructure Used:

- 150 MHz VHF Radio Network
- Other Radios
- NAWAS Phone System
- Cellular Phones
- Land Line Phones

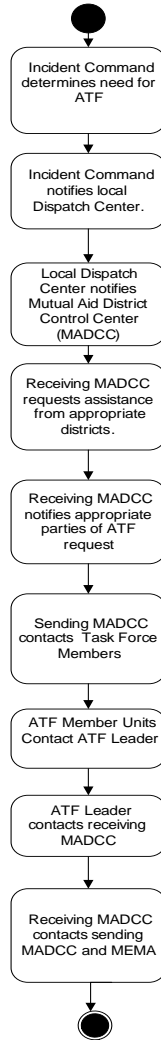
### Infrastructure Flowchart:

# The Massachusetts Emergency Medical Services Radio Communications Plan

The following page contains a flowchart of the high-level activation protocol.

For complete details, please see the Commonwealth of Massachusetts State Fire and Emergency Medical Services Mobilization Plan.

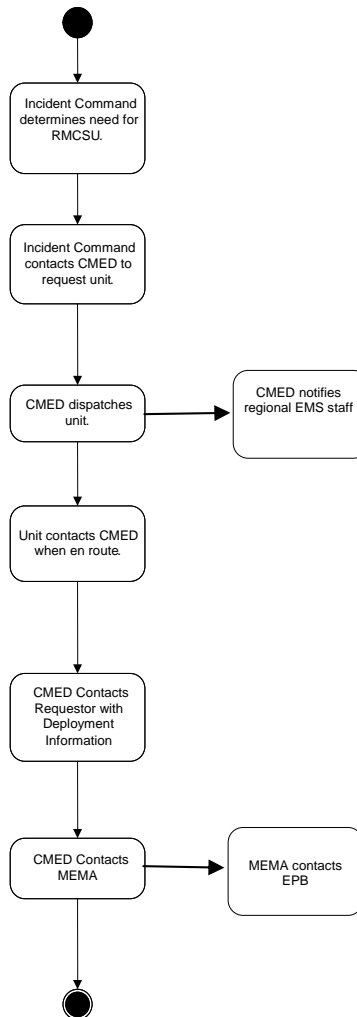
<b>PROTOCOL</b>	
Project:	Massachusetts Emergency Medical Services Communication Manual
Use Case:	Ambulance Task Force Mobilization and Communication
Actor(s):	Incident Command, Local Dispatch Center, Mutual Aid District Control Center, Sending and receiving, MEMA, District Mobilization Coordinators, Regional EMS Directors, Task Force Leader, Task Force Members
Use Case Pre-conditions:	1) MCI or other major incident has occurred 2) Incident command has been established for the incident. 3. Local resources, and regional mutual aid resources, have been exhausted.
Use Case Post-conditions:	1) Task Force Member units return to home stations



**7.4 Regional Mass Casualty Support Unit Activation**

The following summarizes the official protocol for the deployment of all Regional Mass Casualty Support Unit in the Commonwealth.

<b>PROTOCOL</b>	
Project:	Massachusetts Emergency Medical Services Communication Manual
Use Case:	Regional Mass Casualty Support Unit(RMCSU) Activation and Deployment
Actor(s):	Incident Command, EMS Branch Director CMED, RMCSU (and host agency), MEMA
Use Case Pre-conditions:	<ol style="list-style-type: none"> <li>1) MCI or other major incident has occurred</li> <li>2) Incident command has been established for the incident</li> <li>3) Patient management resources have been exhausted</li> </ol>
Use Case Postconditions:	<ol style="list-style-type: none"> <li>1) Regional Mass Casualty Support Unit(RMCSU) trailer deployed to incident</li> </ol>



**7.4.1 Incident Command Determines Need for RMCSU**

An incident commander or designee on scene may determine the need for an RMCSU trailer.

**7.4.2 Incident Command Contacts CMED to Request Unit**

The EMS Branch Director may contact the CMED if authorized by the incident Commander (IC). If so, the IC will be informed of the deployment. The requestor (Incident Commander or EMS Branch Director) will also inform the Staging Manager that the equipment will be arriving and where it will be needed.

**7.4.3 CMED Dispatches Unit**

The CMED Operator identifies the unit nearest the incident and dispatches that unit to the incident. If the closest unit is not within that Region, the CMED operator will follow inter-region agreements and policies to attempt to deploy a resource from another region. Depending on the nature and scope of the incident, CMED may place a second unit on standby or deploy a second unit as a redundant response.

CMED notifies regional office staff.

**7.4.4 Unit Contacts CMED when En Route**

The RMCSU unit staff contacts the CMED en route to the incident.

**7.4.5 CMED Contacts Requestor with Deployment Information**

Once informed the unit is en route to the incident, CMED will contact the Incident Commander or EMS Branch Director via radio or phone and provide an estimated time of arrival.

### **7.5** *Medical Control*

Medical communications include those messages between EMTs, physicians, nurses and CMED operators required to care for the patients. Most common is the communications between hospital and EMTs for entry notification and/or medical control consultation for clinical advice and orders prior to a patient's arrival at the hospital. The EMS radio systems shall be capable of meeting the needs of this frequent medical communication.

A special form of this medical communication is between the EMT (most often, but not limited to, EMT-Paramedics) and a physician at their EMS service's affiliate hospital for purposes of medical control. Although such communications are less frequent than basic medical communications, medical control demands careful consideration for all systems. Medical control requires more air time due to the quantity of information and instructions exchanged. Communications must be established rapidly and maintained in order that the patients who receive care can benefit from it, since under the Statewide Treatment Protocols, EMTs may perform certain procedures only with medical control approval. Finally, portable radios are used during most of the patient care phases of medical control communications. EMS systems shall, at a minimum, provide Advanced Life Support ambulances with sufficient communication capacity to provide a channel for medical control communication that will be free of harmful interference throughout the entire period of the case 80% of the time.

### **7.6** *Medical Aircraft Communication*

Activation and communication protocols are part of the emergency response network that medical aircraft must follow.

## 8 References

- 1) Health Plan for Massachusetts 1983-1990. The Plan satisfies the requirements of the Health Plan for Massachusetts 1983-1990 developed by the State Office of Health Planning, in conjunction with the Office of Emergency Medical Services.
- 2) The Plan is consistent with the Rules and Regulations of the Federal Communications Commission and, in accordance with Title 47 CFR 90.35(b), is on file with the Commission.
- 3) RCC report
- 4) Old Communications Plan
- 5) Regulations

## Appendices

### 8.1 Appendix A: Glossary of Terms and Acronyms

#### **ANTENNA**

A component of a radio which emits and/or receives the radio frequency radiation. It is connected to the radio set itself. Antennae are placed in high locations, when possible, in order to achieve maximum performance.

#### **ALS**

Advanced Life Support

#### **BAND**

A portion of the radio frequency spectrum; such as VHF high band: 150 MHz to 173 MHz.

#### **BASE STATION**

A radio transmitter/receiver in a fixed location used to communicate with mobile units. Commonly located in remote locations close to the attached antenna.

#### **BASE STATION REPEATER**

A base station that operates as a mobile relay but has dedicated control from a control point. See mobile relay.

#### **BLS**

Basic Life Support

#### **CDC**

Centers for Disease Control and Prevention

#### **CENTRAL MEDICAL EMERGENCY DIRECTION CENTER (CMED Center)**

A communication center that coordinates EMS communications in a region or an area.

#### **CHANNEL**

A specific radio path that is employed by users when they communicate. A channel may consist of a single frequency or a group of frequencies (oftentimes a pair).

#### **CONTROL POINT**

The location from which a base station is primarily controlled.

**CONTROL STATION**

A radio transmitter/receiver in a fixed location intended to be used for communicating with another fixed station such as a mobile relay.

**CRITICAL CHANNEL**

A UHF radio channel designated for most frequent use by a CMED system. Refer to the State Communications Plan for information concerning channel utilization policies.

**CTCSS (CONTINUOUS TONE CODED SQUELCH SYSTEM)**

A squelching feature used by most radio systems that permits only transmissions that contain a specific "sub-audible" tone to be heard. Radios in such systems are designed to transmit a continuous tone code that activates the squelch circuit of the receiving radio. Radios on the same frequency but with different tone codes will not be able to hear or talk to one another unless the CTCSS is disabled in both units. (Often this can be accomplished by operating a "monitor" button.) UHF EMS systems in New England use a dual CTCSS system. CTCSS is described by various trade names: Channel Guard, CG, (General Electric); Private Line, PL, (Motorola); and others.

**DECODER**

The opposite of an encoder. See encoder.

**DEDICATED LINE**

A special type of telephone line typically used as a radio control circuit; not a part of the public switch telephone network (PSTN).

**DHCQ (DIVISION OF HEALTH CARE QUALITY)**

A division of the Department of Public Health whose responsibilities include the inspection and licensing of health care facilities such as hospitals, and in particular as relates to EMS, licensing of hospitals for the service of providing medical control to ambulance services.

**DISPATCH CENTER**

A request for services is received and appropriate medical resources are deployed.

**DTMF (DUAL TONE MULTI-FREQUENCY)**

A tone signaling system that uses a pair of tones in combination and are used to control or access equipment; currently used chiefly to access hospital or CMED

radios on the VHF frequencies. Also called "Touch Tone" since it is identical to telephone signaling system.

**DUPLEX**

A feature of telecommunications that allows equipment to transmit and receive simultaneously. The opposite of simplex. Duplex may refer only to equipment or it may also refer to operations. The latter would permit two users to speak simultaneously. In EMS, duplex operations are sometimes referred to as the "doctor interrupt" feature.

**ED**

Emergency Department

**EKG**

Electro-cardiogram (also ECG). A chart of the electrical signals recorded from a person's heart.

**EMS**

Emergency Medical Services

**EMT**

Emergency Medical Technician encompasses basic and immediate paramedic.

**ENCODER**

A component of a radio that applies a signal to a transmission, usually in order to access another unit. A decoder in the other unit "listens" for the proper signal or code. DTMF and CTCSS all employ encoders and decoders.

**EOC**

Emergency Operation Center

**EPB**

The Emergency Preparedness Bureau (EPB) within MDPH provides guidance and technical assistance about emergency preparedness and emergency management activities.

**ERP (EFFECTIVE RADIATED POWER)**

The power supplied to an antenna multiplied by the relative gain of the antenna in a given direction.

**ESFs**

Emergency Support Functions

**ESF-8**

Emergency Support Function for Health and Medical Services

**FCC (FEDERAL COMMUNICATIONS COMMISSION)**

The Federal Communications Commission (FCC) is an independent government agency, directly responsible to Congress. The FCC is charged with regulating interstate and international communications by radio, television, wire, satellite and cable. Their jurisdiction covers the 50 states, the District of Columbia, and U.S. possessions.

**FREQUENCY**

The specific measurement of a signal, expressed in Hertz (cycles per second). In common usage, similar to channel.

**HHAN**

Health and Homeland Alert Network

**HAZMAT**

Hazardous Materials

**H.E.A.R. RADIO (HOSPITAL EMERGENCY AND ADMINISTRATIVE RADIO)**

Commonly used to refer to the VHF radio channel 155.340/155.280/155.385/155.400 which became the primary EMS channel prior to the development of UHF radio for EMS. H.E.A.R. is a trade name of the Motorola Corp. The channel, and the acronym, is still widely used.

**Hz (HERTZ)**

Cycles per second per second. Signal frequencies are expressed in hertz or multiples: kHz=kilohertz or 1,000 cycles per second; MHz=megahertz or one million cycles per second. 155.340 MHz=155,340,000 cycles per second.

**IC**

Incident Commander

## **ICS**

Incident Command System

## **INTERFERENCE**

*HARMFUL* -Radio emissions, radiation, or induction which specifically degrades, obstructs or interrupts the communications of other users.

*NUISANCE* -Radio emissions which present to a user of a radio channel that distracts, annoys, or disturbs that user but does not cause harmful interference.

*CO-CHANNEL* -Interference associated with a user on the same frequency as the user experiencing the interference.

*ADJACENT CHANNEL* -Interference associated with a user on a frequency just above or below the frequency of the user experiencing the interference.

## **INTERCONNECTION**

Connection or interface of private radio systems with the facilities of the public switched telephone network (PSTN), i.e. the conventional dial network, to permit the transmission of signals between points of the PSTN 's and the private radio system. In common EMS use, a "phone patch" is interconnected and FCC rules require positive control of the patch by a control point (CMED). Dedicated lines or ring-down lines are not part of the PSTN and therefore do not constitute interconnection.

## **LAND MOBILE RADIO**

As defined by the FCC, all two-way radio facilities whose primary use is for private communication between mobile units and base stations.

## **MCI**

Mass (or multiple) casualty incident

## **MDPH**

Massachusetts Department of Public Health

## **MED CHANNEL**

EMS channels in the UHF band are labeled by "MED #" by common usage and FCC Rule. MED 1 through MED 8 are channels with MED 4 used as a common calling channel. MED 9 and MED 10 are used for dispatch and mutual aid/resource coordination.

**MICROWAVE**

Extremely high radio frequencies, usually above 1 GHz (gigahertz=1,000 megahertz=one billion hertz) that are used for fixed point communications. Microwave links are capable of simultaneously transmitting many, many separate communications signals along a single path.

**MMRS**

Metropolitan Medical Response Systems

**MOBILE**

A radio unit that is installed in a vehicle. A mobile unit consists of an antenna, a control head and the radio set. The latter item is usually located in an out of the way spot such as behind a front seat.

**MOBILE RELAY STATION**

A base station that automatically retransmits signals received from mobile units or control stations. Commonly called a repeater, the name refers to its purpose of relaying communications between mobile or portable units. A mobile relay may be free standing at a remote site or be controlled directly by a control point (see base station repeater).

**MOBILE REPEATER STATION**

A mobile radio that automatically retransmits signals received from portable units. In EMS use, a mobile repeater is used by EMTs to communicate to a hospital or CMED while away from the ambulance. Such units are necessary in areas in which standard portables are not powerful enough to reach a base station directly. Mobile repeaters have the effect of boosting a portables' range. {Note: Mobile repeaters are not compatible with all systems. Great care must be used in their acquisition and in operation.}

**MOU**

Memorandum of Understanding

**NIMS**

National Incident Management System

**OEMS**

The program within the Department of Public Health that is charged with licensing ambulance services, certifying EMTs and ambulance vehicles and accrediting EMS training institutions within the Commonwealth. OEMS also develops, implements and enforces regulations, administrative requirements and other policy for EMS in the Commonwealth; develops and updates the Statewide Treatment Protocols governing scope of practice and clinical care of EMTs in

Massachusetts; coordinates EMS communications, and reviews and approves local service zone plans for EMS delivery in the Commonwealth. OEMS also administers federal grants that contribute to the EMS community.

**PAGING**

One-way radio transmission characterized by tone activation of small radio receivers (pagers). Used for alerting personnel.

**PATCH**

A method to connect two parties who require communications who otherwise cannot communicate directly. Common EMS usage refers to an ambulance being "patched" by a CMED to one or more hospitals. Cross-channel patching refers to the connecting of one radio channel to a separate radio channel. Telephone patching refers to radio to telephone connections; also called interconnection.

**PORTABLE RADIO**

A type of mobile unit that can be carried. Portables are less powerful than a mobile and thus poorer communications can be a problem. Also see mobile repeater.

**PSAP (PUBLIC SAFETY ANSWERING POINT)**

The location in a specified jurisdiction where all emergency requests are answered. The place where a telephone is answered when a person calls 9-1-1. It may or may not be the location from which EMS, fire or police units are dispatched.

**PTT SWITCH (PUSH-TO-TALK)**

A switch on a microphone or handset that activates a radio's transmitter when depressed.

**REMOTE CONTROL CONSOLE**

A piece of radio equipment that controls a base station. Typically hospitals have "remotes" located in their emergency departments.

**REGIONAL EMS COUNCIL**

An entity created pursuant to M.G.L. c. 111C, §4 and designated by the Massachusetts Department of Public Health (MDPH) to assist the MDPH in establishing, coordinating, maintaining and improving the EMS system in a geographic area of the state defined by MDPH for EMS planning purposes.

**REGULATIONS – EMS SYSTEM**

<sup>1</sup> These regulations can be found at the following links:

[http://www.mass.gov/?pageID=eohhs2terminal&L=5&L0=Home&L1=Government&L2=Laws%2c+Regulations+and+Policies&L3=Department+of+Public+Health+Regulations+%26+Policies&L4=Regulations+and+Other+Publications+-+E+to+H&sid=Eeohhs2&b=terminalcontent&f=MDPH\\_regs\\_emergency\\_services&csid=Eeohhs2](http://www.mass.gov/?pageID=eohhs2terminal&L=5&L0=Home&L1=Government&L2=Laws%2c+Regulations+and+Policies&L3=Department+of+Public+Health+Regulations+%26+Policies&L4=Regulations+and+Other+Publications+-+E+to+H&sid=Eeohhs2&b=terminalcontent&f=MDPH_regs_emergency_services&csid=Eeohhs2)

**REPEATER**

A radio which is designed to automatically re-transmit a signal received from another unit. See mobile relay, mobile repeater, and/or base station repeater. In common usage, repeater refers to a mobile relay.

**SEOC**

State Emergency Operations Center

**SIMPLEX**

A feature of telecommunications that restricts equipment to transmit or receive. The opposite of duplex. Users of a simplex system cannot interrupt a user while he/she is transmitting commonly referred to as "push to talk, release to listen."

**SQUELCH**

An electronic feature of a radio which eliminates unwanted noise or signals from the loudspeaker. Standard squelching operates when there is no carrier on the frequency present at the receiver.

**TALK IN**

A reference to a mobile or portable radio's ability to be received by a base station.

**TALK OUT**

A reference to a base station's ability to be received by a portable or mobile unit.

**UHF (ULTRA HIGH FREQUENCY)**

The portion of the radio spectrum between 300 MHz and 1.000 MHz (1 GHz). UHF EMS communications use frequencies in the 460 MHz portion of the UHF band.

**VHF (VERY HIGH FREQUENCY)**

The portion of the radio spectrum between 30 MHz and 300 MHz. Two-way radio VHF is further broken down into low band (30 MHz -50 MHz) and high band (150 MHz -174 MHz). Most EMS VHF frequencies are in the 155 MHz portion of the VHF band.

**WATT**

A measurement of power; used in expressing the power output of radios.

**The Massachusetts Emergency Medical Services Radio Communications Plan**

**8.2 Appendix B: Ambulance Task Force Radio Profiles**

<b>DCR</b>						
<b>Ch</b>	<b>Alias</b>		<b>Transmit</b>	<b>PL</b>	<b>Receive</b>	<b>PL</b>
1	Statewide	Wide	151.205	71.9	151.205	71.9
2	Brewster	Wide	151.415	162.2	151.145	71.9
3	Plymouth	Wide	151.415	131.8	151.145	71.9
4	Sharon	Wide	151.415	82.5	151.145	71.9
5	Andover	Wide	151.415	110.9	151.145	71.9
6	Wachusett	Wide	151.415	71.9	151.145	71.9
7	Pelham	Wide	151.415	94.8	151.145	71.9
8	Greylock	Wide	151.415	123.0	151.145	71.9
9	Monterey	Wide	151.415	146.2	151.145	71.9
10	Mendon	Wide	151.415	203.5	151.145	71.9
11	Med 280	Wide	155.280	CSQ	155.280	CSQ
12	Med 340	Wide	155.340	CSQ	155.340	CSQ
13	V-CALL	Narrow	155.7525	156.7	155.7525	156.7
14	V-TAC 1	Narrow	151.1375	156.7	151.1375	156.7
15	V-TAC 2	Narrow	154.4525	156.7	154.4525	156.7
16	V-TAC 3	Narrow	158.7375	156.7	158.7375	156.7
17	V-TAC 4	Narrow	159.4725	156.7	159.4725	156.7

<b>MEMA</b>						
<b>Ch</b>	<b>Alias</b>		<b>Transmit</b>	<b>PL</b>	<b>Receive</b>	<b>PL</b>
1	Plymouth	Wide	156.135	210.7	154.085	210.7
2	Andover	Narrow	155.955	203.5	153.965	203.5
3	Sharon	Narrow	156.135	D-025	154.085	D-025
4	Wachusett	Narrow	156.135	D-023	155.745	D-023
5	Monterey	Narrow	155.955	D-023	155.085	D-023
6	Greylock	Wide	155.955	225.7	155.085	225.7
7	Pelham	Narrow	155.955	D-025	155.085	D-025
8	MEMA 1D	Narrow	153.965	203.5	153.965	203.5
9	MEMA 2D	Narrow	154.085	210.7	154.085	210.7
10	MEMA 3D	Narrow	155.085	162.2	155.085	162.2
11	MEMA 4D	Narrow	155.745	100.0	155.745	100.0
12	MEMA State	Wide	155.955	100.0	155.955	100.0
13	Med 280	Wide	155.280	CSQ	155.280	CSQ
14	Med 340	Wide	155.340	CSQ	155.340	CSQ
15	V-CALL	Narrow	155.7525	156.7	155.7525	156.7
16	V-TAC 1	Narrow	151.1375	156.7	151.1375	156.7
17	V-TAC 2	Narrow	154.4525	156.7	154.4525	156.7
18	V-TAC 3	Narrow	158.7375	156.7	158.7375	156.7
19	V-TAC 4	Narrow	159.4725	156.7	159.4725	156.7

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**The Massachusetts Emergency Medical Services Radio Communications Plan**

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		<b>Weather</b>			
<b>Ch</b>	<b>Alias</b>	<b>Transmit</b>	<b>PL</b>	<b>Receive</b>	<b>PL</b>
1	WX 1	None	None	162.55	CSQ
2	WX 2	None	None	162.400	CSQ
3	WX 3	None	None	162.475	CSQ
4	WX 4	None	None	162.425	CSQ
5	WX 5	None	None	162.450	CSQ
6	WX 6	None	None	162.500	CSQ
7	WX 7	None	None	162.525	CSQ

### 8.3 Appendix C: Hospital Satellite Phone Protocols

As part of cooperative agreement funds awarded from the federal ASPR National Bioterrorism Hospital Preparedness Program, MDPH purchased satellite phones and accompanying service for use by the Commonwealth's hospitals, EMS CMED centers and selected partner organizations. These satellite phones will be part of the Hospital Communications Network and will enable each of the recipients to communicate via satellite connections that are much more stable and reliable than commercial telephone service. MDPH, hospitals, EMS Regional Directors and CMED Centers will be able to use these satellite phones as an additional method of communication during emergencies, when conventional phone services (landlines and wireless) may be unavailable.

The objective of the Hospital Communications Network is to establish a mechanism of communication between MDPH, Massachusetts hospitals, regional communications centers, state agencies and other responding agencies/supporting units in the event of a disaster requiring coordinated hospital communications and response. MDPH intends to deliver special alerts from the MDPH Health and Homeland Alert Network (HHAN) to hospitals via the phone devices.

**Note: The phones are not replacing existing traditional hospital, CMED or EMS communication systems. They will provide redundant communications to aid in the dissemination of information to various parties during emergencies.**

#### **Roles and Responsibilities of Different Parties**

##### **Massachusetts Department of Public Health**

During a disaster, MDPH's role is to utilize the communications network, including the satellite phones, in acting as a communications liaison between hospitals, the Hospital Association, state health officials and federal health resources to provide assistance and support as needed.

During non-emergency operations, MDPH's role is to coordinate and participate in testing and exercises.

The EPB will use the satellite phones to issue alerts and updates from the Massachusetts Health and Homeland Alert Network (HHAN) using both text messaging, and the automated voice broadcast communicator functions.

EMS Regional Directors and CMEDS will participate in the communication network on a standby basis for emergency communications and routine testing (24/7/365), and participate in any drills and/or exercises.

##### **Hospitals**

Each hospital's role during non-emergency operations is to function as a participant in the communication network on a standby basis for emergency communications and routine testing (24/7/365) and to participate in any scheduled exercises. Participating in routine drills will help familiarize staff with the phones use and increase proficiency in the event of a true emergency.

During a disaster, each hospital's role is to ensure that each satellite phone is powered by a functioning emergency power source; and standby for satellite communications with EPB, MHA or other Network emergency response agencies.

Hospitals are expected to inform EPB in writing of general or widespread reception problems with the phones; EPB will then report these to Globafone.

Barring disruption in satellite phone service, Hospitals must ensure that the phone is operational 24/7/365.

Hospitals must ensure that the phone volume is sufficiently high to receive any calls or alerts. These phones should be used for disaster preparedness and response purposes only.

### **Emergency Communications**

#### **Guidelines**

As stated, the satellite phone network will not replace existing methods of emergency response communications, but is available for use as a redundant mechanism and for relaying communications during an emergency.

In the event of an emergency involving one or more hospitals, hospitals can use the satellite phone network to coordinate resources and response between and among hospitals and other involved agencies.

The organization that first becomes aware of the incident or is closest to the incident should initiate a call to the appropriate organization (e.g., EPB, MEMA, etc.). In the event of a major emergency, hospitals can use this communication system to augment their disaster plan.

#### **To initiate an emergency call, follow these guidelines:**

Contact EPB using the contact information provided below, with any healthcare related disaster.

Begin all emergency satellite phone calls by self-identifying the facility from which you are making the call. Identify whom you are calling. For example, "this is Boston Medical Center contacting the Department of Public Health."

Use of any part of the Hospital Communications Network is warranted when an incident commander declares a mass casualty incident, a major disaster, or needs to relay vital information to the EPB other hospitals or healthcare partners regarding an emergency.

Useful Contact Information:

#### **MDPH 24/7 numbers:**

Epidemiology and Immunization – 617-983-6800

General State Lab-based programs – 617-983-6200 or 617-522-3700

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Bioterrorism Incidents – 617-590-6390  
Chemical Incidents – 617-590-7361  
Division of Health Care Quality – 617-363-0755  
MDPH Globalstar Satellite Phone – 254-219-4398  
EPB – 617-647-0343

MEMA – 508-820-2000. You may ask for the MDPH-staffed, ESF-8 desk, if the emergency operations center at MEMA has been activated.

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**8.4 Appendix D: Hospital Contact Numbers**

FACILITY	EOC PHONE1	EOC PHONE2	EP Contact	ED PHONE
Addison Gilbert Hospital-Beverly Hospital	978-283-4001 x596	978-283-4001 x476	Administrator on Call	978- 922-3000 X3700
Anna Jaques Hospital	978-463-1000		David Fowler	978 463-1051
Athol Memorial Hospital	978-249-3511	978-249-1101	Lucille Songer, RN, BS	978 249-1250
Baystate Franklin Medical Center	413-773-2752	413-773-2211	Administrator on Call	413 773-2581
Baystate Mary Lane Hospital	413-967-6211 x72110	413-323-6653	Christine Shirtcliff, F.A.C.H.E.	413 967-6211 X72155
Baystate Medical Center	413-794-4477	413-794-5534	Patricia Hannon	413 794-5375
Berkshire Medical Center	413-395-7530	413-442-3789	Nursing Director	413 447-2399
Beth Israel Deaconess Hospital-Needham Campus	781-453-3610	617-667-2300 #97806	Eliza Gregory	617-754-2341
Beth Israel Deaconess Medical Center	617-754-2040	617-667-3412	Meg Femino	617 754-2347
Beverly Hospital	978-922-3000 x2122 or x2740	978-922-3000 x3010	Administrator on Call	978 922-3000 X3700
Boston Medical Center	617-414-6860	617-414-4444	Maureen McMahon	617 414-4930
Braintree Rehabilitation Hospital	781-848-5353	781-348-2148	Administrator on Call	
Brigham and Women's Hospital	617-732-8664		Administrator on Call	617 732-5989
Cambridge Hospital - Cambridge Health Alliance	617-665-1000	617-665-3475	Christian Lanphere	617 381-7153
Cape Cod Hospital	508-862-2503	508-862-2504	Terry Whittemore	
Caritas Carney Hospital	617-506-2424	617-506-2495 or 617-506-2496	Michael Stack	617 296-4012 X4444
Caritas Good Samaritan Medical Center	508-427-3034 /3064	508-427-3075	Richard Herman, MD	508 427-3034
Caritas Holy Family Hospital and Medical Center	978-687-0156 x2710	978-687-0156 dial 0	Administrator on call	978 687-0151 X2103
Caritas Norwood Hospital	781-278-6700	781-225-0722	William P. Fleming, CHE	781 769-4000 X2493
Caritas St. Elizabeth's Medical Center	617-789-2098	617-789-2096	Michael Tabeek	617 789-2639

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Charlton Memorial - Southcoast Hospitals Group	508-679-7191	508-679-3031 Nursing supervisor	H. Ray Price	508 674-7425
Children's Hospital	617-355-6971	617-355-2900	Administrator on Duty	617 355-6624
Clinton Hospital	978-368-3899	978-368-3890	Administrator on Call	508 421-1400
Cooley Dickinson Hospital, Inc.	413-582-2702	413-582-2004	Administrator on Call	413 582-2363
Dana-Farber Cancer Institute, Inc.	617-632-3118	617-632-3118	Administrator on Duty	
Emerson Hospital	978-287-1100	978-369-1420	Patient Care Coordinator	978 287-3697
Fairview Hospital	413-528-8530	413-528-0790	Doreen M. Hutchinson, R.N.	413 854-9706 X3100
Falmouth Hospital	508-548-5300	508-548-5301	Susan M. Wing	508 457-3837
Faulkner Hospital	617-983-7766	617-983-7400	ER Attending Physician or Administrator on Call	617 983-7132
Franciscan Hospital for Children	617-254-3800 x1410		Donna Polsell	
Harrington Memorial Hospital	508-765-3195 Emergency Center	508-765-9771 ext. 10	Nursing Clinical Supervisor	508 765-9771 X2562
HealthAlliance Hospitals, Inc.	978-466-2030	978-630-2182	David Duncan	978 466-2428
Hebrew Rehabilitation Center	617-363-8437		Carl Zack	
Heywood Hospital	978-630-5704	978-669-5507	Scott Janssens	978-630-6280
Holyoke Medical Center	413-534-2675	413-534-2677	6 SR Staff Rotation	413 534-2880
Hubbard Regional Hospital	508-943-2600		Nursing Supervisor	508 943-2600 X271
Jordan Hospital, Inc.	508-830-2801	508-830-2832	Deb Ciavola	508 830-2833
Kindred Hospital Boston	617-254-1100 ext. 0	N/A	Dave Turilli	
Kindred Hospital Northeast Stoughton	781-297-8239	781-297-8613	Darlene Cunha	
Kindred Hospital Boston North Shore	978-531-2900	866-654-9870	Nursing Supervisor	
Kindred Hospital Park View	413-787-6700	413-726-0701	Karen Moore	
Kindred Hospital Park View - Central MA	508-892-6000	508-892-7360	Jean D'espinoza	
Lahey Clinic Hospital, Inc.	781-744-8300 Operator will page Admin on call		Administrator on Call	781 744-8109
Lawrence General Hospital	978-683-4000 x2440	978-683-4000 x2489	Nursing Supervisor	978 683-4000 X2513
Lawrence Memorial-Hallmark Health Corporation	781-306-6000	781-979-3764	Lillian Yadgood, R.N.	781 979-3635

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Lemuel Shattuck Hospital	617-971-3092	617-971-3020	Terry Beck	
Lowell General Hospital	978-937-6222	978-937-6415	Nursing Administrative Coordinators	978 937-6290 X6161
Marlborough Hospital	508-486-5671	508-486-5562	Candra Szymanski	508 486-5827
Martha's Vineyard Hospital	508-693-0410		Administrator on Call	508 693-0410 X433
Massachusetts Eye & Ear Infirmary	617-573-3121	617-573-2121	Rick Mulholland	617 573-4085
Massachusetts General Hospital	617-726-8619	617-726-2000	Administrator on call	617 724-4123
Massachusetts Hospital School	781-830-8300	781-830-8303	Mary O'toole	
Melrose-Wakefield-Hallmark Health Corporation	781-979-3000	781-979-3794	Lillian Yadgood, R.N.	781- 979-3635
Mercy Medical Center	413-748-9651	413-748-9000	Administrator On Call/Nursing Supervisor	413 748-9151
Merrimack Valley Hospital	978-374-2000		Robert Allen	978 521-3270
MetroWest Medical Center-Framingham Union Hospital	508-383-8518	508-626-9318	James Bartley	508-383-1296
MetroWest Medical Center-Leonard Morse Hospital	508-650-7591	508-626-9318	Judith Barrett	508-650-7400
Milford Regional Medical Center	508-422-5501	508-422-5502	Administrator on Call	508 422-2252
Milton Hospital	617-696-4600 x1047	617-696-4600 x 1166	Thomas O'Donnell	617 696-4600 X1622
Morton Hospital and Medical Center, Inc.	508-828-7061	508-828-7062	Administrator on Call	508 828-7108
Mount Auburn Hospital	617-441-1644 (only when EOC is activated)	617-201-1695	Nicholas T. Dilseo	617 499-5617
Nantucket Cottage Hospital	508-825-8375	508-228-3873	Jane Bonvini, R.N. CPHQ, BSN	508 228-4846
Nashoba Valley Medical Center	978-784-9000	978-784-9250	Steve Roach	978 784-4344
New England Baptist Hospital	617-754-5478	617-754-5547	Nursing Coordinator	
New England Rehabilitation Hospital	781-939-1816		John Schultz	
New England Sinai Hospital	187-297-1201	781-297-1201	Lester P. Schindel	781 297-1146
Newton-Wellesley Hospital	617-243-6474	617-243-6274	Eugene Giromini	617 243-6040
Noble Hospital	413-568-2811 x5558	413-572-5040	Thomas Tremblay	413 568-2811 X5886
North Adams Regional Hospital	413-664-5387	413-664-4865	Kathy Arabia	413 664-5224
NSMC/Salem Hospital	978-354-4014	978-354-4866	Valerie Hunt, RN	781 477-3576

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NSMC/Union Hospital			Mary Beth DiFilippo	978 354-3517
Quincy Medical Center	617-769-0874	617-376-5606	Administrative Coordinator	617 376-5549
Radius Specialty Hospital Boston	617-989-8400	617-442-8760	Administrator on Call	
Saint Anne's Hospital	508-235-5565	508-235-2467	Administor on Call	508 674-5600 X2560
Saint Vincent Hospital	508-363-7750		Administrator on Call	508 363-087
Saints Medical Center	978-934-8500	978-458-1411	Administrator on Call	978 934-1411 X4343
Shaughnessy-Kaplan Rehabilitation Hospital	978-825-8570	617-838-3229	Keith L. Symmes or Nursing Supr.	
Shriners Hospital for Children	413-787-2000	413-787-2010	Mark L. Niederpruem, FACHE	
Shriners Hospital for Children-Boston Burns Unit	617-371-4790	617-722-3000	Kevin J. Keating	617 371-4711
Signature Healthcare Brockton Hospital	508-941-7400	508-941-7193	Kim Walsh	508 941-7401
Soldiers Home in Holyoke	413-532-9475 x1102	413-533-7266	Stephen N. Morneau	
Somerville Hospital-Cambridge Health Alliance	617-591-4015	617-591-4107	Christian Lanphere	617 665-1453
South Shore Hospital	781-340-8333	781-340-8288	Tim Quigley	781 340-4294
Spaulding Rehabilitation Hospital	617-573-7021	617-573-7101	Administrator on Call	
St. Luke's Hospital-Southcoast Hospitals Group	508-997-1515 ext. 2264	508-997-1515 nursing supervisor on call	H.Ray Price	508 273-4198
Sturdy Memorial Hospital	508-236-7040	508-236-7042	David A. Denneno	508 236-7045
Tobey Hospital-Southcoast Hospitals Group	508-273-4276	508-273-4010 nursing supervisor on call	H. Ray Price	508 961-5184
Tufts Medical Center	617-636-3181	617-636-4401	William P. Brown	617 636-4721
UMass Memorial Medical Center	508-334-6688	508-334-6264	Gina Smith	508 421-1400
UMass Memorial Medical Center-University Campus	508-334-9567	508-856-2815	Gina Smith	
VA Boston Healthcare System	857-203-6015	857-203-6389	Christopher Roberts	857 203-5358
VA Medical Center	413-584-4040x2747	413-584-4040x2748	Admin Officer of Day	

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Western Massachusetts Hospital	413-562-4131x129	413-562-4131 ask Oper.	Robert F. Zajac	
Whidden Memorial Hsp-Cambridge Health Alliance	617-394-7723	617-389-9298	Christian Lanphere	617 591-4705
Winchester Hospital	781-756-7111	781-756-2523	Nursing Supervisor	781 756-2005
Wing Memorial Hospital & Medical Centers	413-283-7651	413-284-5308	Nursing Supervisor on Call	413 284-7651

## The Massachusetts Emergency Medical Services Radio Communications Plan

### 8.5 Appendix E: EMS Regional Contact Information

The following list is subject to update.

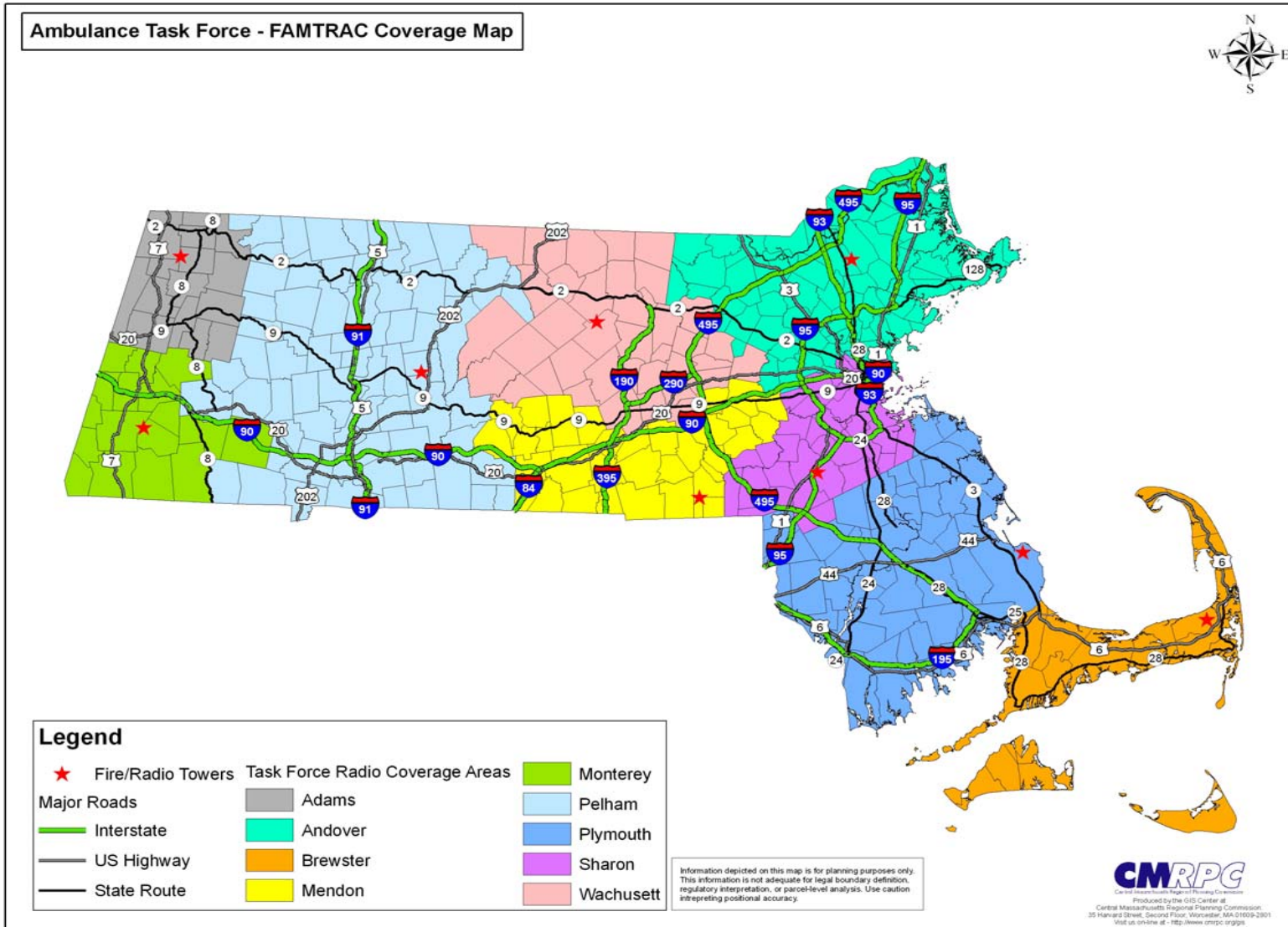
EMS Region	Address	City	State	Zip	Telephone
EMS Region 1 - Western HQ	168 Industrial Park Drive	Northampton	MA	01060	413-586-6065
EMS Region 1 - CMED Center	595 Cottage Street	Springfield	MA	01104	413-586-6065
EMS Region 1 - CMED Center	595 Cottage Street	Springfield	MA	01104	413-787-6328
EMS Region 1 - CMED Center	595 Cottage Street	Springfield	MA	01104	800-544-1170
EMS Region 2 - HQ	361 Holden Street	Holden	MA	01520	508-854-0111
EMS Region 2 - CMED Center	361 Holden Street	Holden	MA	01520	508-854-0100
EMS Region 3 - HQ	20A Del Carmine Street	Wakefield	MA	01880	781-224-3344
EMS Region 3 - CMED Center	Lawrence Gen Hosp., 1 General St.	Lawrence	MA	01842	978-946-8130
EMS Region 4 - HQ	25 "B" Street, Suite A	Burlington	MA	01803	781-505-4367
EMS Region 4 - CMED HQ	1199 Tremont Street	Boston	MA	02120	617-343-1499
EMS Region 5 - HQ	339 Centre Street, Suite 36	Middleborough	MA	02346	508-946-3960
EMS Region 5 - CMED Center(s)	Plymouth Cty Sheriff ,24 Long Pond Rd.	Plymouth	MA	02360	508-830-6379
EMS Region 5 - CMED Center(s)	OTIS ANGB, 3132 Richardson Road	Otis ANGB	MA	02542	508-563-4200
EMS Region 5 - CMED Center(s)	Bristol Cty Sheriff, 400 Faunce Corner Rd.	N. Dartmouth	MA	02747	508-995--6400x5318

#### MSV EMS/CMED Satellite Phones - TO BE USED IN THE EVENT OF LAST RESORT

Account Owner	ESN	Fixed Site	Assignment	MSV Phone	MSV Dispatch ID	Primary TAG	TAG Member
MADPH	16405336	FALSE	DPH	888-201-1244	1543	2	
MHA	16400957	FALSE		800-411-9341	XX60	3	
MHA	16400701	FALSE		877-250-8507	XX59	3	
MADPH	16402009	FALSE	DPH	888-824-4927	1498	2	
MHA	16400585	FALSE	SSG	877-621-6949	XX58	3	
MADPH	16401018	FALSE	DPH	888-891-1615	1522	2	
MADPH	16400748	FALSE	Region V	888-891-1614	1505	2	
MADPH	16401913	FALSE	Region III	888-891-1608	1501	2	
MADPH	16405424	FALSE	Region I	888-891-1606	1499	2	
MADPH	16401572	FALSE	Region IV	888-891-1613	1503	2	
MADPH	16401960	FALSE		888-891-1611	1502	2	
MADPH	16401087	TRUE	Region II Holden	877-298-8593	1489	2	
MADPH	16401595	TRUE	Region IV Boston	877-298-5322	1490	2	
MADPH	16401700	TRUE	Region I Springfield	888-244-4921	1490	2	
MADPH	16400793	TRUE	Region III Lawrence	888-824-4922	1494	2	
MADPH	16402252	TRUE	Region V Bristol	888-824-4923	1495	2	
MADPH	16401069	TRUE	Region V Barnstable	888-824-4924	1496	2	
MADPH	16400513	TRUE	Region V Plymouth	888-824-4926	1497	2	

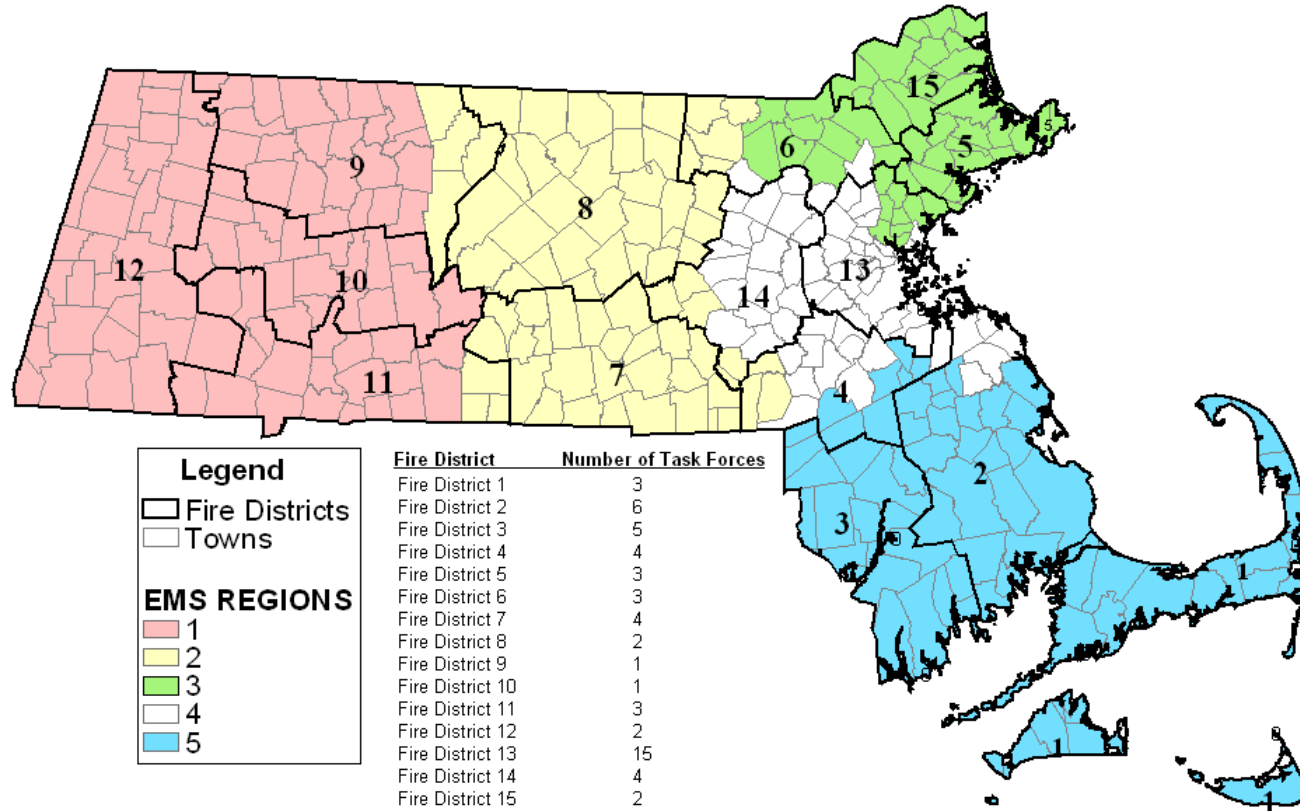
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## 8.6 Appendix F: FAMTRAC Coverage Map



8.7 Appendix G: Fire over EMS Region Map

## Fire Districts over Emergency Medical Services Regions



The Massachusetts Emergency Medical Services Radio Communications Plan

8.8 Appendix H: Massachusetts MED Channel Plan

Massachusetts MED Channel Plan				Channel Plan																	
REGION / C-MED	9	92	10	102	1	12	2	22	3	32	4	42	5	52	6	62	7	72	8	82	
1- Western Mass.																					
2- Central Mass.																					
3- Northeast																					
4- Metro-Boston																					
5- Plymouth																					
5- Barnstable																					
5- Fall River																					

MED 4 (blocked)  
 9 & 10 (blocked)  
 Critical  
 Shared  
 Blocked, probably  
 Blocked, definitely  
 Narrow Band  
 Tactical (narrow)  
 Questionable availability due to adjacent channel Ind./Bus. Use.



NOTE:  
 1) MED 8 in Region 1 is already narrow-band.  
 2) Base Stations shall not operate co-channel, or narrow-band adjacent to a wide-band channel, when that channel is used by another region's Base Station and the two station's 39 dBu Contours intersect. Real-time inter C-MED communications, on a case by case basis, may permit this close-spaced sharing.

PLAN in PROGRESS

9/25/2006  
 rev.: 9/27/06

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**8.9 Appendix I: Massachusetts MED Channel Frequency**

<b>Channel</b>	<b>Base Transmit Mobile Receive</b>	<b>Mobile Transmit Base Receive</b>	<b>Narrow Band</b>
MED 1	463.000 MHz	468.000 MHz	
MED 2	463.025	468.025	
MED 3	463.050	468.050	
MED 4	463.075	468.075	
MED 5	463.100	468.100	
MED 6	463.125	468.125	
MED 7	463.150	468.150	
MED 8	463.175	468.175	
MED 9	462.950	467.950	
MED 10	462.975	467.975	

**8.10 Appendix J: CMED Operator Console Equipment List**

<b>EMS Region</b>	<b>Communications Console</b>	<b>Switch Matrix</b>
Region I	Motorola Centracom Gold II	None [Uses Console Module Patch]
Region II	Motorola Centracom 5500	MJC Thomas GUI
Region III	Motorola Centracom II Gold	MJC Thomas GUI
Region IV	Penta Corporation	Penta Corporation
Region V Barnstable County Sheriff	Motorola Centracom II Gold Elite	MJC Thomas GUI
Region V Plymouth County Sheriff	Motorola Centracom II Gold Elite	MJC Thomas GUI
Region V Bristol County Sheriff	Motorola Centracom Gold Elite	MJC Thomas GUI

**The Massachusetts Emergency Medical Services Radio Communications Plan**

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**8.11 Appendix K: Trailer Contact**

<b>RMCSU Trailer-Contacts</b>	<b>Street</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone Number</b>
EMS Region 1 - Western CMED	595 Cottage Street	Springfield	MA	01109	413-846-6226
EMS Region 1 – Berkshire County	467 Cheshire Road	Pittsfield	MA	01201	413-442-0512
EMS Region 1 – Northhampton Control	555 North King Street	Northhampton	MA	01060	413-586-1508
EMS Region 2 - CMED	361 Holden Street	Holden	MA	01520	508-854-0100
EMS Region 3 - CMED	One General Street	Lawrence	MA	01842	978-946-8130
EMS Region 4 - CMED	1199 Tremont Street	Boston	MA	02118	617-343-1499
EMS Region 5 - Barnstable CMED	3132 Richardson Road	Otis ANGB	MA	02542	(508) 362-4335
EMS Region 5 - Bristol CMED	400 Faunce Corner Road	North Dartmouth	MA	02747	(508) 995-0520
EMS Region 5 - Plymouth CMED	24 Long Pond Road	Plymouth	MA	02360	(508) 747-1779