

# **WISCONSIN EMERGENCY MEDICAL SERVICES COMMUNICATIONS PLAN**



**Department of Health and Family Services  
Division of Public Health  
Bureau of Local Health Support and EMS**

**Revised 10/2006**

# INTRODUCTION

The Wisconsin Emergency Medical Services (EMS) Communication Plan is both a communications guide for EMS providers and an overview of requirements for local EMS systems to assure that a statewide communication system is in place that can address daily needs as well as large scale multi-casualty situations. The original document was created with input from an ad-hoc committee attached to the EMS Advisory Board and the Bureau of EMS and Injury Prevention, Division of Public Health, Department of Health and Family Services. The committee met for several months in 2001 and 2002 and presented a draft to the EMS Board in July 2002. The EMS Board reviewed the document and added comments, which were either added or addressed in discussions with the Board. The EMS Board officially approved the original version in September 2002.

This current plan, also approved by the EMS Board, takes the same original information and guidance and blends it with the new interoperability planning and other technical documents released from the Governor appointed State Interoperability Executive Committee (SIEC).

The document is intended to serve four purposes:

- Provide an overview of EMS Communications.
- Provide specific information on EMS communications in Wisconsin.
- Serve as a "user's manual" for providers in creating and maintaining their EMS communications.
- Provide an update to current EMS providers on new channels and technologies.

The first section provides general information on what is involved with communications between pre-hospital health care providers, Emergency Medical Technicians (EMTs), First Responders, and the other entities they need to communicate with on a regular basis. This includes communications with hospitals, other EMS providers, and other public safety agencies.

The second section addresses specific information about EMS in Wisconsin. It includes an overview of how communication occurs, the radio channels, and Federal Communication Commission rules that apply to Wisconsin EMS service providers.

The third section is a guide to EMS service providers about the laws and provider requirements that govern EMS communications. This section includes information on required radio channels, recommended equipment needs, and a set of questions for providers to consider in setting up their communication system.

Questions about this document or other EMS communication questions should be sent to:

EMS Systems and Licensing Section  
EMS Communications Coordinator  
1 W. Wilson St, room 131 / 133  
PO Box 2659  
Madison, WI 53701-2659  
Phone: (608) 261-9306  
Fax: (608) 261-6392  
Email: [wittkpv@dhfs.state.wi.us](mailto:wittkpv@dhfs.state.wi.us)

# TABLE OF CONTENTS

|   |    |
|---|----|
| <b>INTRODUCTION</b>   | 1  |
| <b>TABLE OF CONTENTS</b>  | 2  |
| <b>GLOSSARY</b>   | 3  |
| <b>SECTION 1 – COMMUNICATION SYSTEM COMPONENTS</b>                            |    |
| 1.0 Introduction – System Components  | 6  |
| 1.1 Public Access to EMS after Discovery of a Medical Emergency               | 7  |
| 1.2 Dispatch and Coordination of Response                                     | 7  |
| 1.3 Medical Control Communications  | 8  |
| 1.4 Interagency Communications  | 8  |
| 1.5 Education for Users   | 8  |
| <b>SECTION 2 - STATE EMS COMMUNICATIONS PLAN</b>                              |    |
| 2.0 Administrative Overview – State Authority                                 | 9  |
| 2.1 Public Access to the EMS System after Discovery of a Medical Emergency    | 10 |
| 2.2 Dispatch and Coordination of Response                                     | 10 |
| 2.3 Medical Control Communications  | 10 |
| 2.4 Interagency Communications  | 11 |
| • Local   | 11 |
| • Regional  | 11 |
| • ALS Intercept and Air Medical   | 11 |
| • Back-Up Communications  | 12 |
| • Telephone Interconnection   | 12 |
| 2.5 Ambulance Licensure and Frequency Coordination                            | 12 |
| 2.6 Frequencies and tones for EMS Communications                              | 12 |
| • EMS B (155.340)   | 13 |
| • EMS A (155.400)   | 13 |
| • EMS C (155.280)   | 13 |
| • Hospital tones and codes  | 13 |
| • MARC 1, MARC 2, MARC 3, MARC 4  | 13 |
| • IFERN   | 13 |
| • Med Pair Channels   | 14 |
| • Trunking systems – 800 MHz  | 14 |
| • Recommendations for Air Medical Communications                              | 14 |
| 2.7 FCC license requirements  | 15 |
| <b>SECTION 3 - LOCAL PROVIDER AND SYSTEM STANDARDS</b>                        |    |
| 3.0 Overview and Laws   | 17 |
| 3.1 EMS Provider Requirements – Radio Frequency Capabilities                  | 17 |
| 3.2 EMS Provider Equipment Needs and Requirements                             | 18 |
| 3.3 Considerations in setting up communication systems & purchasing equipment | 18 |
| <b>APPENDICES</b>   |    |
| A - Detailed Table of EMS Communication Frequencies                           | 22 |
| B - Wisconsin VHF Mutual Aid Channels and Description                         | 23 |
| C - Implementation of EMS VHF Channels, Suggested Programming Priorities      | 32 |
| D - Wisconsin Hospital Tones for 155.340 EMS B, 155.400 EMS A                 | 33 |
| E – EMS and Mutual Aid Channel Authorization and Procedures                   | 37 |

# GLOSSARY

**911** – A three-digit emergency telephone number accepted and promulgated by the telephone industry as the nationwide emergency number.

**911 Enhanced** – A three-digit emergency telephone number that has additional features such as automatic phone number identification and automatic location identification.

**Advanced life support or "ALS"** Means use, by appropriately trained and licensed personnel, in pre-hospital and interfacility emergency care and transportation of patients, of the medical knowledge, skills and techniques included in the department-approved training required for licensure of emergency medical technicians-intermediate under Administrative Code HFS 111 or emergency medical technicians-paramedic under Administrative Code HFS 112 and which are not included in basic life support

**Base station** - An item of fixed radio hardware consisting of a transmitter and a receiver.

**Basic life support or "BLS"** Means emergency medical care that is rendered to a sick, disabled or injured individual, based on signs, symptoms or complaints, prior to the individual's hospitalization or while transporting the individual between health care facilities and that is limited to use of the knowledge, skills and techniques received from training under s. 146.50, Wisconsin Stats. and Administrative Code HFS 110 as a condition for being issued an EMT-basic license.

**Call sign** – Federal Communications Commission assigned identifying letters and numbers used for identification of a radio station, transmitter, or transmission.

**Communications system** – A collection of individual communication networks, transmission systems, relay stations, control and base stations, capable of interconnection and interoperations that are designed to form an integral whole. The individual components must serve a common purpose, be technically compatible, employ common procedures, respond to control, and operate in unison.

**Continuous tone-controlled squelch system (CTCSS)** – A system wherein radio receiver(s) are equipped with a tone-responsive device that allows audio signals to appear at the receiver audio output only when a carrier modulated with a specific tone is received. The tone must be continuously present for continuous audio output. CTCSS functions are sometimes referred to by various trade names, such as Private Line or PL (Motorola Communications & Electronics), Channel Guard or CG (General Electric Mobile Radio Department), or Tone Call Guard or TCG (E.F. Johnson).

**Coverage area** – In a radio communications system, the geographic area where reliable communications exist; usually expressed in terms of miles extending radially from a fixed radio station.

**Direct dispatch method** – A system in which all 9-1-1 call answering and radio dispatching is performed by the personnel at the public safety answering point.

**Emergency medical dispatch center:** Any agency that routinely accepts calls for EMS dispatcher assistance from the public and/or that dispatches pre-hospital emergency medical personnel and equipment to such requests.

**Emergency medical dispatcher (EMD)** – A trained public safety telecommunication with additional training and specific emergency medical knowledge essential for the efficient management of emergency medical communications.

**Emergency medical service (EMS)** – The service used in responding to the perceived individual need for immediate medical care in order to prevent loss of life or aggravation of physiological or psychological illness or injury.

**Emergency Medical Technician – basic** – An individual who is licensed by the Department of Health and Family Services to administer basic life support and to properly handle and transport sick, disabled or injured individuals.

**Federal Communication Commission (FCC)** – A board of seven commissioners appointed by the president under the Communications Act of 1934 to formulate rules and regulations and to authorize use of radio communications. The FCC regulates all communications in the United States by radio or wireline, including television, telephone, radio, facsimile and cable systems.

**First Responder** - A person who provides emergency medical care to a sick, disabled or injured individual prior to the arrival of an ambulance.

**Frequency** – The number of cycles, repetitions, or oscillations of a periodic process completed during a unit of time. The frequency of waves in the electromagnetic spectrum (radio waves) is designated in hertz, kilohertz, or megahertz. (Hz, KHz, or MHz). One hertz is equivalent to one cycle per second.

**Frequency coordination** – The cooperative selection and allocation of radio frequencies such that all systems can operate with minimum interference.

**IFERN** – Inter-agency Fire Emergency Radio Network. Formerly WISTAC 1.

**Intercept** - The transfer of care of a patient between an ambulance and an air medical provider or ALS provider that can provide a higher level of medical care.

**MABAS** – Mutual Aid Box Alarm System. A method developed for mutual aid and communications support during incidents requiring a large, multi agency response.

**MARC** - Mutual Aid Radio Channels (MARC 1, 2, 3, and 4) are statewide interoperability frequencies. Used for communication between public safety agencies and providers.

**Medical control or on-line medical control** - Means voice communicated medical direction from a physician to EMT personnel to assist in the care provided by EMT personnel in the field.

**Mobile station** – A two-way radio station in the mobile service intended to be used while in motion or during halts at unspecified points.

**Narrow Banding** – The effort underway by the FCC to develop more VHF channels for public safety communications. Current channels are 25 KHz. in width. Narrow band channels will be 12.5 KHz. in width. All public safety radios must comply with narrow banding regulations by the end of 2012.

**Paging** – A one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tone, tone-voice, tactile, optical readout, etc.

**Pre-arrival Instructions:** Instructions given by the dispatcher to the caller to assist the caller in keeping the patient from injuring him/herself further and to give the caller life saving information and/or instruction to potentially aid a patient in a life-threatening situation prior to the arrival of medically trained professionals.

**Private line (PL)** – Motorola’s trademarked name for continuous tone-controlled squelch system, CTCSS. DPL, or digital PL, uses a burst of digital information rather than a continuous tone.

**Radio** – The transmission and reception of signals by means of electromagnetic waves without a connection wire.

**Regional EMS system** – An emergency medical service area (trade, catchments, market, patient flow, geographic or governmental) that provides essentially all of the definitive emergency medical care for all emergencies and for the most critically ill and injured patients within the area.

**SIEC** – State Interoperability Executive Council. A council appointed by the Governor to address the public safety communications interoperability issues in our state and to develop a solution.

**Tone code** – A specified character of transmitted tone signals required to effect a particular selection or function.

**Trunking** – A digital technology that forms “talk groups” instead of channels on computer controlled communications systems and infrastructures. The chief advantage is a greatly increased loading capacity on the system.

**Ultra High Frequency (UHF)** – Frequencies between 300 and 3000 MHz.

**Very High Frequency (VHF)** – Frequencies between 30 and 3000 MHz.

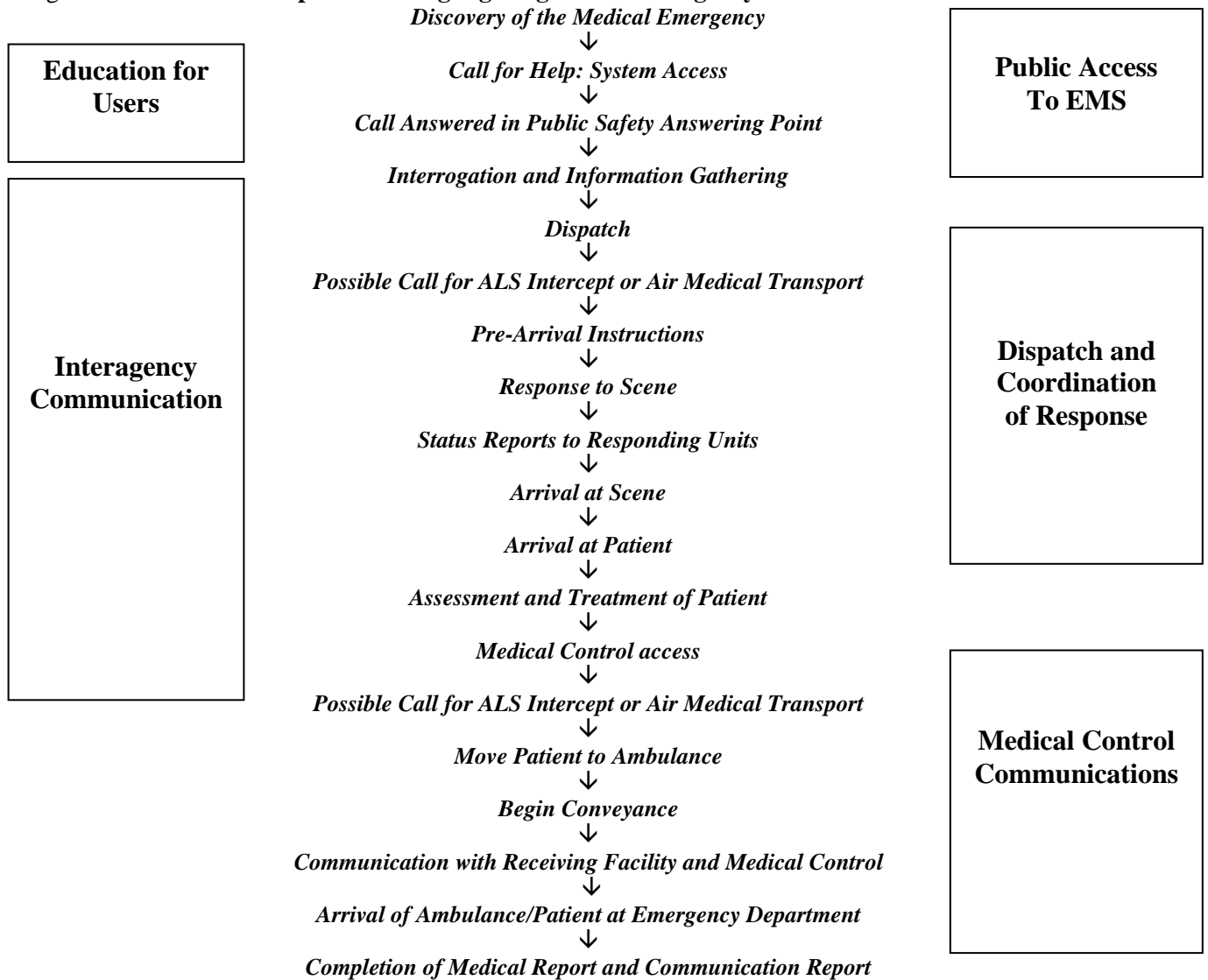
# SECTION 1 – COMMUNICATION SYSTEM COMPONENTS

## 1.0 Introduction

An Emergency Medical Services (EMS) communication system must take into account many factors. The goal of being able to exchange key information for the EMS system to function is dependent on a system that takes into account five key components:

- Public Access to EMS after Discovery of a Medical Emergency
- Dispatch and Coordination of Response
- Medical Control Communications
- Interagency Communication (for resource and disaster coordination)
- Education for Users

Figure 1: Flow of Pre-hospital EMS highlighting role of Emergency Medical Communication



## **1.1 Public Access to EMS after Discovery of a Medical Emergency**

An essential component of an EMS communication system during a medical emergency is public access to the three-digit public safety phone number 911. This is achieved through the use of 911 public safety answering points (PSAPs) which route all emergency calls to the appropriate agency. Enhanced 911 (E911) has additional features beyond the basic 911 system that include:

- Selective routing of the call to the appropriate center based on originating location.
- Automatic number identification (ANI) and automatic location identification (ALI) of the caller.

Currently, most of the state, 70 counties, is equipped for enhanced 911 operations.

Cellular telephone access to 911 is still problematic because enhanced 911 features are not functional without additional infrastructure. Quite often, the location of the caller and routing of the message to the appropriate EMS service are still dependent on verbal information from the caller, which may lead to delayed response times. Current efforts are underway to equip and fund “wireless PSAPs” one per county, for automatic location and number identification. At the time of this text, fifteen counties in our state are so equipped.

## **1.2 Dispatch and Coordination of EMS Response**

After notification of a call is received, the next component is to dispatch the appropriate EMS unit to the scene. There are a variety of dispatch methods in Wisconsin. Law enforcement agencies or agencies with combined law enforcement, fire, and EMS responsibilities provide the bulk of EMS Communications. Many (approximately half) of the persons providing these services in Wisconsin have completed some type of formal training as an EMS Communicator.

Central medical dispatch’s primary function is service coordination. This includes: (1) access to EMS from the incident, (2) dispatch and coordination of EMS resources, (3) coordination with medical facilities and (4) coordination with other public safety services.

Pre-arrival medical instructions are an important aspect of EMS Communications. However, it may be difficult for a communicator in a multifunctional agency to provide pre-arrival instruction while simultaneously being responsible for other functions. The time and cost of training associated with the provision of medical instructions prior to the arrival of the ambulance requires an additional commitment from the dispatch center that includes initial and continuing education and quality improvement activities. Because the provision of pre-arrival instructions constitutes indirect patient care, the WI EMS Advisory Board has recommended that EMS Dispatch Centers be certified as competent to practice these skills by the State.

Ambulance and field personnel should also be trained in the use of communication equipment. This would include, but is not limited to:

- The ability to use all the communication equipment for the ambulance.
- The ability to communicate accurate patient care reports.
- Use of new digital communications technologies and appropriate use of new mutual aid channels.

### **1.3 Medical Control Communications**

Medical control communications provides field personnel with a direct link to relay information to and receive medical advice from a hospital or other health care facility. In some cases, it might also include biomedical telemetry of EKG information directly to the facility while the patient is in route. Medical control has been primarily done via radios in the past, but cellular telephones are being used in more cases. The pros and cons of cellular phone use are summarized in Section 3.3.

The degree to which medical control communications is utilized varies by areas of the state. Factors that influence how much medical control is used include geographical factors and the degree that standing orders are allowed by the ambulance service medical director.

### **1.4 Interagency Communication (for resource and disaster coordination)**

There are a number of reasons why coordination of interagency communications is an important piece of the Wisconsin State EMS Communication Plan. Basic reasons for interagency communications include resource and disaster response coordination, which optimizes the ability to communicate with other agencies when necessary, but avoids interference with other agencies when a response is specific to only one agency.

The need for interagency communications can be illustrated by the following list of possible communication paths:

- Hospital to hospital
- Ambulance to hospital
- Ambulance to ambulance
- Ambulance to dispatch
- Hospital to dispatch
- First responder team to medical control
- First responder team to ambulance
- First responder team to dispatch
- Helicopter to hospital
- Ambulance to helicopter
- Helicopter to dispatch
- Telemetry from ambulance
- Medical control to ambulance
- Communication between all public safety agencies

### **1.5 Education for Users**

A communications system is only as good as the people using it. People need to be educated in each component of the system for it to work as efficiently as possible. In the case of EMS communications, knowledge of how and when to access the system and activate an EMS response is essential. Continued public education efforts are needed to help in this area.

## **SECTION 2 – STATE EMS COMMUNICATIONS PLAN**

### **2.0 ADMINISTRATIVE OVERVIEW - State Authority**

Wisconsin Statutes 146.53 (5)(a) establishes the Wisconsin Department of Health and Family Services as the lead state agency for Emergency Medical Services (EMS). Wisconsin Statutes 146.50(13) provides substantial authority for rule writing to plan and implement guidelines for EMS systems and to provide technical assistance to local EMS agencies. A major component of each of the EMS licensing rules is development and submission of an operational plan for each ambulance service, which include a communication component.

Additionally, statewide planning for coordinated use of radio frequencies for EMS communications is necessary so individual efforts do not become counterproductive to the system. The Federal Communications Commission (FCC) and Emergency Medical Radio Service (EMRS) rules require that frequency coordination comply with state EMS communications plans where they exist.

The State EMS Systems and Licensing Section currently provides limited assistance to Wisconsin EMS providers and agencies with radio licensing and frequencies. FCC license applicants for Emergency Medical Radio Service frequencies submit a request to the State EMS Systems and Licensing Section describing their proposed application and request a letter of support. If the request is in conformance with the state EMS plan, the State EMS Systems and Licensing Section will provide a letter of support, which the applicant then submits to the national frequency coordinator.

Specific information on FCC license requirements and steps to follow in obtaining a license can be found on page 15, and also in appendix E.

### **Goals for a State EMS Communications System**

There are five fundamental goals identified in the National EMS Directors Planning Guide for Emergency Medical Communications.\* These five goals are:

1. EMS Communications systems should meet the needs of emergency medical systems and nationally accepted standards of functional performance.
2. Local EMS communications should be compatible with, and should not interfere with EMS communications systems in neighboring or adjacent areas and within the state or in other geographical areas.
3. Local EMS communication systems should be compatible with, and should not interfere with, other types of communications systems that are used by non-EMS agencies.
4. EMS communications should make maximum use of state and other common resources, where this approach is appropriate and cost-effective.
5. The State EMS Systems and Licensing Section acts as the representative of local EMS systems in dealing with federal agencies and national organizations.

In Wisconsin this means that local services need to follow some minimum standards that ensure communications can occur, that there is oversight of how communications occur on a regional and statewide basis to avoid conflicts and allow for interagency communications, that communication costs are high and resources must be shared to implement and maintain a communications system and that the State EMS Systems and Licensing Section must serve as a advocate and communications conduit between federal agencies and local systems.

\* *Planning Emergency Medical Communications*, National Assoc of EMS Directors and National Highway Traffic Safety Administration, June 1995

**EMS communication elements** – The following sections describe the key elements of the State EMS Communications Plan. The EMS communications system must provide the means by which emergency medical resources can be accessed, mobilized, managed, and coordinated in both day-to-day and disaster situations.

### **2.1 Public Access to EMS after Discovery of a Medical Emergency**

The Wisconsin EMS communications system's goal is to assure a system whereby all individuals should be able to summon help rapidly in an emergency situation whether for medical, police, fire, rescue, or other emergency need.

The entire state has access to the 911 system. Statewide E911 or Enhanced 911 coverage is available in all but two counties at the time of this text. Work needs to continue to make E911 statewide & include the ability to locate wireless calls to their actual physical location. The 911 system is the recommended means of accessing the EMS system for medical emergencies.

As mentioned in section 1.2, cellular telephone access to enhanced 911 services is currently in process throughout the state. In most areas, however, the location of the caller and routing of the message to the appropriate EMS service are still dependent on verbal information from the caller, which may lead to delayed response times.

### **2.2 Dispatch and Coordination of Response**

There are a variety of dispatch methods in Wisconsin. Law enforcement agencies or agencies with combined law enforcement, fire, and EMS responsibilities provide the bulk of EMS Communications. Many of the persons providing these services in Wisconsin have completed some type of formal training as an EMS Communicator.

The communication center's primary function is service coordination. This includes: (1) access to EMS from the incident, (2) dispatch and coordination of EMS resources, (3) coordination with medical facilities and (4) coordination with other public safety agencies. Recent emphasis on NIMS compliance will assist communications and coordination at large events.

Pre-arrival medical instructions are an important aspect of EMS Communications. However, it may be difficult for a communicator in a multifunctional agency to provide pre-arrival instruction while simultaneously being responsible for other functions. The time and cost of training associated with the provision of medical instructions prior to the arrival of the ambulance requires an additional commitment from the dispatch center that includes initial and continuing education and a quality improvement activities. Because the provision of pre-arrival instructions constitutes indirect patient care, the WI EMS Advisory Board has recommended that EMS Dispatch Centers be certified as competent to practice these skills by the State.

### **2.3 Medical Control Communications**

The EMS communications system must provide EMS field personnel (Advanced and Basic Life Support) with a channel for communication that permits the exchange of vital medical information between EMS responders and medical control and the receiving medical facility, if different. This can be done through a variety of mechanisms (radio frequencies and cell phones) and may be dependent on local needs and resources. Additional means of communication such as digital phones and satellite communications will likely be future options.

Although many protocols are executed by standing orders, contact with medical control is still needed or required for certain procedures or conditions. When to contact medical control is determined by the ambulance service medical director and approved by the State EMS Systems and Licensing Section as part of the service's operational plan required under Administrative Code HFS 110.08, 111.07 and 112.07.

The ability to communicate with medical control is a requirement for all ambulance services. The ability to talk with medical control from the patient's side is an additional requirement at the EMT-intermediate and EMT-paramedic levels.

Telemetry– Telemetry uses the assigned radio frequencies for not only voice communications, but also medical data such as EKG rhythms. Such systems can use carrier tones or digital encryption to transmit data. The system must have the ability to establish a baseline data set through the use of calibration signals or error correcting software to ensure data accuracy. Systems using telemetry must also adhere to FCC requirements for data transmission.

#### **2.4 Interagency Communications (for resource and disaster coordination)**

EMS communications systems should provide a means of communication to enable medical and logistical coordination between EMS field personnel, emergency department personnel and other agencies. If necessary regional or statewide coordination may be necessary based on the EMS operational plan submitted by the provider to the Department of Health and Family Services.

Local Coordination - The EMS communications system must have the capability for mobile and portable radios to communicate between agencies. EMS communications systems should be able to describe their communications capability with mutual aid responding units when an emergency requires multiple EMS agency vehicle response.

Regional Coordination - EMS agencies should establish resource coordination (e.g. first responder, ambulance and other EMS resources) to ensure that the highest level of care required is available to the patient. The EMS communications system should provide for coordination of EMS resources. EMS agencies should consider their involvement in large-scale disasters and anticipate the need for interagency communications. Preplanning with local Emergency Management agencies is an important aspect of interoperability on agencies' communication systems.

Intercept and Air Medical – The local ambulance service must be able to describe how communications takes place for ambulance intercepts and air medical transports.

- This includes a means of communication between units once they are dispatched and the ability to communicate to arrange for the transfer of patient care.
- In the case of air medical transports, this includes a means of communication between air and ground units once they are dispatched. The recommended channel for air medical communications with ground units while the air medical unit is on the way to the landing zone is MARC 2 or EMS C. See Sections 2.6 and 3.1 for more information.

Back-up Communications - The concept of back-up communications is for disaster scenarios and redundancies in case of equipment failure. With regard to EMS communications specifically, the concept of back-up communications as applied to base station or other fixed radio equipment means to:

- Enable dispatch and response communications to continue despite outage of the primary dispatch and response radio base station.
- Enable local medical coordination communications to continue despite outage of the primary base hospital.
- Minimize the need for additional, widespread training and maintains needed flow of EMS personnel.

A failure plan must include provisions for:

- Medical control
- Dispatch
- Inter-agency coordination

The requirement for each ambulance service to have four basic frequencies creates a mechanism for back-up communications. More detailed information on the required frequencies can be found in Section 2.6.

Telephone Interconnection - Cellular phone use may be used as a primary communications method for ambulance service providers. However, because of some of the limitations of cellular phone use, cellular phones can not take the place of the required radio equipment and frequencies. A more detailed list of the pros and cons of cellular phone vs. radio use can be found on page 20. Cellular phone use for communication during interfacility transports is an area where cell phones may have an advantage over radios because it avoids the need to program in multiple PL codes for all receiving facilities. EMS providers may also wish to provide telephone interconnection capability with specialty information and treatment centers (ex.: poison center, burn centers) that may have statewide contact numbers.

## **2.5 Ambulance Licensure and Frequency Authorization**

State approval for an EMS provider license includes authorization for the Ambulance Provider and First Responders that are approved for advanced skills to operate on all EMS frequencies as part of the State FCC licenses. Ambulance Providers have permission to use EMS frequencies as outlined and approved as part of their operational plan.

## **2.6 Frequencies & Tones for EMS Communications**

Standard EMS channels are 155.340, 155.400, 155.280, MARC 1, MARC 2 channels and Med Pairs. All EMS transport providers must have the capability to communicate on all these channels except for the Med Pairs and 155.280. Services that don't currently have this capability must add it when purchasing new equipment or when they reprogram equipment. The above requirement applies regardless of what technology or communications system is used locally.

It is recommended that all First Responder services have the capability to communicate on 155.340, 155.400, 155.280 and the MARC channels. Use of these frequencies should be coordinated with the local ambulance provider and other related agencies.

There may be existing local systems that will be exceptions to the normal use of these frequencies as explained below. These exceptions should be taken into consideration on how they may impact other agencies and when planning for county and regional communication needs.

**EMS B (formerly State EMS channel) (155.340)**– 155.340 is dedicated to Basic Life Support (BLS) and Advanced Life Support (ALS) communications with a primary purpose of communications between emergency medical field personnel and hospital personnel directing patient care prior to arrival at the hospital. A secondary purpose is on-scene medical coordination for mobile to mobile medical communications. This use should first be attempted on alternate frequencies (local, 155.280, MARC & then 155.340 in that order). The channel is for emergency medical care and should be limited to this purpose.

All ambulances licensed in Wisconsin are required to have the capability to communicate with their receiving hospitals and medical control hospitals on this channel. All hospitals are also required to have the capability to communicate on 155.340 so ambulances from any area can make contact with the facility. This can be accomplished through direct 155.340 communications or through a patch from a central dispatch center.

**EMS A (formerly State ALS channel) (155.400)** – 155.400 is dedicated to communications among ambulance and hospital personnel directing patient care prior to arrival at the hospital while using advanced skills. The primary & secondary use of this frequency should be for any ALS communications. This channel is for emergency medical care and should be limited to this purpose. Proper use would include communication for ALS intercepts and air medical contact.

**EMS C (formerly State Coordination channel) (155.280)** – The primary purpose of 155.280 is for communications between hospitals and provides a backup to the public telephone system, particularly in times of disaster. A secondary purpose is for coordination of landing zone operations for air medical providers, or for interagency EMS field coordination for disasters. This frequency is optional for hospitals that have other means of inter-hospital communication.

**Hospital Tones and Codes** – Each hospital in Wisconsin is assigned a CTCSS tone or PL (Private Line). These tones are coordinated to allow communications with just the needed hospital and not other local facilities. Tones for EMS B, EMS A, and EMS C are the same for any given facility. A digital code, D156, is also assigned for state-wide mutual aid use to allow multiple users and agencies access at the same time. This applies to all three channels, EMS B, EMS A, and EMS C. Providers and hospitals are urged to program accordingly at their next opportunity. See Appendix D for this list.

**Mutual Aid Radio Channels - MARC 1 (151.280/153.845), MARC 2 (151.280), MARC 3 (formerly WISTAC 2,-154.010), MARC 4 (formerly WISTAC 3, 154.130)** – The Mutual Aid Radio Channels (MARC 1, 2, 3, and 4) are statewide interoperability channels. These channels are to be used for communication between public safety agencies and providers of any discipline. Note that MARC 1 is configured for wide area repeater usage. State interoperability plans include the bolstering of the MARC 1 repeater system throughout the state. See Appendix B for information on the MARC plan.

**IFERN (formerly WISTAC 1) (154.265)** – This channel is for use by any EMS, fire, or rescue use for mutual aid operations and for on-scene tactical use. This channel is part of the MABAS system, and is often used for MABAS dispatch functions.

**UHF MED Pairs** – The ten MED channels are designated for EMT- Intermediate and Paramedic care. The MED channels are dedicated to communications among ambulance and hospital personnel directing patient care prior to arrival at the hospital at a paramedic and intermediate level. The channel is for emergency medical care/telemetry and should be limited to this purpose. A secondary use for air medical dispatch is acceptable as long as it doesn't interfere with the ability to communicate to provide patient care.

| <u>Med Mobile Receive channel frequencies are:</u> | <u>Med Mobile Transmit channel frequencies are:</u> |
|--|---|
| Med 1 463.000                                      | Med 1 468.000                                       |
| Med 2 463.025                                      | Med 2 468.025                                       |
| Med 3 463.050                                      | Med 3 468.050                                       |
| Med 4 463.075                                      | Med 4 468.075                                       |
| Med 5 463.100                                      | Med 5 468.100                                       |
| Med 6 463.125                                      | Med 6 468.125                                       |
| Med 7 463.150                                      | Med 7 468.150                                       |
| Med 8 463.175                                      | Med 8 468.175                                       |
| Med 9 462.950                                      | Med 9 467.950                                       |
| Med 10 462.975                                     | Med 10 467.975                                      |

Med 9 & 10 are primarily used for dispatch. Note that these ten pairs of channels are configured for repeater usage. The Med Pair channels need to be coordinated in a geographical area. A requesting provider will normally be approved for Med Pairs 1-8, but normal use is usually limited to either Med Pairs 1-4 or 5-8. Use of these frequencies must be coordinated by the State EMS Communications Coordinator in conjunction with the dispatch center and ambulance services in the area of requested use.

**Trunking Systems (800 MHz/VHF/UHF)** – Trunking systems are in use more and more frequently, especially in urban areas, due to the loading, traffic, and management advantages that this technology offers. These systems are generally all discipline in nature, and can be used for ambulance communications between ambulance providers and hospitals. However, because of the need for ambulances to have the ability to communicate with any hospital in the state, a trunking system can not be the sole method of communication. The required VHF channels still apply as an adjunct to other methods of communication.

**Air Medical Frequency Recommendations** – Local providers must be able to describe how communication takes place for air medical transports. This includes a means of communication between air and ground units once they are dispatched. Often, the air provider cannot land unless a communications link is established with at-scene responders on the ground. The recommended channel for air medical communications on the way to the landing zone is MARC 2. The reasons for using MARC 2 are:

- MARC 2 is a universal public safety frequency that can be used by all landing zone personnel (first responders, EMTs, fire and law enforcement)
- Designating MARC 2 as the standard frequency will avoid confusion in searching for the frequency to hook-up the air and ground units.
- Designating MARC 2 will also avoid the inappropriate use of other frequencies that should be left open for other communication.

Keep in mind, however, that during a mass casualty event, the MARC 1 repeater system may be activated. The use of MARC 2 by in-flight aircraft could interfere with the MARC 1 repeater system due to the increased transmit range an aircraft would have on MARC 2, which is also the input frequency of the MARC 1 repeater.

An alternative frequency choice would be EMS C (155.280). Regional plans should have the flexibility to use this option if it is a more practical frequency MARC.

Use of any other channels must be in the air medical provider's operational plan and must address interface and that these other channels are in addition to the required channels.

## **2.7 FCC Licenses**

Overview of regulations – The Federal Communications Commission (FCC) regulates all radio communications within the United States. Radio communication is controlled by requiring licensure of all radio transmitters. The FCC rules govern who is eligible to license a transmitter and the specific frequencies and equipment configurations allowed for each frequency or service group. A copy of the FCC rules can be obtained from <http://wireless.fcc.gov/rules.html> or:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(866) 512-1800 or (202) 512-1800  
Fax (202) 512-2250

Prior to operating a radio transmitter, a license must be obtained from the FCC. A license can be obtained by completing Form 601, "FCC Application for Wireless Telecommunications Bureau Radio Service Authorization." Frequency concurrence for the license application is obtained by contacting the EMS Communications Coordinator at the State EMS Systems and Licensing Section, (608) 266-1568. See Appendix E for further details.

EMS service providers and hospitals are required to obtain an FCC license for operating a base station (fixed location radio) and for mobile radios that are not covered by another license. Mobile & portable units operating on all frequencies can legally use that frequency through approval of any of the following methods:

- Holding their own FCC license.
- Hospital license from medical control hospital.
- County-wide license.
- Statewide license.

EMS transport & First Responder services that are licensed by the State have permission to use the required EMS channels (EMS B 155.340, EMS A 155.400, MARC 1 and MARC 2) in mobile and portable radios, as well as EMS C 155.280. MARC 1 usage, however, may need to be coordinated with local agencies. The authorization to use these channels is part of approval for the provider license and applies to all mobile and portable radios, but does not apply to base (fixed) stations. In cases where the hospital uses additional frequencies, EMS mobile and portable radios can operate with authorization under a hospital's license. Providers can contact those hospitals with which they routinely communicate and request authorization under their license.

Providers requiring a FCC license should do the following:

1. When applying for a Public Safety Pool frequency that was formerly included in the Emergency Medical Radio Service (this includes EMS B 155.340, EMS A 155.400, EMS C 155.280, and the Med channels), first request a letter of support from the State EMS Systems and Licensing Section. This request should include:
  - That the applicant provides ongoing basic or advanced life support (if applying for 155.280, 155.340, 155.400, or the Med channels).
  - That the application is in conformance with the State's EMS Communication Plan.
2. File the FCC Form 601 and the State EMS Systems and Licensing Section letter of support with the national frequency coordinator. Contact the EMS Communications Coordinator for further details regarding this process:

Bureau of Local Health Support and EMS  
EMS Communications Coordinator  
1 W Wilson Street Room 131 / 133  
PO Box 2659  
Madison, WI 53701-2659  
Phone: (608) 261-9306  
Fax: (608) 261-6392  
Email: [wittkpv@dhfs.state.wi.us](mailto:wittkpv@dhfs.state.wi.us)

## **SECTION 3 – LOCAL PROVIDER AND SYSTEM STANDARDS**

The system requirements defined in the following section will be part of the EMS Operational Plan submitted to the Wisconsin State EMS Systems and Licensing Section for ambulance provider license approval.

### **3.0 Overview and Laws**

There are required operational plan elements for every EMS license level. The references to EMS communications in Administrative Code HFS 110, 111 and 112 are:

A description of the communication system for providing medical control to EMT personnel. When installing communications equipment in ambulances, the ambulance service provider shall comply with the specifications and standards of the Wisconsin statewide emergency medical services communications system. All ambulances shall have direct radio contact with a hospital emergency department on the designated ambulance-to-hospital frequency.

A description for EMT-intermediate and EMT-paramedic providers for ensuring 2-way voice communication between every ambulance and the medical control physician, including, in addition to a mobile radio in the ambulance, a portable means of communication capable of being operated from the patient's side.

A description of how calls are dispatched, including who does the dispatching, whether or not dispatchers are medically trained and whether or not dispatchers give pre-arrival instructions.

*Reference note: WI Administrative Code HFS 110.08 (2) (f) & (g), HFS 111.07 (2) (f) & (g) and HFS 112.07 (2) (f) & (g).*

There are also requirements in WI Administrative Code Trans 309 for the equipment in an ambulance. The two specific requirements are:

Each ambulance shall have a permanently mounted radio to contact the hospital emergency department of the hospital it serves. There shall be a microphone and speaker permanently mounted in the patient compartment. The radio shall comply with Admin. Code HFS 110.

Each ambulance service provider operating ambulances staffed either wholly or partially with EMTs practicing advance skills shall have remote 2-way communications for personnel when they are away from the ambulance

*Reference note: WI Administrative Code Trans 309.18 (1) and (2).*

NOTE: For a copy of the administrative code, write to the Bureau of Local Health Support and EMS, Division of Public Health, PO Box 2659, Madison WI 53701-2659 or download the information from the website at <http://www.legis.state.wi.us/rsb/code.htm>.

### **3.1 EMS Provider Requirements – Radio Frequency Capabilities**

**EMS Providers** – As described in section 2.6, standard EMS frequencies are EMS B, EMS A, EMS C, MARC 1, MARC 2 and Med Pair channels. All EMS providers must have the capability to communicate on all these channels except for the Med Pairs and 155.280. Services that don't currently have this capability must add it when purchasing new equipment or when they reprogram equipment as part of an upgrade in level of care. It is recommended that all First Responder services have the capability to communicate on 155.340, 155.400, 155.280 and the MARC channels. Use of

these frequencies should be coordinated with the local ambulance provider and other related agencies to avoid congestion on these frequencies.

See Appendix A for a detailed table of EMS Communication Frequencies. More information on EMS frequencies can be found in Section 2.6, pages 12-14.

### 3.2 EMS Equipment Needs and Requirements

**Ambulance:** Must have a primary and back-up means of communication. Must have a VHF radio with the following specifications:

- VHF radio with the four required frequencies.
- PL, local or all state – Must have PL tones for local hospitals, hospitals in adjacent counties and hospitals where you routinely do emergency transports. Providers don't need to have PL tones for all hospitals in the State, the statewide D156 code should be programmed for mutual aid operations. Interfacility transports can be done by cell phone.
- Required radio in patient compartment.
- 25-100 Watts depending on what is appropriate for the area served. Higher power is recommended for rural areas with large coverage areas or services that have unique radio coverage issues.

**Hospital:** Must have a VHF radio with EMS B (155.340). EMS A (155.400), and EMS C (155.280) are optional, but recommended for ALS communications and coordination. Local and statewide PL codes should be programmed. See section 2.6, hospital tones, for further details. The ability to operate on, or at least monitor, other local public safety channels should be considered, although this may take coordination with these other agencies. The ability to monitor the local EMS / fire paging channel will provide lead time for the emergency department in case of a mass event. An emergency department phone number for ambulance contact is also recommended.

### 3.3 Considerations in setting up your communication systems and purchasing equipment

These are questions you need to consider in completing the communications component of your EMS operational plan. Although not all of these questions have to be addressed in the operational plan, they should all be considered as you set up your communication system.

#### Dispatch Considerations

1. How do citizens access EMS?

E911

911

Wireless E911

2. How are you dispatched?

Radio/Pager

Telephone

Mobile data terminal

3. Who does your dispatching?

Law Enforcement

County public safety

Private company

Other \_\_\_\_\_

4. Are your dispatchers trained to give pre-arrival instructions?
  - Yes
  - If yes, what system or method to provide consistency is in use?
  - If yes, who provides medical direction for the dispatch agency?
  - No

**Response Considerations**

1. What is your communication link to other public safety agencies such as law enforcement and fire departments (method/frequency)?
2. Do you have intercept agreements with ALS? If yes, how do you communicate with them (method/frequency)?
3. Do you use air medical for transports? If yes, how do you communicate with them (method/frequency)? *recommendation: MARC 2, then EMS C (155.280)*
4. Do you have telecommunications ability with your first responders? If yes, how do you communicate with them (method/frequency)?
5. If you provide service for special events outside your primary service area, what is the method of contact with the local provider, hospital, dispatch center and medical control for special events?
6. If you provide service for interfacility transports outside your primary service area, what is the method of contact with the receiving hospital and medical control during transport.

**Medical Control Considerations**

1. Describe method(s) for contact with medical control
  - 155.400
  - 155.340
  - Med Pairs
  - Cell phone
  - Other \_\_\_\_\_
2. What is the method to contact the receiving hospital during interfacility transports if it is different than method to contact medical control?
3. If applicable what is your method for telemetry?

**Communications Equipment Considerations**

1. How large is your coverage area and will your equipment cover that entire area? How did you test your coverage area to determine the extent of communications coverage?
2. Are there any unique geographical areas that may affect communications coverage such as forests, hills, buildings, etc.?
3. Did you consider both daily needs and “worst case scenarios” in determining your communication needs, including a back-up means of communication?

4. What frequencies and codes do you need programmed into your radio, in addition to the four required frequencies?

Local hospital tones

Regional hospital tones

State wide code

Dispatch frequency

Med Pairs

IFERN, MARC 3, MARC 4

Others \_\_\_\_\_

Radio vs. Phone use

**Pros and Cons for Radio vs. Cellular phone use:**

|  |  |
|--|--|
| <p><b>PROS –Two-way radio communication</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Local control</li> <li><input type="checkbox"/> Paging</li> <li><input type="checkbox"/> Monitor other agencies</li> <li><input type="checkbox"/> Broadcast capabilities</li> <li><input type="checkbox"/> Multi channel</li> <li><input type="checkbox"/> Direct contact on talk-around channels</li> <li><input type="checkbox"/> One in place, ongoing costs are minimal</li> <li><input type="checkbox"/> Priority access</li> </ul> | <p><b>CONS -Two-way radio communication</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cost of implementation and operation</li> <li><input type="checkbox"/> Communications can be monitored</li> <li><input type="checkbox"/> Coverage area dependent on related equipment (towers, etc.)</li> <li><input type="checkbox"/> Can't provide telemetry</li> <li><input type="checkbox"/> Interference from other users</li> </ul>  |
| <p><b>PROS – Cellular phone</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Good voice quality in strong cell area</li> <li><input type="checkbox"/> Large number of available channels</li> <li><input type="checkbox"/> Communications aren't monitored</li> <li><input type="checkbox"/> Can provide limited telemetry</li> <li><input type="checkbox"/> Access to translation services</li> </ul>  | <p><b>CONS – Cellular phone</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dependent on location and availability of cell tower</li> <li><input type="checkbox"/> Can only talk to one location (can't broadcast)</li> <li><input type="checkbox"/> Cell system will be overloaded in a disaster</li> <li><input type="checkbox"/> Can't interrupt an ongoing conversation</li> <li><input type="checkbox"/> Vulnerable to availability of an open phone line</li> <li><input type="checkbox"/> Battery life</li> <li><input type="checkbox"/> Beyond local system control</li> </ul> |

## **APPENDICES:**

A - Detailed table of EMS communication channels.

B - Wisconsin VHF mutual aid channels.

- Chart with channel name, frequency, tone, primary and secondary uses.
- Text description of channel with further details.

C – Implementation of VHF EMS channels, suggested priority for programming.

D – Wisconsin local hospital tones for EMS B 155.340 and EMS A 155.400 channels.

E – EMS and other mutual aid channel use.

- Authorization procedures.
- Miscellaneous other notes.

**APPENDIX A - DETAILED TABLE OF EMS COMMUNICATION CHANNELS**

| <b>Channel Name</b>   | <b>Frequency</b>   | <b>Tone</b>   | <b>Call Sign</b>   | <b>Primary Use</b>  | <b>Secondary Use</b>   |
|---|--|---|--------------------|---|--|
| <b>EMS B</b><br>(Former State EMS)<br>FOR LOCAL HOSPITAL<br>AND STATE WIDE USE. | 155.340 (receive and transmit)<br><b>LOCAL HOSPITAL USE</b>    | Varies (transmit)<br>Varies (receive)<br>See Appendix D | KH4762             | BLS & ALS contact with hospitals for medical care.  | On-scene medical coordination from mobile to mobile (should be done on other channels, if possible).                                 |
| <b>EMS REQUIRED</b>   | 155.340 (receive and transmit)<br><b>STATE WIDE MUTUAL AID</b> | D156 (transmit)<br>None (receive)                       |                    |   |  |
| <b>EMS A</b><br>(Former State ALS)<br>FOR LOCAL HOSPITAL<br>AND STATE WIDE USE. | 155.400 (receive and transmit)<br><b>LOCAL HOSPITAL USE</b>    | Varies (transmit)<br>Varies (receive)<br>See Appendix D | KH4762             | ALS contact with hospitals for medical care.  | This includes ALS contact for intercepts and air medical.  |
| <b>EMS REQUIRED</b>   | 155.400 (receive and transmit)<br><b>STATE WIDE MUTUAL AID</b> | D156 (transmit)<br>None (receive)                       |                    |   |  |
| <b>MARC1</b>  | 151.280 (receive) 153.845 (transmit)                           | 136.5 (transmit)<br>136.5 (receive)                     | WNPG812            | Statewide interagency communications.   | MARC 2 for landing zone coordination and air-scene communications.   |
| <b>MARC2</b><br>Mutual Aid Radio Channels<br><b>EMS REQUIRED</b>                | 151.280 (receive and transmit)                                 | 136.5 (transmit)<br>136.5 (receive)                     | WNPG812            |   |  |
| <b>IFERN</b><br>(Former WISTAC1)  | 154.265 (receive and transmit)                                 | 210.7 (transmit)<br>None (receive)                      | KO2099             | Mutual aid for EMS / fire/ rescue, on-scene tactical. Usage for all three channels is restricted in some parts of the state. See plan text for further description. | Mutual aid for any discipline. IFERN receive tone of 210.7 may be required in the future as WISTAC1 / IFERN transition is completed. |
| <b>MARC3</b><br>(Former WISTAC2)  | 154.010 (receive and transmit)                                 | 71.9 (transmit)<br>71.9 (receive)                       | KO2099             |   |  |
| <b>MARC4</b><br>(Former WISTAC3)<br>More mutual aid channels                    | 154.130 (receive and transmit)                                 | 82.5 (receive)<br>82.5 (receive)                        | KO2099             |   |  |
| <b>EMS C</b><br>(Former State Coordination)                                     | 155.280 (receive and transmit)                                 | D156 (transmit)<br>D156 (receive)                       | KH4762             | Communication between hospitals. Use may be limited due to non-EMS users.   | Field coordination between public health agencies. Alternate for air medical.  |
| <b>MED1</b>   | 463.000 (receive) 468.000 (transmit)                           | Transmit - Varies by hospital.<br>See Appendix D        | Varies by hospital | EMT-P & EMT-I to base for medical care.   | Air-medical dispatch in some areas.  |
| <b>MED2</b>   | 463.025 468.025  |   |                    |   |  |
| <b>MED3</b>   | 463.050 468.050  |   |                    |   |  |
| <b>MED4</b>   | 463.075 468.075  |   |                    |   |  |
| <b>MED5</b>   | 463.100 468.100  |   |                    |   |  |
| <b>MED6</b>   | 463.125 468.125  |   |                    |   |  |
| <b>MED7</b>   | 463.150 468.150  |   |                    |   |  |
| <b>MED8</b>   | 463.175 468.175  |   |                    |   |  |
| <b>MED9</b>   | 462.950 467.950  |   |                    |   |  |
| <b>MED10</b>  | 462.975 467.975  |   |                    |   |  |
| UHF Med Channels  |  |   |                    |   |  |

**APPENDIX B - WISCONSIN VHF MUTUAL AID CHANNELS**  
**WISCONSIN STATEWIDE VHF PUBLIC SAFETY**  
**COMMON FREQUENCY CHART**

| <b>MOBILE<br/>RX FREQ</b> | <b>RX<br/>TONE</b> | <b>MOBILE<br/>TX FREQ</b> | <b>TX<br/>TONE</b> | <b>STATE<br/>NAME</b> | <b>NATIONAL<br/>NAME</b> | <b>STATE<br/>CALLSIGN</b> | <b>PRIMARY<br/>USE</b>  |
|---------------------------|--------------------|---------------------------|--------------------|-----------------------|--------------------------|---------------------------|-------------------------|
| 155.340                   | None               | 155.340                   | D156               | EMS B                 | 1EMS14                   | KH4762                    | EMS BASIC<br>STATE-WIDE |
| 155.340                   | None               | 155.340                   | See<br>chart D     | EMS B                 | None                     | KH4762                    | EMS BASIC<br>LOCAL      |
| 155.400                   | None               | 155.400                   | D156               | EMS A                 | None                     | KH4762                    | EMS ALS<br>STATE-WIDE   |
| 155.400                   | None               | 155.400                   | See<br>chart D     | EMS A                 | None                     | KH4762                    | EMS ALS<br>LOCAL        |
| 155.280                   | D156               | 155.280                   | D156               | EMS C                 | None                     | KH4762                    | EMS COORD<br>& HOSPITAL |
| 151.280                   | 136.5              | 153.845                   | 136.5              | MARC1                 | None                     | WNPG812                   | All                     |
| 151.280                   | 136.5              | 151.280                   | 136.5              | MARC2                 | None                     | WNPG812                   | All                     |
| 154.010                   | 71.9               | 154.010                   | 71.9               | MARC3                 | None                     | KO2099                    | All                     |
| 154.130                   | 82.5               | 154.130                   | 82.5               | MARC4                 | None                     | KO2099                    | All                     |
| 156.000                   | 136.5              | 156.000                   | 136.5              | WEM CAR               | None                     | KGT483                    | Emergency<br>Management |
| 155.475                   | CS                 | 155.475                   | 156.7              | WISPERN               | 1LAW16                   | KA6570                    | Law                     |
| 155.370                   | CS                 | 155.370                   | 146.2              | POINT                 | None                     | KA6570                    | Law                     |

|           |       |           |       |          |        |        |                   |
|-----------|-------|-----------|-------|----------|--------|--------|-------------------|
| 154.265   | CS    | 154.265   | 210.7 | IFERN    | 1FIR7  | KO2099 | Fire              |
| 153.830   | CS    | 153.830   | 69.3  | FG RED   | None   | KO2099 | Fire              |
| 154.280   | CS    | 154.280   | 74.4  | FG WHITE | 1FIR9  | KO2099 | Fire              |
| 154.295   | CS    | 154.295   | 85.4  | FG BLUE  | 1FIR11 | KO2099 | Fire              |
| 153.8375* | 91.5  | 153.8375* | 91.5  | FG GOLD  | None   | KO2099 | Fire              |
| 154.2725* | 94.8  | 154.2725* | 94.8  | FG BLACK | 1FIR8  | KO2099 | Fire              |
| 154.2875* | 136.5 | 154.2875* | 136.5 | FG GRAY  | 1FIR10 | KO2099 | Fire              |
| 154.3025* | 67.0  | 154.3025* | 67.0  | IFERN2   | 1FIR12 | KO2099 | Fire              |
| 155.160   | 127.3 | 155.160   | 127.3 | NATSAR   | None   | KO2099 | Search and Rescue |
| 155.7525* | 156.7 | 155.7525* | 156.7 | VCALL    | 1CAL18 | KO2099 | All               |
| 151.1375* | 156.7 | 151.1375* | 156.7 | VTAC1    | 1TAC5  | KO2099 | All               |
| 154.4525* | 156.7 | 154.4525* | 156.7 | VTAC2    | 1TAC13 | KO2099 | All               |
| 158.7375* | 156.7 | 158.7375* | 156.7 | VTAC3    | 1TAC22 | KO2099 | All               |
| 159.4725* | 156.7 | 159.4725* | 156.7 | VTAC4    | 1TAC23 | KO2099 | All               |

**\*NARROW BAND USAGE ONLY**

**APPENDIX B (con't) - WISCONSIN VHF MUTUAL AID CHANNELS**  
**WISCONSIN STATEWIDE VHF PUBLIC SAFETY**  
**COMMON FREQUENCY DESCRIPTION**

Name State EMS Basic (BLS)  
 Acronym **EMS B**  
 Receive Frequency 155.340  
 Receive Tone None  
 Transmit Frequency 155.340  
 Transmit Tone D156 for statewide; each hospital is assigned a tone for local use  
 Primary Discipline EMS only  
 State Callsign KH4762  
 Usage Ambulance to hospital communications.  
 See appendix D for local hospital tones.

Name State EMS Advanced (ALS)  
 Acronym **EMS A**  
 Receive Frequency 155.400  
 Receive Tone None  
 Transmit Frequency 155.400  
 Transmit Tone D156 for statewide; each hospital is assigned a tone  
 Primary Discipline EMS only  
 State Call-sign KH4762  
 Usage ALS ambulance to hospital and ambulance to ALS intercept.  
 See appendix D for local hospital tones.

Name State EMS Coordination  
 Acronym **EMS C**  
 Receive Frequency 155.280  
 Receive Tone D156 for statewide; each hospital is assigned a tone for local use  
 Transmit Frequency 155.280  
 Transmit Tone D156 for statewide; each hospital is assigned a tone for local use  
 Primary Discipline EMS, Public Health  
 State Call-sign KH4762  
 Usage Hospital to hospital communications, on scene coordination,  
 Alternate for medical helicopter landing zone coordination.  
 Use may be limited in some areas due to non-EMS users.  
 See appendix D for local hospital tones.

Name Mutual Aid Radio Channel 1  
 Acronym **MARC1**  
 Receive Frequency 151.280  
 Receive Tone 136.5  
 Transmit Frequency 153.845  
 Transmit Tone 136.5  
 Primary Discipline All public safety  
 State Call-sign WNPG812  
 Usage Wide area interagency communications through repeaters.

Name Mutual Aid Radio Channel 2  
 Acronym **MARC2**  
 Receive Frequency 151.280  
 Receive Tone 136.5  
 Transmit Frequency 151.280  
 Transmit Tone 136.5  
 Primary Discipline All public safety  
 State Call-sign WNPG812  
 Usage On scene tactical incident communications.  
 Medical helicopter landing zone coordination.

Name Mutual Aid Radio Channel 3 (Previously Wisconsin Tactical 2)  
 Acronym **MARC3** (Previously WISTAC 2)  
 Receive Frequency 154.010  
 Receive Tone 71.9  
 Transmit Frequency 154.010  
 Transmit Tone 71.9  
 Primary Discipline Fire/Rescue/EMS, alternate for other public safety  
 State Call-sign KO2099  
 Usage Fire-ground operations, on scene tactical  
 Use is restricted in the area of: Eau Claire, Fond du Lac, Green Lake, Manitowoc, Marinette, Milwaukee, Washington, Waushara, Wood Counties, and Gratiot, Linn, Newbold, Westby, Whitewater.

Name Mutual Aid Radio Channel 4 (Previously Wisconsin Tactical 3)  
 Acronym **MARC4** (Previously WISTAC 3)  
 Receive Frequency 154.130  
 Receive Tone 82.5  
 Transmit Frequency 154.130  
 Transmit Tone 82.5  
 Primary Discipline Fire/Rescue/EMS, alternate for other public safety  
 State Call-sign KO2099  
 Usage Fire-ground operations, on scene tactical. Use is restricted in the area of: Bayfield, Brown, La Crosse, Marquette, Pierce Counties, and Greenwood, Manitowish Waters, Milwaukee.

Name Wisconsin Emergency Management Car to Car  
Acronym **WEM CAR**  
Receive Frequency 156.000  
Receive Tone 136.5  
Transmit Frequency 156.000  
Transmit Tone 136.5  
Primary Discipline Emergency Management  
State Call-sign KGT483  
Usage On scene tactical incident communications

Name Wisconsin Police Emergency Radio Network  
Acronym **WISPERN**  
Receive Frequency 155.475  
Receive Tone None until after 06/01/06, then optionally 156.7  
Transmit Frequency 155.475  
Transmit Tone 156.7  
Primary Discipline Law Enforcement  
Use by other disciplines only if directed by law enforcement  
State Call-sign KA6570  
Usage Interagency communications

Name Point to Point  
Acronym **POINT**  
Receive Frequency 155.370  
Receive Tone None until after 06/01/06, then optionally 146.2  
Transmit Frequency 155.370  
Transmit Tone 146.2  
Primary Discipline Law Enforcement  
Use by other disciplines only if directed by law enforcement  
State Call-sign KA6570  
Usage Base to base interagency communications

Name Interagency Fire Emergency Radio Network (Previously Wis. Tactical 1)  
Acronym **IFERN** (Previously WISTAC 1)  
Receive Frequency 154.265  
Receive Tone None until transition from WISTAC1 to IFERN is completed  
Transmit Frequency 154.265  
Transmit Tone 210.7  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Mutual aid base/mobile dispatch  
Use is restricted in the area of: Columbia, Marathon, Marquette, Milwaukee, Sheboygan, Wood Counties, and PoySippi.

Name Red Fire-ground  
Acronym **FG RED**  
Receive Frequency 153.830  
Receive Tone None until after 01/01/07, then optionally 69.3  
Transmit Frequency 153.830  
Transmit Tone 69.3  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical

Name White Fire-ground  
Acronym **FG WHITE**  
Receive Frequency 154.280  
Receive Tone None until after 01/01/07, then optionally 74.4  
Transmit Frequency 154.280  
Transmit Tone 74.4  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical.

Name Blue Fire-ground  
(Previously Fire Interagency Radio Emergency Communications)  
Acronym **FG BLUE** (Previously FIRECOM)  
Receive Frequency 154.295  
Receive Tone None  
Transmit Frequency 154.295  
Transmit Tone 85.4  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical.

Name Gold Fire-ground  
Acronym **FG GOLD**  
Receive Frequency 153.8375  
Receive Tone 91.5  
Transmit Frequency 153.8375  
Transmit Tone 91.5  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical  
Do not use at the same incident as Red Fire-ground and MARC 1.  
**NARROW BAND OPERATION ONLY**

Name Black Fire-ground  
Acronym **FG BLACK**  
Receive Frequency 154.2725  
Receive Tone 94.8  
Transmit Frequency 154.2725  
Transmit Tone 94.8  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical  
Do not use at the same incident as IFERN and White Fire-ground.  
NARROW BAND OPERATION ONLY

Name Gray Fire-ground  
Acronym **FG GRAY**  
Receive Frequency 154.2875  
Receive Tone 136.5  
Transmit Frequency 154.2875  
Transmit Tone 136.5  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Fire-ground operations, on scene tactical  
Do not use at the same incident as White and Blue Fire-ground.  
NARROW BAND OPERATION ONLY

Name Interagency Fire Emergency Radio Network 2  
Acronym **IFERN2**  
Receive Frequency 154.3025  
Receive Tone 67.0  
Transmit Frequency 154.3025  
Transmit Tone 67.0  
Primary Discipline Fire/Rescue/EMS, Mutual Aid Box Alarm System  
State Call-sign KO2099  
Usage Alternate mutual aid base/mobile dispatch  
Do not use at the same incident as Blue Fire-ground and 154.310.  
NARROW BAND OPERATION ONLY

Name National Search & Rescue  
Acronym **NATSAR**  
Receive Frequency 155.160  
Receive Tone None or 127.3  
Transmit Frequency 155.160  
Transmit Tone 127.3  
Primary Discipline Search and Rescue  
State Call-sign KO2099  
Usage Interface between public safety, search and rescue groups.

Name VHF Calling  
 Acronym **VCALL**  
 Receive Frequency 155.7525  
 Receive Tone 156.7  
 Transmit Frequency 155.7525  
 Transmit Tone 156.7  
 Primary Discipline All public safety, nationwide  
 State Call-sign N/A  
 Usage Public safety interagency calling channel, nationwide.  
 Use is restricted in some parts of the state.  
**NARROW BAND OPERATION ONLY**

Name VHF Tactical 1  
 Acronym **VTAC1**  
 Receive Frequency 151.1375  
 Receive Tone 156.7  
 Transmit Frequency 151.1375  
 Transmit Tone 156.7  
 Primary Discipline All public safety, nationwide  
 State Call-sign N/A  
 Usage Public safety interagency tactical communications.  
 Use is restricted in some areas of the state, see plan.  
**NARROW BAND OPERATION ONLY**

Name VHF Tactical 2  
 Acronym **VTAC2**  
 Receive Frequency 154.4525  
 Receive Tone 156.7  
 Transmit Frequency 154.4525  
 Transmit Tone 156.7  
 Primary Discipline All public safety, nationwide  
 State Call-sign N/A  
 Usage Public safety interagency tactical communications.  
 Use is restricted in some areas of the state, see plan.  
**NARROW BAND OPERATION ONLY**

Name VHF Tactical 3  
Acronym **VTAC3**  
Receive Frequency 158.7375  
Receive Tone 156.7  
Transmit Frequency 158.7375  
Transmit Tone 156.7  
Primary Discipline All public safety, nationwide  
State Call-sign N/A  
Usage Public safety interagency tactical communications.  
Use is restricted in some areas of the state, see plan.  
**NARROW BAND OPERATION ONLY**

Name VHF Tactical 4  
Acronym **VTAC4**  
Receive Frequency 159.4725  
Receive Tone 156.7  
Transmit Frequency 159.4725  
Transmit Tone 156.7  
Primary Discipline All public safety, nationwide  
State Call-sign N/A  
Usage Public safety interagency tactical communications.  
Use is restricted in some areas of the state, see plan.  
**NARROW BAND OPERATION ONLY**

**APPENDIX C - IMPLEMENTATION OF EMS VHF CHANNELS  
SUGGESTED PRIORITY FOR PROGRAMMING**

| <b>PRIORITY</b> | <b>EMS</b>    | <b>NOTES</b>  |
|-----------------|---------------|---|
| 1a              | EMS B LOCAL A | Same as EMS B 155.340 MHz, PL tone for local hospital A   |
| 1b              | EMS B LOCAL B | Same as EMS B 155.340 MHz, PL tone for local hospital B   |
| 1c              | EMS B LOCAL C | Same as EMS B 155.340 MHz, PL tone for local hospital C   |
| 1d              | EMS B LOCAL D | Same as EMS B 155.340 MHz, PL tone for local hospital D   |
| 2               | EMS B STATE   | Former State EMS channel, with state-wide PL tone         |
| 3               | MARC1         | Wide area mutual aid repeater channel, all discipline     |
| 4               | MARC2         | Medical aircraft LZ coordination, on-scene tactical comm. |
| 5a              | EMS A LOCAL A | Same as EMS A 155.400 MHz, PL tone for local hospital A   |
| 5b              | EMS A LOCAL B | Same as EMS A 155.400 MHz, PL tone for local hospital B   |
| 5c              | EMS A LOCAL C | Same as EMS A 155.400 MHz, PL tone for local hospital C   |
| 5d              | EMS A LOCAL D | Same as EMS A 155.400 MHz, PL tone for local hospital D   |
| 6               | EMS A STATE   | Former State ALS channel, with state-wide PL tone         |
| 7               | MARC3         | Former WISTAC 2 channel                                   |
| 8               | MARC4         | Former WISTAC 3 channel                                   |
| 9               | IFERN         | Former WISTAC 1 channel, interagency fire EMS network     |
| 10              | EMS C         | Former State Coordination channel, now with D156 PL tone  |
| 11              | FG RED        | Fire-ground operations, on-scene tactical comm., MABAS    |
| 12              | FG WHITE      | Fire-ground operations, on-scene tactical comm., MABAS    |
| 13              | FG BLUE       | Former FIRECOM channel                                    |
| 14              | WISPERN       | Law Enforcement   |
| 15              | POINT         | Law Enforcement   |
| 16              | NATSAR        | New channel, national search and rescue coordination      |
| 17              | WEM CAR       | Emergency management on-scene tactical                    |
| 18              | FG GOLD       | Fire-ground operations MABAS, narrow band usage only      |
| 19              | FG BLACK      | Fire-ground operations MABAS, narrow band usage only      |
| 20              | FG GRAY       | Fire-ground operations MABAS, narrow band usage only      |
| 21              | IFERN2        | Mutual aid operations MABAS, narrow band usage only       |
| 22              | VCALL         | Tactical on-scene comm., narrow band usage only           |
| 23              | VTAC1         | Tactical on-scene comm., narrow band usage only           |
| 24              | VTAC2         | Tactical on-scene comm., narrow band usage only           |
| 25              | VTAC3         | Tactical on-scene comm., narrow band usage only           |
| 26              | VTAC4         | Tactical on-scene comm., narrow band usage only           |

**APPENDIX D - WISCONSIN HOSPITAL TONES  
FOR EMS B 155.340 AND EMS A 155.400 CHANNELS**

| <b>CITY</b>       | <b>HOSPITAL</b>                               | <b>TONE (hz)</b> | <b>TELEPHONE</b> |
|-------------------|---|------------------|------------------|
| Amery             | Amery Regional Medical Center                 | 131.8            | 715 268 7151     |
| Antigo            | Langlade County Memorial Hosp                 | 88.5             | 715 623 2331     |
| Appleton          | Appleton Medical Center                       | 110.9            | 920 731 4101     |
| Appleton          | St. Elizabeth Hospital                        | 107.2            | 920 738 2000     |
| Arcadia           | Franciscan Skemp Health Care – Arcadia Campus | 131.8            | 608 323 3323     |
| Ashland           | Memorial Medical Center                       | 107.2            | 715 685 5320     |
| Baldwin           | Baldwin Area Medical Center                   | 82.5             | 715 684 3311     |
| Baraboo           | St. Clare Health Services                     | 100.0            | 608 356 5561     |
| Barron            | Barron Memorial Medical Center                | 82.5             | 715 537 3186     |
| Beaver Dam        | Beaver Dam Community Hospital, Inc.           | 114.8            | 920 887 7181     |
| Beloit            | Beloit Memorial Hospital                      | 118.8            | 608 364 5151     |
| Berlin            | Berlin Memorial Hospital                      | 91.5             | 920 361 1313     |
| Black River Falls | Black River Memorial Hospital                 | 162.2            | 715 284 5361     |
| Bloomer           | Bloomer Medical Center                        | 206.5            | 715 568 2000     |
| Boscobel          | Boscobel Area Health Care                     | 123.0            | 608 375 4112     |
| Brookfield        | Elmbrook Memorial Hospital                    | 103.5            | 262 785 2000     |
| Burlington        | Aurora Memorial Hospital of Burlington        | 110.9            | 262 767 6100     |
| Chilton           | Calumet Medical Center                        | 123.0            | 920 849 2386     |
| Chippewa Falls    | St. Joseph's Hospital                         | 114.8            | 715 726 3220     |
| Columbus          | Columbus Community Hospital                   | 136.5            | 920 623 2200     |
| Cudahy            | St. Luke's South Shore                        | 156.7            | 414 489 4055     |
| Cumberland        | Cumberland Memorial Hospital                  | 146.2            | 715 822 2741     |
| Darlington        | Memorial Hospital of LaFayette County         | 114.8            | 608 776 4466     |
| Dodgeville        | Upland Hills Health Center                    | 206.5            | 608 930 8000     |
| Durand            | Chippewa Valley Area Hospital                 | 186.2            | 715 672 4211     |
| Eagle River       | Eagle River Memorial Hospital                 | 118.8            | 715 479 7411     |
| Eau Claire        | Luther Hospital                               | 110.9            | 715 838 3242     |
| Eau Claire        | Sacred Heart Hospital                         | 110.9            | 715 839 4222     |
| Edgerton          | Memorial Community Hospital                   | 136.5            | 608 884 3441     |
| Elkhorn           | Aurora Lakeland Medical Center                | 114.8            | 262 741 2120     |
| Fond du Lac       | St. Agnes Hospital                            | 97.4             | 920 929 2300     |
| Fort Atkinson     | Fort Memorial Hospital                        | 97.4             | 920 568 5000     |
| Friendship        | Moundview Memorial Hospital                   | 173.8            | 608 339 3331     |

| <b>CITY</b>     | <b>HOSPITAL</b>                                | <b>TONE (hz)</b> | <b>TELEPHONE</b> |
|-----------------|--|------------------|------------------|
| Grantsburg      | Burnett Medical Center, Inc.                   | 110.9            | 715 463 5353     |
| Green Bay       | Aurora Baycare Medical Center                  | 131.8            | 920 288 4301     |
| Green Bay       | Bellin Health                                  | 173.8            | 920 433 7534     |
| Green Bay       | St. Mary's Hospital Medical Center             | 151.4            | 920 498 4560     |
| Green Bay       | St. Vincent's Hospital                         | 173.8            | 920 433 8383     |
| Hartford        | Aurora Medical Center – Washington County      | 167.9            | 262 673 2300     |
| Hayward         | Hayward Area Memorial                          | 100.0            | 715 934 4321     |
| Hillsboro       | St. Joseph's Community Health Services         | 123.0            | 608 489 2211     |
| Hudson          | Hudson Memorial Hospital                       | 167.9            | 715 531 6000     |
| Janesville      | Mercy Health System                            | 100.0            | 608 756 6000     |
| Kenosha         | Aurora Medical Center                          | 107.2            | 262 942 5640     |
| Kenosha         | United Hospital System - Kenosha Med Center    | 107.2            | 262 656 2011     |
| Keshena         | Menominee Tribal Clinic                        | 146.2            | 715 799 3361     |
| Kewaunee        | St. Mary's Kewaunee Memorial Hospital          | 82.5             | 920 388 2210     |
| LaCrosse        | Gunderson Lutheran Hospital                    | 97.4             | 608 785 0530     |
| LaCrosse        | Franciscan Skemp Health Care - LaCrosse        | 97.4             | 608 785 0940     |
| Ladysmith       | Rusk County Memorial Hospital                  | 118.8            | 715 532 5561     |
| Lancaster       | Grant Regional Health Care                     | 123.0            | 608 723 2143     |
| Madison         | Meriter Park Hospital                          | 167.9            | 608 267 6000     |
| Madison         | St. Mary's Hospital Medical Center             | 167.9            | 608 251 6100     |
| Madison         | University of Wisconsin Hosp and Clinics       | 167.9            | 608 262 2398     |
| Madison         | Wm S. Middleton Memorial Veterans Admin        | 167.9            | 608 255 2345     |
| Manitowoc       | Holy Family Memorial Medical Center            | 179.9            | 920 320 2011     |
| Marinette       | Bay Area Medical Center                        | 156.7            | 715 735 6621     |
| Marshfield      | St. Joseph's Hospital                          | 82.5             | 715 387 7676     |
| Mauston         | Mile Bluff Memorial Hospital                   | 82.5             | 608 847 6161     |
| Medford         | Memorial Health Care                           | 88.5             | 715 748 8107     |
| Menomonee Falls | Community Memorial Hospital                    | 173.8            | 262 251 1000     |
| Menomonie       | Red Cedar Medical Center – Mayo Health System  | 100.0            | 715 235 5531     |
| Mequon          | Columbia St. Mary's Hospital – Ozaukee Campus  | 206.5            | 262 243 7373     |
| Merrill         | Good Samaritan Health Center                   | 85.4             | 715 536 5511     |
| Milwaukee       | Children's Hospital of Wisconsin               | 156.7            | 414 266 2000     |
| Milwaukee       | Columbia St. Mary's Hospital – Columbia Campus | 156.7            | 414 961 3300     |

| <b>CITY</b>      | <b>HOSPITAL</b>                                  | <b>TONE (hz)</b> | <b>TELEPHONE</b> |
|------------------|--|------------------|------------------|
| Milwaukee        | Aurora Sinai Medical Center                      | 156.7            | 414 219 6666     |
| Milwaukee        | St. Francis Hospital                             | 156.7            | 414 647 5165     |
| Milwaukee        | St. Joseph's Regional Medical Center             | 156.7            | 414 447 2171     |
| Milwaukee        | Aurora St. Luke's Medical Center                 | 156.7            | 414 649 6333     |
| Milwaukee        | Columbia St. Mary's Hospital – Milwaukee Campus  | 156.7            | 414 291 1200     |
| Monroe           | The Monroe Clinic                                | 114.8            | 608 324 1160     |
| Neenah           | Theda Clark Medical Center                       | 141.3            | 920 729 3100     |
| Neillsville      | Memorial Medical Center                          | 85.4             | 715 743 3101     |
| New London       | New London Family Medical Center                 | 100.0            | 920 531 2000     |
| New Richmond     | Westfield Hospital                               | 127.3            | 715 246 2101     |
| Oconomowoc       | Memorial Hospital of Oconomowoc                  | 131.8            | 262 569 9119     |
| Oconto           | Oconto Memorial Hospital                         | 167.9            | 920 834 8800     |
| Oconto Falls     | Community Memorial Hospital                      | 103.5            | 920 846 3444     |
| Osceola          | Osceola Medical Center                           | 91.5             | 715 294 2111     |
| Oshkosh          | Aurora Medical Center                            | 131.8            | 920 456 7400     |
| Oshkosh          | Mercy Medical Center of Oshkosh, Inc.            | 186.2            | 920 236 2000     |
| Osseo            | Osseo Medical Center – Mayo Health System        | 173.8            | 715 597 3121     |
| Park Falls       | Flambeau Hospital                                | 146.2            | 715 762 2484     |
| Platteville      | Southwest Health Center                          | 123.0            | 608 348 2331     |
| Pleasant Prairie | United Hospital System – St Catherine Med Center | 107.2            | 262 577 8117     |
| Portage          | Divine Savior Hospital                           | 162.2            | 608 742 4131     |
| Prairie du Chein | Prairie du Chein Memorial Hospital               | 151.4            | 608 326 2431     |
| Prairie du Sac   | Sauk Prairie Memorial Hospital                   | 141.3            | 608 643 3311     |
| Racine           | All Saints Medical Center - St. Luke's Campus    | 229.1            | 262 687 4011     |
| Racine           | All Saints Medical Center - St. Mary's Campus    | 229.1            | 262 636 4201     |
| Reedsburg        | Reedsburg Area Medical Center                    | 103.5            | 608 524 6487     |
| Rhineland        | St. Mary's Hospital                              | 114.8            | 715 369 6700     |
| Rice Lake        | Lakeview Medical Center                          | 192.8            | 715 234 1515     |
| Richland Center  | Richland Hospital, Inc.                          | 118.8            | 608 647 6321     |
| Ripon            | Ripon Medical Center                             | 85.4             | 920 748 3101     |
| River Falls      | River Falls Area Hospital                        | 85.4             | 715 425 6155     |
| Shawano          | Shawano Medical Center                           | 127.3            | 715 526 2111     |
| Sheboygan        | Aurora Sheboygan Memorial Medical Center         | 186.2            | 920 451 5553     |

| <b>CITY</b>      | <b>HOSPITAL</b>                              | <b>TONE (hz)</b> | <b>TELEPHONE</b> |
|------------------|--|------------------|------------------|
| Sheboygan        | St. Nicholas Hospital                        | 146.2            | 920 459 8300     |
| Shell Lake       | Indianhead Medical Center                    | 123.0            | 715 468 7833     |
| Sparta           | Franciscan Skemp Health Care - Sparta Campus | 156.7            | 608 269 1770     |
| Spooner          | Spooner Health Systems                       | 123.0            | 715 635 2111     |
| St. Croix Falls  | St. Croix Regional Medical Center            | 203.5            | 715 483 3261     |
| Stanley          | Our Lady of Victory Medical Center           | 91.5             | 715 644 5571     |
| Stevens Point    | St. Michael's Hospital                       | 206.5            | 715 346 5100     |
| Stoughton        | Stoughton Hospital                           | 91.5             | 608 873 6611     |
| Sturgeon Bay     | Door County Memorial Hospital                | 123.0            | 920 743 5566     |
| Superior         | St. Mary's Hospital of Superior              | 151.4            | 715 395 5400     |
| Tomah            | Tomah Memorial Hospital                      | 156.7            | 608 372 2181     |
| Tomahawk         | Sacred Heart Hospital                        | 85.4             | 715 453 7762     |
| Two Rivers       | Aurora Medical Center of Manitowoc County    | 94.8             | 920 794 5135     |
| Viroqua          | Vernon Memorial Hospital                     | 167.9            | 608 637 4261     |
| Watertown        | Watertown Memorial Hospital                  | 88.5             | 920 262 4222     |
| Waukesha         | Waukesha Memorial Hospital                   | 141.3            | 262 928 1000     |
| Waupaca          | Riverside Medical Center                     | 203.5            | 715 258 1040     |
| Waupun           | Waupun Memorial Hospital                     | 71.9T, 136.5R    | 920 324 5581     |
| Wauwatosa        | Froedtert Memorial Hospital                  | 156.7            | 414 259 3000     |
| Wauwatosa        | Wisconsin Heart Hospital                     | 156.7            | 414 778 7800     |
| Wausau           | Aspirius Wausau Hospital                     | 167.9            | 715 847 2121     |
| Weston           | St. Clare's Hospital of Weston               | 179.9            | 715 393 3000     |
| West Allis       | West Allis Memorial Hospital                 | 156.7            | 414 328 6111     |
| West Bend        | St. Joseph's Community Hospital              | 94.8             | 262 334 5533     |
| Whitehall        | Tri-County Memorial Hospital                 | 107.2            | 715 538 4361     |
| Wild Rose        | Wild Rose Community Memorial Hospital        | 110.9            | 920 622 3257     |
| Wisconsin Rapids | Riverview Hospital                           | 82.5             | 715 423 6060     |
| Woodruff         | Howard Young Medical Center                  | 114.8            | 715 356 8000     |

**APPENDIX E - EMS AND OTHER MUTUAL AID CHANNEL USE**  
**AUTHORIZATION PROCEDURES**  
**MISCELLEANOUS OTHER NOTES**

The use of mutual aid channels must be authorized. All two-way public safety radio use is controlled by the Federal Communications Commission (FCC).

Refer to appendix B on page 23.

Authorization for the use of those channels covered by the FCC state license call sign KO2099 shown in appendix B is obtained by making written request to:

Frequency Coordinator  
WSP, Bureau of Communications  
PO Box 7912, Madison, WI 53707-7912.

The Frequency Coordinator's phone number is 608-266-2497.

Authorization for the use of those EMS required channels covered by the FCC state license call signs KH4762 and WNPG812 shown in appendix B is granted when the EMS service provider license is granted. Without the service provider license, channel usage may be obtained by making written request to:

EMS Communications Coordinator  
Bureau of Local Health Support and EMS  
PO Box 2659, Madison, WI 53701-2659.

The Communications Coordinator's phone number is 608-261 9306.

Except for the EMS channels, EMS A, EMS B, and EMS C, the use of mutual aid channels is granted for mobile or portable use only. Base station usage of EMS channels must be licensed by the hospital or provider. See page 15 for further details.

All EMS service providers and hospitals in Wisconsin are encouraged to implement the statewide common EMS and mutual aid channels. Adopting the State EMS Communications Plan will foster further interoperability among all EMS responders in out of service area mutual aid situations and also foster further communications between EMS and responders from other disciplines.

In some cases there are local assignments that may conflict with the State EMS Communications Plan. It is highly desirable for these situations to be integrated into the state plan. The State Frequency Coordinator and EMS Communications Coordinator will work with those county and local EMS agencies affected to address these situations.