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| Region 4Western Wisconsin Healthcare Emergency Readiness Coalition Communications Plan | This is a compiled and coordinated communications plan for HERC Region 4. This plan will be updated, reviewed and approved by the governing board. This document will provide guidance and planning considerations for a multitude of events as they present themselves.April 5, 2021 |

**Document Updates**

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| **Version #** | **Update** | **Date of Update** | **POC** |
| 1 | Document initially adopted by coalition DEC 2019 | DEC 2019 | HERC Coordinator |
| 2 | Page 9. New section 2.2.5 Mass Care Trailer and capabilitiesAppendix C: Contact information updatedAppendix E: Map of HAM and SatPhone locations added to appendix | FEB 2021 | HERC Coordinator |
| 3 | Page 11. Added MEDEVAC channels | MAY 2021 | HERC Coordinator |
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**FORWARD**

 The Western Wisconsin Healthcare Emergency Readiness Coalition Communications Plan is a communications guide for Region 4 Coalition partners and stakeholders. This plan provides requirements for communication and IT systems to ensure there is a region wide communication plan in place to address daily needs as well as large-scale multicausality and other disruptive situations. Subsequent versions of the plan will be adopted as changes in rules and communication technologies occur.

The document is intended to serve four purposes:

* Provide an overview of normal communications for coalition partners utilizing radio, internet, POTS and other telephone capabilities, such as satellite and cellular.
* Alternate means of communications for other than “normal” operations.
* Identify required redundant communications test as well as WISCOM radio required communication tests to ensure operability throughout the region.
* Identify and provide recommendations for disruptive situations concerning information technology (IT).

This plan is not meant to replace current organizational plans and policies, but to be used to augment and potentially enhance those plans and practices. This plan is developed as a regional plan covering seven counties in the western portion of Wisconsin, also known as HERC Region 4.

 The first section provides general information on current and normal communications between pre- hospital health care providers, emergency medical technicians (EMTs), first responders, and the other entities with whom they need to communicate on a regular basis. This includes communications with hospitals, other EMS providers, and public safety agencies.

 The second and third section addresses alternate means of communication when “normal” operations are affected, including radio, phone and computer and drills and tests. The alternate means section will discuss secondary means of communication between hospitals, EMS to EMS, and EMS to hospitals (to include ground to air capabilities). Other agencies can/may adapt similar capabilities to ensure continued coordination and communication for their respective areas of responsibilities. Section 3 discusses the drills and tests the coalition will conduct during the course of a year.

 The fourth section addresses cyber operations, including disruption of normal operations and general cyber security for all coalition partners. General recommendations for addressing disruptions will be noted but not mandated nor will they supersede current policies at any of the coalition facilities. This section will address redundant systems of operation and how they are utilized during normal and emergency situations.

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**SECTION 1 – COMMUNICATION SYSTEM COMPONENTS**

 **1.0 Introduction – System Components**

 A communication system must consider many factors. The goal of being able to exchange key information for the system to function is dependent on a system that considers 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 emergency request highlighting the role of emergency medical communication:

Discovery of the medical emergency

**Public**

**Access**

**to EMS**

**Education**

**For users**

Call for help: system access

Call answered in public safety answering point

Interrogation and information gathering

**Interagency**

**Communication**

Dispatch

**Dispatch and Coordination of Response**

 Possible pre-alert to hospital based on dispatch information

Possible call for ALS intercept or air medical transport

Pre-arrival instructions

Response to scene

Status reports to responding units

Arrival at scene

Arrival at patient

Assessment and treatment of patient

**Medical Control Communications**

Medical control access

Possible call for ALS intercept or air medical transport

Move patient to ambulance

Begin conveyance

Communication with receiving facility and medical control

Arrival of ambulance/patient at emergency department

Completion of medical report and communications report

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

An essential component of an EMS communications system during a medical emergency is public access to the three-digit public safety phone number 9-1-1. This is achieved through the use of 9-1-1 public safety answering points (PSAPs), which route all emergency calls to the appropriate agency. Enhanced 9-1-1 (E9-1-1) has the following additional features beyond the basic 9-1-1 system:

• 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.

All Wisconsin counties are equipped for enhanced 9-1-1 operations.

Cellular telephone access to 9-1-1 is still problematic because enhanced 9-1-1 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 spoken information from the caller, which may lead to delayed response times.

 **1.2 Dispatch and Coordination of EMS Response**

 After notification that a call has been received, the next component is to dispatch the appropriate EMS unit to the scene. There is 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 staff from the incident; (2) timely 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 require 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 Wisconsin EMS Board has recommended EMS dispatch centers use an emergency medical dispatch (EMD) system. Further, this EMD system should be approved and monitored by the dispatch center’s medical director, and the telecommunicators using the system should be certified in its use.

 Ambulance and field personnel should also be trained in the use of communication equipment. Training would include at least the following capabilities:

- The ability to use all the communication equipment for the ambulance.

- The ability to communicate accurate patient care reports.

- Use of new digital communication technologies and appropriate use of new mutual aid channels.

**1.3 Medical Control Communications**

 Medical control communications provide field personnel with a direct link to relay information and receive medical advice from a hospital or other health care facility. In some cases, these communications might also include biomedical telemetry of EKG information directly to the facility while the patient is in route. Medical control communications have been accomplished primarily by radios in the past, but cellular telephones are being used in more cases today.

The degree to which medical control communications are used varies by areas of the region. Factors that influence how much medical control communications are used include geographical factors and the degree to which standing orders (patient care protocols) are allowed by the ambulance service medical director.

 **1.4 Interagency Communications (for resource and disaster coordination)**

There are a number of reasons why coordination of interagency communications is an important piece of the Regional Communications Plan. Interagency communications are needed primarily for resource and disaster response coordination, to optimize the ability to communicate with other agencies when necessary, but avoid 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

**SECTION 2 – Regional COMMUNICATIONS PLAN**

 **2.0 Administrative Overview**

 Development and inclusion of an operational plan for each coalition member, including connecting to additional stakeholders in the community, is an important part of the overall plan and its development. This plan will identify and layout the capabilities this coalition has identified for communication during events that have disrupted normal or routine operating procedures. This plan will be reviewed on an annual basis or as improvements are identified during various training or real-life events.

Goals for the regional communications plan:

* Communication systems should meet the needs of an emergency, be compatible with, and should not interfere with communication systems in neighboring or adjacent areas and within the state or in other geographical areas or other types of communication systems that are used by non-EMS agencies.
* Redundant communication systems need to be identified and accepted throughout the region to provide consistency during times of regional emergencies and non-normal operating conditions.
* Integration of various phone systems can help to ensure continued communication during all situations will provide continued communication at all times.
* Identify capabilities of information technology (IT) during routine operations. Identify, if any, redundant capabilities of the IT infrastructure to ensure continued operations during times of limited or no access to internet for various reasons.

 **Taken together, these goals have the following implications for Region 4:**

* Local services need to follow some minimum standards that ensure communications can occur.

There is oversight of how communications occur on a regional and statewide basis to avoid conflicts and allow for interagency communications.

* Communication costs are high and resources must be shared to implement and maintain a communications system.
* Whenever possible, Task Forces (TF) or Working Groups (WG) should be formed to take advantage of capabilities, talent and any other assets found within the region prior to, during and after emergency events.

The following parts of Section 2 describe the key elements of the Region’s Communications Plan. The 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 Normal Operating Conditions**

Normal operations are defined as generally and collectively, the broad functions that an organization undertakes it is responsible for based on its capabilities. Normal is also defined as no significant disruptions are currently impeding its routine operations between pre- hospital health care providers, emergency medical technicians (EMTs), first responders, and the other entities with whom they need to communicate on a regular basis. This includes communications with clinics, state agencies and public/private agencies. Communication includes but not limited to:

- Telephone; VOIP, POTS or cell, fax

- WISCOM

- Email / Internet

- UHF/VHF

All organizations within Western Wisconsin Healthcare Readiness Coalition, Region 4, will operate under their current normal operating procedures with limited to no disruptions. It is expected that all organizations operating within this region will follow all protocols and standard operating procedures defined by that organization’s leadership along with state and federal regulations.

**2.2 Emergency Operations and Redundant Capabilities**

 Alternate means of communication should be utilized when “normal” operations are affected, including radio, phone and computer. This section will discuss secondary means of communication between all partners during an event that has rendered normal operations inoperable. Other agencies can/may adapt similar capabilities to ensure continued coordination and communication for their respective areas of responsibilities. This is a regional approach to a solution and is not mandated for any of the coalition partners.

**2.2.1 WISCOM and SOW.** WISCOM radio should be considered as a primary means of communication during emergency events. The system has the capability to reach all areas of the state as long as the repeater towers are working. The Wisconsin Interoperable System for Communications (WISCOM) is a shared system that first responders in communities across the state will use to communicate during a major disaster or large-scale incident. WISCOM supports up to four simultaneous conversation paths during an incident, dramatically increasing the current capacity available with statewide mutual aid channels and allowing responders from any area of the state to assist another community without losing communication capabilities. Leverages existing radio towers and other infrastructure and it does not use proprietary technology so it will be flexible; it works with the wide variety of local systems currently operating in the state.

 The Site On Wheels (SOW) is a mobile radio tower provided by the state of Wisconsin during emergency situations that enhances and ensures emergency medical service providers from various agencies the ability to communicate with each other on the Wisconsin Interoperable System for Communications (WISCOM) system.

**2.2.2 HAM Radio.** Amateur Radio (HAM radio) is a popular hobby and service that provides people work with electronics and communication as a combined fascination. HAM radios can be used to talk across town, around the world, or even into space, all without the Internet or cell phones. HAM radio describes the use of radio frequency spectrum for purposes of non-commercial exchange of messages and a host of other uses to include emergency communication. When during a large-scale event, HAM radios would be an excellent choice to communicate with other organizations within the region as this capability is not limited to locality to each other. It would be encouraged for all hospitals, county emergency management/public health and other first responders to either obtain or arrange to have this capability in the absence of radio and/or phone communication. See Appendix D listing current regional organizations with HAM radio capabilities. Not all locations have this capability, this should not be used as a primary back up system. It can augment as a redundant capability if not all facilities have this capability. See Annex E for map of locations.

**2.2.3 EMResource.** EMResource is a tool to better manage an incident through sending alerts, knowing the diversion status of hospitals and knowing what bed space is available to assist hospitals in need. EMResource eventually will be the tool by which hospitals and others can communicate with physicians in their office setting by providing physicians with alerts as well as "just-in-time" diagnostic and treatment information. The system has IM capabilities to assist with communications during major events.

EMResource is a requirement of the federal Hospital Preparedness Program. Hospitals are required, when requested, to post their available bed capacity on EMResource. The state will then report the aggregated bed capacity to the U.S. Department of Health and Human Services Strategic Operations Center through HAvBED. HAvBED is the acronym for "Hospital Available Beds for Emergencies and Disasters". EMResource should be used during all events regardless of size. Should voice communications be offline, this could serve as a means of relaying messages to all hospitals as long as the internet is operational in all areas.

**2.2.4 Satellite phone.** A satellite telephone, satellite phone or satphone is a type of mobile phone that connects to orbiting satellites instead of terrestrial cell sites. They provide similar functionality to terrestrial mobile telephones; voice, SMS and low-bandwidth Internet access are supported through most systems. Depending on the architecture of a particular system, coverage may include the entire Earth or only specific regions. Satphones is a smart choice in remote areas where terrestrial cellular service is unavailable. See Appendix E listing current hospital Satellite Phone users. As with the HAM radio, not all facilities have this capability. This could be used on a sub-regional approach to providing information to and from a particular area of the coalition region. This capability should not be considered as a primary means of redundant communications. See Annex E for map of locations.

**2.2.5 Mass Care Trailer.** The coalition has purchased two mass care trailers with communications capability for fire, police and EMS via VHF frequencies. This is a mobile capability and may be deployed with the trailer during events; to include response events, exercise and festival support as requested. This system can be supported by the trailers power generators. The repeater can reach up to approximately 4-5 miles and moved between trailers until a second system can be purchased. This system enables an interoperability communication during a large-scale event, either planned or response. This system can be established outside a hospital in the event of major system failure or the need for expanding radio communication capabilities.

**2.3 Interagency Communications (for resource and disaster coordination)**

 A responsive communication system 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 Wisconsin EMS Section. Below are several examples:

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

**Regional Coordination**— Agencies should establish resource coordination (e.g., first responder, ambulance, and other healthcare resources) to ensure that the highest level of care required is available to the patient. The communications system should provide for coordination of all supporting resources. All agencies must 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 for agencies’ communication systems.

**Intercept and Air Medical**—The local ambulance service must be able to describe how communications take 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.

**Telephone Interconnection**—Cellular phones may be used as a primary communications method for ambulance service providers. However, because of some of their limitations, cellular phones cannot take the place of required radio equipment and frequencies. Communication during interfacility transport is one area in which cell phones may have an advantage over radios because cell phone use avoids the need to program separate radio channels for large numbers of hospitals. EMS providers may also wish to provide telephone interconnection capability with specialty information and treatment centers (i.e., poison center, burn centers) that may have statewide contact numbers.

**2.4 Frequencies and 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 do not currently have this capability must add it when purchasing new equipment or when they reprogram equipment. The above requirement applies regardless of which technology or communications system is used locally.

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, including air ambulances, from any area can contact the facility. This can be accomplished through direct 155.340 communications or through a patch from a central dispatch center.

**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 communications between public safety agencies and providers of any discipline. Note that MARC 1 is configured for wide area repeater usage. (See Appendix B for information on the MARC plan.)

**UHF MED Pairs**—The 10 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 if it does not interfere with the ability to communicate to provide patient care.

UHF Med Pairs Table Med Mobile Receive channel frequencies Med Mobile Transmit channel frequencies.

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 and Med10 are used primarily for dispatch. Note that these 10 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 Med Pairs 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.

**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 on-scene responders on the ground. The recommended channel for air medical communications on the way to the landing zone is MARC 2. There are several reasons for using MARC 2:

• 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, if available, 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 for air medical communications would be EMS C (155.280). Regional plans should have the flexibility to use this option if it is a more practical frequency than MARC.

 Hospital Alt Freq Prim Freq

Tri County Whitehall 155.340 107.2

MCHS Sparta 155.340 156.7

MCHS La Crosse 155.340 97.4

Gundersen St Joes Hillsboro 155.340 123.0

Crossing Rivers PDC 155.340 151.4

Vernon Memorial Viroqua 155.340 131.8

Black River Memorial 155.340 162.2

Gundersen La Crosse 155.340 97.4

Tomah Health 155.340 156.7

**2.4.1** **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 do not 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 communications frequencies. More information on EMS frequencies can be found in Section 2.6.

**2.4.2** **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 statewide—Must have PL tones for local hospitals, hospitals in adjacent counties, and hospitals for which you routinely do emergency transports. Providers do not 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 or WISCOM on the appropriate talk group.

• Required radio in patient compartment.

• 25-100 watts depending on what is appropriate for the area served. Higher power is recommended for rural services 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 “Hospital Tones and Codes” in Section 2.6 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 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.

**3.0 Drills and Tests**

This plan will outline the required drills and tests the coalition will be require to and ensure it conducts in order to maintain its’ proficiency in maintaining communication throughout the region at all times.

**3.1 Semi Annual Redundant Communications Drill.** As required by ASPR, the coalition coordinator is responsible for conducting two redundant communication drills over the course of the fiscal year. These drills must be conducted using various communications methods identified in the plan. Drills must include a primary means of communication and at least one alternate means of communications. Such communications means are identified as phone, radio, internet, satellite phone or any other means as identified by the coalition in this plan.

**3.2 WISCOM Radio Checks.** The WISCOM SME will conduct no less than 25 radio checks at various times over the course of a year to ensure that all hospital facilities are maintaining their radio and they are monitoring it. The WISCOM SME is available for trouble shooting and education on the system if the need arises.

**SECTION 4 INFORMATION TECHNOLOGY (IT)**

**4.0 Overview**

Information technology (IT) system must consider many factors. The goal of being able to exchange key information is critical for the system to function and key considerations consist of:

• Continued connectivity

• Strong cyber security

• Redundant backup systems and alternate means of continued communication capabilities

• Timely trouble shooting capabilities

• Knowledgeable staff for upgrades and educational purposes

An information technology disaster recovery plan (IT DRP) should be developed in conjunction with the organization’s continuity plan. Priorities and recovery time objectives for information technology should be developed during the business impact analysis. Technology recovery strategies should be developed to restore hardware, applications and data in time to meet the needs of the business recovery.

**4.1 Developing an IT Disaster Recovery Plan**

Member organizations should develop an IT disaster recovery plan. It begins by compiling an inventory of hardware (e.g., servers, desktops, laptops and wireless devices), software applications and data. The plan should include a strategy to ensure that all critical information is backed up.

Identify critical software applications and data and the hardware required to run them. Using standardized hardware will help to replicate and reimage new hardware. Ensure that copies of program software are available to enable re-installation on replacement equipment. Prioritize hardware and software restoration.

Document the IT disaster recovery plan as part of the business continuity plan. Test the plan periodically to make sure that it works.

**4.2 IT Recovery Strategies**

Recovery strategies should be developed for Information technology (IT) systems, applications and data. This includes networks, servers, desktops, laptops, wireless devices, data and connectivity. Priorities for IT recovery should be consistent with the priorities for recovery of business functions and processes that were developed during the business impact analysis. IT resources required to support time-sensitive business functions and processes should also be identified. The recovery time for an IT resource should match the recovery time objective for the business function or process that depends on the IT resource.

Information technology systems require hardware, software, data and connectivity. Without one component of the “system,” the system may not run. Therefore, recovery strategies should be developed to anticipate the loss of one or more of the following system components:

* Computer room environment (secure computer room with climate control, conditioned and backup power supply, etc.)
* Hardware (networks, servers, desktop and laptop computers, wireless devices and peripherals)
* Connectivity to a service provider (fiber, cable, wireless, etc.)
* Software applications (electronic data interchange, electronic mail, enterprise resource management, office productivity, etc.)
* Data and restoration

**4.3 Data Backup**

Data backup and recovery should be an integral part of the business continuity plan and information technology disaster recovery plan. Developing a data backup strategy begins with identifying what data to backup, selecting and implementing hardware and software backup procedures, scheduling and conducting backups and periodically validating that data has been accurately backed up.

**APPENDIX A: DETAILED TABLE OF EMS COMMUNICATIONS CHANNELS**

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

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **MOBILE RX FREQ** | **RX Tone** | **MOBILE TX FREQ** | **TX Tone** | **State Name** | **National Name** | **State Call Sign** | **Primary Use** |
| 155.340 | None | 155.340 | D 156 | EMS B | VMED 28 | KH4762 | EMS BASIC STATEWIDE |
| 155.340 | None | 155.340 | See chart E | EMS B | VMED 28 | KH4762 | EMS BASIC LOCAL |
| 155.400 | None | 155.400 | D 156 | EMS A | None | KH4762 | EMS ALS STATEWIDE |
| 155.400 | None | 155.400 | See chart E | EMS A | None | KH4762 | EMS ALS LOCAL |
| 155.280 | D 156 | 155.280 | D 156 | EMS C | None | KH4762 | EMS COORD & HOSPITAL |
| 155.280 | 136.5 | 153.845 | 136.5 | MARAC1 | None | WNPG812 | ALL |
| 155.280 | 136.5 | 155.280 | 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 Management |
| 155.475 | 156.7 OPTIONAL | 155.475 | 156.7 | VLAW31 FORMERLY WISPERN | VALW31 | KA6570 | LAW |
| 155.370 | 146.2 OPTIONAL | 155.370 | 146.2 | POINT | NONE | KA6570 | LAW |
| 154.265 | 210.7 | 154.265 | 210.7 | IFERN | VFIRE22 | KO2099 | MUTUAL AID DISP. ON SCENE TACTICAL |
| 153.830 | 69.3 | 153.830 | 69.3 | FG RED | NONE | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 154.280 | 74.4 | 154.280 | 74.4 | FG WHITE | VFIRE21 | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 154.295 | 85.4 | 154.295 | 85.4 | FG BLUE | VFIRE | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 153.8375 | 91.5 | 153.8375 | 91.5 | FG GOLD | NONE | KO2099 | FIRE OPS ON SCENE TACTICAL |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **MOBILE RX FREQ** | **RX Tone** | **MOBILE TX FREQ** | **TX Tone** | **State Name** | **National Name** | **State Call Sign** | **Primary Use** |
| 154.2725 | 94.8 | 1514.2725 | 94.8 | FG BLACK | VFIRE24 | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 154.2875 | 136.5 | 154.2875 | 136.5 | FG GRAY | VFIRE25 | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 154.3025 | 67.0 | 154.3025 | 67.0 | VFIRE26 | KO2099 | KO2099 | FIRE OPS ON SCENE TACTICAL |
| 155.160 | 127.3 | 155.160 | 127.3 | NATSAR | SAR | KO2099 | SEARCH RESCUE |
| 155.7525 | 156.7 | 155.7525 | 156.7 | VCALL10 | VCALL10 | KO2099 | ALL |
| 151.1375 | 156.7 | 151.1375 | 156.7 | VTAC11 | VTAC11 | KO2099 | ALL |
| 154.4525 | 156.7 | 154.4525 | 156.7 | VTAC12 | VTAC12 | KO2099 | ALL |
| 158.7375 | 156.7 | 158.7375 | 156.7 | VTAC13 | ITAC22 | KO2099 | ALL |
| 159.4725 | 156.7 | 159.4725 | 156.7 | VTAC14 | ITAC23 | KO2099 | ALL |
| 151.1375 | N293 OPTIONAL | 151.1375 | N293 | VAC11DG | None | KO2099 | ALL |
| 154.4525 | N293 OPTIONAL | 154.4525 | N293 | VTAC12DG | NONE | KO2099 | ALL |
| 158.7375 | N293 OPTIONAL | 158.7375 | N293 | VTAC13DG | NONE | KO2099 | ALL |
| 159.4725 | N293 OPTIONAL | 159.4725 | N293 | VTAC14DG | NONE | KO2099 | ALL |
| 151.1375 | 156.7 | 159.4725 | 136.5 | VTAC36 | NONE | KO2099 | ALL |
| 151.1375 | N293 OPTIONAL | 159.4725 | N293 | VTAC36DG | NONE | KO2099 | ALL |
| 155.3475 | 156.7 | 155.3475 | 156.7 | NONE | VMED29 | KH4762 | EMS PORTABLE ONLY |

**APPENDIX C: WISCONSIN HEALTHCARE EMERGENCY PREPAREDNESS PROGRAM REGIONAL STAFF CONTACT LIST:**

**Region 1 HCC Coordinator:**

Aimee Wollman-Nesseth, coordinator@nwwiherc.org, 715-379-6664

RTAC Coordinator: Robert Goodland robert.goodland@dhs.wisconsin.gov, 715-215-0733

EMS Coordinator: Don Kimlicka, donald.kimlicka@dhs.wisconsin.gov 608-266-0737

**Region 2 HCC Coordinator:**

Robert Deede, herc.coordinator@ncw-herc.org, 715-360-6822

RTAC Coordinator: Mike Fraley, michael.fraley@ncrtac.org, 715-892-3209

EMS Coordinator: Don Kimlicka, donald.kimlicka@dhs.wisconsin.gov 608-266-0737

**Region 3 HCC Coordinator:**

Steve Pelch, coordinator@newherc.com, 920-609-7910

RTAC Coordinator: Del Zuleger, newrtacg3@gmail.com, 920-606-4346

EMS Coordinator: Mark Mandler mark.mandler@dhs.wisconsin.gov / 608-266-8853

**Region 4 HCC Coordinator:**

Bill Klemp, loren.klemp@gmail.com, 608-751-0698

RTAC Coordinator: Greg Breen, gbreen7@charter.net, 608-792-3074

EMS Coordinator: Ela Rybczyk, Elizabeth.Rybczyk@dhs.wisconsin.gov, 608-266-0737

**Region 5 HCC Coordinator:**

Jennifer Behnke jennifer.behnke@wi.gov, 920-277-7240

 RTAC Coordinator: Dan Williams dan@scrtac.org, 608-576-1843

 EMS Coordinator: Rick Stenson frederick.stenson@dhs.wisconsin.gov, 608-266-7089

**Region 6 HCC Coordinator:**

Tracey Froiland tracey.froiland@dhs.wisconsin.gov, 920-427-2229

RTAC Coordinator: Jason Selwitschka jason.selwitschka@dhs.wisconsin.gov / 920-203-8791

EMS Coordinator: Mark Mandler mark.mandler@dhs.wisconsin.gov / 608-266-8853

**Region 7 HCC Coordinator:**

Kate Barrett, KBarrett@hercregion7.org, 262-388-4362

RTAC Coordinator: Tom Thrash, sertacwi@gmail.com, 262-483-9862

EMS Coordinator: Mark Mandler mark.mandler@dhs.wisconsin.gov, 608-266-8853



**APPENDIX D: Region 4 Organizations with HAM Radio Capabilities**

**Gundersen St. Josephs - Hillsboro**

**Gundersen Tri-County Hospital**

**Gundersen – La Crosse**

**Mayo - La Crosse**

**Tomah Memorial Hospital**

**Tomah VA**

**Vernon Memorial Hospital**

**Buffalo County EM**

**La Crosse County EM**

**Monroe County EM**

**Trempealeau County EM**

**Vernon County EM**

**APPENDIX E: Hospital Satellite Phone Listing**

**1. Black River Memorial Hospital – 863-833-8814**

**2. Mayo Clinic Health-Franciscan La Crosse – 863-833-8809**

**3. Gundersen Health System-La Crosse – 863-833-8780**

**4. Tomah Veterans Medical Center – 808-434-7042**

**HAM Radio Locations:**

**Gundersen Hillsboro**

**Gundersen Tri County**

**Gundersen La Crosse**

**Mayo Health La Crosse**

**Tomah VA**

**Tomah Health**

**Vernon Memorial Hosp**

**Buffalo County EM**

**La Crosse County EM**

**Monroe County EM**

**Trempealeau County EM**

**Vernon County EM**

**SatPhone Locations:**

**Black River Memorial**

**Mayo Health La Crosse**

**Gundersen La Crosse**

**Tomah VA**

**APPENDIX F: WISCONSIN HOSPITAL TONES FOR EMS B 155.340 AND EMS A 155.400 CHANNELS**

**CITY HOSPITAL TONE (hz)**

**Amery Amery Medical Center 131.8 Antigo Aspirus Langlade Hospital 88.5 Appleton ThedaCare Medical Center Appleton 110.9 Appleton St. Elizabeth Hospital - Appleton 107.2 Ashland Memorial Medical Center 107.2 Baldwin Baldwin Area Medical Center 82.5 Baraboo St. Clare Hospital 100.0 Barron Mayo Clinic Health Sys Barron 82.5 Beaver Dam Beaver Dam Community Hospital 114.8 Beloit Beloit Memorial Hospital 118.8 Berlin ThedaCare Medical Center Berlin 91.5 Black River Falls Black River Memorial Hospital 162.2 Bloomer Mayo Clinic Health Systems Chippewa Valley 136.5 Boscobel Boscobel Area Health Care 123.0 Brookfield Wheaton Franciscan Healthcare Elmbrook 103.5 Burlington Aurora Memorial Hospital of Burlington 110.9 Chilton Calumet Medical Center 123.0 Chippewa Falls St. Joseph's Hospital Chippewa Falls 114.8 Columbus Columbus Community Hospital 136.5 Cudahy Aurora St. Luke's South Shore Hospital 156.7 Cumberland Cumberland Memorial Hospital 146.2 Darlington Memorial Hospital of LaFayette County 114.8 Dodgeville Upland Hills Health Center 206.5 Durand Chippewa Valley Hospital 186.2 Eagle River Ministry Eagle River Memorial Hospital 118.8 Eau Claire Mayo Clinic Health Systems Eau Claire 110.9 Eau Claire Sacred Heart Hospital 110.9 Edgerton Edgerton Hospital and Health Services 136.5 Elkhorn Aurora Lakeland Medical Center 114.8 Fond du Lac St. Agnes Hospital 97.4 Fort Atkinson Fort Memorial Hospital / Fort Healthcare 97.4 Franklin Wheaton Franciscan Healthcare Franklin 156.7 Friendship Moundview Memorial Hospital 173.8 Grafton Aurora Medical Center Grafton 127.3**

**Grantsburg Burnett Medical Center 110.9 Green Bay Aurora Baycare Medical Center 131.8 Green Bay Bellin Memorial Hospital 192.8 Green Bay St. Mary's Hospital Medical Center Green Bay 151.4 Green Bay St. Vincent Hospital 173.8 Hartford Aurora Medical Center Washington County 167.9 Hayward Hayward Area Memorial Hospital 100.0 Hillsboro Gunderson St. Joseph's Hospital 123.0 Hudson Hudson Memorial Hospital 167.9 Janesville Mercy Hospital and Trauma Center 100.0 Janesville Mercy Hospital and Trauma Center North 203.5 Janesville St. Mary's Hospital Medical Center 141.3 Kenosha Aurora Medical Center Kenosha 107.2 Kenosha United Hospital System Kenosha 107.2 Keshena Menominee Tribal Clinic 146.2 Kewaunee St. Mary's Kewaunee Memorial Hospital 82.5 La Crosse Gundersen Lutheran Medical Center 97.4 La Crosse Mayo Clinic Health System Franciscan Hlthcre 97.4 Ladysmith Rusk County Memorial Hospital 118.8 Lake Geneva Mercy Walworth Hospital Medical Center 114.8 Lancaster Grant Regional Health Care 123.0 Madison Meriter Hospital 167.9 Madison St. Mary's Hospital Medical Center 167.9 Madison University of Wisconsin Hosp and Clinics 167.9 Madison UW Health at the American Center 229.1 Madison Wm S. Middleton Memorial Veterans Admin 167.9 Manitowoc Holy Family Memorial Medical Center 179.9 Marinette Bay Area Medical Center 156.7 Marshfield Ministry Saint Joseph's Hospital 82.5 Mauston Mile Bluff Medical Center 82.5 Medford Aspirus Medford Hospital 88.5 Menomonee Falls Community Memorial Hospital 173.8 Menomonie Mayo Clinic Health System Red Cedar 100.0 Mequon Columbia St. Mary Ozaukee 206.5 Merrill Ministry Good Samaritan Health Center 85.4 Milwaukee Children's Hospital of Wisconsin 156.7 Milwaukee Columbia St. Mary Milwaukee 156.7**

**Milwaukee Aurora Sinai Medical Center 156.7 Milwaukee Wheaton Franciscan St. Francis Hospital 156.7 Milwaukee Wheaton Franciscan St Joseph 156.7 Milwaukee Froedtert Hospital 156.7 Milwaukee Columbia St. Mary's Hospital/Milwaukee Cpus 156.7 Monroe Monroe Clinic 114.8 Mukwonago ProHealth Mukwonago 192.8 Neenah ThedaCare Medical Center 141.3 Neillsville Memorial Medical Center 85.4 New Berlin Moorland Reserve Health Center 94.8 New London ThedaCare Medical Center New London 100.0 New Richmond Westfield Hospital 127.3 Oconomowoc Oconomowoc Memorial Hospital 131.8 Oconto Bellin Health Oconto Hospital 167.9 Oconto Falls St Clare Hospital (Cmmity Mem Hospital) 103.5 Osceola Osceola Medical Center 91.5 Oshkosh Aurora Medical Center Oshkosh 131.8 Oshkosh Mercy Medical Center 186.2 Osseo Mayo Clinic Health System Oakridge 173.8 Park Falls Flambeau Hospital 146.2 Platteville Southwest Health Center 123.0 Pleasant Prairie St Catherine Med Center United Hosp Sys 107.2 Portage Divine Savior Hospital 162.2 Prairie du Chien Crossing Rivers Health 151.4 Prairie du Sac Sauk Prairie Memorial Hospital 141.3 Racine Wheaton Franciscan Healthcare - All Saints 229.1 Reedsburg Reedsburg Area Medical Center 103.5 Rhinelander Ministry Saint Mary's Hospital 114.8 Rice Lake Lakeview Medical Center 192.8 Richland Center Richland Hospital, Inc. 118.8 Ripon Ripon Medical Center 85.4 River Falls River Falls Area Hospital 85.4 Shawano ThedaCare Medical Center Shawano 127.3 Sheboygan Aurora Sheboygan Memorial Medical Center 186.2 Sheboygan St. Nicholas Hospital 146.2 Shell Lake Indianhead Medical Center 123.0 Sparta Mayo Clinic Health System Franciscan Sparta 156.7**

**Spooner Spooner Health Systems 123.0 St. Croix Falls St. Croix Regional Medical Center 203.5 Stanley Ministry Our Lady of Victory Hospital 156.7 Stevens Point Ministry Saint Michael's Hospital 206.5 Stoughton Stoughton Hospital 91.5 Sturgeon Bay Ministry Door County Medical Center 123.0 Summit Aurora Medical Center Summit 162.2 Sun Prairie St Mary’s Emergency Department Sun Prairie 151.4 Superior St. Mary's Hospital of Superior 151.4 Tomah Tomah Memorial Hospital 156.7 Tomahawk Sacred Heart Hospital Tomahawk 85.4 T Two Rivers Aurora Medical Center Manitowoc County 94.8 Viroqua Vernon Memorial Hospital 131.8 Watertown Watertown Memorial Hospital 88.5 Waukesha Waukesha Memorial Hospital 141.3 Waupaca ThedaCare Med Cntr/Waupaca Riverside Med Cntr 203.5 Waupun Agnesian Healthcare (Waupun Mem Hosp) 71.9 Wauwatosa Froedtert Memorial Hospital 156.7 Wauwatosa Wisconsin Heart Hospital 156.7 Wausau Aspirus Wausau Hospital 167.9 Weston Ministry Saint Clare’s Hospital 179.9 West Allis Aurora West Allis Medical Center 156.7 West Bend Froedtert Health St. Joseph's Hospital 94.8 Whitehall Gunderson Tri-County Memorial Hospital 107.2 Wild Rose ThedaCare Medical Center Wild Rose 110.9 Wisconsin Rapids Aspirus Riverview Hospital 82.5 Woodruff Howard Young Medical Center 114.8**

**APPENDIX G: WISCOM OVERVIEW**

**WISCONSIN STATEWIDE VHF TRUNKING COMMUNICATIONS NETWORK FOR PUBLIC SAFETY RESPONDERS**

 Most local emergency responders communicate with responders from neighboring communities by programming their public safety radios with a small number of shared “mutual aid” channels. This approach works well for routine incidents but does not support emergency communications between agencies outside these established networks, resulting in communication failures when coordination is especially critical and time is of the essence.

The Wisconsin Interoperable System for Communications (WISCOM) is a shared system that first responders in communities across the state will use to communicate during a major disaster or large- scale incident. WISCOM will support up to four simultaneous conversation paths during an incident, dramatically increasing the current capacity available with statewide mutual aid channels and allowing responders from any area of the state to assist another community without losing communications capabilities.

The WISCOM backbone is complete, with additional towers being added to bolster coverage. With WISCOM, 95% of the state will have coverage using mobile public safety radios.

 **WISCOM HAS THE FOLLOWING ADVANTAGES:**

• Leverages existing radio towers and other infrastructure, resulting in less initial cost.

• Does not use proprietary technology—it will be flexible—working with the wide variety of local systems currently operating in the state.

• Shares a statewide infrastructure that will result in long-term cost savings for everyone. Communities are already spending millions of dollars on systems that do not allow interoperability. As communities replace their aging local systems, they will be able to leverage the state backbone, sharing infrastructure costs and avoiding costly duplication of equipment. Communities can then build additional local coverage and capacity to meet their needs when they are ready.

• Will be managed by the WISCOM Committee, under the authority of the State Interoperability Council—including public safety executives from federal, tribal, state, county, and local law enforcement, fire, EMS, and emergency management disciplines—ensuring that the WISCOM project has input from a variety of potential users and meets the needs of the entire public safety community.

EMS agencies should consider establishing WISCOM capability to enhance interoperability and bolster communications.