Minnesota
Hospitals

Communications Best Practice Guide

Statewide Radio Board, Operations & Technical Committee (SRB OTC)
EMS, Hospital & Public Health Workgroup

Approved by the Statewide Radio Board

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This document describes the recommended Best Practice, Standards & Contact information for Minnesota Hospitals and Regions to assist in planning for interoperability with EMS, hospitals and other public safety before, during and after migration to the statewide ARMER Radio system.

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EMS, Hospital & Public Health Communications Workgroup

The Statewide Radio Board (SRB), Operations and Technical Committee (OTC) - EMS, Hospital & Public Health Workgroup was created in 2010 to assist and coordinate EMS, hospitals and public health across the State of Minnesota during migration to the ARMER radio system. As ARMER has grown beyond the Metro Region, it has been clear that EMS, hospitals and public health need direction, coordination and best practice guidance. This document is meant to specifically address hospital related issues and assist with planning for Health System Preparedness Regions and agencies. Common hospital communications paths include the following:

- Ambulance to Hospital Emergency Room (addressed in EMS Best Practice)
- Air Ambulance to Hospital Emergency Room (addressed in EMS Best Practice
- Metro Regional Coordination Center to Hospital Emergency Room (addressed in EMS Best Practice).
- Hospital to Hospital
- Hospital to Regional Multi Agency Coordination Center (MACC)
- Hospital to County Emergency Operations Center
- Hospital to Local Public Safety Agency (Law Enforcement/Fire)
- Hospital to Local Public Health
- Multi-Agency Coordination Center to MDH Department Operations Center (DOC)

It is the workgroup's best practice recommendation that all Minnesota hospitals migrate to the Minnesota ARMER System. The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talk groups directly accessible to them in their radios.

Participation in ARMER

Applicable Standard: State Standard 1.10.0 (Requesting & Configuring Participation) and 5.4.0 (Hospital Access).

The decision to participate in ARMER must be made in conjunction with county officials, local public safety, adjacent EMS agencies and hospitals. This must also include an evaluation of interoperability with other radio systems. For questions, please utilize the points of contact in this document.

Minnesota Hospital Related EMS Communications Planning

It is the recommendation of the workgroup that every hospital purchase and install an 800MHz radio on the ARMER system. It is important to consider separate radios for the Emergency Department (for EMS) and hospital emergency preparedness. The ED radio should be dedicated to patient information with ambulance and pre-hospital personnel. A separate radio should be used for hospital incident command to communicate with public safety and other response partners during an incident. The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talk groups directly accessible to them in their radios. Failure to do so may result in an inability to communicate by radio with pre-hospital EMS and other hospitals.

Talkgroup Naming Conventions – Hospitals & EMS

The designated ARMER naming convention for hospitals is "EMH" for Emergency Medical Hospital. As an example, the Cambridge Medical Center talkgroup is EMHCB. EMH should always be in front of the name so it is clearly a hospital designated talkgroup.

The designated ARMER naming convention for EMS is "EMS" for Emergency Medical Services. As an example, the North Memorial Ambulance Service main talkgroup is EMSNM-ALS. EMS should always be in front of the name so it is clearly a hospital designated talkgroup.

Emergency Department Radio

It is recommended that each hospital establish one talkgroup specific for EMS to ED communications and that talkgroup be on a separate radio in the emergency department. Shared pre-hospital EMS talkgroups such as EMS-SMRCC or EMS-ETAC 1 -4 are not meant for hospital use and they should not be in the ED radio. Hospital-to-EMS or hospital-to-hospital communications should be on a designated talkgroup specific for that facility.

It also recommended that each emergency department ARMER radio also have the Emergency Medical Hospital Statewide Emergency Department (EMH-SED) talkgroup. This talkgroup will **not** be monitored. It will be used by Metro Region Communication Center (MRCC) to patch an EMS unit which does not have a specific hospital talkgroup to that hospital. MRCC will contact the hospital by phone to instruct the emergency department to communicate with the hailing EMS unit on the EMH-SED.

Hospital Emergency Preparedness

It is recommended that each hospital have an ARMER radio for the hospital emergency preparedness program. Hospital Emergency Preparedness and Emergency Department radios have a separate use and should not be in the same location.

Hospitals, through a coordinated state and federal program, have been developing response plans for large scale disasters and public health emergencies. The Minnesota Department of Health has identified eight regions for emergency preparedness and response. In addition to a dedicated ARMER radio in the emergency department, it is recommended as a best practice that each hospital have a portable or handheld ARMER radio to be used by the hospital command center as part of the Emergency Preparedness Program.

Regional Hospital Talkgroups

Each Health System Preparedness Region will have one talk group reserved for Hospital-to-Hospital or hospital-to-Multi Agency Coordination Center (MACC) communication. This talkgroup will **not** be monitored and participants will be notified to monitor a regional hospital talkgroup by MNTrac or phone call when the need arises.

Proposed Health System Preparedness Talkgroups:

- Northwest Region HSPP
- Northeast Region HSPP

- West Central Region HSPP
- Central Region HSPP
- Southeast Regional HSPP
- South Central Regional HSPP
- Southwest Regional HSPP

Existing Health System Preparedness Talkgroups:

- Metro Region EMH-CALL (Metro region Hospital Preparedness Hailing to RHRC)
    - EMH-COM 1 (Tactical)
    - EMH-COM 2 (Tactical)
    - EMH-COM 3 (Tactical)
    - EMH-COM 4 (Tactical)

Hospitals and VMED28 (Nation EMS, HEAR, Statewide EMS)

Many hospitals are not planning to maintain VHF systems. However, The State of Minnesota will be narrow banding the state VHF infrastructure and it will remain available regardless of ARMER migration. Hospitals need to consider issues with bordering states and EMS agencies that will continue to use VHF. This workgroup recommends that hospitals maintain VHF systems (and consider narrowbanding, see page 8) as a way to communicate with diverse radio systems, or consider interoperable solutions between ARMER and conventional radio with the local public safety answering point (PSAP).

Minnesota Hospital Specific Talkgroups

Minnesota Hospital Users - Hospital Specific Talkgroups		
Talkgroup/Channel	**Radio System**	**Intended Use**
	ARMER 800 MHz	
EMH (hospital name)	Hospital ED to EMS (ED use only)	Emergency Department
EMH-SED	State Patch for MRCC for EMS to Hospital (ED use only *not monitored*)	Emergency Department
EMH-(region name)	Hospital to Hospital, Hospital to MACC (hospital command center only)	Emergency Preparedness
	VHF CONVENTIONAL	
VMED28	VHF National EMS/Statewide EMS/HEAR (ED use only)	Emergency Department

NOTE: In addition to these talkgroups, it is recommended that hospitals discuss with the radio authority and local public safety officials how the hospital command should communicate with public safety in the event of a disaster. Options include access to the county emergency operations center, local fire/rescue, law enforcement, etc. This may be accomplished by the use of local or regional tactical talkgroups as well.

Radio Communications, Encryption & HIPAA Considerations

The Act allows the transmission of protected health information over the phone or radio for the purpose of emergency response, which includes patients being transported by ambulance. While it is prudent and responsible to minimize unnecessary patient identifying information over the radio, this information is usually necessary to complete a notification and give the receiving hospital the information it needs.

This workgroup does not recommend using encryption for any reason. The best practice is for all communications to remain in the clear. This avoids confusion and radio equipment incompatibility. In addition, statewide talkgroups used to communicate between EMS field units and hospitals are not encrypted. Facilities choosing to use encrypted equipment and talkgroups may not be able to effectively communicate with most users.

Patient Acuity Identification

The standard way of identifying patient acuity in EMS Incident Response Plan and in MNTrac across the state is with the color codes Red, Yellow and Green. These acuity indicators were originally based on S.T.A.R.T. Triage. They have evolved over the years and have a variety of definitions. This has caused confusion for field personnel, dispatchers and ED personnel.

Red-Yellow-Green colors are used in MNTrac and indicate the number of beds each hospital emergency department can handle in each category. MRCC uses these numbers in a major incident to coordinate patient disposition and in daily operations when relaying patient acuity from the field to the hospital. Based on experience and to make it intuitive and understood by field and hospital personnel alike, the following definitions are used today:

- **Red** = critical patient for stabilization/red room
- **Yellow** = patient needs a bed or stretcher
- **Green** = patient for triage only, ambulatory

Patient Information Relay to Hospitals

Field personnel based in the Metro Region should use existing policy and protocol for their agency, and use the existing WMRCC or EMRCC talkgroups.

Field personnel that operate outside of the Metro Region can hail WMRCC by radio on the SMRCC talk group. The MRCXP1 talk group can be used as a back-up, but only if the unit can't wait for traffic to clear from SMRCC talk group due to transport time or patient acuity. If the field user uses the phone, they can make contact with WMRCC directly.

The field unit must contact WMRCC at the earliest possible convenience. Care must be given to allow time for the relay of information. Do not wait for the last few minutes or miles of the transport.

Field personnel should make every attempt to follow the radio format and the specific sequence of information. This also helps to minimize workload and recognize the fact other units may be waiting. It is also very helpful to indicate a short ETA and/or RED/Critical patient in the initial radio hail to West MRCC. This will help the West MRCC dispatcher prioritize calls and minimize a wait in queue.

The following list is the typical information and sequence field users should provide when giving a patient report to West MRCC for medical control or routine information:

1. Agency & Unit ID
2. Declaration of medical control vs. routine patient information
3. Intended hospital destination
4. Age
5. Gender
6. Chief Complaint
7. Patient name (critical/red patients only and transfers)
8. Date of Birth (critical/red patients only and transfers)
9. Vital signs (critical/red patients only)
10. Response to treatment (critical/red patient only)
11. Other pertinent information, specifically for transfers
12. Patient Acuity (red/yellow/green)
13. Estimated Time of Arrival (ETA)

Aeromedical Interoperability

Aircraft to Hospital, Dispatch or MRCC Communication:
Whether an aircraft is equipped with ARMER or VHF radio, they may choose to contact hospitals in several ways:

- Aircraft to Aeromedical Dispatch Center via ARMER or VHF then info relayed by phone to hospital
- Aircraft to MRCC via SMRCC or VHF then info relayed by phone.
- Aircraft to hospital direct that have both have VHF radio (VMED28)
- Aircraft to hospital direct, if the Aircraft has the hospital ARMER talkgroup
- Aircraft to MRCC via SMRCC then patched XP to EMS-SED for direct contact
- Aircraft to MRCC via VMED28 then patched VMED28 to Hosp talkgroup in Metro area.

The appropriate communication pathway is relative to the available resource in the aircraft and the hospital. It may also be dependent on the effective communication of what is needed between the aero-medical crew and the dispatcher.

ARMER Communications and Interop Training

Applicable Standards:

- State Standard 1.11.1(system admin training), 1.11.2 (technical staff training), 1.11.3 (dispatcher training), 1.11.4(field user training), 1.11.5(non-system users training)

All users of the ARMER system need proper training along with communications and interoperability basics as outlined in the SRB Standards and in accordance with regional standards and protocol. The local radio authority and the regional hospital preparedness coordinator can be a resource for developing training.

Radio Equipment Guidance

Applicable Standards:

- State Standard 1.7.0 Subscriber Radio Equipment

Equipment authorized for use on the ARMER radio system is outlined on the ARMER web site: http://www.srb.state.mn.us/ . Also available on the web site is the state contract R-651 for communications vendors and equipment suppliers.

VMED28 (National EMS, HEAR, Statewide EMS) State Planning

The workgroup recommends that EMS and hospital users maintain VHF radio capability and/or interoperability if there is a need for continued interoperability with other states or Minnesota VHF users.

Excerpt from the SRB MN VHF Interoperable Frequency Plan – Dated 12-2-2010:

The Statewide VHF Interoperable Frequency Steering Committee established the final revision of the VHF plan on 12-2-2010. This plan describes the primary channel for interagency EMS communications in the state as 155.340MHz, commonly referred to as EMS HEAR, Statewide EMS and National EMS. The national naming convention for this channel is VMED28. Under FCC rules, "this frequency may be designated by common consent as an intersystem mutual assistance frequency under an area-wide medical communications plan" and was developed as a statewide mutual aid channel under the Minnesota EMSRB Radio Communications Plan. The use of this channel is widespread in Minnesota and has been authorized for use by local, regional, and state authorities for fixed, mobile, and portable radios.

Permission to utilize this channel outside the EMS discipline or hospitals, from the SRB and previous authorities, has been limited. The current standard operational mode for this channel is wideband analog but this channel is subject to the FCC mandated narrowbanding deadline.

In the EMSRB plan, this channel is specified for use with a CTCSS code (210.7). This is different from the National Standard (156.7) and would limit the use of this channel for statewide interoperability with other users from adjacent states and regions that currently utilize or plan to migrate to the national standard CTCSS code. We recommend that all users change to the National Standard code.

An additional statewide EMS tactical channel, 150.7750 MHz, appears in the EMSRB Radio Communications Plan although the channel does not appear to be widely used based on a search of the FCC licenses in the state.

VHF Narrowbanding (Excerpted from the SRB MN VHF Interoperable Frequency Plan)

The Department of Public Safety (DPS) in conjunction with the SRB has recommended that, in order to preserve interoperability, agencies continue to maintain wideband capability on these channels in mobile and portable radios until the narrowbanding deadline of January 1, 2013. This could be accomplished by programming or updating the four current statewide interoperability channels in existing radio modes and zones using wideband names as shown in Table and adding the Statewide VHF interoperability zone with narrowband channels into their radios prior to the 60 day transition period.

DPS proposes that users should proceed with reprogramming base stations on these four statewide channels beginning on October 1, 2012. Reprogramming of mobile and portable radios could begin before that date if users retain wideband capabilities as well. DPS also urges all users to complete

narrowbanding these channels in all their radios no later than November 30, 2012. All wideband operations on these channels must cease as of January 1, 2013.

During this 60 day narrowbanding transition period, significant difficulties communicating on these four primary statewide mutual aid channels may occur if users at an incident are attempting to communicate from a narrowband channel to a wideband channel and vice versa. Even though the operating frequency is unchanged, the substantial differences in operating bandwidth between these modes can cause low or muted audio and/or significant distortion of radio communications.

Bordering States Considerations

VHF frequencies such as VMED28 are widely used by EMS in the adjacent states of North Dakota, South Dakota, Wisconsin, and Iowa. Each of these states interoperability plans includes some provisions for use of the national VCALL and VTAC channels and all of the current primary VHF interoperability channels used in Minnesota. The one exception is MIMS (155.370MHz) which is not widely licensed or used in South Dakota.

EMS agencies that may require interoperability with hospitals or EMS across state lines need to carefully consider 800MHz and conventional interoperability.

Grants Guidance

All ARMER grant information is located on the ARMER web site:
http://www.srb.state.mn.us/ArmerDispCat.asp?catid=124

The following grants are applicable to EMS for ARMER and VHF equipment. Agencies should contact their RAC for more information.

- IECGP Grants, Interoperable Emergency Communication Grant Program
- SHSP Grants, State Homeland Security Program grants
- PSIC Grants, Public Safety Interoperable Communications grant program

Hospital Points of Contact for General Assistance

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Regional Radio Board and Advisory Committee Contacts

Hospitals and EMS agencies across Minnesota must be involved with their respective radio regional governance structure. There are 7 radio regions that do not align with EMS regions or hospital preparedness regions. Be aware of which regions may affect your primary response area.

Contacts for the Regional Radio Boards (RRB) and Regional Advisory Committees (RAC) can be found on the ARMER web site here: http://www.srb.state.mn.us/ARMERDispArt.asp?aid=420