

National Association of
State EMS Officials



EMS Office Assessment of the Status of Communications Systems in the States and Territories

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EMS Office Assessment of the Status of Communications Systems in the States and Territories

Introduction

(This report assumes basic knowledge of public safety communications systems. For clarification of terms, acronyms and concepts, please refer to NASEMSO's [Guide to Emergency Medical Services Information Communications Technology \(ICT\) Systems For EMS Officials](#)).

Public safety communications systems are vital components of emergency medical services (EMS) systems. Mostly, these are land mobile radio (LMR) systems. In the 1960's to 1970's, these systems blossomed. Prior to that, ambulance dispatch often occurred through landline phone systems, mobile communications were citizens band (CB) radios, and ambulances often arrived at hospitals emergency or accident rooms with no prior notice.

The traditional LMR services for EMS were VHF frequencies (primarily 155 band) used for dispatch, ambulance crew to hospital communications, and communications among crews and vehicles responding to an emergency scene. Low band LMR frequencies were used for these purposes primarily in rural areas. Also widely employed were UHF "Med Channel" paired frequencies (primarily 463/468 pairs) for EKG telemetry communication, medical direction, and regional communications coordination.

Later, 700 and 800 band frequencies were incorporated in region-wide and statewide systems for public safety. These systems incorporated EMS in some areas, and offered flexibility in communicating that increasingly oversubscribed VHF/UHF systems couldn't.

Emergency medical crews often used landline phones to converse with hospital staff during patient care, if these phones were convenient, as they afforded added confidentiality. Cell phones became a more flexible tool for this purpose and today are very frequently found in use in ambulances and by crews at the scene.

Smartphones, tablet computers mounted in ambulances and other "broadband" devices are increasingly frequently found in use. Unlike all of the technology previously mentioned, which is narrowband technology, these devices can send huge quantities of data, such as pictures, text messages, patient records, video, biotelemetry and imaging material.

Crews today use broadband communications through commercial wireless aircards, modems and other devices, largely for administrative purposes. These commercial systems are inadequate for "mission critical"/"patient critical" communications because they are unreliable and give no priority to EMS users. In 2012, Congress authorized the creation of a nationwide public safety broadband network to address

these deficiencies. It is now under development and will, through increased real-time availability of situational awareness and common operating picture information, change the way EMS is provided in the field.

This report presents the findings of a state EMS office survey conducted in the spring of 2015 about the status of communications systems. It, in part, replicates a similar survey conducted in 2008. At publication due date, 33 of 56 state EMS offices had responded. This is approximately the same rate as a 2001 communications survey to which 32 states responded, but less than the 2008 survey to which 50 states or territories responded. It is NASEMSO's intention to continue to pursue responses, and publish an update later in 2015.

In the report that follows, when respondents are called "states", that is intended to include states, commonwealths, and territories.

Results

States and Territories That Responded

Of 56 states and territories, the following 33 (59%) NASEMSO members responded to the survey. In 2001, 32 (57%) responded, and in 2008, 50 (89%) did so. Four states provided incomplete responses, which is why some survey areas only had 29 or 30 overall responses.

Alaska	Massachusetts	New York
Arkansas	Michigan	North Carolina
Colorado	Minnesota	Pennsylvania
Connecticut	Mississippi	Rhode Island
Delaware	Missouri	Tennessee
Indiana	Montana	Texas
Iowa	Nebraska	Utah
Kentucky	Nevada	Virginia
Louisiana	New Hampshire	Washington
Maine	New Jersey	Wisconsin
Maryland	New Mexico	West Virginia

General Description of Communications Systems

Alaska: “A mixture of CB, cell phone, dispatcher to radio direct, UHF, VHF and Alaska Land and Marine Radio. Working towards improving ALMR coverage but many isolated areas.”

Arkansas: “VHF: 155.340, 155.280, and 155.235. 800 MHz.”

Frequencies: As above.

Colorado: “The majority use the statewide 700/800 MHz digital trunked system, but some still use VHF, UHF, and cell phones.”

Frequencies: “VHF 155.340; UHF 462.9750, 467.9750; Multiple 700/800 MHz throughout the state accessing 215 sites.”

Delaware: “800MHz encrypted and unencrypted.”

Frequencies: “Operate on 800 MHz trunked system.”

Indiana: “Communications across the state are as diverse as the systems that provide EMS. Dispatch and tactical communications are achieved generally through either VHF or 800 MHz radio. Some providers utilize cellular. Communications with medical direction and between hospitals and EMS is done via VHF, UHF, 800 MHz or cellular. All ambulances are required by rule to be equipped with VHF communications equipment with a common frequency utilized for ambulance to hospital and ambulance to ambulance.”

communications, however there is a provision in the same rule for the providers to utilize 800 MHz if all of the receiving facilities that they transport to have that capability as well. ALS providers are required to have an agreement with a supervising hospital certified by our agency, and both are required to have UHF, cellular, or 800 MHz communications for medical control/direction.”

Frequencies: “As above. 155.340.”

Iowa: “Uses the traditional VHF frequencies of 155.160, 155.175, 155.205, 155.235, 155.280, 155.325, 155.340, 155.355, 155.385, and 155.400.”

Frequencies: As above.

Kentucky: “Generally VHF is being used and UHF would come in second place.”

Frequencies: “155.340. UHF.”

Louisiana: “Has a state-wide 700 MHz radio network.”

Frequencies: “700 MHz.”

Maine: “LMR: 155.325 155.340 155.400 155.355 155.385. Much cell phone use. Some commercial wireless for data.”

Frequencies: “As above. There are lots of others, but we do not maintain a listing.”

Maryland: “Has multiple statewide UHF EMS communication systems. The systems are coordinated by the State EMS Agency (MIEMSS – Maryland Institute for Emergency Medical Service Systems) through 3 regional communications centers (EMRCs - Emergency Medical Resource Centers). Maryland also provides a low band system for medevac communications – both for command and control as well medical direction – which is managed by a central communications center (SYSCOM – System Communications). Maryland integrates local jurisdictional communications systems through the three EMRCs providing linkages between providers, doctors and hospitals.”

Frequencies: “UHF: 453.2125 MHz, 453.4625 MHz, 453.7125 MHz, 453.8625 MHz, 458.2125 MHz, 458.4625 MHz, 458.7125 MHz, 458.8625 MHz, 467.950 MHz, 467.975 MHz, 468.000 MHz, 468.025 MHz, 468.050 MHz, 468.075 MHz, 468.100 MHz, 468.125 MHz, 468.150 MHz, 468.175 MHz, 453.2125 MHz, 453.4625 MHz, 453.7125 MHz, 453.8625 MHz, 462.950 MHz, 462.975 MHz, 463.000 MHz, 463.025 MHz, 463.050 MHz, 463.075 MHz, 463.100 MHz, 463.125 MHz, 463.150 MHz, 463.175 MHz VHF: 155.28 Low Band: 44.74, 47.66 Local jurisdictions use a variety frequencies to handle EMS communications: 700 MHz, 800 MHz, VHF, UHF.”

Massachusetts: “Ambulance services are dispatched on their own frequencies. Medical direction and hospital notifications occur on UHF Med Channels and are handled through Regional Central Medical Emergency Direction (CMED) centers. Ambulance task force mobilization and coordination are conducted over statewide interoperable VHF frequencies.”

Frequencies: “All UHF Med Channels.”

Michigan: “We enjoy a Statewide, state operated, 800 MHz trunked radio system that is becoming more popular for dispatch and medical direction communication around the State. We also have well developed UHF “Med Channel” systems extensively used in the Lansing and Grand Rapids metro areas.

The State minimum system, required to be in place in all ambulances and hospitals, is the VHF 155.34 MHz HERN channel. Cellphone use continues to be popular with the hospital nursing community and is often used by EMS crews. All communication, on any radio or telephone system, related to patient care, is electronically recorded per State rule.”

Frequencies: “155.34, 155.355 (mandated). Also require all national interoperability channels, per band used, for all public bands. Many others on VHF, UHF, and 700/800 used for public safety dispatch.”

Minnesota: “The network is composed of, but not limited to, channel banks, hubs, switches, routers, servers, local area networks at the equipment locations, and wide area links connecting sites together consisting of the microwave and fiber optic equipment, and the network management tools provided by the equipment manufacturer. The system architecture is primarily constructed around an internet protocol (IP) based network. ETAC TALKGROUPS - EMS Required: All EMS Users Recommended: EOCs, Incident Command, 9-1-1 PSAPs Optional: Hospitals Not Allowed: Public Service Site Access: System Wide – All Sites.”

Montana: “For a description:

[http://sitsd.mt.gov/Portals/77/docs/Public%20Safety%20Communications/.](http://sitsd.mt.gov/Portals/77/docs/Public%20Safety%20Communications/)”

Frequencies: “VHF 155.280, 155.340, 155.325, 155.385 & 153.905 are required in all ambulances.”

Nebraska: “Has the following written in Rule & Regulation: 12-004.02D Each service must have a communications system that is capable of two-way communications with receiving hospitals, dispatchers, and medical control authorities. The following is Nebraska's model protocol on communications to dispatch and the hospitals. Most Nebraska ambulance services use the model protocol. To allow for regional or local variations, the provider may follow a locally established two-way electronic communications policy/procedure. General guidelines for radio communication include:

- Avoid the use of 10 codes or other codes
- Contact the destination hospital and advise Patient’s Age and Gender Patient’s chief complaint, History of the Situation – Mechanism of Injury Level of Consciousness and Vital Signs, Treatments Provided, Special Teams Requests (i.e. Trauma Team), ETA to Destination Hospital.
- Contact the dispatch agency and advise The call was received The response unit is in route When at the incident location When leaving the incident When at the Hospital (if applicable) When Unit/responders back in service.”

Nevada: “Agencies use 800 MHz and UHF, LIDS are managed by Nevada Division of Transportation (NDOT).”

Frequencies: As above.

New Jersey: “Predominantly cell phones.”

Frequencies: “155.340, 155.280.”

New Mexico: “VHF Dispatch and operation Dispatch Emergency Management.”

Frequencies: “UHF: 463.00, 463.025, 463.050, 463.075, 463.100, 463.125, 463.150, 463.175, 463.200, 462.975. VHF: 154.295. Also: 867.5125.”

New York: “Systems are developed and operated locally / regionally, typically based on individual county resources available. State no longer funds communications systems but still retains limited oversight of FCC PM licensure by endorsements. Recommendations published to promote interoperability in EMS communications systems.”

Frequencies: “155.235, 155.280, 155.295, 155.325, 155.340, 155.400 and UHF MED channels.”

North Carolina: “Has two EMS communications systems operational statewide. The "VIPER Medical Network (VMN)" 800 MHz trunked shared public safety communications network with 83,000 radios, which is operational in all 154 hospitals and community health centers (CHC) in the state and available to all public safety agencies. The VMN is installed in 2,054 of the 2,654 permitted ambulances in the state. The second statewide network is the UHF MED North Carolina Medical Communications Network (NCMCN) operating from 30 microwave interconnected repeater sites and considered the "redundant backup system" installed and operational in all hospitals and CHCs.”

Frequencies: “155.340; 155.280; 155.400.”

Pennsylvania: “The structure of and frequencies used across the commonwealth is vastly different from one county to another. The system uses most every spectrum. The contributing factors for this include things like mountainous terrain and valleys, proximity to an international boarder, proximity to dense populations and metropolitan areas, the large rural coverage areas and funding.”

Frequencies: “462.95; 463; 463.1; 151.325; 153.89; 154.07; 154.175; 154.22; 154.25; 154.295; 154.43; 155.34; 155.4; 155.775; 452.15; 452.3; 453.0625; 453.1125; 453.125; 453.1375; 453.1625; 453.2125; 453.35; 453.3625; 453.425; 453.5875; 453.625; 453.7; 453.775; 453.85; 453.9; 458.5375; 458.6375; 460.1625; 460.2; 460.25; 460.2875; 460.35; 460.375; 460.6; 460.625; 460.625; 460.6375; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.1; 463.125; 463.15; 463.175; 464.4; 465.5375; 470.325; 470.3875; 470.4125; 470.4375; 470.5; 471.1; 471.1; 471.1375; 471.3125; 471.3375; 471.4; 471.4625; 471.5625; 471.6375; 471.7125; 471.7375; 471.7625; 471.8375; 471.8875; 472.0375; 472.175; 472.225; 472.3125; 472.4125; 472.525; 472.7125; 472.7375; 472.8375; 494.4125; 494.6375; 495.5125; 496.5875; 155.22; 155.325; 155.34; 851.5125; 154.34; 155.325; 155.34; 33.72; 33.74; 33.78; 33.96; 155.22; 155.28; 155.34; 155.49; 453.175; 453.475; 453.475; 453.575; 453.575; 453.7875; 453.8375; 460.375; 460.375; 460.4125; 460.45; 462.9625; 453.725; 453.95; 453.95; 453.95; 453.95; 460.05; 460.05; 460.1; 460.1; 460.1875; 460.275; 460.2875; 460.3875; 460.5; 460.5; 460.575; 460.575; 460.6; 460.6; 460.625; 460.625; 462.975; 463.05; 153.83; 153.95; 154.22; 154.265; 154.265; 154.325; 154.34; 154.385; 155.265; 155.775; 462.95; 462.975; 463.125; 463.15; 453.0625; 458.0375; 458.0625; 458.1125; 458.1375; 458.4625; 458.8125; 458.8875; 458.9375; 458.9875; 463.325; 470.35; 471.025; 471.175; 471.7375; 472.0875; 472.5125; 472.6875; 154.43; 154.515; 154.54; 155.34; 155.385; 452; 453.025; 453.075; 453.225; 453.25; 453.2875; 453.55; 453.775; 458.4375; 460.1375; 460.1625; 460.575; 460.6125; 460.6375; 464.275; 155.22; 155.34; 462.95; 462.975; 154.57; 155.205; 155.325; 155.34; 155.34; 451; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 159.6; 159.735; 160.185; 852.05; 852.075; 852.45; 852.8; 852.825; 852.9625; 852.9875; 853.3; 853.6; 853.8; 855.9875; 856.0375; 856.4625; 856.9875; 858.4625; 859.4625; 859.9625; 155.16; 155.22; 155.22; 155.34; 462.975; 463.1; 468.1; 460.4625; 461.425; 462.95; 463.1; 463.125; 468.1; 468.125; 33.08; 152.93; 153.83; 154.07; 154.1825; 154.22; 154.3025; 155.0025; 155.16; 155.235; 155.265; 155.295; 155.3625; 155.7375; 155.91; 155.9775; 461.125; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 46.12; 151.1375; 151.355; 151.4225; 153.845; 154.175; 154.205; 154.4525;

155.355; 155.7525; 156.015; 156.0675; 156.15; 158.7375; 158.91; 159.0225; 159.3; 159.3975; 159.4575; 462.95; 462.975; 463; 33.52; 33.6; 33.96; 33.98; 460.575; 460.625; 460.625; 462.95; 462.975; 463.125; 463.175; 453.175; 462.975; 463; 463.125; 463.15; 463.575; 46.48; 154.205; 460.1875; 506.5125; 506.5875; 506.5875; 506.6625; 506.6875; 506.6875; 506.7125; 506.8125; 507.8125; 507.9875; 507.9875; 507.9875; 508.0375; 508.1375; 508.1625; 508.2375; 508.3375; 508.6625; 510.4125; 462.975; 463; 155.22; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 155.19; 155.295; 453.525; 453.525; 464.2875; 851.5125; 852.0125; 462.975; 463; 463.025; 463.05; 463.1; 463.125; 463.15; 463.175; 46.06; 46.38; 46.46; 46.52; 462.975; 46.12; 46.46; 151.2725; 151.2725; 154.085; 155.295; 155.3175; 155.34; 155.355; 156.09; 33.44; 33.74; 33.78; 33.98; 453.675; 462.95; 462.975; 155.22; 155.325; 453.125; 453.15; 453.2; 453.225; 453.3125; 453.425; 453.5625; 453.6; 453.65; 453.75; 453.7875; 454.45; 458.55; 458.7875; 458.8125; 460.1; 460.225; 460.275; 460.3; 460.4125; 460.4375; 460.525; 460.625; 460.625; 462.95; 462.975; 463.05; 463.15; 468.1; 154.265; 154.31; 155.22; 155.295; 463.025; 463.075; 463.125; 463.175; 33.08; 33.42; 33.44; 33.46; 33.48; 33.5; 33.52; 33.56; 33.6; 33.62; 33.64; 33.68; 33.72; 33.76; 33.8; 33.82; 33.84; 33.9; 33.92; 33.96; 33.98; 45.04; 151.25; 154.0025; 155.0175; 155.16; 155.34; 155.4075; 157.5975; 453.6875; 458.5875; 460.4375; 462.775; 463.2; 154.8; 155.28; 155.325; 155.325; 461.825; 33.1; 33.74; 33.78; 33.9; 33.94; 152.945; 153.77; 153.95; 154.13; 154.4; 154.445; 155.28; 155.34; 155.4; 460.425; 460.4375; 463.325; 151.355; 155.04; 155.265; 155.295; 155.295; 155.34; 155.34; 155.835; 462.95; 462.975; 153.83; 154.13; 154.145; 154.295; 154.295; 154.325; 154.355; 154.415; 154.725; 155.16; 155.22; 155.325; 155.34; 155.865; 155.94; 157.45; 159.06; 159.465; 463.025; 463.075; 463.125; 463.175; 153.95; 154.01; 154.34; 154.4; 154.43; 155.265; 155.34; 155.985; 159.165; 462.95; 463.05; 463.175; 152.0075; 153.83; 154.145; 154.16; 154.2125; 154.31; 154.355; 154.4; 154.43; 155.325; 462.95; 451.85; 452.975; 461.65; 461.925; 462.95; 462.975; 463.025; 464.025; 464.1; 464.2; 464.45; 464.975; 460.05; 460.075; 460.15; 460.2125; 460.2625; 460.55; 460.6; 460.625; 462.6125; 462.95; 463.1; 463.175; 465.6; 151.115; 151.82; 151.88; 151.94; 154.57; 154.6; 155.235; 155.265; 155.28; 155.34; 155.355; 155.4; 158.835; 462.95; 462.975; 463.05; 464.1; 46.04; 154.025; 154.28; 158.355; 460.3125; 463.05; 465.3125; 852.2125; 852.475; 852.6125; 853.2; 853.425; 853.475; 853.5; 46.36; 46.46; 46.5; 47.5; 155.085; 453.1125; 453.9375; 458.025; 458.075; 458.125; 458.175; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 154.055; 154.19; 154.34; 154.385; 155.235; 155.34; 155.685; 462.95; 500.6375; 500.7125; 500.7375; 500.8125; 500.8375; 500.8875; 500.9625; 501.1375; 501.1875; 501.2625; 501.4125; 501.9625; 501.9625; 501.9625; 462.95; 462.975; 463.05; 45.82; 46.06; 46.2; 46.3; 453.0625; 453.4625; 465.3375; 151.2575; 155.265; 155.265; 33.78; 33.98; 46.14; 46.36; 151.3325; 154.1075; 154.13; 154.19; 154.25; 154.28; 154.34; 154.385; 154.415; 155.28; 155.34; 155.385; 158.835; 158.8425; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 46.04; 46.08; 46.24; 46.28; 46.32; 46.36; 46.4; 46.48; 46.5; 46.56; 46.58; 151.1375; 151.325; 151.625; 151.625; 151.955; 154.07; 154.54; 155.145; 155.175; 155.235; 155.34; 155.7825; 157.62; 462.625; 44.72; 45.52; 46.06; 46.1; 151.04; 151.085; 151.43; 154.22; 154.265; 154.31; 154.355; 154.385; 155.82; 156.12; 159.465; 453.2875; 462.95; 462.975; 155.175; 155.205; 155.34; 155.385; 155.385; 451.325; 464.35; 154.07; 154.13; 154.3025; 154.3475; 155.34; 155.9925; 158.9325; 33.08; 33.8; 33.86; 151.0625; 151.205; 151.475; 153.845; 153.89; 153.9725; 154.25; 154.4375; 154.89; 155.0325; 155.0625; 155.115; 155.6925; 155.9325; 158.835; 158.925; 158.94; 159.2775; 159.45; 462.95; 462.95; 155.205; 155.235; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 155.385; 460.375; 460.525; 463; 463.025; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125; 463.15; 463.175; 33.44; 33.54; 33.58; 33.62; 33.8; 33.88; 33.98; 462.95; 462.975; 463; 463.025; 463.05; 463.075; 463.1; 463.125;

463.15; 463.175; 46.4; 151.0625; 151.265; 151.3475; 151.43; 151.43; 153.08; 153.83; 154.13; 154.415; 155.295; 155.355; 155.355; 155.3775; 155.925; 158.9175; 159.465; 453.4875; 453.8375; 467.3875; 471.0875; 33.86; 33.92; 151.415; 151.565; 153.83; 153.89; 153.89; 153.9125; 153.9575; 154.43; 155.1375; 155.31; 155.6775; 155.745; 155.9175; 156.0375; 155.16; 155.28; 155.34; 851.5125; 151.22; 151.325; 153.74; 154.31; 154.4525; 154.515; 155.235; 155.73; 155.805; 155.955; 159.405; 463.025; 463.125; 463.175; 33.88; 453.525; 453.6; 453.775; 453.9625; 458.9625; 460.5375; 462.975; 465.5375; 502.0625; 502.2125; 505.0625; 505.2125.”

Tennessee: “155.205, 155.280, 155.340, 155.295. All ambulances required to have 155.205 radio capability and dispatch required to have 155.205 monitoring capability. Majority of services also have private dispatch and ambulance communication frequencies.”

Frequencies: As above. “No list of private frequencies. We do have Regional EMS Consultants who have radio for their regions with the primary 911 frequencies for each service in their regions for communications. Every ambulance required to have 155.205 for mutual aid.”

Texas: “The structure ranges from local police dispatching and not providing any EMD up to very sophisticated EMD system with certified EMD personnel like Med Star in north Texas.”

Utah: “The urban area of the Salt Lake Valley utilizes primarily 800MHz system. The rural agencies mostly use VHF. If the state has 800 MHz in the more rural area then the communications are mixed between 800 MHz and VHF. There is limited use of UHF in the state.”

Frequencies: “155.340 Statewide EMS, 155.280, 155.175, 155.040, 155.845, 155.055, 155.835; 800 MHz Talk Groups: UDOH Main, Hospital Common, Health Common, EMS Main, EMS Ops 1, EMS Ops2, Event Channels 1-17, each hospital has a talk group, each agency has talk groups, LZ1, LZ2.”

Virginia: “The structure and frequencies vary by jurisdiction and region. Independent PSAPs use the frequency band best suited for the local needs and geography for the dispatch of available EMS resources. Hospitals will work cooperatively with area EMS agencies to employ frequencies best suited for the needs and geography of the area as well. The vast majority of EMS dispatch is done by a central PSAP receiving a 911 call from a person and alerting the closest available resource. EMS transport units provide patient care reports to the receiving hospital over the available radio frequency or via wireless telephone.

Frequencies: “All licensed EMS agencies in Virginia have access to and can use 155.205, 155.340, 155.280, as well as the UHF frequencies in the 400 MHz range, known as the "Med Channels". Additionally they can utilize 800 MHz and 800 MHz trunked.”

Washington: “Varied especially in the rural parts of our state.”

Wisconsin: “Is VHF analog based. Recent statewide VHF trunked system is in place (WISCOM). Urban pockets of 800 MHz. Some UHF med pair usage. Wisconsin EMS office licenses VHF and UHF frequencies and allows usage by licensed EMS services. VHF ability is required by EMS services (155.340, 280, 400 MHz) and hospitals (155.340 MHz).”

Frequencies: “VHF (MHz): 153.845, 154.010, 154.130, 155.340, 155.280, 155.400, 151.280, 154.265 UHF (MHz): 462.950, 975; 463.000, 025, 050, 075, 100, 125, 150, 175; 467.950, 975; 468.000, 025, 050, 075, 100, 125, 150, 175.”

EMS Dispatch Communications

Frequency Band Usage for EMS Dispatching

About half of the responding states were able to estimate a percentage of services in their states using a particular frequency, the remainder simply indicated its use in the state. Of the 30 out of 33 states which responded to this question:

- Twenty-eight states (93%) indicated **700/800 MHz narrowband** use by one or two percent of services to 100% of services (average 38%). In 2008, the question only pertained to 800MHz systems. In 2008, 44% of states used this, and an average of 27% of the services in those states using it.
- Eight states (27%) reported **low band** use by one percent to 20% of services (average eight percent). In 2008, 10% reported low band use with an average of 11% of services using it in those states.
- No states reported **FirstNet band** use for this purpose.
- Twenty-two states (73%) reported **UHF** use by four percent to 80% of services (average 36%). In 2008, 42% of states reported UHF use for dispatching by an average of 19% of their services.
- Twenty-two states (73%) reported **VHF** use for dispatching by 20 - 100% of services (average 55%). In 2008, 56% of states reported VHF use for dispatching by an average of 72% of services.

Percentage of State Geography Covered by Dispatch Communications Systems

Thirty states responded, with 21 estimating an average of 84% of their state geographies being covered by dispatch. Outliers drove down the average, with 18 states (60%) reporting 90-100% coverage. Eight of 30 states (27%) reported 100% coverage, compared with 30% in 2008 and 18% in 2001. Only one state (3%) reported less than 75% coverage, compared with 9% in 2008 and 14% in 2001.

Emergency Medical Dispatch (EMD)

Of the 30 states responding, nine (30%) have a law, rule or regulation requiring that EMS calls be handled by EMD, while 21 (70%) do not. In 2008, 20% of states had such a requirement. Half of the 30 states responding require emergency medical dispatchers (EMDs) to be certified or licensed while the other half does not.

Eighteen respondents (60%) do not track the percentage of EMS calls handled by EMDs. Of the twelve states that do, two reported that no calls are handled by EMDs, while the remainder reported an average of 91% of calls being handled by EMDs. Five states (42% of those tracking EMS calls handled by EMDs) reported 100% of EMS call being EMD mediated.

Nine of 30 respondents (30%) are able to track the percentage of life threatening calls that get "pre-arrival instructions" from EMD, while the remaining 21 (70%) are not. Of those tracking this, one reports that no calls receive pre-arrival instructions, another that 57% receive such instructions, and the remaining seven report an average of 95% receiving such instructions (four report 100%). In 2008, states with EMD reported that 79% of patients received pre-arrival instructions.

Medical Direction Communications

Frequency Band Usage for Medical Direction

Generally, just under half of the responding states were able to estimate a percentage of services in their states using a particular frequency or communications type, the remainder simply indicated its use in the state. Of 30 states responding:

- Twenty-two states (73%) indicated **700/800 MHz narrowband** use for medical direction by two percent of services to 100% of services (average 48%). In 2008, the survey only asked about 800 MHz communications. At that time 28% of respondents reported use of these frequencies for medical communications by an average of 26% of their services.
- Twenty-five states (83%) said that **cell phones** are used by one percent to 100% of services for medical direction with an average of 48% of services using them for this purpose. In 2008, 20% of states reported cell phone use for medical communications by an average of 38% of their services.
- Three states (10%) reported **low band** use for this purpose, but none could estimate the percentage of services so doing. Only one state in 2008 used low band for medical communications, though 74% of the services in that state did so.
- No states reported **FirstNet band** use for this purpose.
- Twenty states (67%) reported **UHF** use by five percent to 95% of services (average 43%). In 2008, 20% of respondents reported use of UHF for medical communications with an average of 53% of services using them for this purpose in those states.
- Twenty states (67%) reported **VHF** use by four percent to 100% of services (average 40%). In 2008, 28% of states reported this use by an average of 65% of their services.

With regard to policy on cell phone use for medical direction, out of 29 respondents answering this question, 20 (69%) said that medical direction could be sought with a cell phone but that radios must still be carried, 9 (31%) indicated that cell phones alone are allowed, and nobody said that cell phones are not allowed. In 2008, 75% said that cell phones could be used but that radios were also required, 11% reported that cell phones were adequate by themselves, and two percent said that cell phones could not be used. The remainder had no position on this.

Finally, only two of 29 states responding indicated that they had received complaints in the past year regarding medical direction complications when units go out of state.

Use of EKG Telemetry

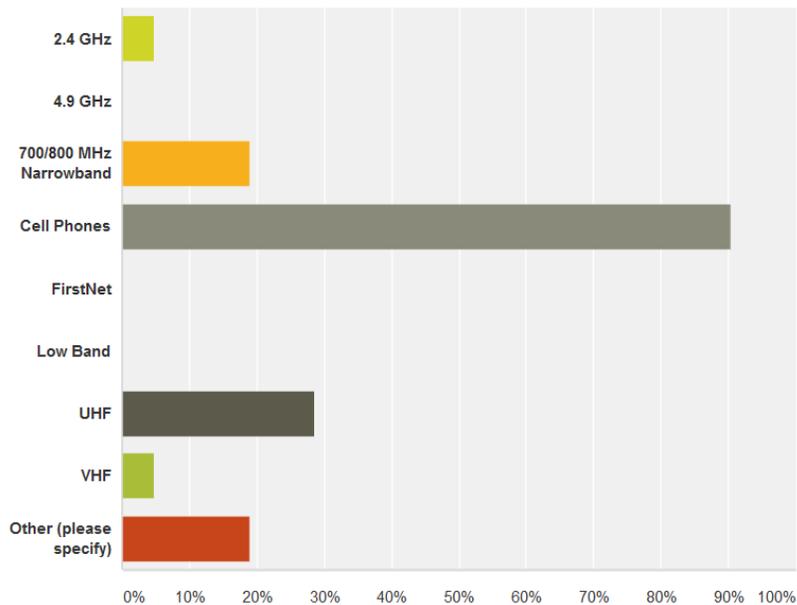
Twenty-two of thirty states responding (73%) indicated that EKG telemetry communications are used, while three (10%) said it is not used, and five (17%) did not know. In 2008, 68% of states responded that EKG telemetry was being employed, 24% said it was not being employed, and eight percent did not know.

The chart and table below demonstrate that out of 21 states using EKG telemetry, cell phone technology predominates (90%), with traditional UHF telemetry in only 29% of the states. One state indicates that

unlicensed broadband (2.4 GHz) is being used. In 2008, the order of popular use of frequencies for this purpose was not significantly different across bands (including 2.4 GHz).

You indicated that EMS providers are sending EKG telemetry to hospitals. What frequency band(s) is/are used to send EKG telemetry? select all that apply

Answered: 21 Skipped: 12



Answer Choices	Responses	Count
2.4 GHz	4.76%	1
4.9 GHz	0.00%	0
700/800 MHz Narrowband	19.05%	4
Cell Phones	90.48%	19
FirstNet	0.00%	0
Low Band	0.00%	0
UHF	28.57%	6
VHF	4.76%	1
Other (please specify)	19.05%	4

Statewide Public Safety Communications Systems and Issues

Statewide Systems and EMS

Twenty-two of 29 (74%) respondents reported that their states own and operate a statewide public safety communications system, while 7 (26%) do not. Of the states that do, the EMS system shares access in 19 states (86%) and does not in three states (14%). In 2008, 76% of states had such systems, and 62% of EMS systems shared access in those that did.

When asked who has responsibility and control of the system, the 22 respondents favored no particular model. This observation was also true in 2008. Even those clustered in telecommunications offices or coordinating groups are found in many arms of state government.

- State telecommunications division or office (5)
- State communications board, commission, state multi-agency coordinating group, multiple municipality agency (5)
- State police (4)
- Department of public safety (2)
- Department of transportation (2)
- Emergency management (1)
- Chief information officer (1)
- Health department (1)
- Department of administration (1)

State Interoperability Governing Board Leadership

Twenty-three of 29 state offices responding (79%) are members of the statewide public safety communications interoperability, while 6 (21%) are not.

Statewide Problem-Solving Leadership: Narrow-Banding

The January 1, 2013 deadline for VHF and UHF licensees to “narrow-band” their radios had great potential for compromising EMS communications systems. In 2008, while 91% of state EMS offices indicated that they were aware of the narrow-banding deadline, only 40 % had a plan to deal with it, and the survey expressed a need by 71% of EMS offices for NASEMSO to assist with it.

The Federal Communications Commission (FCC) and SAFECOM (the Homeland Security program for emergency communications coordination in which NASEMSO has played a leadership role) worked for five years in advance of the deadline to alert and assist public safety entities in this process. State EMS offices were assisted by NASEMSO in this alerting and assisting process.

In the 2015 survey, twenty-three states of 29 responding (79%) reported no EMS agency problems caused by the narrow-banding process. Of those that reported issues, the problems were primarily lack of funding for the changeover of hilltop sites and geographically isolated providers.

National Public Safety Broadband Development leadership in States: FirstNet

The First Responder Network Authority (“FirstNet”) was created and charged by Congress in 2012 with the development of a nationwide public safety broadband network. States are responsible for helping FirstNet develop a plan in each state for implementation of the system. The NASEMSO communications technology advisor sits on the FirstNet Board, and the NASEMSO communications committee chair is vice-chair of the FirstNet Public Safety Advisory Committee. Both have encouraged state EMS offices to provide leadership in the development of their FirstNet access networks. Participation on FirstNet “single point of contact” advisory groups by state EMS and hospital representatives are indicators of this leadership.

Of 29 state EMS offices responding, 22 (76%) sit on the state’s FirstNet advisory group, while seven (14%) do not. Hospital participation is less certain, with 13 states (45%) having such participation, six not having it (21%), and with status of this unknown in 10 states (34%).

FirstNet is holding initial state consultations during 2015, in the process of beginning to develop state plans.

Twenty-two state EMS offices of 29 responding (76%) reported that they had participated in or were invited to participate in the visit. Only two were not involved (7%), but five (17%) had yet to learn of their involvement. Hospitals were, or would be, involved in 13 consultations (45%) and were not or would not be in five (17%). Their participation is uncertain in 11 (38%) of the reporting states.

NG-9-1-1 Development and EMS

Nineteen of twenty-nine state EMS offices (66%) reported having a 9-1-1 office/agency in their states, while 10 (34%) do not. Of the 19 state EMS offices whose states have 9-1-1 agencies, 10 (53%) report an active, ongoing relationship with that agency, while eight (42%) say they have an intermittent relationship. One state rarely interacts with the 9-1-1 agency, and no EMS offices have responsibility for the 9-1-1 agency. Twenty-two (76%) of 29 respondents indicate that have not been involved in state level NG-9-1-1 planning of any sort. We do not know how many states actually have such planning in process. Six state EMS offices report very active participation in state committees, boards, or commissions that plan NG-9-1-1 (generally with other communications system efforts), and one reports only participating in a limited, advisory capacity.

Asked if NASEMSO could be of assistance in state EMS NG-9-1-1 planning efforts, 21 of 29 offices said no. Elaboration on the eight affirmative responses included:

- “As a resource to confirm any national trends, best practices, lessons learned etc.”
- “Information requested regarding NG 911 in general.”
- “Keep the State offices update on planning information and what involvement is needed from the each State.”
- “Probably providing technical input.”
- “Integration of FirstNet with PSAPs; Improving in-building location accuracy of cellular and traditional telephone communications systems; Social media to PSAP connectivity – including usage, potential benefits, challenges; Integration of Advanced Automatic Collision Notification (AACN) into PSAPs – include data delivery, data distribution among PSAPs and first responder agencies, identifying legal issues, and developing best practices.”
- “We could use some information about the current status of the NG-911 issues and status nationwide.”
- “Before we could ask for assistances we would need to get a fuller understand of the state current communication systems.”

State EMS Communications Plans

Fifteen of 29 respondents (52%) said that they use a statewide EMS communications plan, while 48% do not. These are identical results to the 2008 survey. Of those that do, nine (60%) have updated it in the past three years (39% in 2008), three (20%) in the past three to six years (13% in 2008) and three (20%) have not updated it in the past 10 years. In 2008, 13% had updated it in the past seven to ten years and 22% in more than 10 years. Nine of those with a plan (60%) use it for EMS communication system development, while the remainder do not. In 2008, 65% used the plan for system development.

Communications Issues and NASEMSO Support

Integration in Automatic Crash Notification (ACN) Systems

Systems like OnStar®, offer ACN to provide early notification of a car crash to responders. This system has to be integrated into public safety response systems to be effective. In most cases, ACN alerts go to a commercial call center and are then verbally relayed to a public safety answering point. When a system is digitally integrated in the future, data from a crashed car may go directly to a responder's communications device. Only three states (10% of 29 respondents) reported that they capture information on the number of calls generated by ACN technology. Fourteen do not (48%) and 12 don't know (41%). In 2008, only one of 50 states captured this information.

Air/Ground Communications Issues in Wildland Fires

Anecdotally reported as a concern nationally are problems with air/ground communications for helicopter EMS during wildland fires. In this survey, 25 of 29 states 86% reported that they were not aware of any such problems. The four states reporting issues said that were lack of information on frequencies to use, fights over ownership of frequencies, or programming issues. One said that 800 MHz trunked systems for any purpose do not fare well in the air.

Fifty-six percent of respondents (17 of 29) do not have air/ground frequencies for use by federal wildland fire agencies. Of those that do, the following report:

Alaska: "ALMR is assigned via the repeater in the area."

Maine: "State Fire 154.310."

Michigan: "The State operated 800 system has two designated "air-ground" talk groups. 155.355 is also designated and licensed statewide for scene coordination purposes. Helicopters often use the dispatch frequency of the requesting agency since they have frequency agile radios."

North Carolina: "Dedicated standardized VIPER talk groups (LZ-East; LZ-Central; LZ-West) plus talk group installed in all helicopter dispatch locations."

Pennsylvania: "159.28500 DCNR Air/Grd Air-Ground (Interstate Compact)."

Utah: "LZ1, LZ2 and other wildland 800 MHz talk groups."

Wisconsin: "DNR RED - 153.830 MHz Federal VFIRE21 - 154.280 MHz."

Issues with Which EMS Offices Would Like NASEMSO Assistance

Of 29 state EMS offices, a third have issues with which they would like assistance from NASEMSO. These included:

- "Integration of FirstNet."
- "Development of statewide EMD."
- "Funding for statewide interoperable EMS communications systems."
- "Better understanding of EMS and dispatch communications in general."
- "Spectrum limited by Line A and Canada."

State responses to a question about how NASEMSO communications support has helped them, included:

- “Keep sharing information on system developments happening nationally around things like FirstNet and NG-9-1-1.”
- “Share with us the latest on EMS and dispatch communications.”
- “Keeping us up on all the national FCC, FirstNet and other activity going on is very helpful.”
- “Unsure. Fairly new to the position and have limited knowledge of technical assistance provided. Looking forward to First Net discussion with the correct people in the room.”
- “National level planning by Kevin McGinnis and others on defined state and federal accepted EMS mutual aid frequencies.”
- “They have kept us updated on all the current trends and information related to all communications issues. They have provided written documentation and the latest communications updates to help us address our communications needs. The information has been very valuable for us to coordinate our rules and inform our providers of the latest and changing landscape involving communications.”
- “Education and information shared by NASEMSO has assisted the State office in making decisions and allowed us to share that information with localities to assist in their decision making.”

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