



# Getting Emergency Messages Heard Loud & Clear

## Executive summary

**In today's information overloaded society, top mass notification trends address how to get emergency messages heard loud and clear. From podcasts to social media, the number of communication channels in which we receive information has exponentially increased. This prevents people from not only listening to the emergency messages but also from taking the appropriate actions to reduce risk. The trends include, improving message delivery, message content and structure and intelligibility.**



## Mass Notification Trends

In an emergency, getting the right message to the right person at the right time is critical. However, in our modern age of information overload, getting the right message heard and responded to can often be challenging. Not only are huge volumes of new information being constantly created, but also the ability to create, duplicate and share information online has never been so easy and takes just seconds. The number of channels in which information is received - radio, television, print media, websites, e-mail, mobile phones, podcasts, RSS feeds, and social media - has increased exponentially.

Information overload cannot only prevent people from listening to or reading an emergency message in all of the noise but also from taking the appropriate actions to reduce risk. In this white paper, three mass notification trends, message delivery, message content and structure and intelligibility, will be discussed on how to get emergency messages heard loud and clear in order to convey a sense of urgency of the emergency at hand.

### #1 MNS trend: Message delivery

Six ways to improve message delivery to get emergency messages heard:

- **Alert first, then distribute warning message.** It is important to distinguish between the two. Alerts such as a tone grab the audience's attention, notifying them that an emergency is taking place and that there is important information that will follow. The purpose of the warning message is to provide the important information on the state of the emergency and what they are supposed to do in response to the emergency.
- **Be redundant.** Use multiple layers of mass notification to disseminate the warning message, including audible, visual and tactile means. According to the National Fire Protection Association (NFPA), relying on just one method in an emergency could result in a relatively large portion of the targeted population not receiving the message. The overall solution is to deploy layered solutions for example, in-building and wide-area mass notification systems, adding additional layers such as text messaging and social media to produce a reliable and robust design that will achieve the emergency communication objectives.



*Powering Business Worldwide*

- However, just because you sent the message, doesn't mean that it was received. People are busy and although they might glance at their phone, doesn't mean that they'll act on the message, which leads us to the next method.
- **Be repetitive.** To grasp the sense of urgency, a warning message should be repeated at least once; however, research indicates message repetition of at least three times and that urgency increases between the first, second and third notification. Messages should also be stated in full and then repeated in full, rather than repeating statements within the same message. Messages should also be repeated at intervals rather than consecutively.
- **Keep it simple.** Messages should be written in short, simple words, and short sentences, omitting unnecessary words, phrases or jargon that not all of your audience may not understand. For example, instead of saying "shelter in place," simply say: "Stay where you are." Messages should also be written using active voice, present tense, and at a sixth grade reading level or lower.
- **Keep it clear.** Simplicity and relevance are great but the information needs clarity to be effective. Most people will have little to no information of the emergency. See Trend #2 to find out what information needs to be included to get your message heard loud and clear. Also, keep communicating with additional information. If the organization is not communicating, employees may turn to other sources for information that may not be accurate.
- **Utilize push communications.** Push communications is important to use for alert signals as well as initial warning messages. Push technologies do not require individuals to take extra effort to receive alert or warning message. However, messages should be disseminated using a combination of both push and pull technologies.

### #2 MNS trend: Message content and structure

Annex G of the NFPA 72 National Fire Alarm and Signaling Code, lists guidelines on how to create and disseminate messages for increasing response to emergency communications. A warning message should contain five key elements to ensure there is sufficient information to respond. These are commonly referred to as The 5 W's:

- Who is providing the message? The source of the message should be someone who is perceived to be credible to the audience. Recipients of safety messages especially mobile phones often question the importance, legitimacy and relevance of messages
- What should people do? What actions should people take in response to the emergency and if necessary how to take these actions?
- Why do people need to act? Include a description of the hazard and the dangers/consequences
- Where is the emergency taking place? Who needs to act and who does not?
- When do people need to act? In rapid-onset events, the when is likely immediately.

This is the message order for short messages. For longer messages, the recommended order is Who, why, where, what and when. The following longer message template is an example from Annex G.

The emergency message begins with an alert tone.

The voice announcement starts with the credible source. "This is Joan Smith, Chief of Campus Police."

Next is the hazard, the why, followed by the location. "A tornado has been sighted on the ground at 20th Street and 5th Avenue. The tornado is strong and is moving toward the college campus at high speeds with winds over 160 mph."

After the location is the guidance, what people should do, ending with the time. "High winds and large flying debris can flatten a building in a storm of this magnitude. Take shelter now. Get inside now, go to the lowest level and get away from windows. Stay there until further notice."

### #3 MNS trend: Intelligibility of voice messages

Due to today's complex and sophisticated threats, there has been an increasing trend for Mass Notification Systems to provide clear, concise and intelligible voice messages that communicate how people should respond in an emergency, for example whether to broadcast lock-down procedures and evacuation instructions or both. This has resulted in an increase in demand for speakers (voice communications) instead of using horns (tones only) to communicate vital and specific information in an emergency.

In order to properly plan, design and measure intelligibility, it is important to understand which spaces need intelligibility and the factors that affect it such as signal to noise ratio, frequency response, and harmonic distortion.

The general rule of thumb is that a lot more speakers at lower wattage taps are needed when designing for intelligibility. It can be as much as eight times as many speakers used to achieve audibility alone, and increasing the wattage can often distort the message. The ideal point-source (speaker to listener) is 20 feet or less. Ceiling height is speaker spacing. For example, if the ceiling is 12 feet high, space the speakers 12 feet apart for intelligibility versus 24 feet apart for audibility. Look at speaker spacing at an airport, compare the number of speakers for paging vs. the number of speakers for fire. It's about eight to one.

An important point to remember is that effective coverage in a room depends more upon speaker placement, the type of speaker and spacing than upon volume of the speaker themselves.

Today manufacturers are improving speaker design with high fidelity sound output with wider frequency response ranges and reducing distortion. The wider the frequency response of a speaker, the better it is at reproducing the frequencies in the original signal. Thus the better we understand it.

For more information on intelligibility, read Eaton's white paper, ["Designing for Intelligibility vs. Audibility."](#)

### Eaton

When it comes to protecting life and property, there's no room for compromise. The leading solutions for life safety and mass notification from Eaton are designed to save lives. In the most demanding environments, Eaton delivers top performance with the expertise, reliability and scalability that your organization requires. To learn more about our solutions visit [www.eaton.com/massnotification](http://www.eaton.com/massnotification).