WORKING WITH WIRELESS

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Understanding the difference between handling emergency wireless calls and landline calls will help your PSAP to adapt the proper procedures.

It's 2:00 a.m. The phones have been pretty quiet. Then an emergency trunk lights up. You hear background noises like a scuffle, muffled words, then a scream and the line goes dead. You check the ALI screen. It's a wireless call and you have the callback number. When you try the number, there's no answer. Normal procedure in most jurisdictions is to send a police officer, but you don't have an address. What do you do?

If your jurisdiction is receiving Phase II wireless service, you may be able to get the geographic coordinates of the phone call and send a car. But there is one other thing you can try, with or without Phase II—contact the wireless carrier and ask for the customer name and billing address for the phone that placed the call.

You may not always be able to obtain current information on a specific number from the wireless carrier, mainly because wireless carriers allow all phones—even those that have been disconnected or never registered with an account—to place calls to 9-1-1. However, even though

the phone may be stolen or the owner doesn't know its whereabouts, there are many occasions when contacting the handset's owner can provide information to help with an emergency response. This is just one way in which handling a wireless emergency call is different than handling a call received from a landline.

Making up for the Difference

Most PSAPs are learning that wireless is different and their procedures may need to be adapted. One thing is obvious:

For years, you only had to deal with a single phone company, your local 9-1-1 service provider. Now, with the Federal Communications Commission (FCC) requiring wireless carriers to configure their networks to send you 9-1-1 calls, you are suddenly dealing with half a dozen carriers or more. Some of the calls are placed from landline phones, and many are placed from wireless phones.

It's time to update the Rolodex. Make an entry for each wireless carrier serving your area, and start putting in the num-

bers for trouble reports, emergency customer information, misroutes and default routing issues. You'll be happy you did; 2:00 a.m. is not the time to go hunting for those numbers.

Where are the numbers? Start with NENA's website company identification program at www.nena.org/companyid/ index.htm. Each carrier voluntarily pays for this useful service through a listing fee. You can find their 24/7 trouble number and a contact for administrative issues and information. Then call the carriers and ask them who to contact for the various circumstances you've encountered.

Issues and Troubleshooting Tips

Following is the PSAP Top Ten—a collection of the most common issues PSAPs are experiencing, along with some troubleshooting tips that will benefit both PSAPs and carriers.

HANDLING A WIRELESS EMERGENCY CALL IS DIFFERENT THAN HANDLING A CALL RECEIVED FROM A LANDLINE.

Wireless Problems Are Serious Problems!

According to the San Diego Union-Tribune, when firefighters went face to face with the most destructive wildfire in California history in November, 2003, their most reliable method for communicating with each other may have been *shouting*.

Among the after-action reviews being conducted by fire officials is whether any of the more than twenty-two hundred homes lost to the Cedar fire were destroyed because of communications challenges.

Mismatched radio systems left U.S. Forest Service crews unable to talk to their counterparts in other fire agencies.

Combined with overused cellular telephone channels and even cross-border radio interference from Mexico, those factors helped turn firefighting communications into an intermittent nightmare.

Whether any of these problems led directly to the loss of homes has not been determined.
—from www.signonsandiego.com.

9-1-1 Callout

The 9-1-1 Call Center

To hear a voice ask for some sort of relief.
To hear a voice cry, cry rampant with grief.

To hear a man call, call up in despair.
To hear a poor woman begging for care.

The sounds of a tragedy, urgent and needy;

The victims of selfish, and vicious, and greedy.

A daily occurrence at nine-one-one centers

Where calls keep on coming and we become mentors.

A guide to the people who need helping hands;
Answering citizens' daily demands.

All calls, just three numbers, so many mundane,

Until that one instance when someone in pain

Calls up with some urgency stressed out with strife.

An instance of terror invaded a life.

A calming influence, our daily forté,

We dole out our comfort and send help their way.

Then back to work, we, with our dedication,

Take the next call showing no hesitation.

This poem was penned in memory of the attack on America, September 11, 2001, and originally dedicated to those 9-1-1 centers that dealt with the tremendous impact of those tragedies.

—Ron Schuster, ENP, Cincinnati 9-1-1

Issue 1: There is no ALI information (cell site location) displayed.

A *no records found* message is displayed in the ALI field. In some instances, the P-ANI/ESRK or the wireless number will display in the ANI field.

Troubleshooting Tips

For this type of issue, please be sure to provide the following when reporting the trouble or asking for assistance from the carrier:
- Date and time of the call
- The wireless number or P-ANI/ESRK
- Where the caller is or was located (if available)

Issue 2: Erroneous default routing.

This situation occurs when the allocated default agency for the PSAP has changed. Because it takes time to reflect a change in all wireless carriers' systems, the default routing of a 9-1-1 call may be routed to the wrong default agency because the change has not been completed.

For Phase II and I, no ALI information will appear. However, sometimes a *record not found* message or a legitimate call back number may appear.

Troubleshooting Tips

Please be able to provide the following when reporting the trouble or asking for assistance from the carrier:
- Date and time of the call
- The wireless number (if available)
- Where the caller is or was located (if available)
- Screen shots of your display also will be helpful

Issue 3: Misroutes.

These are calls that were routed to the wrong PSAP.

Troubleshooting Tips

Please be able to provide the following:
- Date and time of the call
- The wireless number (if available)
- Where the caller is or was located (if available)
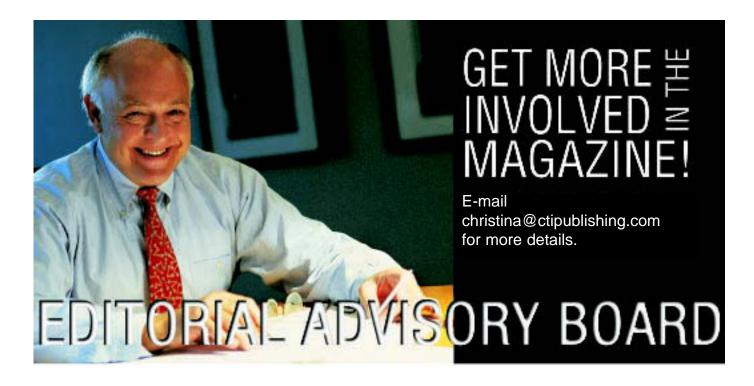- Screen shots of your display also will be helpful

Issue 4: Repeated calls received without voice from the same number.

These types of calls occur for various reasons, such as prank calls, but the most common reason is that many phones have the nine key preprogrammed to dial 9-1-1 if it is depressed for a period of

time. Phones that are placed in a back pocket or in a handbag in which keys can be pressed accidentally are typical situations in which 9-1-1 is dialed. Most phones do have a keypad lock feature, and customers who continue to accidentally call 9-1-1 should be encouraged to use this feature.

Troubleshooting Tips

Please be able to provide:
• Dates and times of these calls
• The wireless number (if available)

Issue 5: Incorrect 9-1-1 Phase displayed.

These are calls that come in with the incorrect 9-1-1 Phase. For example, Phase II may be displayed, but only Phase I information is provided.

Troubleshooting Tips

If COS: WLS is displayed as the Class of Service, this indicates that only Phase I information is available. This is a common occurrence because of the fact that the actual location may not be available at the time the call is routed. Once you rebid for an actual Phase II location, the COS should change to COS: WPH2.

If COS: WPH2 is displayed as the Class of Service, this indicates that you are receiving Phase II latitude/longitude location of the caller. If this is not the case, then the PSAP should capture the

Phase I information: (ANI/ Cell Site Description) for each occurrence.

Please be able to provide the following:
• Date and time of the call
• The wireless number (if available)
• The physical location of where the caller is or was located (if available)
• Screen shots of your display also will be helpful

If this issue occurs numerous times, please provide the information above for each occurrence, if possible.

Issue 6: The wireless number field is populated with numbers, letters and/or symbols.

Troubleshooting Tips

Please be able to provide the following:
• Date and time of the call
• The wireless number (if available from the customer)
• Where the caller is or was located (if available)
• Screen shots are required to troubleshoot this issue

Issue 7: Invalid callback numbers, pseudonumbers or no callback number.

This occurs for all non–service initialized (NSI) phones. Some NSI phones deliver a form of pseudonumber that is switch-specific, some deliver an old

number that often has been recycled (formerly in service phones) and some deliver no number at all.

There is a standard being developed for all NSI phones to send 9-1-1 as the NPA and the last seven digits of the handset's ESN as the rest of the number. This would be a uniform way to alert the PSAP that there is not a dialable call back number. It also would let the PSAP determine if multiple calls were originating from the same handset. This standard is under study by the ESIF (Emergency Services Interconnect Forum) and has not yet been adopted. It will take some time to deploy because some carriers will have to modify the software in their switches. Some mobile switches already provide this feature and some do not.

Troubleshooting Tips

If AT&T Wireless is a carrier in your area, you will see a callback number of (907) 831-XXXX. The (907) 831-XXXX numbers are unique by GSM switch, and you will normally only see numbers representing the GSM switch in your area. If your display shows this number, it is not necessary to contact AT&T Wireless, because there is no information that can be provided on the caller. Other carriers may use this same technique or may not adopt this standard. Before the implementation of the 9-1-1 standard noted above, you may want to check with the individual carriers in your

AT&T WIRELESS AND ITS NSCC

AT&T Wireless operates one of the largest digital wireless networks in North America and tracks all 9-1-1 trouble reports and requests for customer information in response to 9-1-1 emergency calls through its single point of contact—the National Subpoena Compliance Center (NSCC).

If AT&T Wireless is a carrier in your area, and as a PSAP coordinator you are experiencing any of the issues discussed in this article, please contact the National Subpoena Compliance Center as soon as possible by phone at (800) 635-6840, Option 4 or via e-mail at aws.subpoena.compliance.center@attws.com.

The NSCC is open 24/7 and, when called as soon as a problem occurs, they will be well equipped to troubleshoot your issue. You might want to keep the above list handy, so that you can refer to it the next time you experience a problem.

Photo courtesy of AT&T.

area to determine how they handle this type of situation.

Issue 8: One-way transmission.

The caller may be able to hear you, but you can't hear him or vice versa. Breakdowns in transmission can occur in a number of places, but it is most likely in the radio path to the mobile. Knowing the location and cell site of the caller will help the carrier check their equipment.

Troubleshooting Tips

Please be sure to provide the following:
- Date and time of the call
- The wireless number (if available)
- The physical location of where the caller is or was located (if available)
- Screen shots are required to troubleshoot this issue

Issue 9: Repeating ghost calls.

Repeating ghost calls typically come in regular intervals. You will not be able to hear the caller, and they hang up after several seconds. In these situations, they may or may not have a valid callback number.

These calls sometimes come from vehicles fitted with vehicular telemetrics, which call 9-1-1 when the airbags deploy or a crash occurs. If vehicles are ten years old or older, these calls could be false alarms, and are particularly difficult to track down because the programmed number for the vehicle may now be allocated to another customer.

Troubleshooting Tips

Please be able to provide the following:
- Date and time of the call
- The wireless number
- Where the caller is or was located

Issue 10: Local Number Portability (LNP) legislation went into effect November 24, 2003, and now allows wireless customers to keep their existing wireless numbers when switching from one carrier to another.

Troubleshooting Tips

PSAPs should be aware of the following potential issues they may encounter with LNP:

The process of moving a customer from one carrier to another (porting) does not happen instantaneously, and it may take several hours to complete a wireless-to-wireless move, and up to nine hours for a landline-to-wireless move.

(Landline porting was to start some time after November 24, 2003; the FCC has yet to decide when.)

During this time, the customer will be able to call 9-1-1 normally and the callback number and location information will be correct. However, if you need to call the customer back, there is a small chance that you will not be able to complete the call, as the new service may not yet be active. What you will hear may be voicemail, an unavailable announcement or a fast busy.

The key information needed to resolve this LNP issue is:
- Date and time of the call
- The wireless number

Another issue with LNP involves the difficulty PSAPs have determining which carrier owns a given number. Since the NXX can no longer be used to identify the carrier, PSAPs cannot rely on tools such as Telcordia LERG (local exchange routing guide) or other websites that provide carrier information based on the NXX.

An article entitled Public Safety, 9-1-1 and a Free Service From the Telephone Industry in the December/January 2002-2003 issue of NENA News provides excellent information on the Neustar IVR (interactive voice response) system and how it can aid PSAPs in identifying the carrier for a specific number. Keep in mind that Neustar will provide information only on numbers that have been ported. You will still need to rely on tools such as LERG to identify carriers for unported numbers.

Understanding the differences between handling a wireless emergency call and a call received from a landline, following this PSAP Top Ten checklist and making note of its troubleshooting tips will improve communication for both the PSAP and carrier.

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