



# National Institute of Justice

Research in Action

Jeremy Travis, Director

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## The Americans With Disabilities Act: Emergency Response Systems and Telecommunication Devices for the Deaf

by Paula N. Rubin and Toni Dunne

*In 1991 a newspaper headline in a large city reported a tragedy in the following way: "Deaf man: 911 glitch cost wife her life." "911 telecommunicator hangs up on deaf man; wife dead." and "Wife dies after police hang up on 911 call." The article told the story: "...police 911 operator hung up on a deaf man who used a special communicator to report that his wife was having difficulty breathing, and the woman died before paramedics arrived more than 15 minutes later...."*

*The January 3, 1992, Newtown Bee reported: "TDD saves life." The caller "sensed her husband was having a heart attack, went to her TDD (telecommunications device for the deaf), and called 911. She notified police; the police notified the dispatcher; and the dispatcher sent an ambulance."*

The Americans With Disabilities Act (ADA) and its requirements may help to diminish the likelihood of the first incident while increasing the chances of the second. Title II of the ADA makes it illegal for government entities to discriminate against qualified individuals with disabilities in the delivery of programs, activities, and services.

Among the services provided by many public safety agencies is the 911

telephone emergency response service. The law requires that "telephone emergency response services, including 911 services, provide direct access to people who use TDD's and computer modems."<sup>1</sup> Likewise, maintenance of TDD equipment is mandated by the ADA.<sup>2</sup>

The significance of the ADA's requirements cannot be overemphasized. A complaint filed by a deaf arrestee against the Clearwater, Florida, Police Department resulted in a settlement with the U.S. Department of Justice. The complaint was filed after the deaf individual was arrested and jailed overnight without being given the opportunity to communicate effectively through an interpreter.

The resulting agreement requires the Clearwater Police Department to create and implement a policy that prohibits discrimination against persons with disabilities, including failing to provide an interpreter in police situations involving deaf or hard of hearing individuals. The department is also required to provide auxiliary aids whenever necessary to ensure effective communication with individuals who are deaf or hard of hearing. The settlement provides guidance as to what constitutes auxiliary aids. Included are "qualified interpreters, computer-aided note taking, written materials, and notepad and pen."<sup>3</sup>

Additional requirements under the settlement include:

- A written policy that guarantees an interpreter when needed.
- Publication of the policy in the Clearwater community.
- Employee training on how to comply with the settlement.

Criminal justice agencies are required to accommodate persons who are deaf or hard of hearing in arrest and detainment situations. Likewise, it is critical that agencies charged with the responsibility of administering a community's emergency response service accommodate citizens with disabilities. The following questions need to be answered:

- How do telephone emergency service providers interact with individuals who use TDD's for telephone communication?
- What issues do agencies confront in providing these services?
- What are some ways that agencies can resolve these issues?

To answer these questions and others related to making 911 telephone emergency systems barrier-free for persons who are deaf or hard of hearing, a case study was conducted of the city of

## Highlights

NIJ's initiative to examine the implications of the Americans With Disabilities Act (ADA) for criminal justice agencies at the State and local levels was created to respond to the need for understanding the Act in the criminal justice field and the new opportunities it offers persons with disabilities. This Research in Action, one of a series designed to explain how the ADA will affect the criminal justice system, focuses on first steps public safety agencies should take to accommodate the 911 telephone emergency response system to handle telecommunication devices for the deaf (TDD's).

ADA requires that "telephone emergency services, including 911 services, provide direct access to people who use TDD's." Based on a case study of the Denver emergency response system, key requirements for accommodating TDD's include:

- Having a TDD at every telecommunicator position where possible. If financial constraints make this impossible, TDD's should be centrally located so operators can get to them quickly.

- Establishing standard operating procedures for responding and transferring TDD calls.

- Testing equipment and telecommunicators regularly.

- Developing or updating a TDD training program for staff, involving retraining sessions (ideally every 6 months).

- Calling members of the deaf community—including national and local organizations—for advice in creating TDD emergency operating procedures and telecommunications staff training programs.

- Developing a public awareness program to notify citizens of the emergency response system and its TDD accessibility, which should include announcements in the telephone directory and on the ACD recorded announcement. (See glossary at the end of this Research in Action.)

These issues are discussed in more detail in this Research in Action.

Denver's telephone emergency response services.<sup>4</sup> The system used in Denver encompasses universal situations that telephone emergency response services in other communities may encounter. The findings and suggestions from the Denver study may have applications in other criminal justice or public safety agencies across the country.

In order to have a broader relevance, however, some findings are discussed here in generalities. Some specifics have been omitted for the sake of brevity or because they would not be universally applicable. This Research in Action is intended to assist public safety agencies and is best used as a *first* step in identifying and addressing issues in this area. It is not a definitive protocol, nor should it be substituted for independent legal advice.

## Denver: A case study

The first step in evaluating Denver's telephone emergency response services and its TDD capabilities in answering 911 calls consisted of analyzing existing operations. The city of Denver staff answered more than 50 questions covering a range of areas, including an overview of Denver's operations, equipment, procedures, and training.

Every agency operating a telephone emergency response service is required to conduct a self-evaluation to assess its TDD capabilities and emergency response proficiency. (See Box: TDD's and Telephone Emergency response services: A Self-Analysis.)

**Denver's telephone emergency response service.** There are approximately

500,000 citizens within the city of Denver. Because the city is landlocked, it is unlikely that the population will grow by any significant amount. There are no statistics on how many Denver residents are deaf or hard of hearing.

Denver's 911 Communications Center is a consolidated operation funded by the 911 Trust Fund, which places an assessment on the 344,000 access telephone lines. The center is operated by the city's Department of Public Safety and the agencies within its purview. The police, fire, and sheriff's departments are part of Denver's Department of Public Safety.

To handle calls efficiently, Denver's 911 system uses an automated call distributor. There are 16 consoles—or positions—arranged into 4 pods of 4 consoles each. The call takers (telecommunicators) use a telephone system that interfaces with a computer-aided dispatch (CAD). The 115 trunks (see glossary) terminate into the public safety answering point (PSAP). Of these 115 trunks, 48 are dedicated 911 lines.

On average the center receives 2,400 calls a day. When a voice call comes in, it is answered by 1 of the 10 telecommunicators that the center has during each of its 3 shifts. If all telecommunicators are busy, the call is placed into a queue until a telecommunicator becomes available. While the call is in the queue, the caller hears a recorded message advising of the queue status and asking the caller to stay on the line.

The telecommunicator's job is to put the necessary information into the CAD and to determine the nature of the call and the appropriate emergency response (i.e., whether it is a police, fire, or medical emergency). In Denver, medical emergencies are immediately directed to the emergency medical service (EMS) dispatcher, who screens the call to determine the nature of the emergency. The 911 telecommunicators screen police and fire emergencies prior to forwarding them to the police or fire dispatcher.

There are approximately 11 dispatchers working at the center each shift: 5 police dispatchers, 2 police clearance channel operators, 3 fire department dispatchers,

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and 3 EMS dispatchers. When the call reaches a dispatcher, he or she initiates the appropriate action to be taken by the agency called.

**When a TDD call comes in.** The center has two devices capable of responding to a 911 call from someone using a TDD: (1) a traditional TDD device; and (2) a computer keyboard that transmits TDD conversations.

The center has standard operating procedures for responding to TDD calls. When the call is audibly recognized as a TDD call, the telecommunicator forwards it to a nearby position equipped with a TDD. In this process, the automatic number identification (ANI) and automatic location identification (ALI) is also forwarded in order to efficiently complete the call handling procedure. Silent calls are treated as possible TDD calls, and the same procedure is followed.

There are three ways that TDD calls are commonly recognized. First, the telecommunicator may hear tones advising that a TDD call is forthcoming. Second, and just as often, no tones are heard and instead there is silence. This can lead to the mistaken belief that the caller has either hung up the phone or is injured to the degree that he or she is unable to communicate. The third, least common way for the telecommunicator to recognize a TDD call is to hear a prerecorded message advising him or her that a TDD call will follow.

## Results of the analysis

The center has standard operating procedures regarding TDD calls as well as for handling silent calls. The center's employees are trained to use the TDD equipment and are familiar with the ADA and its requirements. In addition, test calls are occasionally made to telecommunicators to gauge whether they are responding to these calls in conformance with standard operating procedures.

**Room for improvement.** The following areas were identified for improvement that would enhance the center's responsiveness to TDD calls.

- Although the present TDD equipment is centrally located to the 10 telecommunicators, the current system requires the telecommunicator to leave his or her console and relocate to another part of the room. This causes a delay in response time and can confuse the caller who may think that the call has been disconnected instead of transferred.

- No system is in place for regularly testing the TDD equipment. Equipment malfunction caused by a maintenance failure could lead to problems.

- Further training of staff would be helpful. In addition, refresher and practice sessions would be useful to speed up the response time in transferring calls.

**Suggestions for direct access.** In today's economy, budgets are shrinking while obligations to provide services are increasing. Nevertheless, solutions are available. Some of those obligations may have a cost while many may be provided at a minimal cost or even at no cost at all.

In Denver more equipment would be helpful. Saving telecommunicators a trip from their customary positions to the TDD position would help cut delays and possible misunderstanding by the caller using a TDD. In emergency situations, when even seconds count, this can be important. For Denver, as in any emergency response center, having a TDD at every telecommunicator position would be ideal. If financial constraints make that impossible, centrally locating an increased number of TDD's would help. For example, in Denver adding a TDD for each pod of four operators would eliminate the need to move to another part of the center to respond to a TDD call.

- Denver should establish regular testing of the equipment and the telecommunicators. This testing involves minimal, if any, money and helps to avoid crises in the long run. It is a good idea to maintain records of testing efforts made by a department as well as all maintenance history on equipment.

The city should develop or update TDD training programs for staff. Training

helps reduce awkwardness and confusion when handling TDD, nonvoice emergency calls. When possible, retraining every 6 months is optimum. Training should include topics such as:

- Language variables and impact when trying to provide access to telephone emergency response services.

- Call handling tips.

- Processing calls using telecommunication relay services.

- Regular proficiency training.

- Identification of equipment problems.

- In addition, Denver should ensure that its TDD capabilities are well known. All pages of the phone book where 911 is listed should prominently state that the telephone emergency system is TDD accessible. A TDD message should be included on the ACD recorded announcement. This allows the caller to know the status of his or her call, thereby decreasing the chances that the caller will hang up, assuming no one is responding.

## Bringing home the lessons learned in Denver

The challenges faced by Denver are not unique. Indeed, many public safety agencies are addressing these issues. There are many themes observed and suggestions made in Denver that may help other departments.

Because current TDD technology only allows for one person to type at a time, this process is going to take longer than voiced communications. Telephone emergency response centers must strive to find ways to speed up the process. Here are some tips that may help to decrease confusion and mistakes or to avoid potential tragedies.

## Equipment

- Conduct a self-evaluation of TDD capabilities and proficiency. Include an assessment of the equipment.

- Install devices that can detect when a TDD tone is initiated by the caller.

## **TDD's and Telephone Emergency Services: A Self-Analysis**

The ADA, under Title II, requires public entities to conduct a self-evaluation of policies and practices to ensure that services for individuals with disabilities are accessible and as effective as those provided to others.

These questions allow a quick appraisal of a telephone emergency response center and can provide an opportunity to identify and resolve or correct problems that may exist in the way the telephone emergency service operates.

### **Communication center overview**

1. What geographical and jurisdictional areas are served by each public safety answering point (PSAP)?
2. How many access lines does the 911 center serve?
3. What is the average daily call volume?
4. Is there a diagram of the 911 system configuration?
5. How many consoles are established for call taking?
6. In addition to call taking, what other functions do telecommunicators handle?
7. What is the average number of telecommunicators working at a given time?
8. Is there a grievance procedure for citizens not satisfied with services?

### **Equipment**

9. Does the telephone emergency response system provide the same level of service [i.e., automatic number identification (ANI) and automatic location identification (ALI)] to all citizens?
10. In the event of individual line or system failure, is an alternative method accessible to TDD callers?

11. How many trunks connect to the PSAP? How many are dedicated for emergency calls?
12. How many consoles are available for receiving emergency calls, and how many are TDD accessible?
13. Describe the equipment and methods used to transfer emergency calls or information to each public safety answering point served by this PSAP.
14. Is redundancy in the 911 equipment provided for?
15. If the answer to the previous question is "yes," are TDD communications included in the redundancy plan?
16. Are TDD's included in the plan for overflow or power outage?
17. Does the system include automatic call distributor? If so, does it include an automatic recording to the citizen who may be put into a queue until there is an available telecommunicator? Does the recording include a TDD recording for a TDD user?
18. Does the system configuration have expansion capabilities (for adding a detector and dedicated/direct connect TDD)?
19. Does the system use a computer-aided dispatch?
20. Is there voice recording equipment that monitors all incoming emergency lines, including the point of answer for the TDD?
21. What type of TDD accessible equipment (i.e., standalone TDD, keyboard, computer TDD software, etc.) is currently being used?
22. How many TDD units are in use?
23. If the TDD equipment has preprogrammed messages, have persons with hearing disabilities been consulted regarding the language appropriate for TDD users?
24. Does the center have TDD detection equipment?
25. Does the communications system have the capability to provide TDD access to alternative nonemergency numbers?

### **Operations**

26. Does the center have standard operating procedures (SOP's) for TDD call handling?
  27. If SOP requires calls to be transferred to the fire department or emergency medical service, does the secondary public safety answering point response have TDD capability?
  28. Is the standard time for answering voice calls comparable to that for TDD users?
  29. Do the call-back procedures include contingencies for call-back for TDD calls?
  30. Does the center keep entries or statistics of TDD calls?
  31. Is there a method for handling foreign language speaking callers?
  32. When there is no vocal response, is there an SOP handling for the open-line or silent call?
  33. Are there procedures for handling telecommunication relay service calls?
  34. Are there minimum training requirements for telecommunicators?
  35. Is there specialized training regarding TDD calls?
  36. Does the department have a public education program for the TDD user on accessing telephone emergency services?
  37. Does the local telephone directory indicate direct access to telephone emergency services for TDD users?
- These are the kinds of questions that should be asked in a self-analysis. The more questions that are answered "yes," the more likely the department will provide meaningful telephone emergency response service to those using TDD's. Established operating procedures and a comprehensive training program are key to a successful emergency response system. It also reflects the agency's commitment to the protection of lives and properties in the communities it serves.

- Where financially feasible, add more TDD equipment.
- Ensure the trunking used with the TDD devices are included on any recording or logging equipment.
- Prepare a plan and procedures for power failure contingencies.

## Operations

- Develop and implement standard operating procedures for responding to TDD calls.
- Develop and incorporate effective transfer methods for transferring calls to the fire department or EMS.
- Initiate call-back procedures to include a mechanism for reaching a TDD caller.
- Develop and implement standard operating procedures for processing silent calls or open lines and how to query lines for a TDD caller.
- Test the system. Conduct test calls using various call processing scenarios. Involve members of the deaf community in this effort.

## Training

- Develop and deliver a comprehensive TDD training program for incumbents as well as new hires.
- In communities with low TDD call volume, provide refresher training on a regular basis.
- Follow technological development through the various emergency response services associations and add these innovations into the training regiment.

## Other

- Consult with the disability community in the self-evaluation process, the creation of standard operating procedures, and the development of training.
- Develop and deliver a public awareness program to notify citizens using TDD's of the department's accessibility and services.

## Anatomy of a 911 Call

Typically, calling 911 means something is wrong or someone may be in trouble. When the caller can speak or hear, the telecommunicator immediately processes the call, asking appropriate questions. When the same scenario occurs, but the caller is using a TDD, the telecommunicator should rely on standard operating procedures for handling TDD calls. Voice calls are very different from calls coming in on a TDD. Compare how an emergency might sound by a voice caller with that of the same communication as relayed on a TDD.

**A voice call.** A 911 line rings.

*911 Telecommunicator:* "911, What is your emergency?"

*Caller:* "I need an ambulance. Bob's friend came in and started a fight. He's really bleeding bad. I'm hurt too."

*Telecommunicator:* "Okay, sir, calm down, what's your address."

*Caller:* "105 Evergreen. But Bob's at HIS house . . . I ran up here to get help."

*Telecommunicator:* "What's Bob's location?"

*Caller:* "112 I think . . . I don't know."

*Telecommunicator:* "Are there any weapons involved?"

*Caller:* "No. No. I don't know, man! Hurry, please."

*Telecommunicator:* "Sir! Are there any weapons?"

The telecommunicator continues to process the call, getting all the pertinent information to dispatch police and medical services.

Consider the same scenario with the caller using a TDD.

Here are abbreviations commonly used by TDD callers:

- GA = Go ahead ("it is your turn").
- SK = Stop keying ("ready to hang up").
- GASK = Go ahead/hang up.

- SKSK = Stop keying/hang up now.
- XXX = Erasing the error. The backspace key is rarely used. Instead, typing XXX indicates to disregard the previously typed word. Then the word is retyped.
- Q = Question mark. Punctuation marks are not used. Therefore, this letter is used to indicate a question.

**A TDD call.** A 911 line rings.

The 911 telecommunicator responds, "911 What's your emergency? . . . Hello? . . . Do you have an emergency?"

The caller may or may *not* press some keys on the TDD. If the caller does, the tones are heard by the telecommunicator and procedures begin to establish communications via TDD. If the caller does not press any keys, the telecommunicator begins to try to determine the problem. Procedures for silent—or open line—calls should be set in action.

The following conversation might occur when TDD communication has been established.

*911 Telecommunicator:* "That sounds like a TDD . . ." The telecommunicator proceeds to establish communication on the TDD by typing: "911 here what ur emergency q ga."

*Caller types:* "BOB FRIEND MAD AND COME IN HOUSE HIT BOB I FIGHT FRIEND AND RUN AWAY BOB ON FLOOR BLOOD MUCH I BLOODY TO AN BOB IN HOUSE 105 EVERG GA."

*911:* "Okay what address for ambulance q ga."

*Caller:* "112 EVERG GA."

*911:* "spell everg ga."

*Caller:* "EVERGREEN."

*911:* "where are u now q ga."

*Caller:* "MY HOUSE 105 EVERG PLS HURRY GA."

At this point, the telecommunicator will begin asking clarifying questions, one at a time, to determine what services are needed and where, information on the assailant, weapons involved, etc.

## Equipment for TDD Users

Various types of equipment are manufactured for persons who must use TDD's. The method that the public safety answering point uses to provide accessibility may vary according to the equipment and environment. Current products include:

- Telephones with built-in TDD's.
- TDD software and modems for personal computers.
- Built-in TDD communications in the 911 system equipment.
- Detecting devices to identify TDD calls.

All TDD's have some basic features in common, such as a keyboard similar to that on a typewriter or personal computer. The character display is where the conversation is electronically shown. An optional feature is a built-in or attachable printer. The

acoustic coupler is the mechanism in which the telephone handset is placed to convert the TDD tones. Some optional features include auto answer/direct connect, rechargeable battery pack and AC adapters, and memory capabilities. TDD's with memory capability can store short messages for quick response.

Most TDD's have the standard 45.5 baud rate in Baudot code. The maximum rate of transmission is about 60 words a minute. Some units now are equipped with 110/300 baud capability. This allows for more characters to be transmitted per second (300 baud).

Detecting devices monitor phone lines, detect TDD (Baudot and ASCII, i.e., American Standard Code of Information Interchanges) calls, and alert the telecommunicator by visual and/or audible message of the incoming call. (It should be noted that at the time of publication of this guide, the U.S. Department

of Justice did not require direct access to callers using TDD's or computer modems that use ASCII transmission.) Some units, upon detection, automatically send a preprogrammed message to the caller to inform him or her that the call has been received.

TDD call detecting can be handled several ways. Installation of a separate standalone unit can be connected to the trunking system. An alternative method would be to install equipment that has the built-in TDD detection feature. Another system offers not only TDD detection, but also diverts the call to a dedicated position equipped with a TDD.

The information provided here is limited to the availability of information at the time of compilation. With continuously advancing technologies, new and improved products will enhance communications for TDD users.

One of the most difficult aspects of being a telecommunicator is taking a TDD call when the caller does not use standard English. Variations in language usage will vary. The telecommunicator will need to rely on training received for TDD call handling. TDD communication sometimes requires a variety of strategies to enhance the call-taking process.

## Tips

Current TDD technology allows for only one person to type at a given time, which is more time consuming than voiced communication. When an emergency occurs, every second is critical. The telecommunicator must achieve ways to speed up the call-handling process. The following tips are provided to eliminate confusion, thus avoiding having to explain or repeat when processing the TDD emergency call.

- Ask clarifying questions, one at a time. The caller may not have a TDD with a printer or be in a state of mind to recall

numerous questions before being given the opportunity to respond.

- Use vocabulary that is easy to understand. Do not use words like "en route" or "intoxicated." Instead try "on the way" or "drunk." Try making a list of common words used in the course of handling various calls. Then list alternative words that can be substituted.
- Keep sentence structure simple. For many TDD users, English may be a second language. By keeping the structure simple, wasted seconds can be eliminated in situations such as when the caller does not understand and asks for the sentence to be repeated.
- Avoid using English idioms. Some phrases standard to the public safety profession can be considered an idiom, such as stand by. A person never having heard that phrase may believe he or she is being directed to actually stand by something. This could cause a great deal of confusion that could be avoided if basic English is used.

- Process the call just as calls are processed for hearing callers. Remember to type phrases like "stay calm" and inform him or her that "help is on the way" as soon as possible. Continue to periodically reassure the caller.

Finally, there are a few other differences to be aware of between handling a call from an individual who can hear and one who is using a TDD. Telecommunicators need an ability to listen to callers to know when to help them calm down in order to get the information needed to process the call. When communicating via a TDD, voice inflection is lost. Likewise, the TDD caller will not hear the professionalism and control in the telecommunicator's voice or that, perhaps, units have been dispatched.

## How to identify a TDD call

- Audible electronic tones.
- Silence, "open line."

## Glossary

**ACD:** Equipment used to distribute large volumes of incoming calls in approximate order of arrival to a call-taker or to store calls until call-taker becomes available.

**ALI:** Automatic location identification. A system that automatically displays the calling party's name, address, and other information.

**ANI:** Automatic number identification. A system that automatically displays the seven-digit number of the telephone used to place the 911 call.

**Baud rate:** The number of bits of information that are transmitted electronically per second.

**Baudot:** A five-bit code designed to transmit alphanumeric characters to a telecommunication device (i.e., TDD).

**CAD:** Computer-aided dispatch. A computerized system used to assist in dispatching emergency services. Special software programs allow the telecommunicator to retrieve caller ANI/ALI information pertaining to the incident.

**Dedicated trunk:** A telephone line dedicated to a specific purpose.

**PPSAP:** Primary PSAP.

**PSAP:** Public safety answering point. A location that answers 911 calls.

**Redundancy:** The installation and/or availability of multiple pieces of 911 equipment and system components as

backup to support the original system to ensure reliable and consistent 911 service.

**Selective routing:** A telephone system feature that enables all 911 calls from a defined geographical area to be answered at a predesignated public safety answering point.

**SOP:** Standard operating procedures. Policies and practices developed by an agency.

**SPSAP:** Secondary public safety answering point.

**TDD:** Telecommunications device for the deaf, sometimes referred to as TTY (teletypewriter) or TT (text telephone). A device that allows for nonvoice communications via transmission/translation of electronic tones into typed format.

**TDD detector:** A device that identifies incoming TDD tones and alerts the telecommunicator of the TDD call by audio and visual indicators and notifies the caller that the call has been received.

**TRS:** Telecommunication relay service. A service that allows a TDD user and a traditional telephone user to communicate through the telephone network via a communication assistant who serves as a conduit to relay information between the parties.

**Voice call:** A normal telephone call.

able to read the telecommunicator. Therefore, it is important to inform the caller, as soon as possible, if help is on the way.

## Resources

There are numerous organizations with expertise in TDD's, emergency response systems, and issues facing those who are deaf or hard of hearing. Criminal justice professionals responsible for implementing and administering 911 telephone emergency response centers should consider contacting such organizations for guidance. Listed below are some groups who might be of assistance.

### National organizations

National Emergency Number Association (NENA)  
P.O. Box 1190  
110 South Sixth Street  
Coshocton, OH 43812-6190

Associated Public-Safety Communications Officers, Inc. (APCO)  
2040 South Ridgewood Avenue  
South Daytona, FL 32119-2257

Telecommunications for the Deaf, Inc. (TDI)  
8719 Colesville Road, #300  
Silver Spring, MD 20910

U.S. Department of Justice  
Civil Rights Division  
Coordination and Review Section  
P.O. Box 66118  
Washington, DC 20350-6118  
202-514-0301 voice;  
202-514-0381 TDD

### Local resources

Community organizations; advocacy agencies

Social organizations (i.e., deaf clubs)

State agencies having programs for special populations (i.e., Commissions for the Deaf/Hearing Impaired, Blind Commission, Rehabilitation, etc.)

State organizations (affiliate chapters to the National Association of the Deaf)

● Synthesized voice announcement (a built-in feature on specific TDD's) such as, "TDD caller," "Use TDD," or "Hearing Impaired Caller: Use TDD."

● A TRS (see glossary) communication agent announcement (DO NOT CONNECT TO A TDD).

**Troubleshooting tip.** Garbled typed conversations are not uncommon. If this happens, telecommunicators should tap

the space bar two or three times and check connections; if the telephone handset is using acoustical couplers, be sure it is placed on the couplers appropriately.

When the caller stops typing, the telecommunicator should type, "CANT READ U PLS REPEAT GA." Although the telecommunicator may not be receiving a clear message, the caller may be

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Public or social services (i.e., independent living centers, community services)

Other: individual State telecommunication relay services

## Notes

1. 28 CFR Section 35.162.
2. 28 CFR Section 35.133.
3. *ADA Compliance Guide*, Thompson Publishing Group, Washington, D.C., Vol. 4, No. 9, September 1993, p. 3.
4. The National Institute of Justice gratefully acknowledges the contribution and invaluable assistance of the city of Denver, the Denver Police Department, the Denver Fire Department, and the Denver Emergency Medical Service. In particular, this publication would not have been possible without the efforts of Beth McCann, manager of safety for the city of Denver; Assistant Chief Miriam Reed of the Denver Police Department, and Captain Joe Hart of the Denver Fire Department.

Paula N. Rubin, a lawyer, is a visiting fellow at the National Institute of Justice, coordinating NIJ's initiative to research, develop, and deliver publications and training for the criminal justice system on the Americans With Disabilities Act as well as other human resources management issues. Toni D. Dunne is training and access specialist for the Texas Advisory Commission on State Emergency Communications.

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