Nancy J. Victory, Esq.
Chair
The FCC Independent Panel Reviewing
the Impact of Hurricane Katrina on Communications Networks
Wiley, Rein and Fielding
1776 K St, NW
Washington, DC 20006

Dear Ms.  Victory,

I am writing on behalf of COMCARE, a 9 year old nonprofit organization with over 100 member organizations focused on improving emergency response.  Many of our members were involved in the response and recovery efforts in the Gulf Coast. From their experiences we have been able to identify where communications failures occurred and what needs to be accomplished to improve emergency response before the next disaster.

As you know, there were several points of failure in emergency communications systems and applications.   The various reports on Katrina have emphasized the loss of radio communications. Until the recent Senate report, none have addressed the lack of interagency data interoperability – and of the lack of redundant data systems in agencies in the areas where primary systems were knocked out.  We would like to encourage this panel, the FCC, and the Administration to make data and interagency interoperability a priority and not limit the discussion to simply first responder radio interoperability.  We have already been working with the FCC on these issues. The NRIC Focus Group 1D report the FCC accepted at the end of last year describes well what is needed.  I am hopeful that your panel will address the need for data tools and interoperability for all agencies, professions, and organizations involved with the planning, response and recovery before and after disasters.   Their presence would have been a great help before, during and after Katrina.

One crucial capability that our emergency service practitioners lacked was the use of interoperable data communications.   Data communications are critical to all agencies and organizations dealing with emergencies; using data can spread more information more accurately and far faster to more parties than voice communications in most instances.

Much has been made of the destruction of emergency communications in the Gulf Coast. However, the vast number of agencies in the hinterland (and all over the country), whose systems were still functioning and were being called on to respond, lacked the ability to share information through modern interoperable data systems.

As the Senate Homeland Security Committee's recent report on Katrina stated:  "The response to Katrina was also hampered by the lack of data interoperability – that is responders' inability to electronically share data – including patient medical records, information needed to track

missing children and adults – coordinate search and rescue operations, and verify eligibility for benefits." The report recommends, "DHS should develop a national strategy, including timeframes, for implementing a survivable, resilient, national interoperable communications network. DHS should establish a plan to migrate to the use of 1) interoperable platforms for communications networks; 2) equipment that permits sharing of resources in times of crisis; and 3) systems to promote high-precedence data communications and interoperability during disasters so that data (such as medical, victim registration, and Geographic Information Systems (GIS) data) can be electronically shared among responders, as needed, at all levels of government."

Inter-organizational data is not something in the normal tool kit of our emergency response agencies. Today, for the most part, data is something each agency does to record what they did – rather than to share with others. So when patients were moved from New Orleans to dry land, and then dispersed to hospitals in a multi-state region, there was no electronic application, much less system, to track them, or standards that would allow treating hospitals and physicians in these distant states (or the next county) to access data from the various sources of electronic patient data such as ambulance, hospital and/or pharmacy records. Data communications also provide a record that may be referenced later and ensures that requests are not lost due to radio static, poor phone connections, or in the paper shuffle.

The keys to solving this problem are: (1) a major federally-funded push to get inter-profession emergency data standards, and (2) some new shared applications for functions like situational awareness, patient tracking, and other shared activities. The successful emergency effort by HHS to create a shared database of drug prescriptions so emergency doctors in the Houston Astrodome and elsewhere could access it and prescribe new medicine is a shining example of what should be, but is not, available across the board.

We saw during Hurricane Katrina that when voice communications failed, IP data communications (including VoIP) could still be used in places due to the physical qualities of packet data. Another gap is the absence of integrated IP state emergency networks, including 9-1-1. Most agencies do not have broadband connections to the Internet, much less redundant ones and connections to private emergency IP networks.

When Hurricane Katrina flooded 9-1-1 centers, their calls did not automatically roll over into a functioning center. This was not only a technical problem. Thousands of firefighters, police and medical personnel came to the region to help survivors, but there was no plan to bring additional telecommunicators to the region to keep up with the influx of 9-1-1 calls from victims and rescue and response teams. Indeed, some of our members who tried to go there were blocked for days by bureaucracy. However, sending more staff into harm's way to provide electronic support functions is not the best solution. There needs to be a system and plan that allows us to reroute 9-1-1 calls and the necessary data from that community to allow telecommunicators from unharmed communities to help those citizens. There is no reason to send telecommunicators into dangerous situations when phone calls and data can be routed to their normal working facilities.

We have addressed these issues and made recommendations based on our experience and findings in the attached report.  Please look over it and let us know if there is anything more we can provide.  We appreciate the magnitude of the effort you are undertaking and offer any help and support COMCARE and its members can provide.  We welcome the opportunity to provide any further information you and your colleagues might require.

Sincerely yours,


Richard Taylor
Chair
COMCARE

COMCARE is a national non-profit alliance dedicated to advancing emergency response by promoting modern, interoperable emergency communications systems, and the development of new procedures, training, and tools to maximize value for emergency responders. COMCARE encourages cooperation across professional, jurisdictional and geographic lines, and works to integrate the emergency response professions, government, private industry and the public. COMCARE's 100+ organizational members represent a wide diversity of the emergency response community.

Our goal is to promote an integrated, coordinated approach to emergency communications and support the development of comprehensive "end-to-end systems" to link the public to emergency agencies, and to link those agencies together. Introducing 21st Century information and communications technologies to the often-antiquated communications infrastructure, emergency agencies will save thousands of lives each year, substantially reduce the severity of injuries, and enhance homeland security. This integrated network would equally serve to protect Americans during both daily and mass emergencies.

# Introduction

The 9/11 Commission recently severely and correctly criticized the government for failing to solve the radio interoperability problem, and to provide more spectrum to safety agencies. However, the Commission did not note that the government has not even addressed *data* interoperability among the thousands of emergency response agencies – both first responders and others such as hospitals.  Yet response to any large disaster, and to most small ones, would benefit greatly from the sharing of information by modern means (not just voice or fax) across professions, not to speak of across jurisdictions and with the private sector.

When Hurricane Katrina flooded 9-1-1 centers, their calls did not automatically roll over into a functioning center. There was no plan to bring additional telecommunicators to the region to keep up with the influx dispatch needs and 9-1-1 calls from victims and rescue and response teams. There were few back up communications systems and an apparent lack of planning.

When patients were moved from New Orleans to dry land, and then dispersed to hospitals in a multi-state region, there was no electronic system to track them, or standards that would allow treating physicians in these distant states (or the next county) to access patient data from the various electronic sources such as ambulance, hospital and/or pharmacy records.

After the storm, when the region was filled with rescue and recovery teams from around the country, there was no overarching, shared GIS system for the crews to use to help them find the nearest functioning hospital, designate areas that had already been searched, or post emergency

incident/help requests. In New Orleans, rescue teams spray painted houses that had been searched with the date and the status of the search. Shared GIS applications would aid this process and make it more efficient.

In large areas involved with the response, the electricity, phone lines and computers were working. But even where there were functioning electronic tools, they generally could not share data with each other because of the absence of data interoperability. Data interoperability requires a common language (words, "sentences" and communications protocols), but while there are now a number in process, there is a single emergency data messaging standard – the Common Alerting Protocol – just one. Katrina demonstrated once again why there needs to be far more emphasis on the importance of interoperable data communications.

The lack of a national interoperable data communications infrastructure is a critical homeland security and emergency response problem. The solution is not for the federal government to buy a new "national emergency network" or to achieve "interoperability" by buying a single software tool for all emergency agencies to use. It is to have the standards and tools to link their legacy systems together, while providing some new decision support tools to support first class, all-hazards incident management and response nationwide.

Hurricane Katrina was a catastrophic event that could not have been avoided, and was seen for days on television, making slow, yet steady progress towards the Gulf Coast. In the future, our country will face events that test our emergency preparedness and response plans again, but we will be lucky to get so much advanced warning.

In a large part of the Gulf Coast, there was a complete loss of communications and subsequently, information. Telephones and radios did not function, preventing valuable information getting to those who needed it. Even more troubling is the fact that even if all the communications systems and equipment remained functional, phone calls, radios and faxes would not have been sufficient to handle the disaster. If the lines remain open, that is a highly inefficient way to communicate large amounts of information to large numbers of people.

Including the use of data communications to supplement voice communications is a necessary step that emergency response agencies must take. We saw during Hurricane Katrina that when voice communications failed, IP data communications (including VoIP) could still be used in places. Agencies need to be equipped to use data, and the data needs to be standardized so that agencies of different geographies and jurisdictions which use different proprietary systems can share information. The size of Katrina also underlined the fact that an agency will not necessarily know in advance with whom they will need to share information. This makes the creation, proliferation, and use of standards even more crucial.

# Recommendations

### Recommendation

***Require Public Safety Answering Points (PSAPs) to have plans to interoperably route calls to other centers in case the center is not functional.  Do this as part of a statewide IP backbone emergency network.***

When Hurricane Katrina flooded 9-1-1 centers their calls did not automatically roll over into a functioning center.  Jim Bugel from Cingular said that his operations people could see people in the system making 9-1-1 calls that were not being answered because the 9-1-1 centers were no longer functioning.  Many callers in the Gulf Coast who were in areas served by functioning 9-1-1 centers often were greeted by busy signals. There was no system in place to route the calls out to a functioning center that could answer them.

FCC Chairman, Kevin J. Martin reported that at least 38 9-1-1 centers lost the ability to function during Katrina.  Most of the centers were unable to reroute calls to other locales.  Even when the calls were able to be rerouted the telecommunicators did not have access to the maps, data, and resources to provide the help that the citizens and first responders in those communities needed. There needs to be in every state a modern Internet protocol network that will carry all emergency communications, and can implement a plan at every Public Safety Answering Point (PSAP) to reroute calls to places outside the affected area.  With such modern interoperable networks, Craig Whittington, a senior member of the National Emergency Number Association, said 9-1-1 telecommunicators will be able to dispatch local emergency service personnel from anywhere in the country.  The technology exists so that the systems can reroute the calls along with the data, maps, and other resources needed to effectively answer and dispatch 9-1-1 calls. This will provide a necessary supply of telecommunicators out of harm's way while still providing 9-1-1 services to all areas.

### Recommendation

***Expand the definition of first responder, and emergency responder, to include all emergency service providers including 9-1-1 telecommunicators.***

Craig Whittington, a 9-1-1 Coordinator from Guilford Metro 911 in North Carolina, helps lead the Telecommunicator Emergency Response Taskforce (TERT) which was deployed to St. Tammany Parish in Louisiana.  Whittington cites a major barrier they faced was that state leadership did not request 9-1-1 communicators in addition to the thousands of police and firefighters they were requesting.  Thousands of firefighters and police came to the region to search for survivors, but there was no plan to bring additional telecommunicators to the region to keep up with the influx of 9-1-1 calls from victims and rescue and response teams.  When 9-1-1 help was requested, there was no system for treating them like any other resource.  Had they been doctors or fire fighters, they would have received FEMA approval in hours.

Whittington reports that it took six days for the TERT to get officially approved through EMAC. Once approved, it took them 15 hours to get to St. Tammany's Parish. When they arrived, one of the local dispatchers was so physically exhausted that she had to be helped out of her chair and given an IV.

The North Carolina TERT should be commended for the work they did in the Gulf Coast. Telecommunicators were overlooked in the emergency planning process. The police, firefighters, and EMS were deployed readily but no one had planned to bring in extra telecommunicators to dispatch the increased numbers of responders.

In a similar vein, DHS has realized the need to credential emergency responders and has started a national program to develop standards to do that. The program is inclusive of many professions including police, doctors, firefighters, EMS, and even veterinarians. However, 9-1-1 telecommunicators are not included in this credentialing program.

**Recommendation**

***Make data and interagency interoperability a priority, not just wireless and first responder radio interoperability.***

When winds knocked down public safety radio transmitters, and waters flooded a handful of key telephone company switching offices, some county emergency operations centers and other agencies were entirely cut off from their mobile staff and from the outside world for days. But communications were mostly unaffected in the counties and states inland from which response was being organized.

The various reports on Katrina have emphasized the loss of radio communications. None have addressed the key problem of the lack of interagency data interoperability – and of the lack of redundant data systems in agencies in the areas where primary systems were knocked out.

During Hurricane Katrina in New Orleans, city officials cobbled together a Voice over Internet Protocol (VoIP) service using but one working Internet line, and a Wi-Fi network was set up in the SuperDome. Mayor Nagin and the leadership of New Orleans also relied on VoIP technology for communication. When voice went down the internet was still working in many places making a clear case for the utilization of such technologies for all emergency services as a supplement (or in this case, a back up) to the more traditional phones and radios.

Data communications are very important to emergency responders; the use of data can spread more information more accurately and faster than voice communications in many instances. The use of data communications also helps achieve more effective voice communication because the radios are not being tied up nearly as much. Before, during and after Hurricane Katrina, emergency services and the public would have benefited greatly from interoperable emergency data communications. As we are beginning to see more data communications being used we need to standardize the means of communication. It is important that data communication be interoperable so that different jurisdictions, professions and agencies can communicate without having one off interfaces, or one off prearranged communications protocols. Once a disaster

strikes organizations may need to communicate with people or organizations they never imagined they would need to. For example, the hospitals and shelters in New Orleans never would have thought to arrange mutual data transmission agreements with communities in as far away as New York and St. Louis.

In order to create a strong data communications system we need to have complete data interoperability. The method for receiving information about an emergency event should be the same whether it is a homeland security event, car crash or any other type of emergency incident. Unfortunately, today incident data and information that would help in response are either not collected or exchanged at all. Usually a limited amount of data is recorded in separate systems residing in each emergency response domain. In fact, many emergency response agencies in the United States cannot send or receive incident data. Major events demand real time data and interoperable communications across all jurisdictions and domains.

Data from devices in cars and trucks, incident data or personal medical data can immediately be sent to those registered and authorized to receive this type of information. This is one approach for all-hazards emergency messaging, whether messages are about mass emergencies or single events, about patient tracking or resource management, and whether an agency needs to contact other agencies, private entities or the public. This type of data messaging adaptable for use by a wide range of organizations and improves operational efficiency so the focus is on emergency response, not on the administrative tasks of data entry, looking up contact information or filing paper records.

Agency systems as well as other discipline-specific systems can be integrated across the entire emergency response spectrum. Real time data can be collected for all types of hazards, improving the ability to detect trends and threats. Agencies will know immediately when an emergency event occurs. Responders will receive timely information allowing them to provide more effective response — and to reduce injuries and save lives in the process. Some specific examples follow.

**Recommendation**

*Develop fully integrated, standards based electronic patient and victim care tracking systems that capture and distribute patient information to EMS, emergency managers, hospitals and other appropriate agencies, and victim information to emergency managers, shelters, the Red Cross and others, as needed.*

After Hurricane Katrina, citizens of the Gulf Coast received assistance and medical treatment in various types of non-traditional locations. Trapped, residents were often treated in their homes and at shelters for their immediate needs, and were then transported to the nearest functional hospital for follow-up care. After medical attention received from a local hospital, thousands of people were discharged to temporary shelters or evacuated to other facilities around the county. No continuous records were kept to identify the patients, where they had been, or what treatments they received. In many cases the system for identifying and tracking patients was paper stapled to the victims' bed sheets, taped to their body or maintained by a family member in a distant state. Because the traditional continuum of care was interrupted by necessity and very

disjointed, critical patient information was lost, never collected, or never shared with those later in the chain of care.

Knox Andress is the emergency preparedness coordinator for the Christus Schumpert Health System in Shreveport, La., and the designated regional coordinator for HRSA-Louisiana Hospitals, Region 7. He was directing a regional hospital Emergency Operations Center (EOC) that was coordinating the efforts of twenty-eight hospitals in the area. The EOC was not given any information about the identification of the patients that were being brought to the various hospitals in their jurisdiction or even what condition they were in. They relied on telephones and conference calls to share information to piece together any situational awareness. The information that they did receive on the phone consisted of an estimate of both number of patients and time of arrival. While they did have access to e-mail there was no system in place to allow the hospitals to share information in any other form than telephone and radio communications. Without a more efficient means of collecting data, valuable time and manpower was wasted that could have been used to better treat and manage patients. With more information they could have prepared better for the arriving patients and could have been routing incoming patients to the facilities with the appropriate resources to best manage specific injuries and illnesses. Had the hospitals and emergency services had an organized or even automatic way of tracking which resources were available without making phone calls the logistical nightmare could have relied on up-to-date databases and networks rather than a life-or-death game of phone tag. Andress also recalls situations where he had been informed that patients were coming that never actually showed up with no explanation or means to find out the disposition of the missing patient. His EOC became swamped with telephone calls from loved ones looking for family and friends and set up a website to aid in the reunification process.

Andress' story is not uncommon, he and his staff were able to accomplish a level of coordination with the conference calls and their radio system, and they are to be commended for not only how much they were able to accomplish with such little resources, but also for their ingenuity. In other major sectors of the US economy, like banking, airlines or even vehicle registration, interoperability between computer systems is an essential part of daily operations. Imagine an airline coordinating ticket purchases from around the world by phone, or a bank in Kentucky having to call a bank in California to verify an ATM transaction, or even a vehicle registered in Vermont pulled over in Georgia and the local police officer having to call the Vermont DMV for records. These are examples of data interoperability, which is a key component of tracking patients and victims because the agencies collecting the information need to be able to share the data with other agencies simultaneously and in near real-time. Right now when data is shared it is most often shared over a phone line consuming lots of time and energy with little results. An interoperable patient tracking system would allow agencies to share information quickly with the right people who depend on that information, or subsets of it, to do their jobs. The technology exists now, and it existed before Hurricane Katrina that could have made emergency response and patient care more efficient. We, as citizens have the ability to send data from our cell phones, computers, Blackberries and cars, there is no reason why a hospital should not be able to share data with police, EMS, 9-1-1, the Red Cross, shelters, public health officials and other emergency services, let alone other hospitals.

Hurricane Katrina illustrated that while we may have the best hospitals in the world, they must function collaboratively during times of crisis and will continue to be constrained because of a lack of an efficient way to exchange electronic patient information from one care-provider to another. Information can be collected at each point of contact with the patient or victim and shared through the care of the individual whether they go to a hospital, shelter, or other agency. In the case of a disaster that leads to mass-displacement as well as many casualties, the system should be scaleable so that critical information, like patients' immediate medical history, can be transported with the patient from one facility to another.

We are pleased to hear the recent announcement in *Government Health IT* that The American Health Information Community, a panel of government and private-sector executives seeking to accelerate deployment of electronic health records will be working on a project to use health information technology to improve the nation's responses to a disaster. Michael Leavitt, the Secretary of the Department of Health and Human Services, asked the panel to develop recommendations on how electronic health records can be used in a disaster that leaves many people without their medical records and prescriptions for medication. This is clearly a step in the right direction, and we hope to work with them. We would suggest the system using electronic health records for emergencies be operable day to day so that when a disaster does strike the system is up and running with practitioners trained in using it.

# Conclusion

The response to Hurricane Katrina showed us that we were not prepared to handle such an event and that we could better prepare for large and small scale incidents by improving emergency communications. Throughout the country, our emergency responders need to be able to communicate important information effectively. The most common explanation for the lack of modern interoperable emergency voice and data systems is lack of money. Certainly, the initial investments to install modern technology are expensive, and these areas are historically under funded. Yet billions of dollars have been spent on public safety communications and IT systems in the last few years, billions more on Enhanced 9-1-1 from consumer charges on wireless and wireline phone bills, and that does not count the far larger sums spent on public and government networks and IT systems that first responders and other emergency agencies could use if everyone was not doing their own thing. The emergency response community is in desperate need of a clear plan that receives adequate federal funding, to introduce interoperable data and voice communications into their systems.

Little attention has been paid to the issue of leadership. Modern and efficient interoperability demands modern systems, coherent architecture, "enterprise" planning -- in short, overall leadership. In emergency response communications we have the opposite. There are over 38,000 independent units of government, but in almost none of them is there central planning and control of emergency communications and information technology (this is the "plumbing", as distinct from the information that flows over them and its use). Just start with 32,000 fire and EMS agencies, 18,000 law enforcement departments, 5500 hospitals, 7,500 PSAPS, 5,000 urgent care facilities, 1000+ public health offices, 7500 emergency management offices and operations centers, over 1000 transportation departments, and over 7000 public works departments. Typically, each of these decide on their own what communications and IT systems to buy. Most

jealously guard that power, and few state or national figures, especially Governors, have challenged them. Indeed, this powerful commitment to localism and control by each profession of emergency communications and information technology means that at the local, state and national levels there is almost a complete lack of leadership because no one person or entity is responsible for overseeing the coordination of all of these organization.

There is no national agency in charge of promoting integrated, interoperable wired and wireless emergency communications, nor are we aware of any state agencies taking on this challenge. What we have are pockets of progress. DHS has significant programs in intelligence data sharing and first responder radio interoperability (SAFECOM), some very positive work on data standards, and lots of grants to states and locals for interoperable radio systems -- but no overall program. It has a congressionally-mandated project to expand delivery systems for presidential alerts to the public, but not for state and local alerts, or alerts to agencies. DOJ has funded a highly successful effort to develop common data terminology for local, state and federal use, but only for the justice community.

We should not have been surprised when police, fire, EMS, hospital and other data systems could not communicate with each other when the relevant federal agencies, Governors, mayors and/or county supervisors failed to assert leadership in implementing common systems. Almost by definition, none of the individual emergency professions has interoperable communications as a primary function; and most don't have the staff or funding to envision how their agencies could improve their performance with investments today in shared systems with other professions – much less to implement such systems. Most important, they do not control the check books of the other agencies.

As a country, we need to do our best to prevent disasters like those of September 11 and Hurricane Katrina so that they never happen again. When catastrophes do strike we need to be prepared to handle them in the best ways possible to prevent loss of life and ensure safety for the public and our emergency services professionals. We do not know when or where a disaster will strike next and we need to have interoperable data communications, trained 9-1-1 telecommunicators, backup communications equipment, and strong leadership and management of the situation. We sincerely hope that the experiences of COMCARE members and emergency services personnel throughout the country who responded to the Gulf Coast can lead to changes in the way we prepare for disasters.