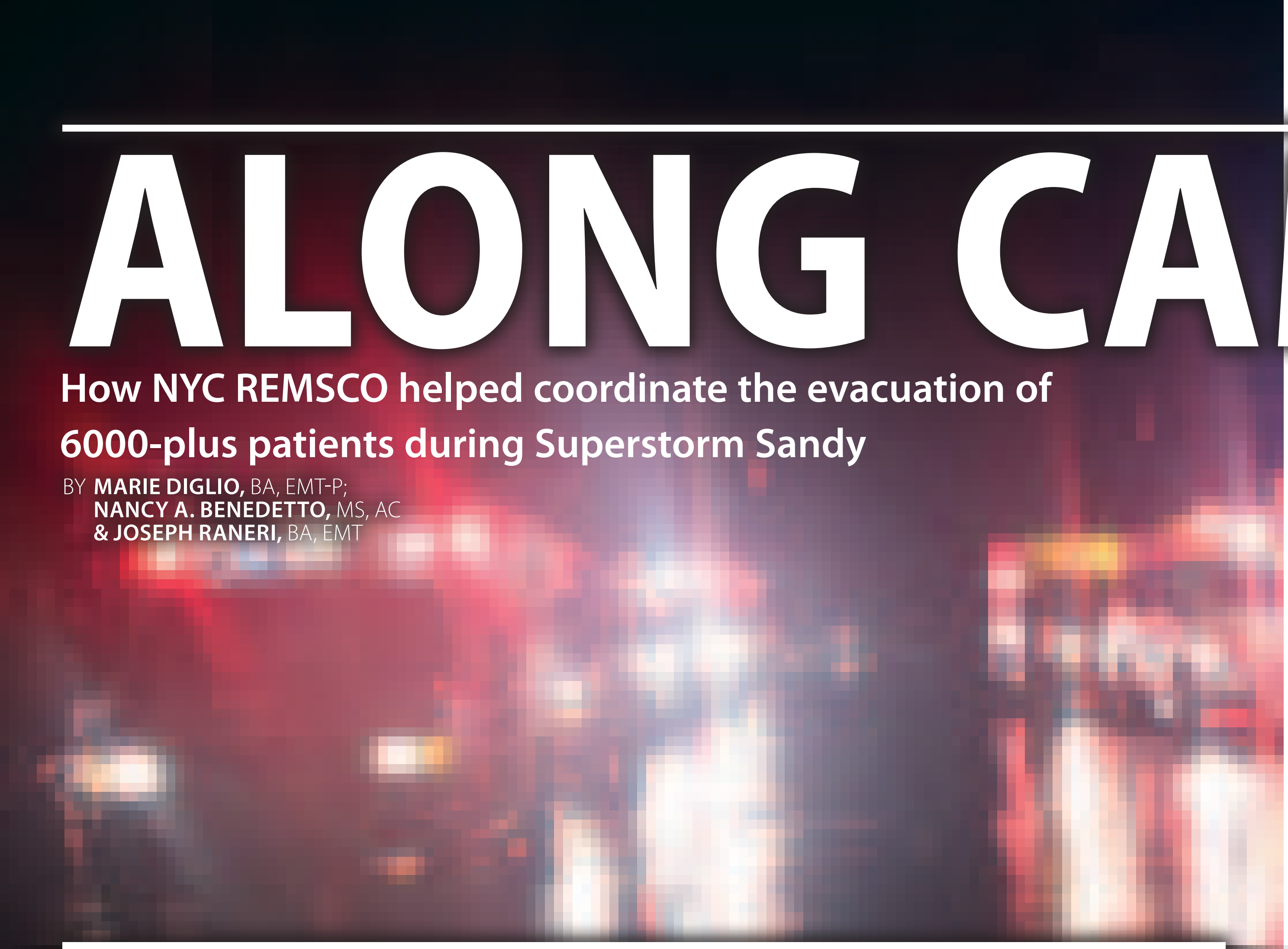

ALONG CA

How NYC REMSCO helped coordinate the evacuation of 6000-plus patients during Superstorm Sandy

BY **MARIE DIGLIO,** BA, EMT-P;
NANCY A. BENEDETTO, MS, AC
& JOSEPH RANERI, BA, EMT

We all wait for the "Big One"—that natural or man-made disaster we hope never arrives but secretly hope we're called to respond to if it does. When it happens, if your organization hasn't taken the time to properly prepare, you might be able to limp along. But you won't have the ability to create an empowered team with a single focus and the many arms necessary to do the job, which is saving lives while keeping your personnel in a safe operating environment.

Mutual aid isn't something that magically occurs during a disaster. The leadership of emergency response agencies—who are probably also competitors—doesn't start shaking hands and working well together simply because there's a big disaster in the area. Being able to activate a mutual aid response takes years of preparation, building relationships, writing policies and procedures, and testing those procedures in drills and smaller emergencies.

THE POWER OF COMMUNICATION

"Keep 'em talking to each other." If you repeat that mantra over and over, you can achieve and succeed at almost anything. Communication is the key to fostering cooperation and respect, especially in the environment of inevitable public safety turf wars and egos.

The ability to communicate effectively contributed largely to the remarkable success of the Regional Emergency Medical Services Council of New York City (NYC REMSCO) response during Superstorm Sandy. As an underfunded, not-for-profit entity whose existence is mandated by state public health laws, NYC REMSCO has the state-mandated responsibility of coordinating a regional EMS system for an 8 million-plus population in a multi-layered EMS system with players that include one of the world's largest municipal ambulance services and 69 other ambulance services functioning at various levels of complexity.

WARNINGS OF A 'SUPERSTORM'

When Hurricane Sandy began her assault along the East Coast during the last weeks of October, it was clear she was not going to be pleasant. Even before Sandy arrived, the NYC REMSCO staff at the New York City Office of Emergency Management (NYCOEM) was anxiously hearing about potential 14-foot ocean surges and violent winds, although what really happened was not limited to that and was actually much worse.

Many people remembered Hurricane Irene, which had been built up to be a killer storm and turned out to be rather tame. Medical care and skilled nursing facilities that had evacuated for Irene and incurred massive costs were cautious about evacuating again for what might be another dud.

However, by the time Sandy left the East Coast, she had earned her so-called 'Superstorm' status; 43 people were dead, the lives of thousands were irrevocably changed, and homes and neighborhoods were destroyed. Tallying numbers after the storm showed that NYC REMSCO had coordinated the evacuation of more than 6,000 residents from 36 area healthcare facilities (HCFs), including hospitals, nursing homes and adult care facilities, to 148 HCFs

ME SANDY

Ambulances wait outside New York University Tisch Hospital during an evacuation of the hospital after its backup generator failed when the power was knocked out by Superstorm Sandy.

AP PHOTO/JOHN MINCHILLO

outside the flood zones. Due to the professional nature of EMS supervisors and personnel in New York City's EMS system, there were no evacuation-related fatalities.

DATELINE SANDY

Wednesday: On Wednesday, Oct. 24, NYC REMSCO had the first of many weather-related conference calls with the NYCOEM and representatives from national and local weather services. Other agencies responsible for oversight of various city and private services represented local hospital and nursing home associations, municipal hospitals, fire (FDNY) and police (NYPD) departments, utilities, public housing and the parks department.

At that time, Sandy was approaching the Caribbean and was identified as a significant storm that had a high probability of impacting the New York City area. Agencies that would be staffing the NYCOEM Emergency Operations Center (EOC) were advised to keep their emergency communication lines open for additional updates and

continued on page 34

EMS and hospital staff assist a patient into an ambulance during an evacuation of New York University Langone Medical Center during Superstorm Sandy.

AP PHOTO/JOHN MINCHILLO

>> CONTINUED FROM PAGE 33

AP PHOTO/JOHN MINCHILLO

Paramedic John Kesselman (right) and EMT Greg Garcia, from the Nor Cal Strike Team for American Medical Response, assist a patient into an ambulance during an evacuation of New York University Tisch Hospital.

PHOTO COURTESY NYC REMSCO

TransCare ambulances wait in front of New York Downtown Hospital, which had voluntarily decided to vacate prior to the arrival of Superstorm Sandy.

to participate in follow-up conference calls.

Thursday: By the next day, Oct. 25, Sandy arrived at the southernmost coast of the U.S. Now that the probability of Sandy hitting New York City had increased, OEM announced that the Healthcare Facility Evacuation Center (HEC) would initiate pre-planning operations. HEC representatives included NYC REMSCO staff that were told to be at the EOC the following day.

Ninety-six hours before the storm was slated to arrive, 53 HCFs were notified by OEM of the potential need for evacuation. Those facilities were located in Zone A and the Rockaways, plus six additional facilities with elevations less than 10 feet above sea level. Zone A included areas bordering low-lying coastlands and rivers that were deemed likely to suffer from flooding should the potential ocean surges become a reality.

Friday: On Friday, Oct. 26, NYC REMSCO staff arrived at the EOC and participated in the HEC pre-planning activities. This included reviewing the HEC manual that had been refined since New York City's brush with Hurricane Irene.

It's important to note that when getting buy-in for evacuation plans, agencies can't be expected to provide staff and equipment without being compensated. Working with OEM, contracts were developed and finalized that allowed local proprietary EMS resources to be used and reimbursed for HEC operations.

Everyone wants to help, but providers must be paid. Getting municipalities to understand that non-municipal agencies can't work for free and that their services are no less valid or important than municipal services was an argument the Regional Council took on, and your agency should too—long before a major storm or incident hits your region.

That same day, OEM announced the EOC would remain open and maintain operations throughout the storm. NYC REMSCO activated its communications system to send out notifications to EMS leadership and agencies in the region, alerting the EMS community of the current storm status and announcing that the NYC REMSCO desk at the EOC would be staffed.

The NYC REMSCO electronic communications system is a regionally customized commercial communications program that has been in use in New York City since 2006. It has been used for daily notifications, emergencies and to activate regional mutual aid. The system was used throughout Superstorm Sandy, allowing NYC REMSCO to contact EMS leadership easily and effectively.

By 6 p.m., the regional contract for the use of local proprietary EMS resources was finalized. These contracts, based on the National Ambulance Contract (NAC), included the use of not only ambulance units and personnel, but also EMS supervisors to be used for field coordination and as the on-scene eyes and ears of the HEC.

It then became a watch-and-wait game as the EOC continued to monitor weather reports and track the storm's path.

Saturday: By Saturday, Oct. 27, updated storm tracking reports continued to indicate a strong likelihood that New York City would be hit hard by Superstorm Sandy. The potential impact of Sandy on the city and its residents became more ominous the farther north it moved. Once the storm made U.S. landfall in the Carolinas, it turned back out to sea to gather additional strength.

Although New York City Mayor Michael Bloomberg didn't order an evacuation, State Commissioner of Health Nirav R. Shah, MD, MPH, and New York City Department of Health and Mental Hygiene Commissioner

WORKING IN THE HEALTHCARE FACILITY EVACUATION CENTER

The New York City Office of Emergency Management (NYCOEM) staffs its main command center with agencies deemed necessary according to the nature of the event being dealt with. During Superstorm Sandy, in addition to the main center, the Healthcare Facility Evacuation Center (HEC) was set up as a satellite unit within the same building to handle specific aspects of the evacuation of healthcare facilities.

The HEC has two arms: facility and transportation. The facility arm is responsible for communicating with healthcare facilities to identify patients requiring evacuation and arranging receiving facilities where those patients will be sent. The transportation section, which was overseen by NYC REMSCO, was responsible to move all those patients from their flood-threatened sending-facilities to appropriate and safe receiving facilities.

In addition to NYC REMSCO staff, the HEC had representatives from FDNY, Metropolitan Transit Authority (MTA), Paratransit and the Taxi and Limousine Commission.

NYC REMSCO was in contact with the leadership of the largest private ambulance agencies in the region. These private EMS agencies provided the on-scene supervision, muscle and vehicles to conduct the massive evacuation of entire hospitals and nursing homes.

Thomas Farley, MD, MPH, mandated the evacuation of ventilator-dependent patients from HCFs within Zone A. The first wave of NAC ambulances were requested. It was a life-saving decision.

NYC REMSCO, with assistance from FDNY EMS command personnel, coordinated local resources to execute the mandated evacuation of ventilator patients in accordance with the pre-developed HEC plan.

An expected obstacle during the storm was that 9-1-1 resources couldn't be used for evacuation purposes, so those units and personnel from FDNY, hospital and proprietary ambulances under contract with New York City continued responding to their usual and accelerated storm-related 9-1-1 emergency calls.

At this time, the HEC was running a 24-hour operation and, in late afternoon, OEM requested that the State Emergency Management Office (SEMO) order mutual aid ambulances into New York City.

After the mandated evacuation of patients on ventilators was announced, HEC personnel from the Facility section began to manually dial all affected HCFs to get the number of ventilator patients requiring transport. The HEC Facility section was staffed by members of the New York City and New York State Departments of Health, Greater New York Hospital Association, New York City Health and Hospitals Corporation, and nursing home and adult living associations. As the number of patients was identified, HEC staff dialed receiving facilities in safe areas to find beds. As soon as this information was received by the HEC Transport section, personnel there began dispatching ambulance resources.

Evacuation of ventilator-dependent patients was in full force. In most cases, this type of transport required ALS ambulances and personnel. EMS supervisors and ambulances were then dispatched by the HEC to the specific facilities. Patients were either transported with specialized equipment or they were manually ventilated with a bag-valve mask en route.

Sunday: As of Sunday, Oct. 28, the storm had already begun assaulting the southern New Jersey shore and was approaching New York City. As the city's coastal areas began to experience coastal surge swelling, Bloomberg ordered residents in Zone A to evacuate. Unfortunately, not all residents took this seriously, or they felt that they could ride out the storm. After all, Irene had been built up to be a monster storm and they survived that. How much worse could Sandy be?

Notifications were sent again via the NYC REMSCO communications system, updating agencies on the storm progress and reminding them that the NYC REMSCO OEM desk was operational. OEM announced that the National Ambulance Contract (NAC) units previously requested were en route and would be available for use post-storm.

By 11 p.m., 685 patients, most of whom were ventilator-dependent, were evacuated out of Zone A. Evacuees also included specialty patients, such as infants in the neonatal intensive care units, and patients from the New York Downtown Hospital, which had voluntarily decided to vacate.

At that point, NAC ambulances arrived, bridges and tunnels were closed to the public,

>> CONTINUED FROM PAGE 35

PHOTO COURTESY SKEDCO INC.

The Sked stretcher is a tool to consider for moving patients through confined spaces and at high or low angles.

and the exhausted staff at OEM hunkered down and waited for Sandy to arrive.

Monday: On Oct. 29, Superstorm Sandy slammed into the New York City area, causing extensive damage to such waterfront areas as Manhattan, Staten Island, the Rockaways and Coney Island. The storm surge pushed water levels up to a record-breaking 13.88 feet at Battery Park, which is on the southern tip of Manhattan.

Water flooded subways, tunnels and the construction site at Ground Zero. The 108-year-old subway system was heavily damaged. Seven tunnels under the East River flooded. Tidal surges from Sandy caused massive flooding in Staten Island, and nearly half of the area was without power.

Entire neighborhoods were destroyed, including the homes of many EMS responders who remained on duty. In Queens, a fire ripped through the beachfront neighborhood of Breezy Point and destroyed around 100 homes, also affecting police, fire and EMS responders.

At around 9 p.m., an explosion at a Consolidated Edison power plant in Manhattan took out power in most of the East Village and Lower East Side. This power outage stretched south from 39th Street and included four large hospitals: New York Downtown, New York University Medical Center, Bellevue Hospital and Manhattan Veterans Affairs. Only one of these hospitals had voluntarily evacuated.

Another massive problem was lack of telephonic communications. Cell phone towers were drowned under the storm surge, and the violent winds ripped down trees and telephone lines. Many subscribers, including off-site NYC REMSCO and HCF staff, couldn't communicate with the OEM or HEC. In large HCFs, communication with the outside world ceased. EMS supervisors were used for face-to-face communications with large HCFs.

During this time of mayhem, NYC REMSCO continued to operate within the HEC, evacuating residents from multiple facilities at a time.

Tuesday: Oct. 30 marked the end of what turned out to be a 36-hour shift for HEC personnel. The storm was now "over," and condition reports began coming in from all over the city. HCFs were without power and running out of provisions. HCF lobbies were submerged in 10–12 feet of water. Thousands of patients were in immediate danger, and it was up to the HEC Transportation Section to get them moved quickly.

HEC Transportation resources were staged at Floyd Bennett Field in Brooklyn. This included private ambulances, Metropolitan Transportation Authority (MTA) buses, school buses, Para-transit, and NAC ambulances.

NYC OEM now had to activate the regional mutual aid plan to officially begin using non-municipal resources for the evacuation of HFCs. Multiple HFCs affected by the storm required emergency evacuations. The HEC coordinated evacuation of more than 2,000 patients. It used local proprietary, volunteer and NAC ambulance resources, along with resources from MTA, Para-transit and local school bus companies. Emergency evacuations continued on a 24-hour basis until news of a nor'easter added another unwelcome layer of stress onto an already over-worked HEC staff.

Wednesday: On Oct. 31, NYC REMSCO began receiving notices from EMS agencies in the Rockaways that they had

Table 1: Superstorm Sandy New York Evacuations by the Number

	Hospitals	Nursing Homes	Adult Care Facilities	TOTAL
Patients evacuated, re-evacuated and repatriated	1,379	3,102	1,520	**6,001**
Pre-storm evacuation of ventilator dependent patients	579	57	49	**685**
Healthcare facilities that lost power during the storm	9	43	21	**73**
Healthcare facilities that operated using a generator	5	32	12	**49**
Healthcare facilities that remain partially-closed[†]	3	0	0	**3**
Healthcare facilities that remain fully closed[†]	0	4	1	**5**
HCFs requiring post-storm evacuations (5,316 persons)	6	18	12	**36**
HCFs within NYC that received patients (4,436 persons)[**]	45	73	18	**136**
HCFs outside NYC that received patients (30 persons)[**]	0	4	1	**5**

[†] Figures as of April 1, 2013

[*] Note: many of these patients were evacuated more than once. First evacuations were emergent, so not all patients went to the most appropriate HCF. Second evacuations were from shelters to more appropriate HCFs. Third transport was to repatriate patients back to their original facility (if it was still operational).

[**] Note: 7 special medical needs shelters received 1,523 persons

experienced extensive damage to their equipment and facilities. In addition, volunteer EMS agencies whose staffs were personally affected by storm damage were having difficulty assisting their communities. EMS agencies began notifying NYC REMSCO of fuel shortages and of their difficulty obtaining fuel.

Thursday: By Nov. 1, post-storm HCF evacuations were continuing on a 24-hour basis. At this time, NYC REMSCO worked with the Office of the Mayor and the Strategic National Stockpile to develop a plan for EMS agencies to obtain fuel, which was now in short supply.

When additional NAC ambulances arrived, they were used for evacuations and to provide ambulance coverage in the Rockaways. Armed with radios, NAC ambulances also provided a way for neighborhoods with no communications ability to call 9-1-1. Teams of NAC ambulances, National Guard soldiers, and FEMA disaster medical assistance team (DMAT) members conducted door-to-door residential checks in the Rockaways, Coney Island and other affected areas.

Those HCFs now too fragile to withstand the coming storm began evacuations.

Friday: Evacuation efforts continued on Friday, Nov. 2, and EMS agencies were notified of secured fueling sites designated by the Strategic National Stockpile to provide priority fueling access to EMS agencies and other emergency services. NYPD units were dispatched to those locations to ensure orderly and safe access for EMS units.

Saturday through Thursday: From Nov. 3–8, NYC REMSCO continued to coordinate post-storm HCF evacuations on a 24-hour basis. Evacuations continued through the nor'easter, which lasted from Monday, Nov. 5, through Tuesday, Nov. 6.

After the nor'easter departed, surveys via the NYC REMSCO Communication System were made of EMS agencies to determine storm damage and obstacles that might affect when agencies could begin returning to normal operations. NAC ambulances were to be leaving soon, and the operations staff needed to know where voids in service were likely to occur so they could plan coverage accordingly.

Thursday: On Nov. 8, the HCF evacuations were completed, and the relocation of healthcare patients from shelters to more appropriate HCFs began. Many patients who were initially urgently evacuated from HCFs due to dangerous conditions had been transported to city shelters. Many of those shelters were not equipped to handle the more fragile patients. It was now time to relocate them to more medically appropriate HCFs.

Thursday, Jan. 17: It wasn't until mid-January when NYC REMSCO's participation in patient repatriation was completed. REMSCO supplied three staff members, two of whom staffed the HEC from Oct. 24 until the day before Thanksgiving. After that time, NYC REMSCO continued to assist with repatriation of patients from its offices through Jan. 17.

LESSONS LEARNED

Decision Makers: These people must be on-site or easily reached so that decisions can be made quickly. During Sandy, the HEC had several decision-makers on site. These included New York State Commissioner of Health Nirav R. Shah, MD, MPH; New York City Department of Health & Mental Hygiene Commissioner Thomas Farley, MD, MPH; and New York State Director of the Bureau of EMS Lee Burns, EMT-P. Along with Deputy HEC Director Mordechai Goldfeder, urgent needs like ratifying a regional contract for the use of local EMS resources, mandating the evacuation of ventilator patients, and obtaining access to fuel for EMS agencies were accomplished quickly.

EMS Supervisors: These people should also be on-site or easily reached so that decisions can be made quickly.

- *Use on-site EMS supervisors to coordinate evacuation of patients.* EMS supervisors should be sent to the evacuating facility prior to sending transportation resources. Past experience shows that many facilities won't be ready to begin moving patients into waiting vehicles, such as ambulances and buses. Those transportation resources may wait for hours, wasting time, personnel and fuel. On-site supervision is critical to make things happen fast.
- *On-site EMS supervisors must connect with the on-site health facility manager.* Supervisors can ensure that patients are packaged and ready to go.
- *Once the sending facility is ready, the on-site EMS supervisor can call the HEC and request transportation.* The EMS supervisor should also decide what type of transportation is needed: ALS, BLS, bus, taxi or ambulette.


PHOTO DAVID HANDSCHUH

EMS providers and other emergency workers work to evacuate a nursing home in Far Rockaway, Queens.

- *Patients must have medications and paperwork, and sometimes specialized medical equipment, ready to go out the door.* It would be helpful if patient information was a one-page form with the patient's name, date of birth, emergency contact (family member), current medical history, medications and allergies easily accessible.
- *The receiving facility should have additional hands for off-loading of patients.* These personnel do not have to be EMS personnel.
- *An EMS Supervisor tool kit should be made available for each supervisor.* The kit should include an identification vest, short operations manual, ID tag, pens/pencils/waterproof pencil, healthcare facility maps, tracking sheets and pagers.

Communications: Ensure optimal communication. Supervisors and ambulance units should be issued easy-to-use, preprogrammed or programmable handheld radios.

Provider Transportation: Transportation of EMS personnel (and their families) should be pre-planned and instituted early. Be aware that staff won't be willing or able to work if they're concerned for the safety/well-being of their family, and if transportation isn't provided.

Shelter in Place: Don't just shut the windows and lock the doors in the hopes that your facility can ride out a disaster. Discharge/evacuate those patients who can be safely moved while holding onto those

ALONG CAME SANDY

>> CONTINUED FROM PAGE 37

patients too fragile to safely transport out. Then you can shut the windows and lock the doors.

OTHER HELPFUL PRE-PLANNING TIPS:

>> *Don't keep bariatric patients on the highest floor of a facility.* This is especially important if you have more than a ten-story building. Evacuation without elevators can cause career-ending injuries and countless workers' compensation claims.

>> *Store fuel near generators.* If your generators are in the penthouse, ensure that there's a process in place to store fuel nearby for use when needed.

>> *Work closely with the National Guard and integrate them into your plan.* They are young, strong and will gladly help move patients and equipment without elevators.

>> *Smile, even when you transport the same patient for the third time!* Even if the patient has three garbage bags full of personal belongings—and a piano (this actually occurred)—maintain a caring and professional demeanor.

>> *Maintain professionalism.* Even when you're faced with the transport of 24 psychiatric patients—all on the same city bus—and are trying to explain the innate problem with this process to the irate and uncomprehending sending facility manager, maintain your professional demeanor.

CONCLUSION

NYC REMSCO is a small not-for-profit agency that exists due to New York public health laws. This small staff of five, which isn't constrained by bureaucracy and is armed with energy and ingenuity, does big things. The success of the NYC REMSCO team during Superstorm Sandy was made possible by having well-developed plans, encouraging—sometimes forcing—communication and building the bridges needed to foster trust among the players. As a result of the Regional Council's major role in the safe and swift evacuation of New York City HCFs, NYC REMSCO Executive Director of Administration Nancy Benedetto will be traveling to New Orleans with Disaster Coordinator Joseph Raneri to accept the Outstanding Achievement Award at the 2013 National Hurricane Conference. JEMS

Marie Diglio, BA, EMT-P, worked as an EMT and paramedic for the NYC Emergency Medical Service in 1981, and graduated from the Bellevue Hospital Paramedic Program in 1982. She served as director of the NYC Health & Hospitals Corporation 9-1-1 Evaluation Unit for several years, before becoming executive director of operations for the Regional EMS Council of NYC in 1992. She's responsible for the development and implementation of medical and operational protocols. She can be contacted at mdiglio@nycremsco.org.

Nancy A. Benedetto, MS, AC, is the executive director of administration of the Regional EMS Council of NYC Inc. and has been there since 1990. Her responsibilities include oversight of staff, fiscal management and program development. Benedetto is the primary non-municipal EMS liaison with the NYC Municipality for Emergency Preparedness activities. She has spent the past two years helping to lay the foundation of NYC's hurricane and disaster response plans.

Joseph Raneri, BA, EMT, joined the Regional EMS Council as an intern for the NYC REMSCO's CISM team. He has since become disaster coordinator and also oversees the CPR program. In addition to his NYC REMSCO duties, he's chief of the Edgewater Park Volunteer Fire Department in the Bronx.


Sprint
KYOCERA
7:00 PM