

Public Health and Medical Preparedness and Response Activities at the 2017 Route 91 Harvest Music Festival: A Peer Assessment Report

Executive Summary

This report summarizes the public health and medical preparedness activities that supported the response to the shooting at the Route 91 Harvest Music Festival on Oct. 1, 2017, in Las Vegas, Nevada. It also explores gaps in preparedness programs brought to light during the response. This report is based on information gathered from a site visit conducted in February 2018 and on subsequent conference calls with key responders. Staff from the Association of State and Territorial Health Officials (ASTHO) conducted interviews with representatives from the Clark County Office of Emergency Management, the City of Las Vegas Emergency Management, the City of Henderson Emergency Management, the Clark County Office of the Coroner and Medical Examiner, the Nevada Hospital Association, Southern Nevada Health District, University Medical Center of Southern Nevada, Desert Springs Hospital, Sunrise Hospital, the American Red Cross, and the Vegas Strong Resiliency Center.

The findings in this report focus on the initial 24-36 hours post-incident, but discussions with stakeholders yielded information about current and long-term recovery efforts and recommendations for other communities and the nation. Events like this highlight how horrific incidents can and must be catalysts for change through increased focus on training and partnerships. These events also highlight the need for collaboration between academia and the practice community to support mass casualty research that provides tangible improvements to care.

This report highlights challenges and successes concerning activities carried out through the Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness (PHEP) program. Most importantly, responders wanted to share their experiences and lessons learned so other communities preparing for a mass casualty incident could improve their response by anticipating and addressing similar gaps and challenges beforehand.

Acknowledgements

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ASTHO is the national nonprofit organization representing public health agencies in the United States, the U.S. territories and freely associated states, and Washington, D.C. ASTHO's vision is state and territorial health agencies advancing health equity and optimal health for all. Its mission is to support, equip, and advocate for state and territorial health officials in their work of advancing the public's health and well-being.

ASTHO would like to thank all Las Vegas peer assessment participants for their time, effort, and willingness to share their experiences and professional expertise, which greatly informed the contents of this report. We also want to thank several individuals for their willingness to serve as peer assessors for this project, including Christopher Emory, chief of the bureau of health emergency management, New Mexico Department of Health; Kelly Nadeau, director of the healthcare community preparedness program at the Georgia Department of Public Health, and Michelle Seitz, manager of the healthcare emergency preparedness program at the Wisconsin Department of Health Services. Additionally, ASTHO would like to recognize the Southern Nevada Health District, specifically Jeff Quinn, manager of the office of public health preparedness, and Misty Robinson, senior public health preparedness planner, for their outstanding support and assistance in planning and conducting this peer assessment.

We also acknowledge representatives from the following organizations for their time and dedication to sharing their experiences from the shooting response: Clark County Office of the Coroner and Medical Examiner, Southern Nevada Health District, State of Nevada, First Med, Bridge Behavioral Health, American Red Cross, Clark County Emergency Management, City of Las Vegas Emergency Management, City of Henderson Emergency Management, City of North Las Vegas Emergency Management, Clark County Fire Department, Clark County Social Services, AMR, Medic West, Community Ambulance, Desert Springs Hospital, University Medical Center, and the Nevada Hospital Association.

Background

Community Context

Clark County, Nevada, the nation's 14th largest county, hosts more than 46 million visitors a year and provides services to more than 2 million regional residents.¹ Contrary to popular belief, the famous Las Vegas Strip is technically located within Clark County, and not the City of Las Vegas. The City of Las Vegas begins north of the strip and expands into the downtown area. Close proximity and the sharing of resources and services between county and city partners have resulted in the development of strong relationships and collaborative efforts.

Incident Management Framework

Large scale emergencies within the Clark County and Las Vegas urban area are managed by the Clark County Office of Emergency Management's multiagency coordination center (MACC). As a member of the MACC, the medical surge area command (MSAC)ⁱ, a regional coordination entity comprised of healthcare facilities and regional response agencies, provides situational awareness among the healthcare system to the Emergency Support Function (ESF-8) representative in the MACC, primarily to identify resource needs and distribute those resources within the region.

Incident Management Structure

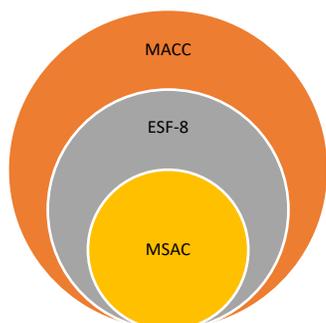


Figure 1. Illustration of the MSAC within the MACC structure

The Incident

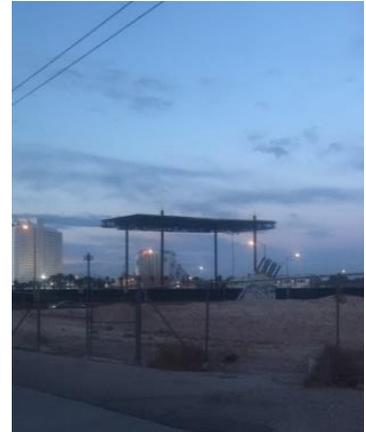
On the night of Oct. 1, 2017, a lone gunman located on the 32nd floor of the Mandalay Bay Hotel and Casino opened fire on over 22,000 people attending the Route 91 Harvest Music Festival in Las Vegas, killing 58 people and injuring over 850 visitors and residents. The festival was located on the 17.5-acre open-air Las Vegas Village lot northeast of the Mandalay Bay and was considered a routine, average sized event for the area. Prior to the response, there were 50 Las Vegas Metropolitan Police Department (LVMPD) officers, one Clark County fire prevention inspector, 16 EMS personnel and three ambulances providing medical care on site. At approximately 10:05 p.m., the gunman fired into the Las Vegas Village for approximately 10 minutes. As concert attendees and others near the event attempted to evacuate, hundreds of injured individuals were transported to area hospitals by ambulance, fire, and police with

ⁱMembers of the Medical Surge Area Command include University Medical Center, area healthcare facilities, Southern Nevada Health District, Nevada Hospital Association, and the Veterans Administration.

the majority by private vehicle. The closest hospitals to the site were Desert Springs Hospital (4.4 miles), Sunrise Hospital (4.8 miles), and University Medical Center (6 miles).

Initial Notification

Initial notifications of a mass casualty incident (MCI) varied among the numerous response organizations. As the event happened on a Sunday evening, most response leaders were at home getting ready for bed and were alerted by phone calls, social media, and direct messages from colleagues. As the event started to unfold, the Clark County Fire Department sent out a notification, and the MACC was activated by the Clark County office of emergency management. In response, law enforcement closed many areas roads to set a perimeter and responding organizations activated their internal emergency operations centers (EOC).



The Response

The response to this event differed from past mass casualty planning and procedures as the incident was continually evolving and life safety was the primary focus. First responders set up a triage station at Tropicana and Las Vegas Boulevard. However, as a result of thousands fleeing the venue, hundreds of victims were transported using ride sharing services, personal cars, and phone navigation maps to find the closest hospitals.

Medical Surge Area Command and Multiagency Coordination Center Operations

Upon notification, the MSAC initiated calls to its members. As part of the MSAC plan, designated representatives from area hospitals and other participating organizations were to report to the MACC to begin coordination of health and medical services, logistical, and other ESF-8 support activities. However, due to the severity of the event, many of the trained representatives delegated to serve in the MSAC did not report to the EOC and stayed at their facilities. Alternate, non-trained employees reported to the MSAC instead. Unfortunately, this deviation from the plan caused delays in collecting facility status information. The alternate MSAC staff tasked with making direct calls to each facility, were met with initial responses of refusal to provide information until the caller provided further reassurance and explanation of their role and association with the MSAC.

Even with the initial difficulties in understanding the role of the MSAC and collecting information from area hospitals, MSAC staff pressed on and focused their efforts on patient tracking.

Successes:

- All area EOCs have a standardized set of priorities, including: (1) life safety, (2) incident stabilization, and (3) property protection and preservation. In this instance, all EOCs shared consistent messaging to the public to show coordination.
- All area EOCs have the same setup and operations to ensure all area staff can easily adapt if they are required to travel between EOCs.
- Initially, 20-30 ambulances were staged at the MACC and ready to be dispatched.
- Medical Reserve Corp (MRC) volunteers provided close to 100 hours of MACC call center support.

Challenges:

- Due to the magnitude of the event, staff from the medical examiner's office could not report to the MACC.
- LVMPD established unified command and its department's operations center at LVMPD headquarters but, due to limited staff, they did not have a dedicated representative assigned to the Clark County MACC for this event, which caused delays in providing critical support from the MACC to LVMPD operations.
- Law enforcement used a secure text messaging system that allows messages to be sent between pre-authorized users. However, access was not granted to other responding organizations and users as it lacked an "emergency mode" to allow additional approved participants.
- There is still a lack of understanding from other disciplines concerning the role of public health in unified command.
- As part of the plan, the MSAC is to be staffed by an appropriate emergency management or preparedness representative from each hospital. However, due to the magnitude of the event, many hospitals did not send the designated MSAC representative; rather, some sent an administrative representative instead.
- When MSAC staff called hospitals directly to collect patient information and bed availability, there was difficulty in reaching staff who were aware of the role of the MSAC, and thus hesitant to share information due to concerns of HIPAA violations. This caused delays in situational awareness.
- There is a need for common health emergency terminology for use within the hospital command center when responding in collaboration with other hospitals and first responders (i.e., "internal disaster" means different things to different hospitals and responders).

"We are here to serve. We must never forget that."

- Carolyn Levering,
City of Las Vegas
Emergency
Management

Area Hospitals

Area hospitals were able to quickly prepare for the surge in patients and were successful in decompressing themselves. For example, one hospital discharged over 160 patients within an hour and all began to reassign various spaces within their facilities to effectively triage the influx of patients. In addition to gunshot injuries, many patients were "walking wounded" with injuries resulting from falls, running, trampling, and similar causes. For days following the event, area hospitals, urgent care centers, and outlying hospitals continued to receive patients who delayed seeking medical treatment to allow other victims they perceived having more critical injuries receive immediate treatment.

Response Successes

- Hospital staff understood that plans provided an educational foundation for response, but flexibility and adaptability were necessary.
- Law enforcement perimeters were quickly established around hospitals and required incoming staff to have appropriate identification to enter.
- Hospital response leaders reassigned spaces within facilities to meet demand for triage and treatment allowing for a more efficient observation and management of patients.
- Triage occurred outside of hospitals (i.e., parking lots). In some instances, using paramedics to assist with intubations and Intraosseous infusion (IO) lines.
- Victims with similar wounds and injuries were grouped together.

- Hospitals and other organizations assigned staff to manage donations sent to the hospital from the community.
- Hospital staffing was managed to ensure relief for immediate providers and sustainment, if necessary.
- Other departments, such as pharmacy and environmental services, provided necessary assistance and flexibility.

Response Challenges:

- Due to technology and social media, the press has unique access to survivors during an event. At times, patients were conducting video interviews through their cellphones while in emergency and triage departments.
- Previously planned and exercised surge plans did not account for large influxes of patients due to personal and non-first responder vehicles.
- Due to the majority of victims using personal vehicles or ride sharing services, they presented to the nearest facility based on cell phone GPS systems, rather than the facility most appropriate for their injury.
- Many victims arrived without identification. As a result, the hospital's electronic health record systems ran out of alias names to use for unidentified disaster patients. Due to the fast-paced influx of patients, initial charting was minimal or non-existent.
- If electronic health records were used, the required amount of time to input information was cumbersome (i.e., too many clicks).
- Some hospitals lacked an automated call-down system and individuals calls to staff were necessary.
- Early conflicting reports of potential multiple shooters placed hospitals on lockdown status, causing difficulty for incoming personnel to gain immediate access to enter without proper identification or verification.
- Some non-emergency department staff were unfamiliar with triage tagging.

Clark County Office of the Coroner and Medical Examiner

Upon notification of the incident, the medical examiner quickly responded by setting up a conference call with staff and applicable partners to set up a plan and expectations and a team was dispatched to the scene. Upon arrival at the scene, the decision was made by the coroner to initiate a missing person call center using the local 211 system. A refrigerated trailer was used to transport a number of deceased victims from the scene and the remaining victims were transported by one local mortuary company.

Success:

- Two local mortuary companies in the area are used on 24-hour rotations. One company was selected to serve as the lead for this incident, while the other company continued to respond to other normal calls and needs as necessary. This protocol was helpful to reduce communication channels and responsibilities to one partner versus multiple partners.
- The Clark County morgue was large enough to hold all victims.
- Due to existing trust and partnerships, the needs of this office were expressed and represented by other MSAC members during the response due to the coroner's inability to be in the EOC.

Challenges:

- Low staffing numbers required the request and deployment of other medical examiner staff for assistance.
- Some responding agencies do not fully understand the medical examiner's role in response efforts, including how and when to contact the Office of Coroner and Medical Examiner during an incident.

Victim Information Center

As victims and families looked for a place of refuge, assistance, and information, a victim information center was established at LVMPD headquarters. The center was under unified command between the Clark County Office of the Coroner and Clark County Office of Emergency Management. Within three hours of the event, a call-in number was shared with the public and over 4,200 missing person reports were collected through the Unified Victim Identification System (UVIS). As families arrived, interviews were conducted by staff to collect pertinent medical and other information.

Successes:

- Interviews with families were conducted with representatives from the police, coroner's office, and a scribe to reduce the burden of multiple interviews on families.
- All local police departments and the American Red Cross agreed to stop collecting missing person reports and direct all reports to the Clark County Office of the Coroner to allow the coroner's office to collect pertinent information for body identification.
- A representative from the Clark County Vital Records Office was co-located with the coroner during victim identification and processing. This decreased wait times to release victims to families due to burial permits being required before death certificates could be released.

Challenges:

- The call center quickly became overwhelmed with the large volume of calls and bandwidth had to be increased multiple times.
- At one point, an additional call-in number was provided to the public causing confusion and information collection challenges. The authorizing entity was unknown, but once discovered, the promotion of the additional number was halted, and the line closed.

Family Assistance Center

Within 15-16 hours post-event, the victim information center was renamed the Family Assistance Center (FAC) and moved to the Las Vegas Convention Center. Even though there was no formal memorandum of understanding (MOU) in place to use the convention center in instances such as this, due to the close relationships and understanding of the event, the convention center was quickly opened. Within 12 hours, the FAC was set up with appropriate space, including separate entrances for volunteers, responders, and victims. The center continued to be under the already-established unified command structure, with the Clark County Fire Department and the Office of the Coroner serving as co-incident commanders. The command structure was expanded to include a public information officer (who oversaw the joint information center), a safety officer, and liaison officer. The FAC was open from Oct. 2-21 and served over 4,300 individuals.

Successes:

- The initial layout and footprint of the FAC was adequate to meet requirements and needed no corrections or major alterations.
- Staff with experience managing other in-state family assistance centers provided additional assistance to the Las Vegas operation.
- Use of traditional public health services (e.g., environmental health services monitored food donations) exhibited the role of public health.
- Community businesses and members came to the aid of the FAC. Businesses supplied phone chargers, blankets, pillows, resources, and food. For the first 10 days, much of the food was made and donated by Las Vegas resort chefs.
- The FBI's Victim Assistance program provided valuable technical assistance in the processing of victims' personal items left on scene and in hospitals, as well as provided staff to assist in planning efforts.
- Medical Reserve Corp (MRC) volunteers deployed to support FAC operations provided 57 hours of event support.

Challenges:

- Vetting of mental and behavioral health providers continues to be a challenge due to volume of individuals wanting to assist, even months after the event.
- There was a broad definition of victims, which included food truck vendors and their staff, ride-sharing drivers, taxi drivers, homeless individuals, resort staff, and other guests who were not accounted for in earlier planning assumptions.

American Red Cross

Upon notification, a representative was embedded within the MACC. In its initial actions, the Red Cross prioritized placing volunteers at the Las Vegas metro police headquarters and notifying the national Red Cross headquarters to request additional volunteers. As the FAC was expanded, Red Cross volunteers served as "navigators" to assist victims and families as they entered. As navigators, volunteers guided each family through each section of the FAC to help them understand each office that was there to provide support and additional information. In total, the American Red Cross responded to the event by providing over 300 volunteers.

Successes:

- Mental health workers affiliated with the Red Cross evaluated and assisted over 300 victims at the FAC. Continued services were provided as needed.
- The Red Cross opened over 1,000 cases in Las Vegas to assist victims and families and over 100 more in other areas of the nation and the world.
- Red Cross integrated condolence care teams that went into homes and hospitals to offer assistance.
- A portion of the Red Cross members who responded had prior experience responding to this type of incident; they knew what to expect and how they could best assist.
- Volunteer Organizations Active in Disaster (VOAD) served as critical staff to organize all donations.

Challenges:

- The Red Cross uses a website called Safe and Well. This system provides a central location for people in a disaster area to register their status to share with family and friends. The system is operated from the national offices in Washington, D.C., and due to the time difference and the event happening during the middle of the night, there was a delay in determining if the system should be used. Ultimately, it was determined that the Safe and Well service was not needed once the call center was up and running.
- Due to the overwhelmingly large number of people in need of assistance, there was potential to inadvertently overlook the mental health needs of victims and responders who may not have shown immediate reaction to the event.

Nevada Hospital Association (NHA)

While not perceived as a direct response provider, the Nevada Hospital Association (NHA) leaned in to anticipate the needs of its members, partners, and the community by functioning as a multiagency coordinating group. In the immediate hours following the event, NHA drafted the first iteration of the subsequently signed governor's executive order to waive certain licensing requirements of medical providers and declare a state of emergency. Additionally, NHA administered the organization's master mutual aid agreement affording hospitals the ability to share equipment, supplies and personnel between all licensed hospitals in the region. NHA also tracked patient counts and severity, as well as performed "rumor control" functions.

NHA's current recovery work is focused on helping "Go Fund Me" administrators determine which victims are eligible for funding assistance, continued advocacy for its members, and addressing gaps and challenges that were identified during the response. Currently, NHA has created two statewide workgroups: one to address issues related to electronic health records and another to discuss information sharing issues related to HIPAA concerns. These workgroups will develop recommendations for statewide policies and procedures to reduce barriers that hindered response, police investigations, and family reunification.

Successes:

- NHA immediately drafted an executive order for gubernatorial signature to waive licensure requirements for any practitioner (as long as they were already employed by a hospital within the United States) to provide care at any Las Vegas area hospital.
- Widespread use of the NHA Master Mutual Aid Agreement allowed hospitals to share resources between non-affected facilities (including long-term acute care facilities) and hospitals that were saturated with critical patients.

Challenges:

- Lack of a federal emergency declaration may result in hospitals not being reimbursed for uncompensated response costs. This follows similar trends and information heard from other MCI events (i.e., Pulse nightclub shooting in Orlando).
- Electronic health records (EHR) did not provide an option to generate trauma aliases, required multiple screens of patient charting and did not have an ability to provide abbreviated patient registration or charting, which resulted in many patients being treated and admitted before an EHR could be created.

- HIPAA compliance perceptions and requirements created a tenuous situation for hospitals who needed to assist with reunification but were unable to provide a list of patient names to other agencies, coalitions, or others.

Recovery

Victim Recovery and Support

Long-term recovery needs and services for the Las Vegas community and victims are now the focus. After the closing of the Family Assistance Center on Oct. 21, the Vegas Strong Resiliency Center opened on Oct. 23, 2017. The center, managed by the Clark County Social Services Department, is a welcoming environment that provides case management for family services, counseling, children and family services, victim advocacy, legal aid, and other support. The center is staffed by representatives from multiple disciplines of local and state agencies.

Successes:

- The center was provided generous support from staff from resiliency centers in Boston and Orlando who provided suggestions on design and functionality.
- The center was quickly opened due to many volunteers who quickly painted and renovated the former pediatric office to be a warm, inviting space.
- The center provides a centralized resource and referral hub for all victims, in Las Vegas and across the country.
- The center provided assistance with Federal Victim Compensation.
- A companion Resiliency Center is located in California to provide additional support for the more than 10,000 California residents who were impacted.



Challenges:

- As of April 2018, the Vegas Strong Resiliency Center still does not have a full list of all festival attendees. The organizer has not released the list. This has delayed their ability to reach out to victims and offer appropriate assistance services.
- Bloodborne pathogen exposure was increased due to the number individuals who assisted or transported victims. This has led to challenges in identifying, testing (including decisions on who would pay and reimburse for testing), and following up with all affected individuals. Additional challenges included delays in guidance from the local water authority on how to clean blood from vehicles and their desire to not use bleach to affect local water supply.
- Due to the substantial number of bystanders witnessing the event on the streets and within casinos where victims fled, it is difficult to ensure that all of those affected by the event have received appropriate assistance.
- Financial and grant management continues to be a complex issue. The requirements for financial award disbursement and record keeping is difficult.

Responder Recovery and Support

Responder support is also a focus of current and long-term community recovery. While initial mental and behavioral first-aid was provided at the family assistance center, leaders understood the need for additional, long-term opportunities. Led by the state's division of public and behavioral health, a responder recovery workgroup was established. Comprised of representatives from area fire, law enforcement, EMS, and other state agencies, the workgroup is charged with developing appropriate behavioral health services for the responder community. The group continues to find ways to increase engagement with responders, many of whom may be hesitant to go to the Resiliency Center due to feelings of not needing support or wanting to take away services of impacted families. To combat this issue, occupation-specific and multidisciplinary responder support groups and other health and wellness opportunities are available. Services are paid through a Department of Justice grantⁱⁱ and can be accessed anonymously if desired. In addition, a website is currently under development to provide online access to services for those who may not yet feel comfortable in accessing direct support. To promote its use, the site will offer a continuing education component to incentivize behavioral health education that will be provided. Soon, a long-term "home" will host the support groups and other interventions. It will serve as a place of refuge for responders seeking long-term mental and behavioral health support, as needed.



Successes:

- The use of a peer-to-peer strategy was found to increase responders' use of services.
- Organizational leaders encourage and support all responders in their use of recovery and support resources.
- In the aftermath of the incident, the community provided extra support by recognizing responders and rallying behind them at various special events which has continued as of the writing of this report.

Challenges:

- The Clark County Social Services Department continues to report difficulty in ensuring assistance reaches all responders that truly need or desire assistance.
- There is still a stigma that exists for many responders regarding the need to seek mental health assistance. This continues to be a stumbling block as responders feel it is a sign of weakness.

ⁱⁱResponder behavioral support services are paid through the U.S. Department of Justice's Antiterrorism and Emergency Assistance Program. Learn more at: <https://ovc.gov/AEAP/>.

Preparedness Activities Supporting the Response

Funding and education from the following training and planned events with expected threats of mass casualty incidents and medical surge assisted in the response to the Oct. 1 event:

- The development and sustainment of plans and exercises for the MSAC, conducted by the HPP-funded personnel, provided the operational and policy foundation for staff and member organizations.
- The Southern Nevada Healthcare Preparedness Coalition (SNHPC) ensures all local full-scale exercises include hospital and healthcare system-based objectives, and opportunities to exercise resource request procedures.
- Planning and activation for yearly New Year's Eve celebrations includes MSAC establishment and staffing. Planning also requires hospital system participation for casualty collection planning to pre-identify hospitals designated to receive patients from onsite medical tents.
- Large special events (i.e., NASCAR races, Electric Daisy Carnival) staffed by PHEP-funded personnel provide opportunities to exercise relevant capabilities and reinforce public and private partnerships for event management and security. These events also provide an opportunity to work with other emergency response stakeholders, including laboratory and homeland security networks to use relevant surveillance tools and programs, such as BioWatch.
- Bi-weekly all-hospital radio tests between 16 hospital emergency departments and the Clark County Fire Alarm Office provide regular opportunities to test submission and collection of available bed numbers between hospitals and the SNHPC.
- In 2009, the Clark County Office of the Coroner and Medical Examiner worked with each area hospital to review and update their mass fatality plans over the past few years. In recent years, a HPP-funded senior planner continues to work with hospitals to update these plans.
- Nevada HPP funding was used to maintain the state's EMResource notification system, which was one of multiple tools used to notify area hospitals the MSAC was operational.
- Past ASPR and DHS grant funds were used to create a family assistance center plan. A full-scale exercise to test the plan was conducted in 2009. Over 300 individuals and 43 organizations participated. In recent years, PHEP- and HPP-funded personnel worked with community partners to update their mass casualty incident plans.
- In early 2017, the MSAC initiated beta testing with EMS partners to improve patient tracking through increased submission of information in pre-hospital settings.
- Emergency management and public health agencies routinely used funding to coordinate ICS 300 and 400 courses to ensure staff education and collaboration.
- Joint information center operations were influenced by an early 2017 full-scale exercise that provided training to potential staff and partners, including hospital and healthcare system public information officers.
- Previous HPP funds used to train hospital staff on HAM radio systems and devices provided a backup communication system in the event all other forms of communication were unavailable. If necessary, trained personnel could have served as HAM communication leads within each hospital and other healthcare facility to share information with the MSAC.

"Through our HPP and coalition work, this event allowed non-trauma hospitals to see, understand and now better plan for their role in responses."

- Jeff Quinn, Southern Nevada Health District

- A recent PHEP-funded upgrade to the server system of the Intermedix platform ensured necessary technology requirements were met when the tool was used during the event.
- Under the direction of the HPP-funded MRC coordinator, deployed MRC volunteers used previous training and educational opportunities to assist in response. Trainings included victim identification training by the Clark County Office of the Coroner and Medical Examiner, psychological first aid, and more.

Preparedness Lessons for Other Communities and States

Peer assessment participants identified the following lessons for other communities that might face similar incidents in the future:

- **Understand inter-facility patient movement.** Critical patients were treated at the facility where they were first received and were not transferred. Patients moved between facilities were “walking-wounded” who were stable enough to be part of group transportation efforts to nearby facilities under appropriate medical care. Consider transportation methods and personnel escort when developing this part of planning.
- **Donation management will become a major component.** Due to overwhelming responses from the public, donation management can consume a major portion of response responsibilities. Ensure donation management roles and responsibilities are identified in response plans.
- **Individual citizens are valuable immediate responders.** National educational medical care campaigns (i.e., Stop the Bleed) must continue to promote the value educated individual citizens have in providing immediate care during emergencies. Individual citizens can be a force multiplier in a large-scale incident that overwhelms first responders.
- **Prepare for a potential impact on resignations and retirements from responders.** While exact numbers may not yet be known, be prepared for events such as this to potentially impact future staffing levels at all impacted agencies.
- **As a coalition, plan to be self-sufficient and self-reliant.** Focus planning assumptions and activities on being self-sufficient. If outside assistance is delayed (especially for small, rural, or hard to access communities), continued training to rely and support coalition members and other partners will be valuable in creating trust.
- **Understand HIPAA.** As a community, all partners must be educated on the correct restrictions and permissions of sharing patient information as it relates to HIPAA requirements, specifically in an emergency. Develop a template of Essential Elements of Shareable Information that would detail information that can and should be shared among coalition and community response partners.
- **Providing vetted and qualified mental and behavioral health services will be key.** Mental and behavioral health issues will impact a large group, including victims and their families, responders, and the local community. To provide adequate and qualified services, develop a protocol or policy to verify applicants based on their expertise, previous experience and other relevant points to match the needs of the affected.
- **Hospital incident command and management teams are vital.** Hospital incident command teams are vital to successful response. Train and educate staff to serve in any needed ICS role—not just one or two roles that may be similar to their current position. Flexibility and adaptability are key.
- **Ensure adequate in-hospital emergency supplies and resources.** Invest and stock appropriate amounts of emergency supplies and resources in house in order to respond quickly to a no-

notice MCI event. These resources may be needed on weekends and evenings. You can call in staff to respond, but if you do not have the supplies needed in house to treat victims, response efforts may fail.

- **Post-event legal and litigation activities will be time consuming. Develop appropriate policies and procedures.** Legal and litigation issues are very resource and time intensive. For example, hospitals may be part of the validating care process to release funds to victims or asked to serve on a committee to develop criteria for distributing funds. Develop policies and procedures on how to address these issues.
- **Use technology to learn from smaller, routine responses and events.** Using data from day-to-day operations and routine events can provide valuable information for planning purposes. For example, using cell phone and other mapping data to see trends in routes or hospitals accessed can assist in understanding patient traffic flows.

Lessons Learned and Key Takeaways

- **Educate healthcare system and hospital C-suite leaders on emergency preparedness responsibilities.** Continue to educate hospital and healthcare system leaders on the need for emergency management and preparedness personnel to be placed in each facility. Many systems are reducing the number of positions and moving remaining staff into their corporate emergency management offices. This system causes challenges in relationship building for local response communities and can delay information sharing and decision making.
- **Horror incidents can be a catalyst for change.** Events such as this can be a catalyst to review and revise plans, trainings, and increase partnerships. There are now many organizations and individuals compelled to help. Use this new interest as a catalyst to promote participation in future training and exercises to be prepared for the next event.
- **Goals of surge testing should be focused on throughput.** The current goal of coalition surge testing to determine a facility's ability to accept a 20 percent increase in patients should be reviewed. As learned from this event, the goal of surge testing should focus on a facility's throughput ability measured in the number of patients per hour that move through the ED to one of three dispositions: treated and released, admitted, or deceased. Other beneficial throughput measures may include: (a) number of surgeries performed per hour, (b) units of blood product administered, or (c) number of previously admitted patients who could be discharged to make room for critical patients (in 4-hour increments). These new suggested measures should be studied for applicability to revise surge testing national goals.
- **Federal oversight and support is needed for medical examiners and coroners.** Currently, there is no federal agency that provides federal oversight and support for medical examiners, coroners or medicolegal death investigators. It is recommended that HHS research the plausibility of providing day-to-day oversight for the profession through a HHS sponsored department or office.
- **Federal reimbursement to hospitals should be available for similar large-scale incidents.** Hospitals incurred significant immediate, unanticipated, non-healthcare related expenses for the safe management of the incident. Certain federal reimbursements are not available to assist hospitals with these expenses due to the lack of a federal declaration and classification of hospital care as a mitigation activity and not response. Additionally, federal funds are not available, in most cases, to for-profit hospitals even when a federal declaration exists. Reimbursements under these circumstances should be reviewed and modified as necessary.
- **Research applicability of using existing national service models to allow licensure reciprocity.** Currently, medical licensure reciprocity is a state-specific issue that requires each state to determine

its own requirements. During a large-scale disaster, valuable time can be lost awaiting gubernatorial or health official approval to allow licensed professionals from other state to provide aid.

- **Translate disaster science into planning.** Healthcare and public health preparedness systems must continue to support mass casualty research that provides tangible and translatable data that will assist in future pre-hospital and in-hospital planning for clinical management of injuries, logistics, staffing, and other needs related to care.
- **Building and maintaining relationships provides immense value.** Developing and maintaining relationships with traditional and non-traditional planning and response partners provides extreme value in response efforts. The partnerships must be solidified by consistent planning, training and exercising together.



Closing Thoughts

The many responders and community members of the Las Vegas and Clark County metropolitan area graciously shared their thoughts and perspectives of lessons learned from this event. While no incident management of this magnitude could ever go perfectly, the community's positive response was due in large part to the partnerships, collaboration, and trust that have been solidified over the years—many through personal relationships representing many organizations. Communities across the nation preparing for disasters must find ways to memorialize and institutionalize these partnerships to ensure they become part of the fabric and foundation of the response system which will be important as people move and leave positions as time goes on. As we face the need to assess events of this type in the future, structured capturing and sharing of lessons learned and effective practices will further inform future planning, training, strategies, and response tactics to strengthen response and advance readiness. Continued successes in response will come from the adaptability, flexibility, and skillful execution of capabilities performed by the entire public health and healthcare system.

¹Clark County Nevada. "About Clark County." Available at: <http://www.clarkcountynv.gov/pages/about.aspx>. Accessed 3-13-2018.