OREGON STATE MEDICAL EXAMINER

2020 OREGON WILDFIRE MOBILE MORGUE OPERATION

Lessons Learned and Preparation for Future Mass Fatality Response

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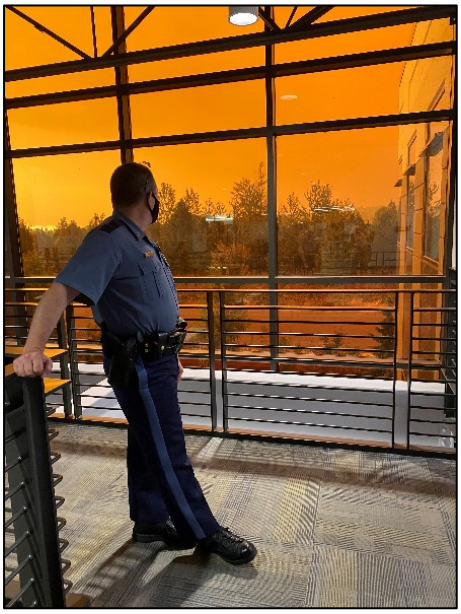
INTRODUCTION

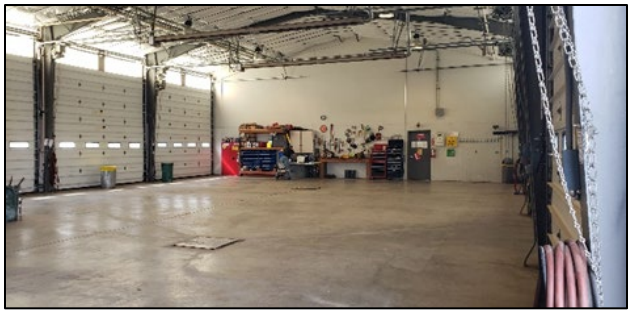
This document details the mobile morgue operations and State Medical Examiner's response to the wildfires in September 2020. It outlines the successes, challenges, and lessons learned in fatality management during this incident.



Superintendent Travis Hampton looks out at the wildfire sky on September 8th at OSP Headquarters.

BACKGROUND

On September 7, 2020, a series of high-wind events and dry conditions triggered the spread of multiple fires across the state of Oregon. By the morning of September 8th, the Holiday Farm, Beachie Creek, Lionshead, S. Obenchain, and Almeda fires were burning out of control in Lane, Linn, Marion and Jackson counties[1]. On that date, the Oregon State Police Medical Examiner Division began preparation for a mass fatality event with initial estimates projected upwards of 200 deaths. In the end, the total deaths related to the wildfires were confirmed at 9. It is important to note that these fires occurred during the COVID-19 pandemic amidst lockdowns, strict safety restrictions, and a shortage of personal protective equipment (PPE). This report details the Medical Examiner's Office response and deployment of the Mobile Morgue[2] Unit from September 8-22, 2020.



MOBILE MORGUE

The Mobile Morgue (MM) is a Medical Examiner asset that is used when a disaster overwhelms the existing system's ability to manage autopsy resources. Housed within two portable trailers, the Mobile Morgue contains the complete physical footprint of an autopsy suite. A team of 6-8 individuals can stage the temporary facility in about three hours, with additional time needed to install equipment. Based on the locations of the fires and initial requests for assistance, a

[1] It should be noted that many more Oregon counties were affected by wildfires than those listed here; however, this report focuses on the ones where mobile morgue services were provided.

[2] The Mobile Morgue as described in this summary was functionally more than a place to temporarily store decedents, as it was set up and used to perform complete medical examiner autopsy services.

centralized location in Linn County was selected. The MM operation was set up in an Oregon Department of Transportation facility.

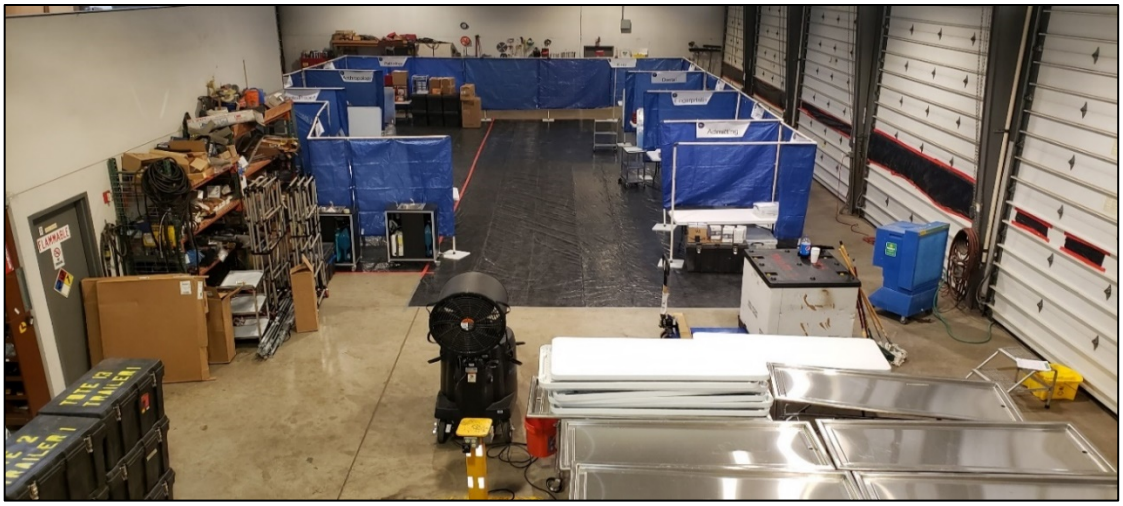
KEY PARTNERS

The rapid deployment and success of the Mobile Morgue operation was in part due to an existing collaboration between several agencies and organizations that came together to create a COVID-19 Fatality Management Workgroup in March 2020. Those relationships allowed the group to quickly pivot to wildfire response. The team was composed of Oregon State Police (OSP), State Medical Examiner's Office (SMEO), OSP Forensic Services Division (FSD), Oregon Health Authority's (OHA) Health Security Preparedness and Response (HSPR) Division and the Center for Health Statistics (CHS), Oregon Funeral Directors Association (OFDA), Oregon Cemetery and Mortuary Board (OCMB), Oregon Air National Guard Fatality Search and Recovery Team (OANG FSRT), Disaster Mortuary Operational Response Teams (DMORT), and Federal Emergency Management Agency (FEMA).

STRUCTURE

The Mobile Morgue provides a complete suite of autopsy and identification services. These include: Admitting/Intake, Photography and Property, X-Ray, Odontology, Latent Prints, Anthropology, DNA, Pathology, and Discharge/Release. Body storage (refrigerated trailers) is added to the deployment via partnership with private vendors but is not currently an asset in the Mobile Morgue. The examination services used for each case depend on the type of disaster and the condition of the decedent. For purposes of the 2020 Wildfire Response, identification was the focus of the postmortem services.

In addition to routine services offered through the State Medical Examiner's Office, ANDE®, a Colorado-based Rapid DNA Analysis provider, brought their mobile laboratory on-site to assist Oregon during this disaster.



Mobile Morgue set-up in ODOT facility.

PERSONNEL

The Mobile Morgue was primarily staffed by the MEO, FSD, OSP, and the OANG. Morgue operations relied heavily upon the Northwest Regional Response Team (NWRRT), which is composed of volunteers from organizations and law enforcement agencies around Oregon including medicolegal death investigators, forensic scientists, criminalists, anthropologists, medical providers, detectives, pathology assistants, and other subject matter experts. Since its inception in 2013, this was the first time the team was deployed in a disaster response.

RESPONDER SUPPORT

Recognizing the emotional impact a mass fatality event has on individuals involved in the response, wellness resources were put in place for supporting the Mobile Morgue Team. Members of the OSP Critical Incident Response Team (CIRT) were on staff. Regular visits to the MM and one-on-one sessions were provided by Responder Life, whose program provides emotional support to first responders. Hyacinth, a therapy dog came to visit from the Trauma Intervention Program.

Hyacinth spends time with Morgue Operations team members.

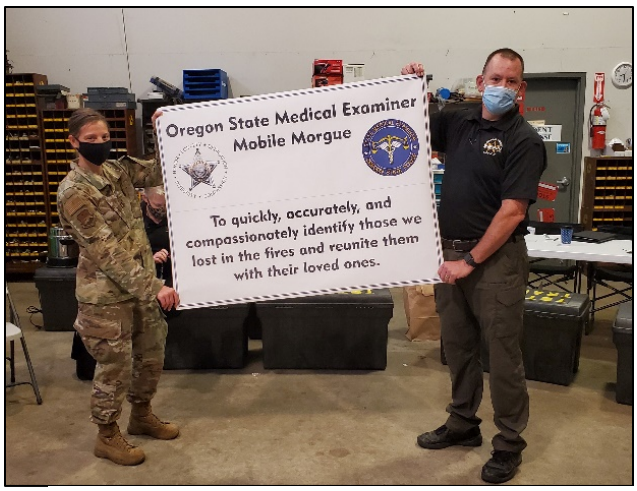
DAILY BRIEFINGS

Regular meetings were held with staff twice each day. The morning in-brief was used to communicate the mission for the day, onboard new volunteers, make assignments, and provide safety messaging. Out-briefs summarized the day's events and included updates and situation reports from other involved partners. Remote members were able to join via phone or video. These briefings were a critical part of the communication flow.

SUCCESSES

Many key factors were identified that worked very well in this mobile morgue response. This was the first deployment of this kind for Oregon and it showed that there is ample expertise and ability to create a functional and effective plan for mass fatality events. The bulleted list below includes things that the team would want to continue for future responses.

- **Mission-focused approach**
  The team created a mission statement that underpinned all the activities of the mobile morgue response. With volunteers rotating in and out, it was important to establish a clear guiding principle of the operation. The mission statement was prominently displayed in the MM.



The mission statement is displayed by team members.

- **Partnerships**
  Established relationships between federal, local, and state partners are what allowed the team to mobilize quickly. Continued partnership and ongoing participation in workgroups will support the State's ability to successfully managing mass fatalities.
- **Internal Communication**
  Daily in-briefings and out-briefings were instrumental in keeping volunteers engaged and informed about the dynamic events surrounding the wildfire response. Leadership gave clear directives on day-to-day activities and a high value was placed on open communication.
- **Volunteers**
  Once the MM was deployed, the team had a robust and dedicated volunteer team that would have allowed uninterrupted operation without external assistance for approximately 6 weeks. Maintaining a deep roster of morgue operations staff is necessary given the undersized staffing at the SMEO.
- **Early Site Assessment**
  Working with Jackson County for early ground and air reconnaissance gave the Mobile Morgue Commander an opportunity to assess conditions for forward-planning. It is recommended that a member of the MM team performs similar assessments for future disasters of this nature.
- **Vital Records**
  A temporary rule was put in place by CHS to obtain no-cost birth and death certificate replacements for those affected by the wildfires. While most victim-centered wraparound services fell outside of this operation's scope, the team had relationships in place with the Center for Health Statistics to help fast-track this action.
- **External Communication**
  Prioritizing inquiries from the Emergency Communications Center, the Department of Health and Human Services, and others provided direct and timely responses to outside

partners. The OSP Public Information Officer was an integral part of the MM operation from its onset and was able to manage media inquiries and provide information to partners.

- **OSP Assets**
  The ability to utilize State Police's own resources across the agency (Medical Examiner, Forensics, Fish & Wildlife, Patrol, Superintendent's Office, IT, Procurement) allowed specialty teams to mobilize quickly and function more effectively. Future events will require the same commitment from multiple program areas and the team will benefit from a member who is familiar with OSP assets.
- **Relationships**
  Superintendent Hampton leveraged relationships from other Department heads of state and federal agencies to assist OSP. Including agency executives early in the process enabled the MM team to quickly obtain assets and equipment (facility space for MM, OANG FSRT, etc.) needed to stage and staff the operation.
- **Leaning forward on requests**
  Groundwork laid during the COVID-19 response meant that triggers were already identified (increasing, surge, overwhelm levels). The team was able to test their plan, utilize prepositioned assets and establish new standards for operations. Mass fatality planning will require ongoing workgroup meetings, preparation, and training.

Mobile Morgue Team, September 13, 2020.

CHALLENGES

While the overall operation was successful in carrying out its mission for the cases that were received, multiple deficiencies and challenges were noted. Had the loss of life been higher, or if key infrastructure had been disrupted, as in the case of a significant earthquake, the mobile morgue operation would have been delayed or undeployable.

The success of the operation was at least partially due to the circumstances of the event. Mortality was very low, which made the lack of redundancy in the SMEO less impactful. Also, loss of life occurred in counties that have robust death investigation services that communicate well with the SMEO as part of their routine operations. Some of the other Oregon jurisdictions lack the level of expertise, support, and experience necessary to operate and communicate in this manner. A similar deployment to any of those areas would present significant challenges.

If a longer deployment had been necessary, routine SMEO operations would have been curtailed in some way, as current staffing would be insufficient to support rotations at the mobile morgue while maintaining routine case management.

LACK OF AUTOPSY EQUIPMENT

Critical identification services include the ability to x-ray decedents and perform odontology (dental) examinations. The SMEO had neither a portable x-ray machine nor a dental scanner, both of which were needed to identify individuals that came through the MM. Several days into the operation, a private citizen dentist volunteered his time and equipment for this operation and a local community college allowed the SMEO to use one of their portable x-rays and technicians. The SMEO ultimately chose to assume the security risk and liability of using private equipment in service of the mission. Funding procured through the Oregon Emergency Board after the wildfires allowed the SMEO to purchase a dental scanner and x-ray. Similar challenges were met in borrowing assets like PPE from the state ME's offices. This disaster underscored the importance of having dedicated assets for the mobile autopsy unit and the proper equipment to perform the entire complement of identification services.

Portable x-ray is delivered to MM.

INFORMATION TECHNOLOGY (IT) NEEDS

The technology needs for a stand-up site are significant. The IT component during wildfire response was largely ad hoc and utilized discarded/surplus equipment from other program areas within OSP. The lack of video conferencing, WIFI, printers, laptops, and other hardware

presented challenges that hampered communication and the ability to operationalize the MM rapidly. Future planning will need to incorporate early dedicated on-site IT support, procurement of modern computer equipment, and set-up time. Up-to-date equipment for video and phone conferencing is also critical for seamless communications with off-site partners.

MANAGING EXPECTATIONS

Throughout the wildfire response, it was clear that outside partners' expectations about the capabilities and role of the State Medical Examiner's Office in a disaster exceeded true capacity. The need to transport decedents considerable distances to a centralized emergency facility was not well received by all partners, as leadership in several jurisdictions assumed the SMEO would have the capacity to set up a mobile morgue and autopsy capability in each of the affected jurisdictions. Unfortunately, the State Medical Examiner system has a total of only 13 employees including 6 physicians, 4 autopsy assistants and 3 administrative staff to service a state with approximately 4.2 million people. The system is stretched, increasingly beyond capacity, by routine case volume. In an event like this, the demands of the disaster are in addition to the routine cases the SMEO sees as part of its normal caseload. For a system that is already stretched beyond capacity and currently rejecting important work, an increase in daily deaths will quickly push the SMEO beyond sustainable workloads.

INCIDENT MANAGEMENT

While the MM Operation had an incident commander, it lacked a dedicated incident management team (IMT). A team of six individuals who had expert knowledge in disaster management, crime scene response, search and recovery techniques, autopsy functions, and leveraging State Police assets came together and ran a remarkably efficient and organized response. While this was right-sized and appropriate for the scale and limited duration of this incident, it would not have been sustainable for a longer period of time. These same individuals also held shared responsibilities as subject matter experts (SME) in forensic pathology, morgue operations, anthropology, and medicolegal death investigation. In a larger-scale disaster, the SMEs will not be able to function on the IMT and also be actively working in morgue operations.

FATALITY COUNTS

One of the most vital pieces of information requested during this operation was the number of daily decedents recovered related to the wildfires. Information from other partners was sometimes in conflict with what was reported as an official number from the SMEO. While the SMEO initially reported daily cases entered from the field to the Emergency Communications Center (ECC), those numbers did not always reflect the true number of deaths and might change based on the findings of the postmortem examination. The MM team worked with the

ECC to determine the best method and timing for reporting cases each day. An early collaboration establishing who is responsible for the official numbers, and how and when those numbers will be reported will be advantageous in future disasters.

DECEDENT RELEASE

Each of Oregon's 36 counties has its own process to handle the retrieval and transport of decedents after autopsy. Some funeral homes have contracts, rotations, shared services, and other provisions for death care management. Funeral homes that need to travel long distances to a mobile morgue site may encounter physical or financial barriers that fall outside of contract agreements. That only a few counties were affected made release easier, but more fatalities would quickly complicate this aspect of the operation. Solutions will need to be devised to address this in the future.

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SAFETY

For those in the field, heavy smoke and poor air quality meant that N95 masks provided insufficient protection. Ground assessment teams needed the additional protection provided by respirators. Funding from the Emergency Board after the wildfires allowed for purchase of the these for the physicians within the Medical Examiner Division, but there are currently no air-purifying respirators stocked in the MM trailers for future deployment.

Launching the MM during the pandemic meant that there were additional precautions needed for personnel. With over 100 staff and volunteers coming into the MM, there were ample opportunities for transmission of COVID-19. Fortunately, there were no reported cases or exposures during the operation. A dedicated safety officer from the beginning can take a forward-planning approach, acquiring the proper PPE, developing and implementing a safety plan, setting up exposure and testing protocols, and mitigating risk more effectively.

TRAINING

Training for the Northwest Regional Response Team (NWRRT) has occurred six times (with either full staff or limited staff) since its inception in 2012. The team relied heavily upon its members' existing knowledge base, practical experience with critical incidents, and just-in-time learning to carry out the MM mission. Lack of funding and the resources needed to provide specific training have been a barrier to giving more robust mass fatality training opportunities

Just-in-time training is provided to OANG FSRT members.

to all its team members. Cascadia Rising 2022 Functional Exercises are scheduled from June 13-16, 2022. At the time of this report, the NWRRT does not have dedicated funding or a plan for how it will participate.

DETERMINING DEATH ESTIMATES

From an operational and planning perspective, it was difficult to provide death estimates to local, state, and federal partners based on early intelligence. Initial reports suggested that the fatalities could number in the hundreds, however missing person reporting systems and searches took time to implement. The need to contain fires that were still active while ensuring the safety of search and recovery personnel in fire-ravaged areas was prioritized.

While initial ground and air assessment in Jackson County confirmed the possibility of major loss of life based on the sheer number of structures burned (over 3000 in Jackson County), the timing of the incident, rapid response, evacuation assistance by law enforcement and residents, and the evacuees' willingness to leave their homes saved many lives that could have otherwise been lost. The team also had to consider potential deaths in encampments from the houseless population as well as people who were undocumented or hesitant to report loved ones as missing persons. Based on early reports from the field, and considering the time it takes to operationalize, the team mobilized according to evolving and best-estimate projections. This resulted in an overestimation of potential deaths.

Homes destroyed by wildfire, Phoenix, Oregon.

CENTRALIZED RESPONSE

In the first days after the fires, wildfire deaths were handled by local medical examiners, but after the MM was set up, the SMEO transitioned to performing autopsies in one location. Centralizing autopsy services for all mass-fatality related deaths from the beginning is best practice. While this will be dependent on the location of the disaster relative to the location and accessibility of the MM, a hub approach allows for greatest consistency in case management and services provided. Focus on maintaining normal operations in the Clackamas, Springfield, and Central Point Medical Examiners Offices minimizes the chance that unanticipated surges will impact the ability to meet routine obligations.

CONTINUITY OF OPERATIONS

Current staffing levels and work volume within the SMEO make it difficult to maintain continuity of operations during a disaster. During the 2020 wildfires, the lack of redundancy hampered routine administrative operations as there was a heavy commitment to the wildfire response. The Chief Medical Examiner spent nearly the entire month of September working at the Mobile Morgue and on SMEO response. Relief from the other state pathologists was not possible due to daily workloads. Duties typically performed by the Chief were put on hold creating a backlog that could not be shifted to other staff. SMEO infrastructure should include a Deputy Chief position with defined management responsibilities as part of the position description, rather than assigning a Deputy State Medical Examiner who is already managing a heavy routine workload. This will help maintain continuity of operations during future mass fatality responses, as well as providing relief in an already overwhelmed system.

LOOKING TOWARD THE FUTURE

Recommendations for successful deployments of Mobile Morgue operations for future mass fatality events must include:

- Increased medical examiner staffing and sufficient resources to handle a mass fatality event while maintaining essential routine operations
- Dedicated mobile morgue assets
- Additional mobile morgue trailers and equipment strategically positioned in Central and/or Eastern Oregon
- Regular training for the Northwest Regional Response Team
- Incident management training for mobile morgue team
- Up-to-date and deployable computer and IT equipment
- Improvements in communication with county medical examiner personnel concerning processes and expectations during mass fatality events

- Coordinated system for reporting official numbers of fatalities
- Cache of personal protective equipment (PPE) for all types of disasters
- Continued partnerships and planning with state, local, and federal agencies

The Oregon State Medical Examiner's Office wishes to acknowledge all of the staff, volunteers, and partners who worked together to serve the people of Oregon during this disaster.