

Mass Fatality Management at NYU Langone Hospital New York City

**THIS DISASTER PLAN WAS PREPARED AS A PUBLIC HEALTH
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Preface

Over the course of the last decade, New York City has experienced increasing threats of a mass casualty event. These events may be the result of a terrorist attack, pandemic, or climatological-due to climate change.¹

With a population of about 8.5 million people, a mass casualty event is extremely difficult to manage.² One significant challenge is the management of mass fatalities and coordination of citywide efforts to secure and preserve human remains at a disaster site. The other responsibilities for the management of mass fatalities, usually under the command of the Office of the Medical Examiner, include: recovery of human remains; development and implementation of public communication messages; credentialing and managing volunteer staff; mobilization of missing persons call centers; performance of all morgue operations and forensic exams as needed, including ante-mortem and postmortem data collection for victim identification (Victim Identification Program); transportation, storage (cold) and securing of temporary interment of remains; and release of human remains for final disposition. Personal belongings of the decedents must also be returned to family members. If the mass fatalities involve CBRNE hazardous agents that may have contaminated the scene and/or human remains, then special precautions may be needed to ensure the safety of staff and the community. All of this must be done without overwhelming appropriate facilities. If local entities cannot manage the caseload, then local authorities may request assistance from the State or FEMA Region entities. In dire situations, Federal assistance may be requested.

In March 2020, New York City was struck by COVID-19, a global pandemic that has taken the lives of over 220,000 Americans, including over 33,000 dead in NYC alone. At the beginning of the pandemic, New York City became the epicenter of the crisis and at the apex, reported more than 700 deaths per day. Hospitals, morgues, crematories, and funeral homes around the city suddenly reached capacity and became overwhelmed with thousands of decedents. Many facilities resorted to refrigerated trucks for morgue overflow; unluckier places were forced to store the deceased in hallways or storerooms while they awaited removal for final disposition of remains.

Moreover, due to the novelty of COVID-19, it was unknown whether or not decedents were remained infectious and posed further threat to medical authorities. CDC soon issued guidance for the management of human remains contaminated with COVID-19.^{3,4}

Signature Page

Director of Emergency Management, NYU Langone Health

Date

Chief Resiliency Officer, NYC Department of Health

Date

Medical Director, NYC Office of the Chief Medical Examiner

Date

Director, NYC Emergency Management

Date

Facility Mission

NYU Langone Health's mission to serve, teach, and discover is achieved daily through an integrated academic culture devoted to excellence in patient care, education, and research.⁵ A world-class Emergency Preparedness Program is essential to ensure uninterrupted access to NYU Langone Health patient care, research and education during disasters or emergencies.⁶ The Department of Emergency Management and Enterprise Resilience (EM+ER) leads that Emergency Preparedness Program across the NYU Langone Health enterprise, with a focus on the following key essentials:

- Safeguarding human resources,
- Maintaining business continuity, and
- Protecting physical resources

Statement of Purpose

The purpose of this management plan is to establish protocol and procedure for managing a COVID-19 mass fatality event for NYU Langone Medical Center in New York City. The protocols and procedures set forth are created to properly store, catalog, identify, and alert next of kin for decedents as a result of COVID-19. Additionally, these protocols will facilitate the arrangement of transportation of remains to funeral homes and cemeteries. Furthermore, these procedures should be considered for other mass fatality events in the entire New York City area.

Authorities

New York City Department of Homeland Security and Emergency Services (DHSES)

New York State Emergency Management Association (NYSEMA)

New York City Department of Health and Mental Hygiene

New York State Country Emergency Management and Public Health Departments

Office of the Chief Medical Examiner of New York City (OCME)

NYS Executive Law Article 2B – Shifted emphasis from civil defense to all-hazards preparedness

NYS Executive Order 26.1 – Adoption of NIMS

NYS Uniform Fire Prevention and Building Code

Definitions/Acronyms

Body Collection Point (BCP): Per the OCME, a BCP is “a temporary refrigeration unit used to store decedents until transport is arranged. It allows a hospital to store a large number of cases until they can be released to funeral homes or until OCME takes possession. The purpose of a BCP is to decompress the hospital morgue to give the funeral director community time to get to the facility to make the removal and follow the wishes of the family”.⁷

Bureau of Vital Statistics (BVS): Responsible for maintaining all birth and mortality data.

Disaster Mortuary Response Teams (DMORT): Provides equipment and supplies, as well as personnel to assist with fatality management and mortuary affairs. Personnel can include, but are not limited to, funeral directors, medical examiners, pathologists, administrative specialists, and security specialists. Functions can include tracking and documenting human remains and personal effects, establishing temporary morgue facilities, collection of medical records, and preparing remains for funerary processes.⁸

EM + ER: The Department of Emergency Management and Enterprise Resilience at NYU Langone Health

FM: Fatality Management

Fixed Facility Morgue: A hospital’s in-house morgue space

GNYHA: Greater New York Hospital Association

HCF: Health Care Facility

Hospital Morgue Census Survey: A survey completed Monday through Friday by New York City HFCs to provide a citywide picture of in-hospital decedent volume and morgue capacity. This survey helps the OCME create the Daily Morgue Census Report.

Mass Fatality Incident (MFI): Per the New York State Emergency Management Association, an MFI is “a disaster incident that meets any of the following criteria: (1) any incident that has the potential to yield more fatalities than can be recovered and examined by the local ME/C and their associated resources; (2) any incident that involves a protracted or complex decedent recovery operation; (3) any situation where there are decedents contaminated with chemical, biological, radiological, nuclear, or high-yield explosive agents or materials; and (4) any incident or other special circumstance that requires a multiagency response to support mass fatality management operations.”¹

NICS: NYU Langone Health Incident Command System

NYCDOH: New York State Department of Health

NYC H+H: New York City Health and Hospitals

NYCEM: New York City Office of Emergency Management

Definitions/Acronyms

NYSEMA: New York State Emergency Management Association

NYSFDA: New York State Funeral Directors Association

OCME: Office of the Chief Medical Examiner of New York City

Communications Plan

Internal Communication

EM+ER will coordinate internal emergency communications when a threat or hazard is detected. Activation trigger is a threat or hazard with the potential to disrupt delivery of healthcare or threaten human resources, business continuity or physical resources. Activation steps including an Initial Incident Message (*!NYULHA!ert!*) to the NICS First Call Roster, which includes 2800+ leaders and managers across the enterprise.⁶ The Initial Incident Message will include incident description and location, any actions needed, and when to expect more information. Messages will use plain language instead of codes to maximize clarity and understanding. Real-time internal emergency communications include multiple redundant systems. These systems include Public Address (PA) Systems, @NYULCMC intranet, broadcast email via Microsoft exchange server, and *SendWordNow* mass notification system to transmit *!NYULHA!ert!* text message, email, phone, and voicemail. Alternate communication technologies maintained by EM+ER include a cache of ultra-high frequency radios, satellite phone, Government Emergency Telecommunications Service (GETS), Wireless Priority Service (WPS), and Coms-in-a-Box mobile communication systems.⁶

External Communication

EM+ER will coordinate internal emergency communications when a threat or hazard is detected. Activation trigger is a threat or hazard with the potential to disrupt delivery of healthcare or threaten human resources, business continuity or physical resources. External emergency communication stakeholders include patients and visitors, local and regional elected officials, entities providing services under arrangement, patients' physicians, regional hospitals and critical access hospitals, media, volunteers, and federal, state, and local emergency management. Contact information for regional and critical access hospitals, as well as for federal, state, and local emergency management can be located in the GNYHA Emergency Contact Directory. The primary and alternate communication technologies maintained for internal communications are the same for external communications.⁶

Mutual Aid Agreements

In the event of an MFI, NYU Langone Health should coordinate response and management with the following agencies:

Bureau of Emergency Medical Services-Metropolitan Region division

Disaster Mortuary Response Teams

Greater New York Hospital Association

New York City Health and Hospitals

New York City Office of Emergency Management

New York State Department of Health

New York State Emergency Management Association

New York State Funeral Directors Association

Office of the Chief Medical Examiner of New York City

Concept of Operations

Activating Mass Fatality Plan

To trigger our mass fatality plan, the New York City positivity rate must exceed 3% over the course of a 3-week period and the death toll must exceed 100 deaths per day. For NYU Langone, specifically, 10 extra deaths a day due to COVID-19 will activate this response⁹.

Plan Activation Authority

NYU Langone Health (NYULH) Emergency Preparedness Program uses the NYULH Incident Command System (NICS), which is based on the National Incident Management System (NIMS). Based on this system, Significant and Major incidents activate the plan and enterprise response. Significant and Major incidents are coordinated by the Department of Emergency Management and Enterprise Resilience (EM+ER), and individual responses are managed by Central Command (CENTCOM) and the Operations Sections and Support Services Groups in the Emergency Operations Center. The NICS Organization consists of Executive Leadership and the Incident Commander, the Safety Officer, EM+ER Coordination Team, Operations Sections, and Support Services Groups.⁶

Incident Commander and Principal Responders at NYU Langone

Central Command (CENTCOM) is the principal coordinator for any mass fatality incident within the NYU Langone Health System. CENTCOM consists of Executive Leadership and the Incident Commander. Executive leadership, which includes the Dean and Vice Dean/Chief of Staff, appoint the Incident Commander. Key responders will also include the Chief Medical Officer, Chief Nursing Officer, and Chief Security Officer, and Decedent Management and morgue personnel. Additionally, the Surge Space Task Force will be mobilized in collaboration with Infection Prevention and Control (IPC), Decedent Management and morgue personnel,

Facilities, Environmental Health and Safety, and Supply Chain. The Surge Space Task Force will include EM+ER, IPC, Hospital Operations, Nursing, and Medicine.⁶

Enterprise-wide Communication

NYU Langone Health uses an enterprise-wide messaging system that includes texts, phone calls, emails, and public address systems.

- *Interdepartmental Communication*
Internal communication systems include Public Address (PA) Systems, @NYULCMC intranet, broadcast email via Microsoft exchange server, and *SendWordNow* mass notification system to transmit *!NYULHAlert!* text message, email, phone, and voicemail.
- *Communication with Response Partners (governmental agencies, Fire, Police, EMS, Health Department, etc)*
Response partners will be notified by telephone call and email. Regular communication will be established and maintained with the Office of the Chief Medical Examiner of New York City (OCME), the New York State Department of Health's Bureau of Funeral Directors, NYCEM, and DOH.
- *Partner Notification (corporate headquarters, nearby businesses, facilities management, etc.)*
Partner and stakeholders will be apprised of plan activation and updates via email and regularly scheduled video conference calls.
- *Suppliers (existing contracts for hospital morgue supplies)*
Federal Emergency Management Agency (FEMA) would be in charge of sending refrigerated trucks to all hospitals in NYC. During the last COVID-19 surge, FEMA distributed 85 refrigerator trucks, doubling morgue space from 3,500 body capacity to about 7,000¹⁰.

Roles and Responsibilities

Within the NICS organization, a Mass Fatality Management working group will be convened and Fatality Management Personnel identified⁷. Per the OCME, these personnel should at least include a(n):

Fatality Management Executive Lead

This person will coordinate fatality management operators between all departments and facilitate communication with city agencies, such as the NYCEM, OCME, and DOHMH. They will also ensure that NYU Langone Health conducts fatality management procedures in a safe and respectful way, in accordance with city and state policies. This person will make sure that adequate resources are dedicated to fatality management activities. Per the OCME, this person should be or include the hospital chief executive officer, chief operating officer, chief nursing or medical officer.

Health and Safety Officer

This person is appointed by the Executive Lead. Per the OCME, this person will ensure that fatality management operations are conducted in a safe manner and that regular communication occurs with the Executive Leader. The Health and Safety Officer has the following responsibilities, including but not limited to, ensuring all fatality management personnel have appropriate PPE and PPE training, that morgue and body collection point personnel have appropriate training regarding infection prevention and safe handling of remains, and that personnel are familiar with how to report unsafe practices and incidents.

Morgue Operations Lead

This person should be a Mortuary Supervisor with knowledge of remains storage requirements. The Morgue Operations Lead will manage Fixed Facility morgue space and Body Collection Points. This person will be involved in census reporting and case tracking at both sites and will coordinate remains storage and transportation with NYU Langone Health and remains retrieval from OCME. Managing remains means that all remains are documented and tracked accurately, records are complete, and that remains are treated respectfully.

Fatality Management Logistics Lead

This person will manage, and support services and infrastructure needed for fatality management operations, such as physically placing Body Collection Points and ensuring their functionality, and managing supplies and equipment used by fatality management staff.

Fatality Management Security Lead

This person will ensure that fatality management operations are secure for the entirety of the operation, which includes providing the security and privacy of all human remains, equipment, and personnel.

Fatality Case Management Lead

This person will conduct case reporting and ensure accurate and complete documentation for all decedents. This can include reporting daily morgue census data and correctly registering death certificates.

Personal Effects Lead

This person ensures that decedents' personal effects are properly collected, documented, packaged, and secured. They supervise release of personal effects to family when possible.

Designated Incident Command Post

The Emergency Operations Center will be established in the Murphy Conference Room at NYU Langone Health's Main Campus in Manhattan.

First Action during Fatality Surge

In order to protect life and the built environment, the first action is to distribute PPE and mandate the use of PPE for all employees handling deceased individuals.

Ongoing Actions during Fatality Surge

One of the immediate first steps is to request refrigerator trucks that can store bodies. While this may be an unconventional approach, it is the most sensible in terms of preservation and in the case that transportation to another hospital morgue or city morgue is required. After the request for refrigerator trucks, if NYU Langone is the only hospital in the area experiencing surges of COVID-19 patients, the hospital will alert other hospitals nearby like Bellevue for assistance and overall preparedness as well as the Greater New York Hospital Association (GNYHA) so that information is consistently flowing between hospitals.

Necessary Resources to Respond to Fatality Surge

Resources needed to properly respond to this event include refrigerator trucks, PPE, body bags and body tags.

Morgue Upstaffing in Fatality Surge

In the event of fatality surge, there would be need for extra mortuary technicians, also known as “body handlers,” per the Office of the Chief Medical Examiner⁷. These are individuals skilled in handling remains and will be in charge of proper tagging and storage as per OCME standards. However, this may be difficult as the OCME and other hospitals may be overwhelmed by the fatality surge.

Recovery: Deactivating Fatality Surge Plan

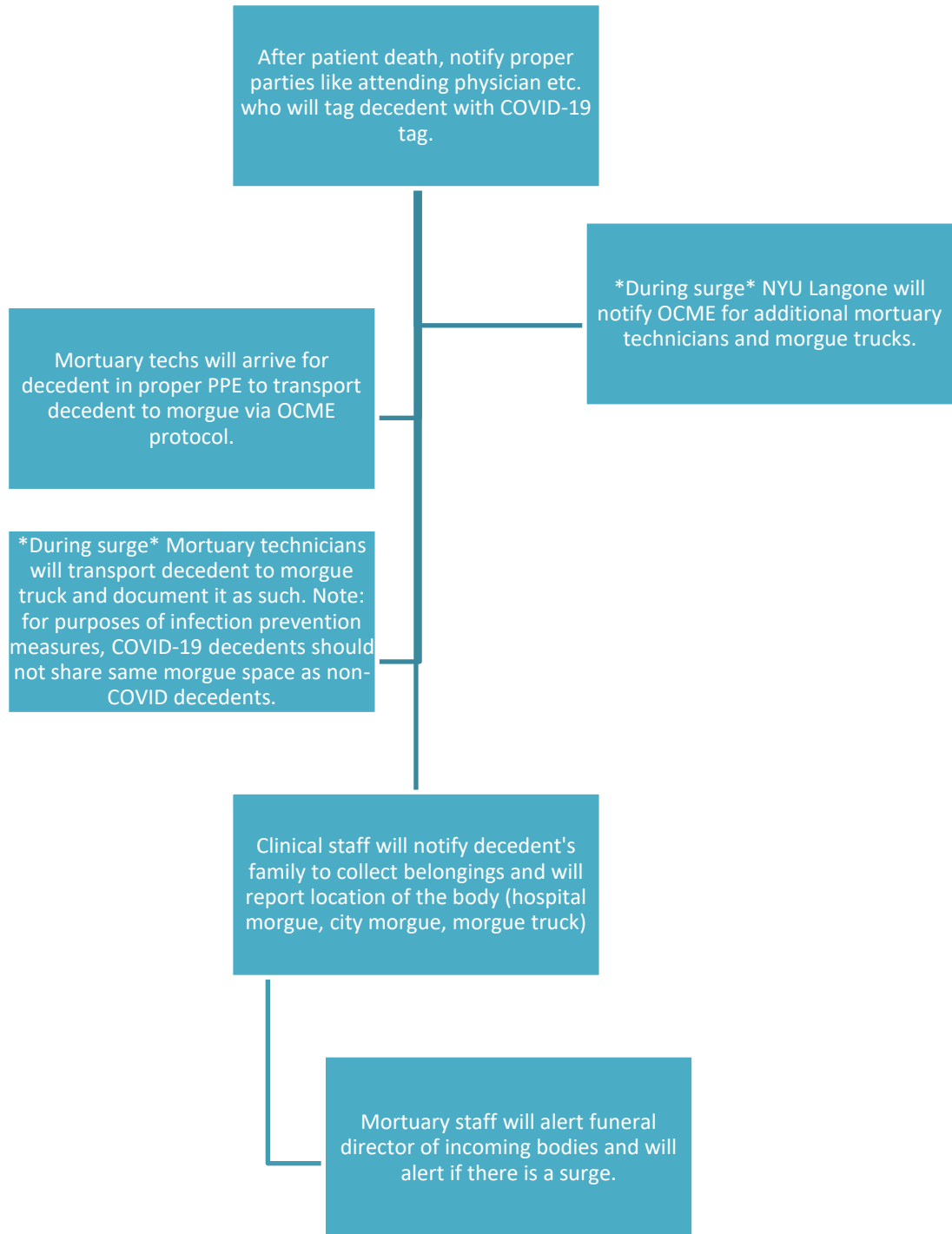
To deactivate the plan, the positivity rate in the New York City area must be below 3% and the daily death toll must be lower than 100 COVID-19 related deaths per day.

Appendices

Appendix 1: Threat and Hazards Assessment Table: Threat and Hazard Identification and Assessment (THIRA) for Metropolitan Transportation Authority in NYC

Natural	Technological	Human-caused
Resulting from acts of nature	Involves accidents or the failures of systems and structures	Caused by the intentional actions of an adversary
<ul style="list-style-type: none"> • Flood: Storms, high rain levels, and overflow of water causes flooding. Recently, NYC has been at a higher risk of flooding as it is a coastal city under the constant threat of rising sea levels due to climate change. Because the MTA is underground, it is especially at risk for damage as a result of flooding. When Hurricane Sandy caused flooding, many underground train lines and stations were out of service for months. • Pandemic: The MTA is known for its crowded train carts and overall unsanitary conditions within trains as well as in the stations. Because so many commuters are tightly packed with each other, it makes the propagation of airborne pathogens like COVID-19 much easier. 	<ul style="list-style-type: none"> • Train derailment: A train derailment can be caused by a multitude of things but overall, it is caused by faulty trains and old unmaintained tracks. The MTA is a system that is over 100 years old, with the usual wear and tear of a transit system that operates 24/7 for over 100 years, and at the speed that trains travel (including LIRR), trains are risk for derailment daily. • Pipeline explosion: There are about 6,000 miles of pipelines underground in NYC. These pipelines carry natural gas to and from the city. At any given moment, any one of these pipelines can explode or leak, the MTA is prone to damage as a result of a pipeline explosion. • Power Outage: In the summer, during times of extreme heat, NYC and other surrounding areas are on high alert for large scaled power outages. Because the MTA runs on power, it is prone to experiencing blackouts which results in a full stop of the transit system leaving many New Yorkers stranded. Most recently, a city blackout in 2003 forced MTA riders out onto the tracks and into stations. 	<ul style="list-style-type: none"> • Cyber-attack against infrastructure: A cyber-attack on infrastructure is an attack that may cause failures on entire grids that support systems such as that of the MTA. With such a vast system to keep track of trains, tracks that are out of service, and overall monitoring, the MTA is prone to cyber-attack. • Biological/Chemical attack: Because of the large number of people that travel in trains within NYC and in and out of NYC in a confined space like a train cart, the MTA is vulnerable to biological and chemical attacks. While there is a large police presence, they are more equipped to handle an explosive attack as opposed to the detonation of a neurological agent. • Explosives attack: An explosives attack is an attack that includes explosive devices that may manually or remotely detonated to damage infrastructure, disrupt property, and cause mass casualties. Because of the large volume of people that use the MTA, it is particularly at risk for an explosive attack especially if it is due to terrorism.

Appendix 2: Morgue Workflow during Fatality Surge



Appendix 3: Training Seminar Title: Mass Fatality Management within the Hospital Setting During Covid-19	
Objectives of your Training Seminar	Educate and train hospital leadership and hospital mortuary staff on mass fatality management due to Covid-19 in accordance with government regulations and the Office of the Chief Medical Examiner. The ultimate outcome is to safely handle remains of decedents with respect and dignity and return them to their families.
Estimate Length of Training	One 8-hour session
Target Audience and Max Size of Audience.	Hospital executive leadership and management, upper management from medical and nursing, and mortuary management and staffing. Limited to 50 people maximum.
Session Facilitator	The executive leader of Emergency Preparedness should lead the seminar because they have already developed connections with government agencies, as well as familiarity with government protocols and safety requirements. The hospital morgue manager should also be a facilitator since they directly manage storage and transportation of remains.
Objectives for Community Members	After this session, hospital leadership and mortuary staff should feel able to prepare their hospital to handle and store a sudden increase in human remains. This includes mortuary upstaffing, increasing PPE supplies, increasing mortuary supplies (i.e. body bags), planning space for body collection points, and training for properly managing body collection points.
Strategies to Increase Community Uptake of Mitigation Plan	The Office of the Chief Medical Examiner for the City of New York published Covid-19 mass fatality planning guidelines for hospitals this year. https://www.gnyha.org/wp-content/uploads/2020/09/Surge-Plan-for-Managing-In-Hospital-COVID-19-Deaths-OCME.pdf

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