

EMS-TO-HOSPITAL RESPONSE PROCESS FOR MASS CASUALTY INCIDENTS: HOSPITAL GUIDANCE DOCUMENT

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UPDATED 5/3/17: This document was originally disseminated in late July 2016. Since then, a number of adjustments have been made. This document reflects the adjustments, which are highlighted in gray.

The Fire Department of the City of New York (FDNY) began using a four-level categorization system for Mass Casualty Incidents (MCI) on Monday, August 1, 2016. Use of these levels informs EMS patient transportation decisions and provides hospitals with additional situational awareness.

The MCI levels are:



Each level is associated with predetermined numbers of patients that hospitals should be prepared to receive during the MCI.

This document is designed to help New York City 911-receiving hospitals consider adjustments to any internal procedures that may be warranted by these changes.

PREVIOUS PROCESS FOR ASSESSING HOSPITAL BED AVAILABILITY

In New York City, an MCI is an incident that has the potential to produce five or more patients. MCIs happen often in NYC, but rarely produce many patients.

An FDNY officer present at the scene will declare it to be an MCI. Previously, the FDNY officer, after arriving on the scene, transmitted the necessary information about the incident to FDNY Emergency Medical Dispatch (EMD), which, in turn, contacted the Emergency Departments (ED) of the three closest hospitals. If none of these hospitals was designated as a Level 1 or Level 2 Trauma Center, then the closest trauma center was also contacted. After receiving the alert about the MCI, ED staff would be asked how many critical and non-critical patients they could accept at that time. During large or complex MCIs, EMD might contact additional hospitals regarding their ability to receive patients.

The hospital staff member responsible for answering the EMD assessment calls, and how that staff person determined the number of critical and non-critical patients their facility could receive varied by location. Acknowledging that the process did not provide useful information for EDs or FDNY, FDNY and the Greater New York Hospital Association (GNYHA) convened a workgroup in spring 2016 to examine the issue and develop recommendations.



GNYHA is a dynamic, constantly evolving center for health care advocacy and expertise, but our core mission—helping hospitals deliver the finest patient care in the most cost-effective way—never changes.

FDNY-GNYHA HOSPITAL BED AVAILABILITY WORKGROUP

Meeting regularly since March 2016, the Hospital Bed Availability Workgroup includes NYC Emergency Management (NYCEM), FDNY, GNYHA, and hospital representatives with ED and Emergency Medical Services (EMS) experience.

Together, workgroup members explored current NYC MCI response processes, identified areas for improvement, and reviewed information collected by FDNY on systems and methods used in other major cities across the United States. These discussions resulted in two recommendations:

- Creation of four MCI Levels (Level A for Minimal to Moderate, Level B for Significant, Level C for Major, and Level D for Catastrophic) that reflect the severity and stability of the incident, the total number of expected patients, and a minimum number of hospitals to be notified regarding receipt of patients.
- Use of a Fixed Allotment Model, whereby FDNY and each 911-receiving hospital agree on a maximum number of critical and non-critical patients to be transported to that hospital at each MCI level.

FDNY MCI LEVELS

FDNY's EMD staff quickly gathers information about the nature and severity of an incident from various sources, including 911 callers, other agency reports (such as the NYPD), and EMS officers and providers on the scene. EMD will make an initial determination regarding the MCI level, and begin hospital notifications. The level may be modified as additional information and more precise patient numbers are received.

LEVEL A (MINIMAL TO MODERATE) MCI

The vast majority of MCIs in NYC will be classified as a Level A (Minimal to Moderate MCI). This is a relatively static incident producing or with the potential to produce a small number of critical patients. Hospitals near the MCI (minimum of 2, including the closest Level 1 or 2 Trauma Center) are called by EMD and told to prepare to accept patients up to the hospital's Level A fixed allotment.

Examples of Level A MCIs: motor vehicle accident or residential fire with small numbers of potential patients.

LEVEL B (SIGNIFICANT) MCI

This is a relatively static incident producing or with the potential to produce significant numbers of critical patients. Hospitals in a broader vicinity of the MCI (minimum of 3) are called by EMD and told to prepare to accept patients up to the hospital's Level B fixed allotment.

Examples of Level B MCIs: bus accident, small residential building explosion/collapse.

LEVEL C (MAJOR) MCI

This is a dynamic incident producing or with the potential to produce a substantial number of critical patients. Hospitals in a still broader vicinity of the MCI (minimum of 5) are called by EMD and told to prepare to accept patients up to the hospital's Level C fixed allotment.

Examples of Level C MCIs: mass shooting, medium to large building explosion/collapse.

LEVEL D (CATASTROPHIC) MCI

This is a catastrophic event that will likely overwhelm the health care system. Hospitals are expected to redirect all efforts to incident response. Rather than rely solely upon a notification call from EMD for such an event, hospitals should instead rely on notification sources such as NYCEM Watch Command hospital radio transmittals, NYCEM All Call email notifications, and information from credible media outlets. All hospitals should prepare to receive patients above their Level C fixed allotment.

Examples of Level D MCIs: World Trade Center attack, intentional release of poison gas in subway system.

EMS officers may attempt to have ambulances bypass the hospital(s) in closest proximity to the MCI during Level C and Level D MCIs. This is because the hospitals in closer proximity are likely to receive many victims who arrive on their own.

EMD NOTIFICATION CALLS TO HOSPITAL EMERGENCY DEPARTMENTS

- When EMD calls a hospital ED to make a notification, the EMD staff person will provide the following: the MCI level; the location of the incident; the nature of the incident (whether it is a fire or a motor vehicle crash, for example); and what kind of patients are involved, if known (for example, whether adults, pediatrics or both).
- As more information about the incident is provided to EMD, the decision could be made to upgrade or downgrade the MCI level. If the change in MCI level is expected to alter the estimated number of patients sent to a particular hospital, then that hospital will receive another call to indicate the level change.
- If two MCIs occur in proximity to a single hospital, which is likely to receive patients from both incidents, then that hospital will receive separate calls, one for each incident.
- The hospital will receive a "stand down" call from EMD when no additional patients are expected from an MCI. If the hospital has received patients from more than one MCI in the vicinity, then the stand down call would occur when no additional patients are expected from the final incident.

Ambulance crews are expected to continue their current hospital notification protocols when transporting critical patients. The crews will provide notifications for both critical patients associated with an MCI, and for critical patients not associated with an MCI. *The hospital notification protocol for transporting critical patients has not changed.*

ONE MCI MAY IMPACT HOSPITALS DIFFERENTLY

FDNY EMD determines the MCI level based on the incident's severity and the potential number of patients. EMD then notifies area hospitals using the protocols detailed above according to the fixed allotments described below. For example, during a Level B MCI, a minimum of three nearby hospitals will immediately receive a Level B notification.

However, if an MCI produces a larger number of patients than expected, or if the MCI escalates, then it is possible that a second wave of additional hospitals will be notified further into the incident. In such a case, EMD's notifications would reflect each particular hospital's fixed allotment. Therefore, during prolonged incidents with large numbers of patients, it is possible that a second wave of hospitals may receive a lower-level notification than the initial hospitals received.

NYC HOSPITAL EMERGENCY RADIO PROGRAM

As of January 1, 2016, NYCEM’s Watch Command transmits a series of messages via the NYC Hospital Emergency Radio Network for any event the FDNY deems a 10-60 (major incident response). As of November 1, 2016, NYCEM’s Watch Command also transmits messages via the NYC Hospital Emergency Radio Network for any event deemed by the FDNY as a Level C or Level D MCI. This is an expansion of the pilot program. For more information, hospitals are urged to review the previously provided guidance document regarding the [Hospital Emergency Radio Outgoing Message Program](#) to ensure that any information received via the hospital emergency radio is appropriately communicated and acted upon.

INTEGRATION WITH EXISTING NYC PLANS AND PROTOCOLS

Certain MCI events, including large fires and explosions, may also trigger the activation of existing NYC plans and protocols such as the draft NYC Burn Protocol. In such instances, impacted hospitals would receive additional notifications and communications from FDNY about the activation of procedures associated with these plans.

HOSPITAL FIXED ALLOTMENTS

Based on similar systems in other large jurisdictions, including Houston, Texas, and Anaheim, California, the workgroup recommends defining a maximum number of critical and non-critical patients for:

- Level A (Minimal to Moderate) MCI
- Level B (Significant) MCI
- Level C (Major) MCI

There is no fixed allotment For Level D (Catastrophic) MCIs. In the case of a Level D MCI, hospitals should do all they can to prepare for large numbers of critical and non-critical patients.

After significant discussion, the workgroup determined that the fixed allotments should be based on a small number of hospital-specific variables, including average daily ED visits and trauma center designation. The numbers were developed first using two bands based on average daily ED visits* (≤ 200 and > 200). Within each band, a separate, slightly higher patient count was developed for Level 1 or Level 2 trauma centers. The number of critical patients is low, given the intensity of resources that may be needed. Conversely, the number of non-critical less resource-intensive patients is higher.

AVERAGE DAILY ED VISITS	CRITICAL PATIENTS		NON-CRITICAL PATIENTS	
	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)
LEVEL A (MINIMAL TO MODERATE)				
≤ 200	1	NA	20	NA
> 200	2	3	30	30
LEVEL B (SIGNIFICANT)				
≤ 200	2	NA	30	NA
> 200	4	6	50	50

* Source: NYC Department of Health and Mental Hygiene ED Syndromic Surveillance System, 2016 data

AVERAGE DAILY ED VISITS	CRITICAL PATIENTS		NON-CRITICAL PATIENTS	
	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)
LEVEL C (MAJOR)				
≤200	4	NA	40	NA
>200	6	9	70	70

The numbers above reflect EMS transport expectations, and do not take into account patients who may arrive on their own. If a hospital becomes overwhelmed with patients who arrive on their own, and cannot safely receive additional patients via EMS transports, then facility should contact the Fire Department Operations Center at 718-999-7062 to request diversion status—though FDNY may not be able to place hospitals on diversion during large MCIs.

Based on the above calculations, all 911-receiving hospitals were assigned patient fixed allotments for Level A, Level B, and Level C MCIs. These were communicated via a letter sent to each hospital CEO. The new process went into effect August 1, 2016.

FREESTANDING EDS

A small number of stand-alone EDs participate in the NYC 911 system. Because these facilities do not have Operating Room capabilities, their fixed allotments were amended to include only non-critical patients.

PEDIATRIC CONSIDERATIONS

MCIs in New York City may produce all adult patients, all pediatric patients, or a mix of both. As a result, the decision was made to fold pediatric considerations into the current fixed allotment framework. When a notification call is made to a hospital, it is done via the ED’s main notification phone. At that time, EMD shares as much information as possible, including patient type: pediatric, adult, or both. The hospital must coordinate staffing and resources across pediatric and adult service areas.

A handful of stand-alone pediatric EDs exist in NYC. Fixed allotments based on the average daily ED census were developed in consultation with these facilities.

INTERNAL HOSPITAL PROCEDURES

NYC 911-receiving hospitals should ensure that the appropriate communication and activation protocols are in place to respond to the FDNY’s EMD notification calls for Level A, B, C, and D MCIs. To help hospitals implement these fixed allotments, FDNY developed a series of MCI Notification Level posters for placement in the ED. Hospitals may want to consider further modifying the posters to include institution-specific procedures or checklists.

Hospitals are encouraged to review the below questions to determine whether modifications to current protocols are warranted.

MONITORING THE ED RED PHONE

- Who in your ED answers the red phone?
- How have you trained relevant staff to respond appropriately to the new notification process?

ACTING ON EMD MCI CALLS

- When an ED staff member receives the EMD's notification call about an MCI, what steps is the staff member expected to take?
- How do the actions differ for a Level A notification compared with a Level B or Level C notification?
- Is the staff person expected to respond differently during business hours compared with evenings or on weekends?
- If a call occurs in the middle of a staff change, how does the response vary?
- What is the expected response of other staff members for each notification level, including ED staff? The Administrator on Duty (AOD)?

COMMUNICATION

- Who beyond the ED is notified when a Level A MCI call is received? Who is notified for a Level B or a Level C?
- If hospital staff members learn of an MCI via other means, such as a credible media source or the hospital emergency radio, how should the ED staff and other staff be notified?
- How are various internal communication systems used during such an incident? Are there pre-scripted messages? If not, should they be developed?

ACTIVATION DECISIONS

- How will appropriate staff (e.g., AOD, ED Director, Emergency Managers) determine which actions need to be taken in response to a Level A, Level B, or Level C MCI?
- Will notification of a Level B or Level C MCI automatically trigger activation of the Hospital Incident Command System (HICS), or will other information be required before such a decision is made? Would HICS ever be activated for a Level A MCI call? If so, under what circumstances?
- What additional decisions need to be considered for a Level B or Level C MCI notification? How will decisions be made about recalling clinical staff to the hospital? How will decisions be made about clearing or preserving operating rooms? What about issues related to hospital security?

Thank you for helping implement the new EMS-to-hospital response processes for MCIs. We believe these changes have already resulted in a more streamlined communication system between FDNY and 911-receiving hospitals, and an increased ability for hospitals to plan and prepare for MCIs.

If you have questions or feedback, please contact GNYHA's Jenna Mandel-Ricci, Vice President, Professional and Regulatory Affairs, at jmandel-ricci@gnyha.org or (212) 258-5314, or Brad Kaufman, MD, First Deputy Medical Director, FDNY Office of Medical Affairs, at bradley.kaufman@fdny.nyc.gov or (718) 999-2790.