

# PRE-HOSPITAL-TO-HOSPITAL COMMUNICATION PROTOCOLS FOR MCIs

RESULTS FROM THE FIRST YEAR OF IMPLEMENTATION | MARCH 2018

## Explanation of Pre-Hospital-to-Hospital Communication Protocols for MCIs

In August 2016, the Fire Department of the City of New York (FDNY) began using a four-level categorization system for Mass Casualty Incidents (MCIs). In New York City, an MCI is an event with the potential

York Hospital Association (GNYHA). Workgroup members explored existing New York City MCI response processes, identified areas for improvement, and reviewed information collected by FDNY on systems

with each level associated with pre-determined numbers of critical and non-critical patients hospitals should be prepared to receive from EMS during the MCI. The use of MCI levels informs EMS patient transportation

### The MCI levels are:



to produce five or more patients. The new protocol was developed through a collaborative workgroup process co-led by FDNY and Greater New

York Hospital Association (GNYHA). Workgroup members explored existing New York City MCI response processes, identified areas for improvement, and reviewed information collected by FDNY on systems

and methods that other major US cities use. The workgroup ultimately recommended the development of a four-level categorization system,

decisions and gives hospitals additional situational awareness.

As illustrated in the table to the left, the allotments vary based on average daily emergency department (ED) visits and trauma center designation. Based on these variables, all 911-receiving hospitals were assigned patient-fixed allotments for Level A, Level B, and Level C MCIs, which FDNY communicated via a letter to each hospital chief executive officer in July 2016. The allotted numbers reflect EMS transport expectations and do not take into account patients who may arrive on their own.

It is important to note that in many recent mass shootings, the large majority of victims arrived by means other than ambulances. ●

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)
<b>LEVEL A MCI (Minimal to Moderate)</b>				
≤200	1	NA	20	NA
>200	2	3	30	30
<b>LEVEL B MCI (Significant)</b>				
≤200	2	NA	30	NA
>200	4	6	50	50
<b>LEVEL C MCI (Major)</b>				
≤200	4	NA	40	NA
>200	6	9	70	70

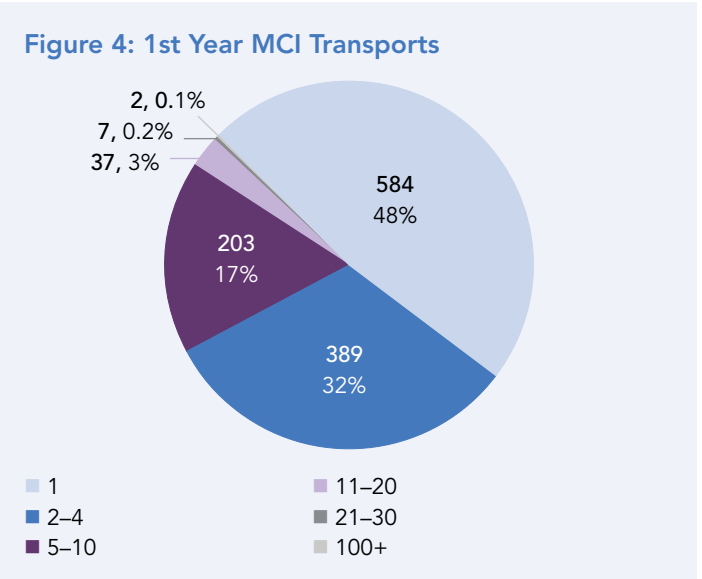
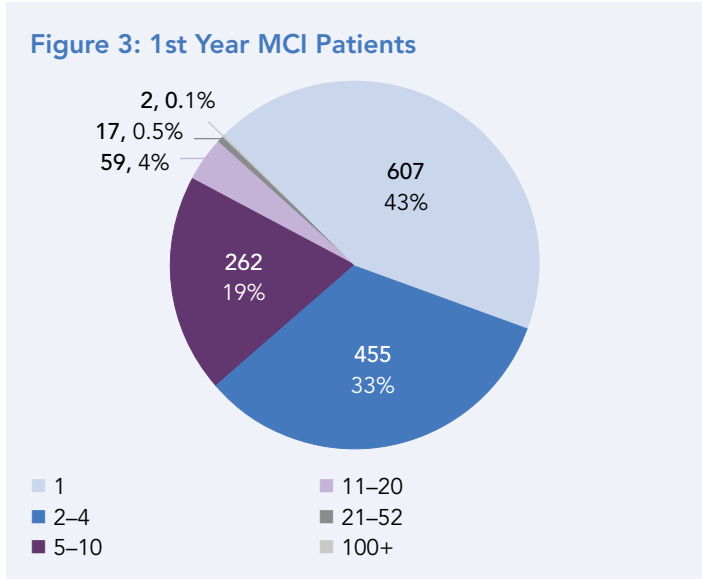
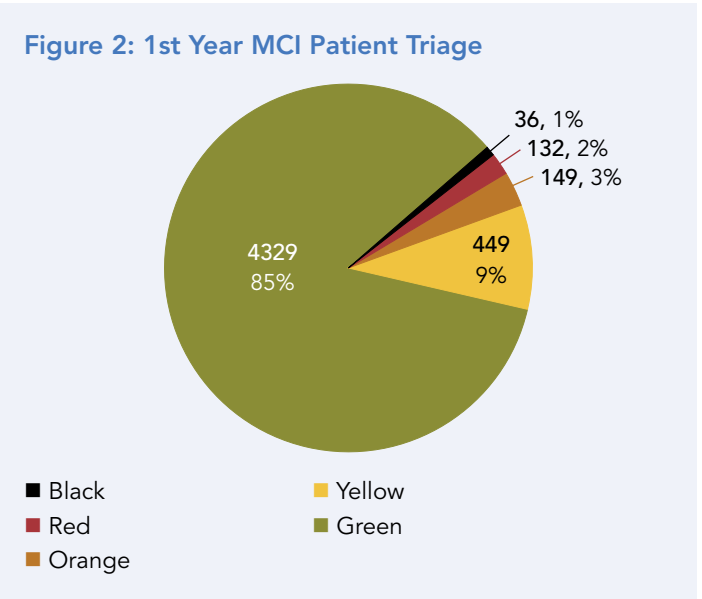
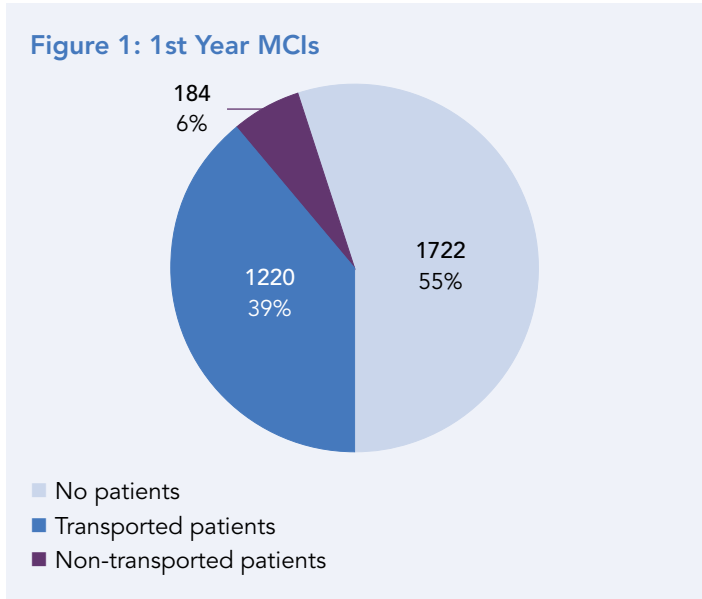
# Analysis of the First Year of Protocol Implementation

FDNY staff conducted analyses of MCIs from August 1, 2016, through July 31, 2017, the first year the new communication protocols were implemented. Because of how the data is coded within FDNY's

that will enable additional analyses in the future.

In the first year of implementation, 3,124 MCIs were declared by FDNY, all of which were Level A or Level B. The MCIs resulted in 5,137 patients,

Of the MCI patients, nearly all (94%) were non-critical, meaning green or yellow tagged. Only 5% were critical, meaning red or orange tagged. The remaining 1% were black tagged (meaning deceased) and were not



data systems, analyses were limited to MCI Computer Aided Dispatch information. Notification data was not included. FDNY has since implemented a hospital notification tracking system

for an average of 1.7 patients per MCI. However, less than half (45%) of all MCIs resulted in patients, and only 39% resulted in patients being transported to a hospital (see Figure 1).

transported to the hospital (see Figure 2).

Of the MCIs that produced patients (n=1,402), 33% produced two

**continued on page 3**

## Analysis (continued)

to four patients, while 43% produced just one patient. Only 19 produced more than 20 patients, accounting for 0.6% of all MCIs for the year (see Figure 3).

Of the MCIs resulting in patients being transported to a hospital (n=1,220), 32% resulted in two to four patients being transported, with nearly half (48%) resulting in just one patient transport (see Figure 4). ●

## FDNY MCI Coding Adjustments

Based on FDNY analyses and discussion with GNYHA and hospital representatives, FDNY removed two codes—MCI 10-29 for a suspicious package and MCI 10-43 for barricaded individuals—from the MCI hospital notification criteria. The analyses conducted revealed that the 10-29 code resulted in only one patient transport during the entire first year. While the 10-43 code was used frequently (n=266), and often produced a transport (n=221), 88% produced only one transport, and 10% produced only two transports. The removal of the two codes should decrease the overall number of MCI notifications, resulting in increased specificity.

## What the Findings Mean for New York City 911-Receiving Hospitals

**G**iven these findings, New York City 911-receiving hospitals may consider adjusting their protocols for a Level A notification call, given the likelihood that the call will result in no patients or a small number of non-critical patients being sent to the emergency department via EMS transport. Hospitals, therefore, may choose a posture of enhanced monitoring rather than activation upon receipt of a Level A call.

Enhanced monitoring enables a hospital to quickly pivot when critical patients are received, or if the incident escalates. Hospital personnel must also use their judgment based on the information provided during the MCI notification call, which should include types of patients and the nature of the incident, if known. Hospital staff should also consider whether additional patients are likely to arrive on their own.

Many New York City hospitals anticipate that the response to a Level A notification can be managed with available emergency department resources. Level B or higher incidents will likely require staff and resources in addition to the ED. As a result, hospitals should consider creating mass notification protocols that trigger specific actions by key departments for Level B, C, and D notifications. ●

## Future Actions

A workgroup led by FDNY and GNYHA developed the recommendations for the pre-hospital-to-hospital protocol that were implemented in August 2016.

The workgroup continues to meet to monitor implementation and recommend adjustments for FDNY and participating hospitals.

Analyses of Year 2 implementation (August 2017-July 2018) will be presented to the workgroup and will inform additional actions and activities.



For more information on emergency preparedness for mass casualty incidents, visit <https://www.gnyha.org/topic/explosive-and-mass-casualty-events/>

