



## How Emergency Department Nurses Handle Mass Casualty Incidents

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### Abstract

Mass Casualty Incidents (MCIs) present extreme challenges for healthcare systems, especially within emergency departments (EDs). Nurses in the ED are often the first medical responders responsible for triage, stabilization, and ongoing patient care during these crises. This article explores the multifaceted roles ED nurses play in the management of MCIs, including pre-incident preparedness, rapid triage under pressure, interdepartmental coordination, and psychological resilience. Emphasis is placed on standardized protocols such as START (Simple Triage and Rapid Treatment), the use of incident command systems, and the importance of simulation-based training. By understanding how ED nurses respond to these high-stakes scenarios, healthcare systems can better prepare for future disasters and enhance the effectiveness of emergency nursing interventions.

**Keywords-** Emergency Department, Mass Casualty Incident (MCI), Triage, START Protocol, Emergency Nursing, Disaster Preparedness, Trauma, Incident Command System, Simulation Training, Crisis Management

### Introduction

Mass Casualty Incidents (MCIs), such as natural disasters, terrorist attacks, industrial accidents, or large-scale transportation crashes, are situations where the number of casualties overwhelms the available medical resources. These events test the limits of healthcare infrastructure and place enormous responsibility on emergency departments, particularly on nurses who serve on the front lines of patient care.

Emergency Department (ED) nurses are integral to the rapid assessment, prioritization, and treatment of patients during an MCI. Unlike routine ED operations, MCIs demand a shift from individual patient-centered care to population-based, utilitarian care models where the goal is to "do the greatest good for the greatest number."

This shift requires ED nurses to operate under intense pressure, make split-second decisions, and rely on disaster response protocols that guide triage and care delivery. Their roles extend beyond clinical



care to include leadership, communication, logistics coordination, and emotional support for both patients and staff. Given the unpredictable nature and rapid evolution of MCIs, preparedness through regular training, drills, and clear role delineation is essential for effective emergency nursing performance.

This article outlines the key responsibilities, strategies, and challenges faced by ED nurses during MCIs and highlights the importance of system-wide readiness and ongoing professional development in this critical area of healthcare.

## 1. Understanding Mass Casualty Incidents

### 1.1 Definition and Scope

A **Mass Casualty Incident (MCI)** is defined as any situation in which the number of patients requiring medical attention exceeds the immediate capacity of available healthcare resources. The key aspect of an MCI is not necessarily the number of casualties alone, but the impact on the system's ability to respond effectively using standard procedures.

MCIs can occur with little or no warning and require hospitals to rapidly transition from routine operations to disaster mode. They demand the immediate activation of preplanned emergency protocols and place a disproportionate burden on frontline healthcare workers, especially **emergency department nurses**.

### 1.2 Types of MCIs

MCIs are broadly categorized based on their **origin**:

#### a. Natural Disasters

- Earthquakes
- Floods
- Hurricanes
- Tsunamis
- Wildfires

These typically involve trauma, crush injuries, hypothermia, burns, and infectious outbreaks due to poor sanitation post-event.

#### b. Technological/Industrial Disasters

- Chemical spills
- Power plant accidents
- Building collapses
- Transportation crashes (air, rail, or road)

These incidents often require hazardous material protocols and involve complex injury types.



### c. Intentional Human Acts

- Terrorist attacks (e.g., bombings, shootings)
- Riots and civil unrest
- Biological or chemical warfare
- Mass shootings or bomb threats

These are highly unpredictable and often cause psychological trauma in addition to physical injury.

### d. Epidemics/Pandemics

- Disease outbreaks (e.g., Ebola, COVID-19)
- These create prolonged stress on the healthcare system and may result in resource shortages and staffing crises.

## 1.3 Characteristics of MCIs

MCIs possess several **defining characteristics** that set them apart from other emergencies:

- **Surge of Patients:** Rapid influx of victims in a short time window.
- **Resource Overload:** Inadequate numbers of staff, supplies, beds, or equipment to treat all patients simultaneously.
- **Time Sensitivity:** Delayed care can significantly increase mortality.
- **Chaos and Confusion:** Disrupted communication, unclear information, and emotional distress are common.
- **Shift in Care Philosophy:** The focus often shifts from individualized care to **utilitarian care**, aiming to maximize survival across the entire population.

## 1.4 Phases of an MCI Response

Understanding the phases of an MCI helps in organizing and optimizing the nursing response:

Phase	Nursing Focus
Preparedness	Training, drills, resource management, plan development
Response	Triage, stabilization, teamwork, communication
Recovery	Continued care, mental health support, after-action review
Mitigation	Policy development, risk analysis, prevention strategies

## 1.5 Legal and Ethical Implications

ED nurses must often make **rapid ethical decisions** during MCIs, including:

- Allocating limited resources



- Prioritizing treatment based on survivability, not severity
- Balancing professional duties with personal safety
- Managing legal liability while deviating from standard care models under emergency laws

Many jurisdictions have **Good Samaritan** or **Crisis Standards of Care** laws that offer legal protections for healthcare providers acting in good faith during declared emergencies.

## 1.6 Impact on Nursing Practice

An MCI is more than a clinical challenge — it's a **psychological and operational crisis**. Nurses are expected to:

- Function outside their normal roles
- Lead without formal titles
- Work extended shifts with minimal breaks
- Care for victims of all ages, backgrounds, and trauma types

These demands reinforce the need for robust **interdisciplinary coordination**, continuous **education**, and **resilience training** among ED nurses.

## 2. The Role of Emergency Nurses During MCIs

Emergency Department (ED) nurses are the **cornerstone** of hospital response during Mass Casualty Incidents. Their roles go far beyond bedside care; they are expected to demonstrate **clinical expertise**, **rapid decision-making**, **emotional resilience**, and **leadership** under extreme pressure. Their effectiveness can significantly influence survival rates and system efficiency during the crisis.

This section outlines the **key responsibilities** and **expanded roles** that ED nurses fulfill during MCIs, divided into pre-incident, active response, and post-incident stages.

### 2.1 Pre-Incident Preparedness

#### a. Participation in Emergency Planning

- ED nurses are active contributors in hospital **disaster preparedness committees**.
- They help design **triage flow maps**, **staging areas**, and **patient tracking systems**.
- Nurses provide insights into staffing models, resource needs, and potential bottlenecks in patient flow.

#### b. Training and Drills

- Nurses regularly engage in **mock MCI drills** and **tabletop exercises**.
- These simulations include scenarios like mass shootings, bomb blasts, or chemical exposure.



- Focus is placed on **triage accuracy, role delegation, crisis communication, and infection control.**

### c. Cross-Training

- ED nurses are often trained to perform **basic functions outside their usual scope**, such as:
  - Setting up field treatment stations
  - Assisting with decontamination
  - Providing behavioral health support

### d. Inventory and Supplies Management

- Nurses ensure **go-bags, disaster carts, and PPE supplies** are stocked and accessible.
- They may also be involved in developing protocols for **resource rationing.**

## 2.2 Triage: First Point of Impact

Triage is one of the most **critical and complex tasks** during an MCI. ED nurses often lead or directly support triage teams.

### a. Use of START Protocol

- START (Simple Triage and Rapid Treatment) is the most commonly used disaster triage model.
- Nurses categorize patients into four groups:
  - **Red (Immediate):** Airway obstruction, severe bleeding, shock
  - **Yellow (Delayed):** Major injuries but stable vitals
  - **Green (Minor):** Walking wounded
  - **Black (Deceased/Expectant):** No signs of life or non-survivable injuries

### b. Rapid Decision-Making

- Triage decisions must be made in **under 60 seconds** per patient.
- Nurses assess **respirations, perfusion, and mental status (RPM).**

### c. Dynamic Reassessment

- Conditions change rapidly; nurses constantly **re-evaluate patients** and update triage status.

## 2.3 Emergency Stabilization and Treatment

Once patients are triaged, nurses are responsible for **initiating lifesaving interventions**, often under chaotic and resource-limited conditions.

### a. Basic Life Support (BLS) and Advanced Life Support (ALS)

- Controlling bleeding (tourniquets, dressings)
- Establishing IV access



- Administering oxygen or medications
- Providing CPR and defibrillation when needed

#### **b. Assisting with Emergency Procedures**

- Nurses assist in **intubations, wound suturing, splinting, and burn care.**
- May also initiate standing orders for analgesia or antibiotics in high-volume settings.

#### **c. Managing Multiple Patients**

- One nurse may manage **several critical patients** simultaneously.
- Delegation and teamwork are essential to prevent missed care.

### **2.4 Communication and Team Coordination**

#### **a. With Multidisciplinary Teams**

- Nurses serve as **liaisons between triage, surgical, ICU, and administration teams.**
- Communication must be clear, fast, and based on **standardized reporting (SBAR).**

#### **b. Within the Incident Command System (ICS)**

- Nurses may take roles in ICS as **Triage Officer, Safety Officer, or Unit Leader.**
- They help coordinate external EMS, police, and public health agencies.

#### **c. With Patients and Families**

- Nurses must deliver **clear, empathetic communication** despite high emotion and time pressure.
- This may include **reassuring survivors, notifying family, or breaking bad news.**

### **2.5 Psychological and Emotional Support**

ED nurses also address the **emotional aftermath** of an MCI.

#### **a. Providing Psychological First Aid (PFA)**

- Calm patients and stabilize emotional distress
- Reorient patients experiencing dissociation or panic
- Provide supportive presence for grieving families

#### **b. Supporting Fellow Healthcare Workers**

- Nurses check in with colleagues, offer relief breaks, and monitor for **acute stress reactions.**



### c. Self-Monitoring

- Nurses are trained to recognize **burnout, compassion fatigue**, or signs of **trauma exposure** in themselves.

### 2.6 Leadership and Role Adaptability

In MCIs, **formal titles often take a backseat** to capability. Nurses naturally emerge as leaders due to their proximity to patients and decision-making roles.

- **Assigning roles** to less experienced staff or volunteers
- Taking over areas of the ED (e.g., triage, trauma bays)
- Ensuring **clinical safety** and **workflow efficiency**
- Maintaining **ethical standards** under pressure

### Summary Table: Core Roles of ED Nurses During MCIs

Function	Nursing Responsibility
Preparedness	Training, drills, stock checks
Triage	START, reassessment, documentation
Clinical Care	Stabilization, pain management, emergency procedures
Communication	Team coordination, patient communication, ICS integration
Emotional Support	Psychological first aid, grief support
Leadership & Adaptability	Role delegation, mentoring, ethical decision-making

### Conclusion of Section

The multifaceted role of Emergency Department nurses during Mass Casualty Incidents cannot be overstated. They are often the **first and last line of defense** in ensuring lives are saved, order is restored, and care is delivered ethically and effectively. Their responsibilities span physical care, emotional resilience, team leadership, and system coordination — making them indispensable in every phase of MCI response.

### 3. Tools and Protocols for Efficient MCI Response

Efficient response to a Mass Casualty Incident (MCI) depends heavily on the **standardization of tools, protocols, and communication systems**. In such high-stakes environments, Emergency Department (ED) nurses cannot rely on improvisation alone; they must operate within established frameworks designed to reduce chaos, save time, and prioritize care effectively.

This section highlights the **critical tools and standardized protocols** that enable ED nurses to manage MCIs safely, systematically, and efficiently.



### 3.1 START Triage Protocol (Simple Triage and Rapid Treatment)

The **START protocol** is the most widely used triage system in the initial phase of MCIs. It is designed for rapid categorization of patients within **60 seconds or less** based on key physiological signs.

#### Triage Categories:

- **Red (Immediate):** Life-threatening but treatable injuries (e.g., airway obstruction, major bleeding)
- **Yellow (Delayed):** Serious injuries needing medical attention but can be delayed (e.g., fractures, burns without airway compromise)
- **Green (Minor):** Walking wounded with minor injuries (e.g., abrasions, sprains)
- **Black (Deceased/Expectant):** Deceased or injuries incompatible with survival under limited resources

#### Assessment Criteria (RPM):

- **Respirations:** >30 breaths/min = Red
- **Perfusion:** Capillary refill >2 seconds or no radial pulse = Red
- **Mental Status:** Unable to follow simple commands = Red

#### Nursing Role:

- Perform **initial triage** and tag patients accordingly
- **Reassess** frequently as patient conditions may change
- Record findings on **triage tags** and initiate life-saving measures (e.g., opening airway, bleeding control)

### 3.2 JumpSTART for Pediatric Patients

Since START is not ideal for children under 8, **JumpSTART** is used in pediatric MCIs.

- Adjusts for age-specific respiratory and neurological responses
- Helps avoid over- or under-triage of children
- Nurses are trained to apply both START and JumpSTART protocols

### 3.3 Incident Command System (ICS)

The **Incident Command System (ICS)** is a **nationally standardized, hierarchical framework** used for multi-agency coordination during disasters. It ensures clarity in roles, responsibilities, and communication.

#### Core Components of ICS:

- **Incident Commander:** Oversees entire operation
- **Operations Section Chief:** Coordinates clinical care and logistics



- **Triage Officer (usually a senior nurse):** Manages triage site and prioritization
- **Liaison Officer:** Connects hospital with external responders (EMS, fire, police)
- **Safety Officer:** Monitors staff safety, PPE use, decontamination

#### **Nursing Integration:**

- Nurses may serve in formal ICS roles (Triage, Safety, Medical Branch)
- They report to the chain of command to streamline communication and avoid duplication

#### **3.4 Disaster Triage Tags and Color-Coding Systems**

Triage tags provide **standardized patient identification** and help prioritize interventions. Key features include:

- **Color indicators** matching triage category
- **Sections to record** vital signs, treatments, allergies, time stamps
- **Barcodes or RFID chips** for electronic tracking (in modern systems)

Nurses are trained to:

- Apply and update tags
- Coordinate patients by zone (e.g., red tent for critical patients)
- Ensure **hand-off documentation** is accurate as patients move through care phases

#### **3.5 Decontamination Protocols**

For **chemical, radiological, or biological incidents**, decontamination is essential to prevent secondary contamination.

#### **Nursing Roles in Decontamination:**

- Assist with or perform **gross decontamination** (removal of clothing, irrigation)
- Use **Level C PPE** (e.g., gowns, N95 masks, face shields)
- Maintain **gender and privacy considerations**
- Monitor for **hypothermia or psychological distress** during the process

Hospitals typically have **designated decontamination areas** outside the ED, and nurses must be familiar with:

- Shower protocols
- Waste water containment
- Cross-contamination prevention measures



### 3.6 Communication Systems and Tools

During an MCI, **breakdowns in communication** can be fatal. To mitigate this, hospitals rely on a range of systems:

#### a. Two-Way Radios and Satellite Phones

- Backup for landline/mobile network failures
- Enables **clear, quick updates** between ED triage, ICU, and command posts

#### b. Mass Notification Systems

- Automated alerts (e.g., text, voice, pager) to recall staff
- Nurses must know **how to respond to activation codes** (e.g., Code Orange for disaster)

#### c. Standardized Reporting Tools

- SBAR (Situation, Background, Assessment, Recommendation)
- Handoff checklists for transferring care during high-volume shifts

### 3.7 Electronic Health Record (EHR) Adaptations

While MCIs may begin with **paper-based documentation** (due to volume or power failure), integration with EHR systems ensures:

- Continuity of care once patients are stable
- Ability to access prior medical history if patients are identified
- Simplified **tracking of interventions and outcomes**

Some hospitals use **disaster-mode EHR modules** to:

- Streamline data entry for multiple patients
- Auto-generate resource use summaries

### 3.8 Personal Protective Equipment (PPE) and Infection Control

MCIs involving **infectious diseases** or bioterrorism (e.g., anthrax, COVID-19) require strict adherence to PPE protocols.

Nurses must:

- Use appropriate PPE (N95 masks, goggles, gowns, gloves, powered air-purifying respirators)
- Follow **donning/doffing procedures** to avoid contamination
- Support **isolation protocols** and airborne precautions in designated zones

### 3.9 Psychological First Aid (PFA) Framework

PFA is a structured approach nurses can use to address **acute psychological distress** in victims and staff during MCIs.



## Core Components:

1. **Ensure safety**
2. **Provide comfort**
3. **Stabilize emotions**
4. **Connect to social support**
5. **Promote hope and recovery**

Training nurses in PFA improves outcomes and reduces **post-traumatic stress** among patients and providers.

## Summary Table: Tools & Protocols for MCI Response

Tool/Protocol	Purpose	Nursing Involvement
START/JumpSTART	Triage of adult and pediatric patients	Rapid assessment and tagging
ICS	Disaster management and coordination	Leadership roles and structured communication
Triage Tags	Patient identification and tracking	Tagging, reassessment, handoff documentation
Decontamination Protocol	Prevent spread of hazardous materials	Performing/assisting with decontamination
Communication Tools	Staff recall and inter-team communication	SBAR use, radio operation, responding to alerts
Disaster EHR Modules	Efficient digital record-keeping	Updating vital records and care logs
PPE Protocols	Staff safety and infection control	Correct donning/doffing, exposure monitoring
PFA	Emotional and psychological support	Crisis intervention and resilience building

## Conclusion of Section

ED nurses rely on a **robust toolkit of protocols, systems, and practical resources** to respond efficiently to MCIs. Familiarity with these tools is not optional — it is essential for safety, coordination, and optimal patient outcomes. Through ongoing training and organizational support, these tools empower nurses to act decisively and confidently in even the most chaotic scenarios.



## 4. Case Study: Real-World Example

### 4.1 Background of the Incident

On **April 15, 2013**, during the annual Boston Marathon, two improvised explosive devices detonated near the finish line. The blasts killed **3 people** and injured more than **260 others**, many with traumatic amputations, blast injuries, and shrapnel wounds. It was a high-profile domestic terrorist attack that instantly transformed a community celebration into a mass casualty event.

### 4.2 Scope of the MCI

- **Time of Incident:** 2:49 p.m.
- **Location:** Boylston Street, Boston, Massachusetts
- **Number of Casualties:** 3 dead, 260+ injured
- **Nearby Hospitals Involved:** Massachusetts General Hospital (MGH), Brigham and Women's Hospital, Boston Medical Center, Tufts Medical Center, and others

All major hospitals in the city immediately activated their **disaster protocols**. Emergency departments were inundated with patients suffering from:

- Traumatic amputations
- Severe burns
- Blast injuries
- Internal bleeding
- Psychological trauma (acute stress, panic, PTSD onset)

### 4.3 Role of Emergency Nurses During the Boston Marathon Bombing

#### a. Immediate Triage and Rapid Response

Emergency nurses were among the **first to receive patients** as ambulances and bystanders rushed victims to nearby hospitals. They applied:

- **START triage protocols** to quickly categorize and prioritize care
- Immediate **tourniquets**, pressure dressings, and airway management
- Emergency blood transfusions and rapid IV fluid resuscitation

Many nurses reported **treating patients within minutes of their arrival**, with trauma teams fully mobilized and ready.

*"We were operating under battlefield conditions in a civilian hospital." – ED Nurse, MGH*

#### b. Activation of Incident Command System (ICS)

Hospitals rapidly transitioned into disaster mode, with ED nurses integrated into the **Incident Command System**:



- Some nurses served as **triage officers**
- Others were deployed to **decontamination tents** or **surgical prep areas**
- A few coordinated with **pre-hospital EMS** and **family reunification centers**

The ICS structure allowed efficient resource deployment, especially in assigning available ORs and managing surge capacity.

### c. Emotional and Psychological Care

In addition to physical wounds, the **emotional toll** on patients and families was immense. ED nurses played a critical role in:

- **Providing psychological first aid (PFA)**
- Reassuring and calming traumatized victims
- Communicating empathetically with distressed families

Many nurses also provided emotional support to **each other**, as the volume and severity of injuries were deeply affecting.

### d. Adaptability Under Resource Strain

With a massive patient influx, nurses had to:

- Share limited supplies (e.g., trauma kits, morphine, sterile gauze)
- Take on **expanded roles** such as assisting in surgery prep or handling logistics
- Triage **multiple critical patients simultaneously**

ED nurses worked **extended shifts**, with some staying over 18 hours voluntarily to ensure continuity of care.

## 4.4 Outcomes and Nursing Impact

### a. Survival Rate

Despite the volume and severity of injuries, **all patients who reached a hospital alive survived**, a testament to the **efficiency and preparedness** of emergency healthcare teams — especially the nurses who formed the core of frontline response.

### b. Lessons Learned

The Boston Marathon bombing highlighted several key lessons:

- Importance of **regular MCI drills and ICS training**
- Need for **rapid triage and communication systems**
- Value of **psychological support** integration in emergency care
- The role of **team-based care** and interdisciplinary coordination



### c. Long-Term Response

Many ED nurses later participated in:

- **After-action reviews** to improve future protocols
- **Community debriefings** and educational panels
- **Peer support groups** for healthcare professionals affected by the incident

### 4.5 Summary of Nurse-Specific Takeaways

#### Challenge Faced

#### Nursing Response

Sudden patient surge

Applied START triage, managed high turnover in ED

Life-threatening trauma

Administered IV fluids, pressure control, airway support

Limited OR availability

Prioritized surgical needs, stabilized critical patients

Emotional trauma

Delivered PFA, assisted families, supported colleagues

Role expansion and leadership demands Took command roles in ICS, coordinated with EMS teams

### Conclusion of Case Study

The 2013 Boston Marathon bombing offers a clear, real-world demonstration of how **prepared, skilled, and adaptable emergency nurses** are essential to the successful management of MCIs. Their actions saved lives, stabilized chaos, and provided hope in the face of terror. It remains a benchmark event in emergency nursing history, reinforcing the need for **resilient systems, protocol-driven response, and empathy-centered care** in all mass casualty situations.

### 5. Challenges Faced by Emergency Nurses During MCIs

Mass Casualty Incidents (MCIs) present extraordinary and often overwhelming challenges for emergency nurses. These events test not only their clinical knowledge and technical skills but also their emotional resilience, decision-making capabilities, and ability to function in unstable and resource-constrained environments. Understanding these challenges is crucial to strengthening MCI preparedness and supporting the nursing workforce during crises.

#### 5.1 Rapid Decision-Making Under Pressure

During an MCI, emergency nurses must make **critical decisions in seconds**, often with incomplete information and minimal time for deliberation.

#### Key Challenges:

- Prioritizing patients when **multiple critical cases** arrive simultaneously
- Identifying subtle signs of deterioration while multitasking
- Deciding between initiating treatment or continuing triage duties



*“It’s one of the few times when you’re forced to trust your instincts more than your protocols.”*  
— ED Nurse, Level I Trauma Center

## 5.2 Emotional and Psychological Trauma

MCI often involve **graphic injuries, child victims, and death**, which can cause significant emotional distress among nurses.

### Common Emotional Reactions:

- **Acute stress reactions** (e.g., anxiety, panic, numbness)
- Feelings of **helplessness or guilt** when unable to save every patient
- **Burnout and compassion fatigue** from prolonged, emotionally taxing work
- Long-term effects like **Post-Traumatic Stress Disorder (PTSD)**

Nurses may suppress emotional responses during the incident but experience delayed reactions later, requiring psychological debriefing and peer support.

## 5.3 Communication Breakdowns

Effective communication is essential during MCIs, yet it can be severely hampered due to:

- Overwhelmed phone and radio networks
- Inconsistent or unclear instructions from leadership
- Confusion about **who is in charge** or who should perform specific tasks
- Language barriers with victims, especially in large, diverse urban events

Breakdowns can lead to **duplication of efforts, delays in care**, or even **misidentification of patients**.

## 5.4 Inadequate Resources and Supply Shortages

A sudden influx of patients can rapidly **outpace available resources**, forcing nurses to work with:

- **Insufficient staff-to-patient ratios**
- Limited trauma supplies (IV kits, tourniquets, suture materials)
- **Overloaded equipment** (e.g., ventilators, stretchers)
- Lack of available operating rooms, ICU beds, or imaging services

Nurses must often **improvise**, ration care, and communicate critical supply needs to leadership while continuing patient care.

## 5.5 Role Expansion and Scope of Practice Stress

In MCIs, nurses may be required to **perform tasks beyond their usual roles**, including:

- Assisting with surgical procedures in overflow settings
- Managing logistics (e.g., bed coordination, supply chain issues)



- Leading triage teams or acting as liaisons with EMS and law enforcement

This **rapid role-shifting** can cause confusion and stress, especially if not supported by **pre-event training**.

## 5.6 Personal Safety Concerns

During disasters involving **chemical, biological, or radiological hazards**, nurses may be exposed to:

- Toxic agents (e.g., anthrax, chlorine gas, radiological dust)
- Infectious disease outbreaks (e.g., COVID-19, Ebola)
- Physical violence or secondary attacks in the case of terrorism

**Proper PPE**, decontamination protocols, and staff safety monitoring are often inconsistently applied or unavailable in chaotic MCI environments, placing nurses at direct risk.

## 5.7 Fatigue and Physical Exhaustion

Many nurses work **extremely long hours** during MCIs without adequate rest or meals. Physical fatigue can affect:

- Clinical performance
- Reaction times
- Attention to detail in documentation and medication administration

In some cases, nurses collapse from exhaustion or dehydration, especially when response efforts last for **days** (e.g., in natural disasters or pandemics).

## 5.8 Ethical and Moral Distress

MCIs may force nurses to make **heart-wrenching decisions**, such as:

- Triage-based denial of care to low-survival-probability patients
- Withholding resuscitation when resources are unavailable
- Balancing duties to patients with obligations to their own families

These situations can cause **moral injury**, a deep sense of guilt or betrayal of personal ethics, which may linger long after the incident ends.

## 5.9 Lack of Training or Infrequent Drills

Despite the importance of MCI readiness, many nurses:

- Receive **inadequate or irregular disaster response training**
- Have **limited hands-on experience** with triage or ICS roles



- Lack familiarity with local or hospital-specific MCI protocols

This lack of preparedness can lead to:

- Slower response times
- Incorrect triage categorization
- Inefficient use of limited resources

### 5.10 Post-Event Debriefing and Support Gaps

After the incident, many nurses report:

- **No formal debriefing** or psychological evaluation
- Limited access to **mental health resources**
- Lack of administrative recognition or support
- Isolation in processing traumatic memories

These post-event challenges can lead to **long-term retention issues** and emotional withdrawal from the nursing profession.

### Summary of Challenges

Category	Specific Challenges
Clinical Stress	Rapid triage, critical decisions, improvisation with limited tools
Psychological Trauma	Acute stress, PTSD, emotional burnout
Communication Issues	Breakdown in command structures, poor information flow
Resource Scarcity	Shortage of supplies, space, equipment, and personnel
Ethical Dilemmas	Triage-based care denial, moral injury
Physical Fatigue	Long shifts, inadequate rest, dehydration
Role Complexity	Expanded duties, unclear scope boundaries
Safety Risks	Chemical, infectious, or physical threats
Training Deficits	Insufficient drills, protocol confusion
Post-Incident Support	Lack of debriefing, delayed psychological help, underappreciation of efforts

### Conclusion of Section

Emergency nurses serve as the frontline responders during MCIs, yet they face a multitude of challenges that can compromise not only their performance but also their well-being. Addressing these obstacles through **robust training, institutional support, mental health care, and post-event debriefing** is



essential to improving MCI outcomes and safeguarding the nursing workforce. Only by **preparing and protecting** those who protect others can we ensure an effective, resilient emergency response system.

## 6. Post-Incident Responsibilities

While the most visible role of emergency nurses occurs during the acute phase of a Mass Casualty Incident (MCI), their responsibilities do not end when the last patient leaves the emergency department. Post-incident responsibilities are essential for ensuring patient continuity of care, organizational recovery, and systemic improvement. These tasks span clinical, administrative, psychological, and educational domains, highlighting the multifaceted nature of the emergency nurse's role even after the initial crisis has passed.

### 6.1 Continuity of Patient Care

After an MCI, emergency nurses remain involved in ensuring that the transition from emergency care to other departments or facilities is seamless and well-documented.

#### Responsibilities include:

- **Handoff reports** to trauma, surgical, or ICU teams
- Monitoring **wound healing, vital signs, and psychological symptoms** in stable patients who remain in ED observation
- Ensuring **accurate charting** of patient assessments and treatments during the chaos for medical-legal and continuity purposes
- Coordinating **follow-up care** and referrals for specialized services (e.g., prosthetics, mental health)

### 6.2 Documentation and Incident Reporting

Accurate and timely documentation is critical for:

- **Legal accountability**
- **Billing and insurance claims**
- **After-action reviews (AARs)**
- **Research and future training**

Emergency nurses may be required to:

- Submit detailed **incident reports** and logs
- Clarify notes made during the high-intensity event
- Provide data on **triage outcomes, nursing interventions, and resource utilization**

### 6.3 Participation in Debriefings and After-Action Reviews

After any MCI, hospitals and EMS agencies conduct **formal debriefings** and **after-action reviews (AARs)** to assess:



- What went well
- What challenges occurred
- What needs improvement

Emergency nurses play a critical role by:

- Sharing **firsthand accounts** of patient care, communication breakdowns, or resource gaps
- Contributing to **process improvement recommendations**
- Identifying **training deficiencies** or unsafe protocols
- Supporting a **blame-free learning environment**

*"Nurses offer insights from the ground level — where theory meets reality."*  
— Hospital Incident Commander

#### 6.4 Emotional Processing and Psychological Support

The emotional toll on emergency nurses can continue long after an MCI. Post-incident responsibilities include **addressing mental health needs**, both personally and as a team.

**Actions may involve:**

- Participating in **critical incident stress debriefing (CISD)** sessions
- Seeking out **employee assistance programs (EAPs)** or therapy services
- Supporting colleagues through **peer support groups**
- Watching for signs of **compassion fatigue, PTSD, or depression**

Hospitals that integrate psychological recovery into their post-MCI plans have better long-term outcomes for staff.

#### 6.5 Restocking and Reorganizing Supplies

Following an MCI, supply inventories may be depleted or disorganized. Emergency nurses assist with:

- **Inventory audits** to assess supply shortages
- **Restocking trauma kits**, PPE, IV lines, and medications
- **Reorganizing treatment zones** that were rearranged during the incident
- Providing feedback on **equipment placement** and usability during the event

#### 6.6 Education and Peer Training

Experienced nurses may be called upon to help **educate others** based on their experiences in the incident.

Duties may include:

- Presenting **case studies** or lessons learned during departmental meetings



- Updating **triage protocols** and disaster handbooks
- Mentoring newer nurses or **simulating MCI scenarios** in staff drills
- Writing for **nursing journals** or presenting at **conferences**

This reflection and education cycle improves the preparedness of the entire healthcare team.

### 6.7 Legal and Media Responsibilities

Depending on the event's visibility, emergency nurses may be involved in:

- Providing **legal testimony** for investigations, particularly in incidents involving criminal acts (e.g., shootings or bombings)
- Responding to **media inquiries** through official hospital channels (nurses must avoid unauthorized communication)
- Ensuring that **patient privacy (HIPAA)** was maintained during chaotic information-sharing

Hospitals often provide legal support and media guidance during this phase.

### 6.8 Policy Advocacy and Systemic Change

Some emergency nurses go beyond the clinical setting to advocate for systemic changes based on their experiences during the MCI.

Examples include:

- Advocating for **increased disaster preparedness funding**
- Supporting **mental health legislation** for frontline workers
- Helping design **more robust ICS structures or triage models**
- Participating in **national emergency preparedness initiatives**

This level of engagement helps translate bedside experience into **policy-level improvements**.

### Summary Table: Post-Incident Responsibilities

Responsibility Area	Key Activities
Continuity of Care	Patient handoffs, documentation, follow-up planning
Debriefing & Evaluation	Incident reviews, AAR participation, protocol feedback
Psychological Recovery	Emotional support, mental health access, peer debriefing
Supply & Logistics	Restocking, reorganization, supply chain feedback
Training & Education	Staff mentorship, protocol updates, conference presentations



## Responsibility Area      Key Activities

Legal & Ethical Oversight      Accurate documentation, patient privacy protection, legal inquiry participation

Policy & Advocacy      Lobbying for systemic improvements, contributing to emergency preparedness planning

## Conclusion of Section

Emergency nurses play an essential role not only in the acute phase of Mass Casualty Incidents but also in the **recovery, evaluation, and future-proofing of healthcare systems**. Their ability to transition from high-intensity clinical roles to thoughtful evaluators, mentors, and advocates makes them indispensable in every phase of disaster response. Strengthening post-incident support for emergency nurses is vital to protecting the profession, preventing burnout, and ensuring long-term resilience in the face of future crises.

## Conclusion

Emergency nurses are the backbone of effective response during Mass Casualty Incidents (MCIs). Their roles extend far beyond the initial triage and treatment of victims—they are instrumental in maintaining continuity of care, ensuring safety and resource management, leading response coordination, and facilitating recovery and improvement after the incident.

Despite numerous challenges such as physical exhaustion, emotional trauma, limited resources, and rapid decision-making requirements, emergency nurses consistently demonstrate resilience, adaptability, and leadership. Addressing the systemic barriers they face—through enhanced training, mental health support, interagency coordination, and policy advocacy—is essential for building a sustainable emergency healthcare infrastructure.

Investing in emergency nurse preparedness and post-incident care not only saves lives during MCIs but also improves long-term health system resilience. Their first-hand experience and insights must be central to future emergency planning, simulation exercises, and healthcare policy reforms.

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# Power System Technology

ISSN:1000-3673

Received: 16-04-2025

Revised: 05-05-2025

Accepted: 15-06-2025

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