

Prairie North: A joint civilian/military mass casualty exercise highlights the role of the National Guard in community disaster response

George Vukotich, PhD; Jamil D. Bayram, MD, MPH, EMDM, MEd; Miriam I. Miller, MPH, CHEC



Abstract

In a joint military/civilian exercise conducted in June 2010, military National Guard medical and decontamination response efforts proved to be paramount in supporting hospital resources to sustain an adequate response during a simulated terrorist event. Traditionally, hospitals include local responders in their disaster preparedness but overlook other available state and federal resources such as the National Guard. Lessons learned from the exercise included the value of regular joint disaster planning and training between the military and civilian medical sectors. Additionally, military communication and medical equipment compatibility with the civilian infrastructure was identified as one of the top areas for the improvement of this joint exercise. Involving the National Guard in community disaster planning provides a valuable medical support asset that can be critical in responding to multiple casualty events. National Guard response is inherently faster

than its federal counterpart. Based on the findings from our joint exercise, states are encouraged to incorporate their corresponding National Guard in civilian critical medical infrastructure disaster preparedness activities, as the National Guard can be an integral part of the disaster response efforts in real multiple casualty events.

Key words: civilian/military, disaster, support operations, National Guard, Rush University Medical Center

Introduction

Joint emergency preparedness initiatives involving both the civilian and military sectors remain scarce and isolated.¹⁻³ This paucity of joint civilian-military preparedness efforts is surprising despite guidelines and indications showing the contrary. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, gives the US President the authority to use various federal resources, including the military, to support various disaster response activities.⁴ After Hurricane Katrina, the US

House of Representatives "Select Committee" indicated in its final reports on disaster response that "the military played an invaluable role, but coordination was lacking."⁵ Federal military agencies are a critical part of the National Response Plan (NRP) to respond to national medical emergencies.⁶ The National Guard is a state-based military reserve with a versatile mission that includes responding to domestic emergencies and community services.⁷ The NRP recognizes the State Governor as the Commander-in-Chief of State military forces.⁶ In December 2012, the National Defense Authorization Act for FY2012 was passed. It codified the dual role the governors play in supporting both state and national emergencies.⁸ Recently, the role of National Guard in supporting the civilian sector in disaster situations was highlighted during Hurricane Irene. In August 2011, a number of agencies worked together to coordinate efforts through the National Guard Coordination Center to provide support medical services, among others.⁹

This article describes the Prairie North/Vigilant Guard 2010 (PN/VG 2010), a recent joint civilian/military mass casualty exercise, highlighting the role of the National Guard in supporting the medical capacity and mass decontamination capabilities of a large urban academic medical center (Rush University Medical Center [RUMC], Chicago, IL).

RUMC is a 676-bed participating academic hospital located in Chicago, providing a wide range of specialized medical and surgical services. RUMC is part of the Illinois Medical District, which is one of the largest healthcare districts in the United States, and is considered a critical medical infrastructure in the state of Illinois.

The Illinois National Guard (IL NG) consists of 13,500 members of which (10,500 belong to the Army branch and the rest to the Air branch. A combined group from both branches makes up the Combined (Chemical, Biological, Radiological, and Nuclear) Enhanced Response Force Package, known as CERFP, which consists of roughly 150 members. This group draws on the skills of doctors, nurses, firefighters, and experts in the field of search and extraction and decontamination. The CERFP is an example of how combined efforts can strengthen the system capabilities in disaster response, compared with single service efforts. The

goal of CERFP is to have its entire function in place and operational anywhere in the state of Illinois within 6-8 hours of activation. The target medical capacity of CERFP is the ability to treat, over a period of 12 hours, a casualty load of 60 critical adult casualties, 240 moderate adult casualties, 10 critical pediatric casualties, and 20 moderate pediatric casualties.

Exercise scope and objectives

The scope of the exercise was to provide a multifaceted learning environment using a coordinated approach for responding to a complex incident involving military, state, city, and private resources. The operational scenario for the PN/VG 2010 exercise was based on multiple incidents occurring in both Illinois and Michigan over a period of 6 days.

Participating stakeholders

Organizations, agencies, and other stakeholders representing a wide range of state, local, public, and private industries participated in the exercise (Figure 1 and Table 1).

Exercise venue timeline

The objectives for this exercise were in-line with the military Regional Catastrophic Preparedness Grant Program (RCPGP), which include the following multiple capabilities (Table 2).

Illinois National Guard and Rush University Medical Center

For purposes of this article, the main discussion will converge on the operational experience on June 16, 2010 between the IL NG and RUMC. Specifically, this exercise served as an impetus for both RUMC and IL NG to validate existing capabilities and joint planning efforts. The principal joint exercise objective between RUMC and ILNG was to evaluate the integration and interoperability of medical surge between civilian and military organizations when responding to a multiple casualty event, focusing on communication, joint incident command, logistics, and decontamination.

Planning preparations

A joint RUMC/IL NG multidisciplinary planning committee convened to develop exercise objectives, to

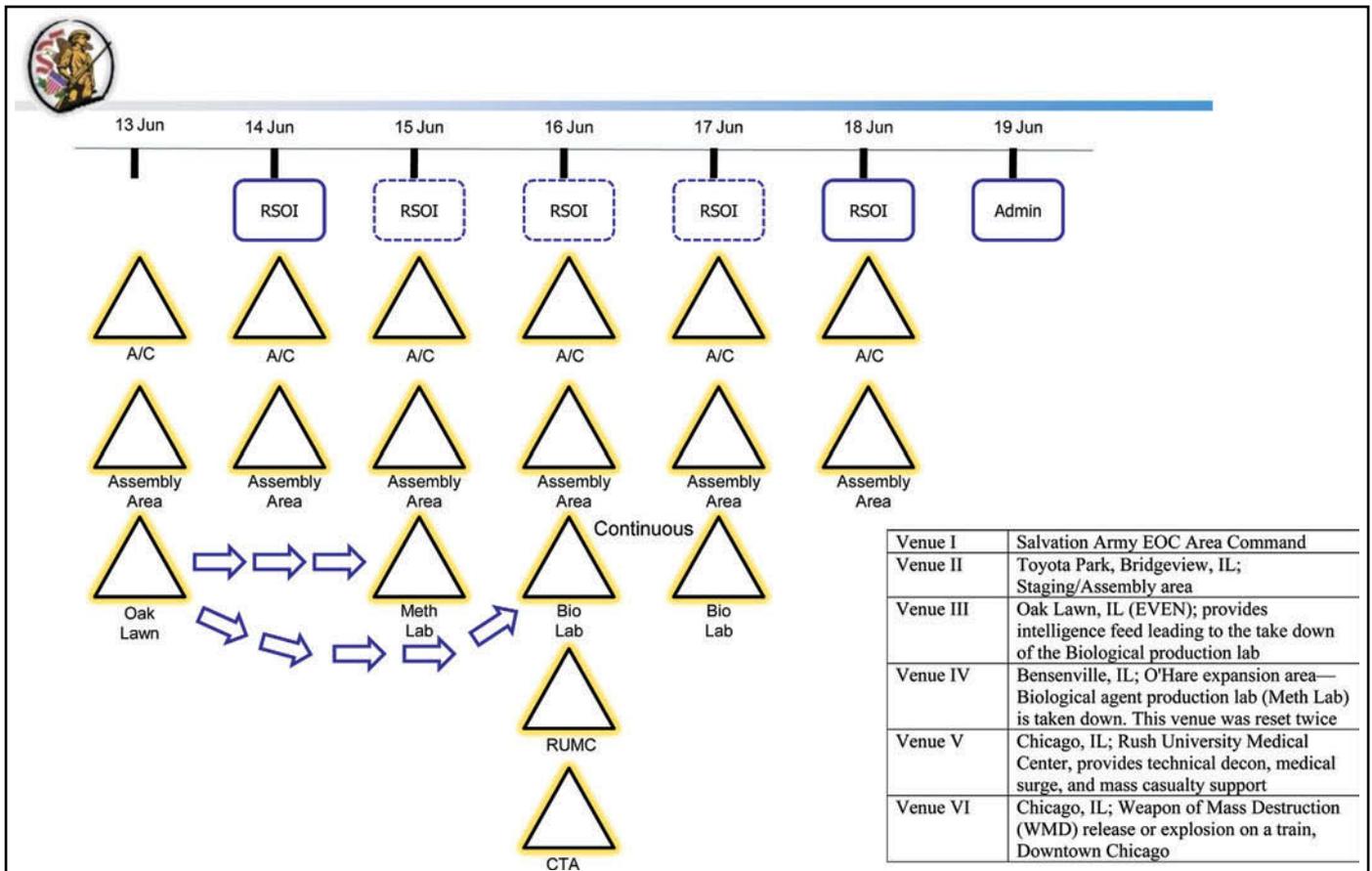


Figure 1. VG/PN multiday, multievent scenario. RSOI = Reception Staging and Onward Integration; A/C = Activation Center; RUMC = Rush University Medical Center; CTA = Chicago Transit Authority.

review the proposed overarching scenario, and to discuss the exercise logistics requirements for both participants. The planning committee comprised members of the IL NG, RUMC physicians, nursing leadership, emergency department nursing, occupational safety, security, hospital administration and leadership, and emergency management. A retired IL NG Colonel served as liaison between RUMC and IL NG. The first meeting was conducted on March 16, 2010 and continued on a weekly basis until the day before the actual exercise, held on June 16, 2010 beginning at 0800. The planning committee followed the Homeland Security Exercise and Evaluation Program guidelines in developing the exercise and identifying exercise capabilities.

To prepare for the exercise, especially the integration of medical and decontamination response efforts, members of both parties spent several hours jointly

planning the exercise and training on decontamination procedures. The process began by inviting critical CERFP members to evaluate and familiarize themselves with RUMC decontamination equipment and capacity. Moreover, IL NG CERFP and skilled RUMC staff conducted decontamination training sessions for the RUMC Hazardous Material Response Team (HMRT). This joint effort improved RUMC preparedness by sharing best practices of the IL NG CERFP subject matter experts, thus incorporating new guidelines in the RUMC Emergency Operations Plan.

One week before the exercise, IL NG CERFP and RUMC conducted a “dry run” of the Relief-in-Place procedure to test the integration and adaptability of equipment and techniques of IL NG CERFP relieving RUMC’s HMRT. This preliminary step lasted ~5 hours and led to identifying a new location for the RUMC’s decontamination tent to better operationalize decontamination

Table 1. PN/VG 2010 participating entities	
Advocate Christ Medical Center	Bridgeview Fire Department
Boy Scouts of America	Cook County Homeland Security
Cook County Sheriff	Chicago Fire Department
Chicago Police Department	Chicago Transit Authority
Department of Homeland Security	Federal Bureau of Investigation
Federal Emergency Management Agency	Illinois Emergency Management Agency
Illinois Army National Guard	Illinois Air National Guard
Illinois Environmental Protection Agency	Illinois State Police
Illinois Urban Search and Rescue	Illinois Terrorism Task Force
Morris Hospital	Mutual Aid Box Alarm System
Nalco Chemical Company	Oak Lawn Emergency Management Agency
Rush University Medical Center	Silver Cross Hospital
The Salvation Army	Toyota Park
Village of Bridgeview	

Table 2. RCPGP capabilities exercised	
Mass fatalities	Critical resource and logistic
Citizen protection	Emergency and public safety and security
Emergency public information and warning	Emergency operations center management
Communications	Tactical response
Medical surge	Civil military cooperation

procedures involving an intermittent and steady influx of contaminated persons, hazmat equipment upgrades, and the ability to coordinate/communicate handoff procedures with other agencies/entities assisting in decontamination procedures.

Given the space and parking challenges facing any major metropolitan city, the planning phase became a critical logistics factor. The size of the IL NG decontamination tent was four times bigger than the hospital tent and the CERFP medical tent was too large to set up in the space allocated for the exercise. Adaptations to accommodate these two challenges included temporary

street closure and parking garage egress/ingress, rerouting, and the conversion of nearby retail space to set up the medical unit of the CERFP. The latter step helped the IL NG to test the capability of its responders in nonideal setup as they are used to open spaces (Figures 2 and 3).

Approximately 1500 people participated in the June 16, 2010 joint RUMC/IL NG exercise. This number includes actors/victims, IL NG personnel and leadership, observers/evaluators from outside agencies, and RUMC staff and leadership. Exercise casualties consisted of civilians hired by a contracted agency. The



Figure 2. IL NG decon tent.



Figure 3. RUMC decon tent.

agency was responsible for moulaging the victims to add a reality element to the exercise. The “role players” were given index cards with descriptive information to help medical practitioners identify and treat the injuries. Before the start of the exercise, a hospital physician “coached” the players/actors on the various symptoms described in the cue cards to add realism to their roles.

Exercise scenario overview

The setup of the exercise scenario stated that intelligence centers had gathered information that a hazardous agent (biological or chemical) had been disseminated in Chicago a few days before the exercise started. As part of the critical medical infrastructure of the Illinois Medical District, RUMC was placed on a heightened alert status for possible medical surge and

decontamination needs. Patients started arriving at RUMC with symptoms resembling influenza. They arrived in private cars, and some were cohorted and sent on a bus. To add another level of complexity, the bus was reported to have collided with other vehicles near the hospital, leading to additional traumatic injuries with various levels of acuity. The scenario was also designed to include a train derailment and vehicular accident leading to more traumatic mass casualties. The trauma injuries included multiple unspecified traumas, burns, blunt head trauma with low Glasgow scores, shock, possible amputations, chest wounds due to impalement, and deep lacerations.

The exercise began at 1000 hours with few “contaminated” victims presenting to the emergency department. As the scenario developed, a surge of presumed contaminated victims presented to the emergency department triggering the activation of the hospital’s decontamination plan, for fear of possible chemical contamination. In addition, the large sudden patient influx led to the activation of a medical surge protocol for the hospital. As the hospital decontamination response team became overwhelmed with the number of contaminated victims, the IL NG began to set up their equipment and teams in a predesignated area to line up with the hospital’s designated hot, warm, and cold zones. Almost 2 hours after the start of the exercise, the IL NG medical tent/area was set up in a designated space to assist in the medical surge capacity and to stabilize the patients before being admitted to the hospital for further care. In addition, the IL NG CERFP also assisted in patient transport to nearby burn centers and trauma centers. The exercise concluded at noon with an “all clear” message to all participants. Evaluator forms were picked up and key staff members from IL NG and RUMC were invited to a hotwash/debriefing session.

Exercise timeline

An exercise timeline was developed with the IL NG through a Master Scenario Events List. Although IL NG and RUMC diligently participated in joint planning efforts, unforeseen traffic and parking issues emerged on the day of the exercise, thus, reducing the joint participation timeline from the original schedule depicted in Figure 4.

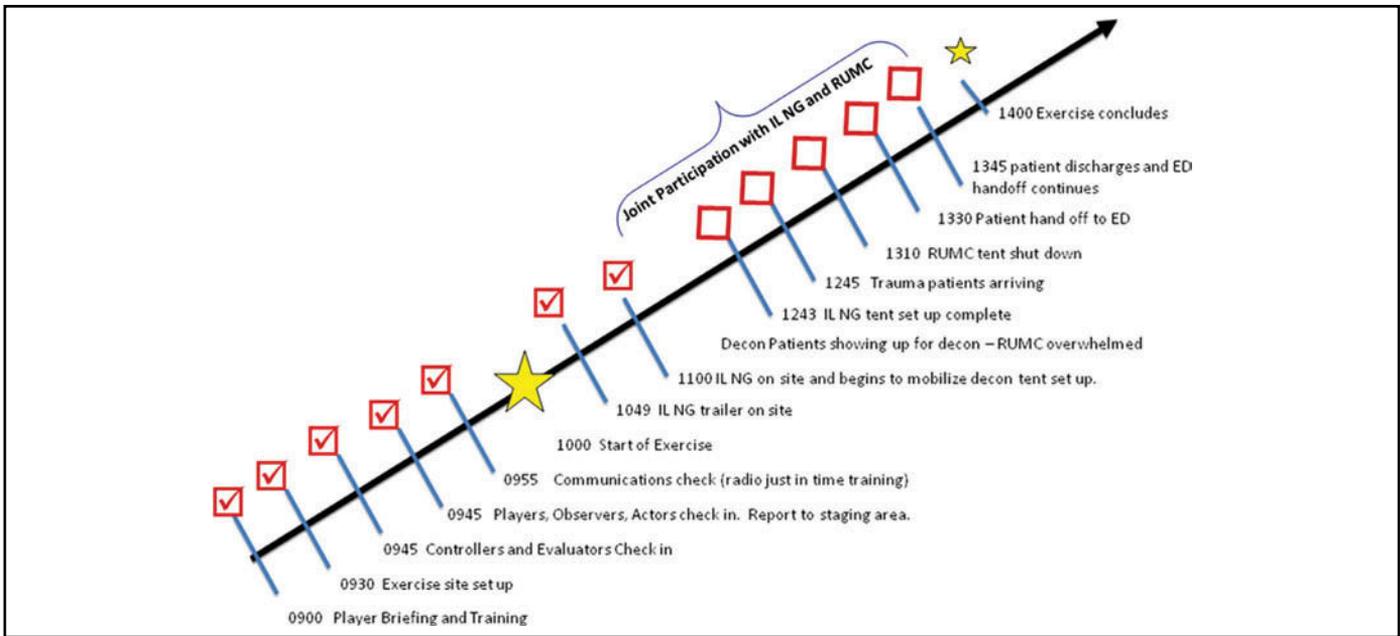


Figure 4. RUMC event timeline.

Exercise evaluation

The hotwash exercise evaluation was conducted in a large auditorium in the Rush University campus within 2 hours after the exercise. Given the magnitude of the exercise details, the discussion was facilitated by the RUMC Emergency Management Committee chairperson addressing the strengths and challenges. Areas for improvement pertaining to each objective and capability were identified. The IL NG leadership was given an opportunity to discuss their experience in integrating a military medical and decontamination response with those of a civilian healthcare facility. At the end of the meeting, both RUMC and IL NG committed to continued efforts in future exercise participation to improve mutual training and response efforts during simulated catastrophic events. The findings of the exercise are summarized as follows:

- *Communication.* Communication was essential in this exercise to alert all RUMC staff, student, and faculty of the situation. It was also important to keep open lines of communication between the two groups (RUMC and IL NG) during the exercise. The modes of communication used were two-way radios, pagers, cell phones, and overhead pages.

Some modes of communication worked well; however, a few areas needed improvement to establish more efficient communication. For example, there was a need for more two-way radios, and a better understanding of the interoperability between the hospital's communication modalities with those of the IL NG. Although cell phone numbers were exchanged between the IL NG and RUMC staff, this was not found to be an optimal method for communicating because of spotty reception throughout the medical center—especially the incident command center. This became an impediment for exchanging vital information between the two responding groups. During the hotwash, both IL NG and RUMC conceded that communication within the IL NG medical care tent and the RUMC incident command center could have been improved by addressing these challenges and having intercommunication contingency plans ahead of time.

- *Joint incident command.* Despite having a military liaison at the joint incident command center, RUMC incident command staff

Table 3. Summary of lessons learned

Category of lessons learned	Recommendations and corrective actions
Communication	Communication
Interoperability challenges	Identify all communication modalities available (eg, radios, satellite phones, and cell phones)
Variation in technology and radiofrequencies	Identify potential cell phone “dead zones”
Interruption of cell phone reception	Address equipment variations or discrepancies in the planning phase
	Development of contingency plans based on available technology
Joint incident command	Joint incident command
Presence of military liaison in the command center did not deter the civilian intimidation factor vis-à-vis military officials	Future planning activities to include a coaching session on how to interface with military command staff
Military has sophisticated response tactics and reliable equipment	
Logistics	Logistics
Maneuvering large military vehicles in an urban area led to response delays due to traffic congestions and parking space limitations	Plan for parking ahead of time. Consider an area for equipment drop off and vehicle parking
	Know geography of surrounding area to designate staging areas for military vehicles
Decontamination	Decontamination
Avoid cross-contamination by designating hot, warm, and cold zones before decontamination process	Equipment upgrades for hospital team to include different HazMat boots, agent detection equipment, and portable hydration equipment (camel bags)
Mass decontamination (50+ persons) proved challenging for hospital staff	Identify communication modalities between hospital and military staff
Communication discrepancies between hospital and military decon tents	Reconcile any frequency discrepancies and develop communication contingency plans during the planning phase
Relief in place is needed to augment the hospital’s decon capabilities	

could have benefited from a “coaching” session on how to interface with the military to best coordinate the efforts of the military unit on campus, augmenting the hospital’s decontamination and medical surge capabilities. Given that this was the first exercise with a military component, the hospital staff may have succumbed to an “intimidation” factor given the sophisticated tactics and equipment of the IL NG.

- *Logistics.* RUMC is located in an urban area and parking of large IL NG vehicles became a challenge. Hospital security staff commented on the need to designate an area for both a temporary parking for equipment drop off and a longer term parking arrangement to minimize traffic flow disruption. An a priori understanding of the geography in the surrounding community is important to provide a “staging

areas” for military vehicles, materials, and equipment.

- **Decontamination.** The RUMC HMRT began decontamination procedures before clearly delineating the hot, warm, and cold zones. Many members “cross contaminated” the cold zone by stepping in and out of the area before the IL NG arrival. On the IL NG arrival, the Relief-in-Place procedures greatly assisted the RUMC HazMat team to redefine the decontamination zones. The IL NG augmented RUMC’s decontamination capabilities using the hospital’s own equipment, and then swiftly proceeded to set up its own decontamination tent. Compared with the IL NG decontamination equipment, the RUMC staff recognized the need for equipment upgrades such as HazMat boots, HazMat agent detection equipment, and portable hydration equipment (camel bags). Communication proved to be a challenge between the IL NG and the RUMC HazMat teams due to incompatibility of communication devices. Further, the RUMC HazMat Branch Director was not able to effectively communicate with his IL NG counterpart during the Relief-in-Place procedures. This led to diminished decontamination efficiency. As the exercise unfolded, it became apparent that RUMC needed assistance in conducting decontamination of more than 50 victims. If there was no logistical decontamination support from IL NG, many critical medical interventions on patients with high acuity could have been compromised (Table 3).

Conclusions

Involving the National Guard in community disaster planning provides a valuable medical support asset that can be critical in responding to multiple casualty events. National Guard response is inherently faster than its federal counterpart. In supporting the Illinois Medical District, the National Guard response is estimated to be 6-8 hours after activation

in no-notice multiple casualty events and can be within an hour in advanced-notice events with strategic prepositioning. Based on the findings from our joint exercise, critical medical infrastructures in every state are encouraged to incorporate their corresponding National Guard in the disaster preparedness activities, as they can be an integral part of the disaster response efforts in real multiple casualty events.

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George Vukotich, PhD, Dean, College of Business, Concordia University Chicago, River Forest, Illinois.

Jamil D. Bayram, MD, MPH, EMDM, MEd, Assistant Professor, Department of Emergency Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland.

Miriam I. Miller, MPH, CHEC, Emergency Management Coordinator, Rush University Medical Center, Chicago, Illinois.

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