

Infectious Disease

Prevention, Containment and Control
on a College Campus



United States Merchant Marine Academy
Emergency Medical Services

Midshipman Lieutenant Commander Peter Garofalo
Midshipman Lieutenant Junior Grade Patrick Gorman
Midshipman Chief Petty Officer Michael Antonelli

USMMA Medical Services Patten Health Clinic

- Medical
- Dental
- Psychological
- EMS



Medical

- Monday-Friday 0730-1700
- 2 RNs, 2 Pas, 1 M.D.
- Minor illness/injury
- Primary care provider during operating hours



North Shore-Long Island Jewish Health System

Setting New Standards in Healthcare™

Advanced Medical Care

- North Shore University Hospital Manhasset
 - Level 1 Trauma Unit
 - Stroke/Cardiac Unit
- Primary Care Provider outside Patten hours
- Receives serious cases from Academy



Emergency Medical Services



- Marine Medic 1
 - Full Type II Ambulance
 - Dispatched and Mutual Aided by Great Neck-Vigilant Fire Department (GNVFD)
 - Capable of BLS transport/treatment
 - Equipped with AMT supplies





Emergency Medical Services



- Responds to all on campus calls
 - Treat/transport all students, first responds for faculty/staff
- Staff Certifications
 - New York State EMT-B
 - CEVO-II Driver
 - Optional NREMT
- Sixty person membership
 - Four day rotations Sun-Thurs, Thurs-Sun
 - Authorized to ride with local volunteer fire department during free time



Statistics

- 1 – 3 Calls per watch shift
- 30 Calls per month
- Approximately 1 serious call per month

- 15-20 Off-campus EMT calls per week for members of volunteer fire company

Timeline of Events

Saturday, December 9, 2006

- 0700 – First Call Dispatched
 - Sick male
 - Transported to NSUH via MM1
 - Symptoms included
 - Nausea
 - Diarrhea
 - Vomiting
 - Mild Fever

Timeline of Events

Saturday, December 9, 2006

- 0720 – Second Call Dispatched
 - Same symptoms as previous patient
 - Transported to NSUH via Ambulance 831 (GNVFD) with Academy Techs and Chauffer

Timeline of Events

Saturday, December 9, 2006

- 0800
 - Following the call, more sick persons were reported to Academy EMS personnel
 - All EMS personnel responding to calls ordered to wear face masks in addition to standard PPE

Timeline of Events

Saturday, December 9, 2006

- 0800 (contd.)
 - 90% of reports indicated sick freshmen
 - Class size approx. 250
 - At 1000 muster of freshmen a count of sick individuals was taken
 - Initial reports indicated 50 potential persons
 - Same symptoms as first two patients

Primary Concerns

Dehydration

- Electrolyte Imbalance
- Hypovolemic shock
- Hypovolemic cardiac arrest
- Hypovolemic respiratory arrest



Primary Concerns

- Began searching for commonalities between patients.
- Sewage break earlier in the week
- Food Poisoning?



Timeline of Events

Saturday, December 9, 2006

■ 1000

- Academy EMS Service Operations Director (SOD) Contacted
 - EMS-SOD contacted Chief of Medical Operations for Patten Health Clinic
 - Contacted NSUH-ED for notification

■ 1200

- Ambulance 8311 obtained from GNVFD for Academy Personnel

Timeline of Events

Saturday, December 9, 2006

■ 1230

- Door to Door survey and initial triage taken of ill students
- Survey included
 - Name
 - Residence
 - Temp
 - Pulse
 - BP
 - Last oral & fluid intake
- NSUH-ED notified for number of potential persons

Timeline of Events

Saturday, December 9, 2006

- 1400
 - Survey complete
 - Avg. Temp - 100° F
 - Avg. BP – 100/60
 - Avg. Pulse/Resps – 90/16

Timeline of Events

Saturday, December 9, 2006

- 1400 (contd.)
 - MM1 & 8311 transport 8 patients to NSUH.
 - Patients taken to Pediatrics Ward for containment
 - USMMA DPS notified of incident
 - Commandant Staff Notified

Timeline of Events

Saturday, December 9, 2006

- 1500-2300
 - Calls roughly every hour for similar symptoms
 - NSUH-ED notified of every incoming patient
 - NSUH quarantined entire Infectious Disease Unit (IDU) for all incoming Academy patients
 - All incoming patients taken directly to IDU, bypassing ED
 - Masks given to patients and personnel prior to transport

Timeline of Events

Saturday, December 9, 2006

■ 1500

- NSUH contacts NYS Department of Health
- M/N Gorman contacted for information
 - Survey sheets/PCRs faxed to DoH with personal health information removed
 - Request for inspection team made to Academy
- NSUH put on diversion for all non-critical patients
- Situation Control given to Academy Staff
- Special Operations Unit notified

Timeline of Events

Saturday, December 9, 2006

■ 2100

■ Ambulance Call

- Patient presenting more serious signs and symptoms

■ 2300

■ M/N Gorman transported

- 18th person to be transported

Timeline of Events

Sunday, December 10, 2006

- Sunday, 0000-2400
 - Total of 6 patients transported
- 1900
 - Three ambulance calls occurred simultaneously on campus.
 - One symptom related patient (transported in MM1)
 - One musculoskeletal injury (transported in 8311)
 - One unrelated RMA

Timeline of Events

Sunday, December 10, 2006

- 1920
 - Fourth Ambulance Call
 - 831 GNVFD responds as Mutual Aid
 - Crew briefed on situation
 - Notified to take extra BSI precautions
 - Proper procedure upon arrival to hospital

Timeline of Events

- Dec. 10-15, 2006
 - Approximately 65 patients visited Patten Health Clinic
 - All patients had similar signs and symptoms
 - All patients treated and released within 72 hours
 - No Signs and Symptoms lasted longer than 48 hours
 - Total patient count – 87 with presenting signs and symptoms

Timeline of Events

- Situation declared over upon the opening of Patten Hall Monday morning
- Freshmen were ordered to clean barracks with Lysol and bleach
- All EMTs washed any exposed clothing

Final Results

- Over 20 students transported to NSUH-ED
- Over 80 students treated for symptoms
- Over 100 students reported being ill but not treated
- No diagnosed as a viral outbreak of unknown etiology.
- Scattered calls until the following Friday

On Scene Operational Considerations

- Could have contacted Medical Control to declare MCI, not necessary
- Could have contacted NSUH to bring their own unit on campus, but above our authority
- Did notify NSUH-ED of the situation
- Did stay in contact with NYS DOH

Lessons Learned for the Future

- Personal Protective Equipment
 - M/N Gorman transported one patient without mask, M/N Antonelli transported with mask every time.

Lessons Learned for the Future

- Communication is inherent to success
 - Communication with Superiors allowed them to know the situation at all times
 - Communication with NSUH-ED allowed for ease of transport, triage, treatment and containment within the hospital
 - Communication amongst the EMTs and Fire Department allowed for ambulance service to still be provided, while triaging and transporting patients.

Lessons Learned for the Future

- Have prior planning for possible or probable situations
 - Pre-existing plans make for smoother operations
 - Would not have wasted the time developing a plan
 - Plans expand to include hospital, dispatch, and civilian personnel

Our Plan

- At the onset, contact Superiors and NSUH-ED
- Set up command post (EMS Squad Room) for central communications
- Alert all notable personnel
 - Dispatch, EMS, Academy Personnel, Medical Staff
 - NSUH-ED again

Our Plan

- Immediately begin count and containment of sick persons
 - Triage using survey forms
 - Treat and Transport most critical immediately
 - Keep notable personnel constantly informed

Our Plan

- Complete Pre-Hospital Care Reports for all transported patients
- Minimize exposed personnel to prevent spread of infection
- Follow all instructions from Hospital
- All critical decisions made after consultation with notable personnel.

Our Plan

- Treat and Transport
 - Primary concern is patient care
- Ensure another “clean crew” is able to handle an unrelated ambulance call
- PPE IS MANDATORY!!!!
- More thoroughly disinfect entire ambulance and all exposed gear thoroughly

Lessons Learned

- More training for EMS and First Responders
 - PPE
 - Even if it is improbable, still train for scenarios
 - Familiarity with plans in place for various incidents

Lessons Learned

- Save the last bell for Jesus



Applications

- Every college campus has the potential for a large scale outbreak
- Even though our situation is slightly different, the lessons learned and plans that followed can still apply on all campuses
- This should not be overlooked by any collegiate EMS provider

Conclusion

- Planning
- Communication
- Training

