

**Hospital and Health System Emergency Preparedness
and Response in Virginia: Lessons from the Past and
Challenges for the Future**

**Lisa G. Kaplowitz, MD, MSHA
Deputy Commissioner, Emergency Preparedness and
Response
Virginia Department of Health**

**Testimony to House Committee on Oversight and
Government Reform
May 5, 2008**

Introduction:

Mr. Chairman and members of the Committee, I am Dr. Lisa Kaplowitz, Deputy Commissioner for Emergency Preparedness and Response for the Virginia Department of Health, a position I have held since August, 2002. In this position, I am responsible for the public health and healthcare response for all emergencies in Virginia. This includes responsibility for both the CDC Public Health Preparedness and HHS/ASPR Hospital and Healthcare Preparedness funding to the Commonwealth.

Virginia Information and Lessons Learned from 9-11, sniper events of 2002

Virginia is a large and diverse state which includes large urban areas and very rural areas, coastal and mountainous regions, affluent and economically depressed areas, and a very culturally diverse population. While many have focused on the vulnerability of large urban areas to terrorism attacks, we know that mass trauma can impact rural areas in the wake of the Virginia Tech tragedy just over a year ago, and the severe weather events of last week. Consequently, the Emergency Preparedness and Response (EP&R) Program of the Virginia Department of Health (VDH) has spent the past 6 years working to assure that every part of the Commonwealth is prepared to handle the public health and healthcare response to all emergency events. Because Northern Virginia is an integral part of the National Capital Region (NCR) with about 47% of the NCR population (2005), we have also worked extensively with Washington DC and Maryland on public health and healthcare emergency planning, including participating in multiple joint exercises. In addition, Virginia has collaborated with all other adjoining states, North Carolina, West Virginia, Tennessee and Kentucky, on joint planning and exercises.

Virginia was one of the sites at the epicenter of the events of 9-11, as well as the subsequent anthrax events of 2001 and the sniper attacks of 2002. The Pentagon is surrounded by Arlington County, Virginia and the Incident Commander for that 9-11 event was the Arlington Deputy Fire Chief. Unfortunately, the Pentagon plane crash was more a mass fatality event than a mass casualty event. While hospitals in Northern Virginia and Washington DC were able to coordinate efforts to care for the casualties on September 11, 2001, there were a number of important Lessons Learned from the Pentagon event, as well as the sniper event that followed not long after; key among these were:

1. **The need for vastly improved communications among healthcare facilities and among hospitals, public health and first responders.** At the time of 9-11, hospitals in Virginia had no communication link to local or state Emergency Operations Centers (EOCs), or to public health at local or state levels. Communications among hospitals in both the NCR and throughout Virginia were poor and information spread by rumor. For example, there were rumors at the VCU Health System in Richmond (where I worked at the time) that burn and trauma patients were en route from Northern Virginia and the hospital cancelled

- all elective surgery and activated emergency plans. No patients were ever transferred and the hospital incurred significant unnecessary financial loss.
2. **Back-up emergency communications for hospitals were inadequate.**
 3. **There was a need for mass fatality planning. The Pentagon crash was more a mass fatality event than a mass casualty event.** Any crash, explosive or shooting event is likely to result in fatalities, including mass fatalities. There was uncertainty of how to proceed with the fatalities before the responsibility was assigned to the Virginia Chief Medical Examiner, who was extremely knowledgeable about handling fatalities in a crime scene.
 4. **The need to include mental health emergency planning in all healthcare emergency planning.** For both the Pentagon crash and the sniper event of 2002, the mental health impact lasted far longer than the time to address the physical impact, requiring community support services for 18-24 months after the events.

Regional planning and HRSA/ASPR grant, plus coordination between public health and healthcare communities, in Virginia:

As part of the response to the lessons of 9-11 and the anthrax incidents of 2001, Congress passed legislation and allocated significant funds to build and enhance emergency preparedness for both the public health and healthcare systems. Virginia received significant funding for public health preparedness from the CDC and hospital preparedness from HHS/HRSA in 2002; my position was created to assume responsibility for both funding sources and to build a coordinated public health and healthcare emergency preparedness and response system in Virginia. There have been a few key factors responsible for the success of this effort in the Commonwealth:

1. **High level support for this effort from Governor Warner, continued by Governor Kaine, and the Commissioner of Health, Dr. Robert Stroube.** This support enabled me to rapidly fill program positions with VDH and the state laboratory, resulting in rapid initiation of planning and response activities.
2. **Partnership with the Virginia Hospital and Healthcare Association (VHHA)** that predated receipt of federal funding, resulting in rapid support and buy-in from all acute care hospitals statewide.
3. **Agreement of hospitals, working through VHHA, to regional planning for both emergency planning and response activities,** including sharing of key information, plus statewide and regional purchase of supplies and equipment.
4. **Close collaboration between public health and healthcare facilities** (hospitals and long term care facilities) at both state and local levels.

Virginia has a unified public health system, which has been an asset for development of a coordinated public health response. The population of the Commonwealth is served by 35 District Health Departments that cover the entire state and are responsible for providing all public health services at the local level. While the Districts vary in size and population, all are part of the state system with 33/35 actually administered by the Virginia Department of Health; the 2 locally administered districts function under

contract with VDH to provide public health services. All Districts receive both state and local funding through negotiated contracts with localities. This unified public health system has facilitated coordinated planning and response to all emergencies, from shootings to hurricanes, tornados and drought – the CDC contract funds a planner and epidemiologist in each health district as well as 4 regional teams to coordinate local planning and response efforts.

I will not spend a great deal of time discussing activities specifically funded by the CDC Public Health Preparedness funding. The EP&R Program of VDH has worked hard to assure coordination not only in planning and response activities but also in effective use of federal funds, no matter what the source of funding. This has included coordination of funding from HHS/ASPR, CDC and the Department of Homeland Security (DHS), specifically UASI and MMRS funding. The VDH EP&R program has been responsible for ALL federal funding for public health and healthcare preparedness and response, enabling us to avoid duplicate funding for the same or similar activities.

Key to the success of the Hospital Planning Program (HPP) in Virginia has been both the partnership between VDH and VHHA, as well as regional planning and response. VDH contracts with VHHA to manage and distribute most of the HHS/ASPR funding. Key program policies are determined and reviewed by the statewide Hospital Emergency Management Committee (HEMC) which includes representation from all regions, key healthcare provider groups and VDH, and meets every other month. Funds are distributed to each of six regions using a formula developed by the HEMC and approved by all hospitals which considers regional population, staffed hospital beds, ER visits, geographic area and perceived vulnerability. The regional planning group for each region includes representation from all hospitals in the region, Community Health Centers (CHCs), Community Services Boards (mental health) and other providers and determines the best use of HPP funds to meet the goals of the program in that region. This has allowed appropriate targeting of funds in each region while meeting the goals and benchmarks of the HPP in Virginia.

Each of the 6 hospital regions has a Regional Healthcare Coordinating Center (RHCC) and a regional hospital coordinator. The RHCC coordinates communications and tracking of resources, including hospital beds, as well as resource needs during an event. Each RHCC is in close communication with the VDH Emergency Coordination Center (ECC) and the state EOC during any event or exercise; the VDH ECC can then determine hospital needs and facilitate movement of resources statewide. Each RHCC is also the Level 1 Trauma Center for the region except for the Far Southwest where the RHCC is in Bristol, TN and serves as the major referral hospital for the region.

Funding from the Hospital Preparedness Program (HPP) has been used for a broad range of activities to enhance the ability of hospitals and the entire health system to respond to all emergencies. Use of these funds has included:

1. **Funding for limited administrative support within VDH and VHHA**
2. **Support of a regional hospital coordinator position for each of the 6 hospital planning regions**
3. **Purchase of redundant communications systems for all hospitals**, including satellite phones and radio systems
4. **Development of a statewide web based bed tracking system** that can be rapidly activated and accessed by any hospital in the state as well as by VHHA and VDH and is HAVBed compliant. VDH can therefore track bed availability statewide on a real time basis. The bed tracking system is also being expanded to track other key resources. Patient tracking and inventory control systems are also in development.
5. **Purchase of supplies and equipment, often done on a regional or statewide basis.** For example, 4 regions have purchased STIPs, portable facilities for Stabilization and Treatment in Place, and the state has one field hospital. Each STIP includes beds, supplies and equipment in addition to a tent to support either a triage facility for a hospital or a stand alone treatment site. STIPs can be shared among hospitals and regions; during Virginia Tech STIPs were rapidly available from 2 regions though none were needed. Other supplies and equipment have been purchased by individual hospitals.
6. **The state has purchased over 300 (308) ventilators** with ASPR and pandemic influenza funding that have been distributed regionally. After careful research on cost and functionality, one kind of ventilator was purchased for all regions with some placed in hospitals to allow staff to gain expertise using them.
7. **Antiviral and antibiotic medication** has been purchased for hospital staff and family use.
8. **Development of a Volunteer Management System** meeting the requirements of the Emergency System for Advanced Registration of Volunteer Health Professional (ESAR-VHP) Program, developed in collaboration with the 26 local Medical Reserve Corps (MRCs) in Virginia.

The importance of close collaboration and regional planning efforts for public health and healthcare, including hospitals, long terms care facilities, all healthcare and mental health providers, has been heightened in the wake of Hurricane Katrina. VDH is working with hospitals and long term care facilities to identify facility infrastructure vulnerabilities that may impact their ability to sustain operations during and after a significant incident. These mitigating actions may include protecting and improving the facility's emergency power generation, providing access to potable water including installing an on-campus water system where feasible, and otherwise "hardening" the facility. Hospitals have access to HPP funds for this purpose. Long term care facilities are eligible for FEMA pre-disaster mitigation grants. It is essential that, during the response and recovery phase, our healthcare facilities (hospital, long-term care and outpatient centers) are recognized by local, state and federal emergency managers as part of the critical infrastructure vital to public safety. Any barrier between the public and private sector and any obstacle to the allocation of public resource support for private sector elements of key public safety infrastructure (including most hospitals and long-term care facilities) must be resolved.

Trauma and Burn Care Systems in Virginia

The trauma system in Virginia was established in 1980 using modified American College of Surgeons criteria for Levels 1, 2 and 3 centers. The VDH Office of Emergency Medical Services (OEMS) has been responsible for evaluating, certifying and monitoring quality issues for trauma centers since their inception. At present there are five Level 1, three Level 2 and five Level 3 trauma centers in Virginia, with one additional hospital soon to be a Level 2 center. There are three burn centers in Virginia, with a total of 37 burn beds. Each of these burn centers is also a Level 1 trauma center.

In 2004, the Joint Legislative Audit and Review Commission (JLARC) of the Virginia General Assembly did a study entitled “Use and Financing of Trauma Centers in Virginia”. Barriers to access to trauma care identified in this study included:

1. **Inadequate staffing**, with fewer physicians willing to participate in trauma centers because of financial, malpractice and quality of life considerations
2. **Declining reimbursements**. Trauma patients are disproportionately uninsured or covered by Medicaid and Medicare.
3. **High incremental costs** for serving as a trauma center, including increased staffing requirements.
4. **Overall it was estimated that in 2003, there were \$44 million in unreimbursed trauma care costs in the Commonwealth**

This study had the following recommendations for financial support for trauma centers:

1. **Renegotiate contracts** with private insurers for improved reimbursement for trauma care: **Not likely to occur**
2. **Increase Medicaid reimbursement** to cover “readiness” costs: **Also not likely with tight state budgets**
3. **Create a fund to assist trauma centers with the uncompensated care burden**

As a result of the third recommendation, a trauma fund was created with:

1. \$1,884,877 per year in general funds for FY 07-08. This was cut from the state budget for FY 08-10.
2. \$40 additional fee for reinstatement of a driver’s license after revocation or suspension
3. \$50 from each person convicted of 2 or more DUI violations
4. **In 2006, \$2.9 million was distributed to the 13 trauma centers in Virginia from the trauma fund; in calendar year 2007, \$10.4 million was distributed.**

Clearly the trauma fund reimburses trauma centers for only a fraction of their unreimbursed costs for trauma care, though it is a step in the right direction. Any cuts in the Medicaid program would have a significant negative impact on those institutions providing trauma care, not only because of decreased reimbursement for trauma care but

also because these institutions are often those providing hospital care to a disproportionately high percentage of the Medicaid population. I know that you have heard Dr. Sheldon Retchin, a close colleague, present on the impact of Medicaid cuts in general for the VCU Health System in Richmond and for public hospitals nationwide.

Virginia Tech Shootings and Lessons Learned

With all our planning for terrorism and emergency events, no one anticipated the events of April 16, 2007 when 32 people were killed and 26 seriously injured at Virginia Tech in Blacksburg, Virginia. While not a true mass casualty incident, this was a major challenge for the hospitals in this very rural area. None of the injured could be transported by air to the closest Level 1 trauma center over 45 miles away because of snow and wind. Patients were transported to the nearest hospitals; of the three closest hospitals, two were Level 3 trauma centers and one was not a designated trauma center. The EMS response was rapid and coordinated, and none of the injured from Norris Hall transported to these hospitals died. Unfortunately, in addition to a significant casualty event, this was a fatality event. The Office of the Chief Medical Examiner, part of the Virginia Department of Health, performed 33 detailed autopsies for criminal investigation and scientifically identified all the dead for release to their families within 72 hours of the event.

Key lessons learned from Virginia Tech concerning mass trauma care included:

1. **Coordination of all parts of the public health and healthcare system is essential**, including EMS, hospitals, local and state public health. This was accomplished with rapid activation of all RHCCs, the local public health district, and the VDH ECC, allowing tracking of beds and resources on a real time basis.
2. **Cross training is key, as well as stocking of key supplies and equipment.** Training of staff in non-trauma centers to provide trauma care is now an increased priority in Virginia.
3. **Any mass casualty event is likely to include a significant number of fatalities.** A mass fatality plan that includes crime scene investigation is essential.
4. **There is a need for a real time patient tracking system** that links EMS, hospitals, and the Chief Medical Examiner with a Family Assistance Center so family members can rapidly determine the location of their loved ones. This is under development now in Virginia.

Trauma Surge Planning in Virginia

We are well aware that the greatest terrorist threat is from explosive events and have therefore studied the best way to assure trauma care surge capacity in the Commonwealth. This need was certainly highlighted by the Virginia Tech shootings where transport to high level trauma centers was not possible. In a mass casualty situation, we cannot depend on designated trauma centers to care for all the victims – all hospitals must be prepared to handle at least the initial care of trauma victims. This is

especially true of burn care, with relatively few burn units and beds designated in the Commonwealth.

Consequently, trauma surge planning now includes the following in Virginia:

1. **Placement of key supplies and medications for burn and trauma care in all hospital facilities.** For burn care, this includes availability of silver sulfadiazine (Silvadine) cream. For trauma care, additional supplies of antibiotics, narcotics (morphine), Silvadine and tetanus toxoid are essential. These are in addition to supplies of dressings and intravenous fluids.
2. **Training of physicians and staff in all hospitals to provide basic trauma and burn care;** this training had already begun prior to Virginia Tech.
3. **Training of EMS and hospital staff on appropriate triage during a mass casualty event.** With very large numbers of blast victims, some will not survive who might otherwise survive as a single trauma case. There must be a focus on those most likely to survive, which is still a difficult concept for healthcare providers in this country who work outside the military. In a significant resource limited situation (including limitation in healthcare providers) sole dependence on trauma centers is not appropriate. Once people are stabilized, there can be planning for transfer to more appropriate care sites, such as burn centers.
4. **Mass fatality planning must be a component of mass casualty planning.** With an explosive or other trauma event, some people are likely to die, as we have learned with both 9-11 and Virginia Tech.

Recent tornados

During the afternoon of Monday, April 28, 2008 Virginia experienced a number of tornados in the South-Eastern Region of the state. In spite of a great deal of destruction, there were no storm related deaths and only 3 serious injuries. Nonetheless, one small hospital in the Eastern Region treated 70 patients in a brief period of time.

Communications among hospitals in the affected areas worked well, as well as communications between the Eastern Region RHCC and the Virginia Department of Health. The local health department was very involved in the response, including providing tetanus vaccine, doing home assessments, assisting with shelter activities, assuring safe food and water; both local and state health departments continue to distribute public health messages, including injury prevention and safe generator use. Three Medical Reserve Corps in the Eastern Region were activated to assist with home assessments and shelter support. Once again, these events impacted small suburban and rural areas of the state, reinforcing the need for statewide health system and public health emergency preparedness. The After Action Reports from this event will once again be used to identify strengths and challenges in the response, and then to modify plans accordingly.

Summary

1. Hospital and health system emergency preparedness can be achieved only through close collaboration and regional planning efforts for public health and healthcare (hospitals, long terms care facilities, all healthcare and mental health providers). Individual facility preparedness is not enough – there must be a system prepared to respond, especially for mass casualty and fatality events. Preparedness is tested through response to exercises and actual events.

2. A coordinated trauma system is important, but there must be a well thought out trauma and healthcare surge plan to effectively respond to large scale events; trauma care provided only through designated trauma centers will not be adequate or appropriate for a mass casualty event.

3. There remains a need for continued federal funding, both for public health and healthcare preparedness efforts, as well as for Medicaid support for healthcare facilities and providers. Much has been accomplished with CDC public health and HHS/ASPR health system preparedness funding but more remains to be done. Every event and exercise is an opportunity to enhance emergency plans through critical assessments and use of performance measures.

Thank you again for the opportunity to share Virginia’s plans, challenges and accomplishments for public health and healthcare emergency preparedness and response with you today.