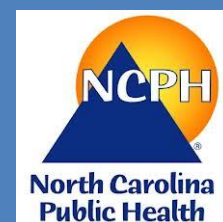




EXSEROHILUM ROSTRATUM CULTURE, NATIONAL FUNGAL MENINGITIS OUTBREAK (CDC)

*Epi*notes

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Preparedness Capabilities: National Standards for State and Local Planning

by Dr. Julie Casani, Public Health Preparedness and Response

In March 2011, the CDC published the "Public Health Preparedness Capabilities: National Standards for State and Local Planning." In July 2011, all 85 local health departments and the Division of Public Health undertook a 10-month long comprehensive review and self-analysis of their preparedness systems in light of the 15 capabilities and 114 functional elements (Figure 1, below). The reviews identified gaps – some major, some minor – in all of the 15 capabilities. The gaps identified by each local health department were rolled up to the regional level. The regional reports were then aggregated and merged

with the overall state response. State, regional and local strategies that address gaps were then identified. A report representing the aggregated responses was published in November 2012. This report serves as a roadmap and was utilized to generate work plans that continue to build an improved comprehensive preparedness system in North Carolina. In December 2012, the top three priority gaps were:

1) Vulnerable population gaps:

- A comprehensive system-wide risk assessment has not been completed.
- There are limited tools to identify "at risk" populations in communities.
- There are gaps in the knowledge and awareness of who is doing what and how to integrate these activities.
- The definition of "at risk" is difficult and may be different for different emergencies.

- There are limited policies and procedures regarding how to include at risk populations in planning and plans.
 - At risk populations have not been mapped by local health departments or maps are not widely known
- ### 2) Gaps related to basic and advanced media information training courses, including crisis and emergency risk communications:
- Most counties need to complete "IS-250: ESF 15- External Affairs- A New Approach to Emergency Communications and Information Distribution" and "IS 702a: NIMS Public Information Systems."
 - Insuring by policy and practice that PIOs as well as other local health department staff with PIO responsibilities complete required training.
- ### 3) Gaps related to countermeasure inventory management systems:

- Inventory lists for medical materiel management systems need to be developed.
- Inventory management systems need to be implemented both at the state and local levels.

These priorities were used to build work plans for the regional offices in Public Health Preparedness and Response and local health departments. They were also presented to partner agencies such as other DHHS Divisions, the N.C. Hospital Association and N.C. Emergency Management. These other agencies play vital roles in meeting these preparedness goals. This process establishes a continuous cycle of improvement and progress.

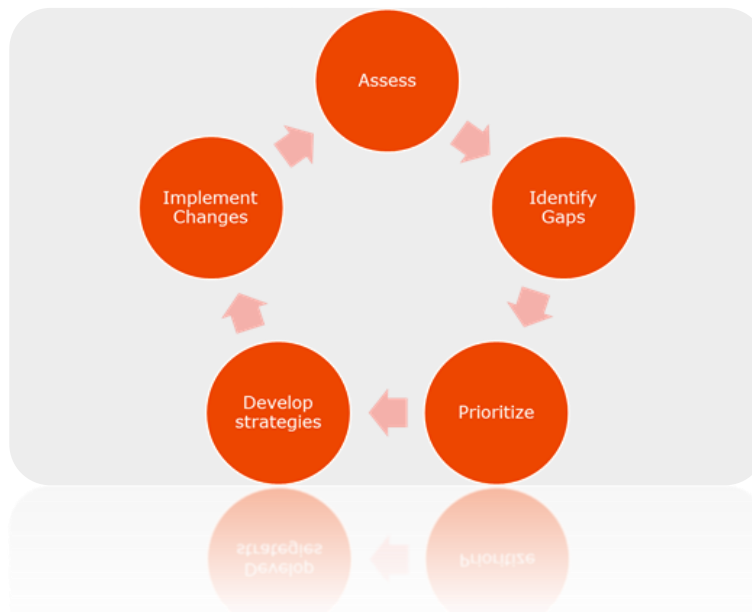


Figure 1. Strategic planning steps to assess preparedness goal statewide.

contaminated lots, including 300 patients in North Carolina.

This outbreak has required a sustained and multifaceted response from public health at all levels. In North Carolina, local health department staff went door-to-door to find exposed patients who could not be reached by phone. The Communicable

FOR MORE INFORMATION

Please visit the CDC website:

<http://www.cdc.gov/phpr/capabilities/>

Where you can download the complete document or view each capability and functional element.

especially unusual in that none of the typical meningitis causes could be diagnosed by laboratory testing, and several patients were suffering from strokes.

On Sept. 27^h, the Communicable Disease Branch was notified of a North Carolina resident who had developed meningitis and stroke after receiving an epidural steroid injection with the same product used in the Tennessee clinic. This was the first case identified outside of the Tennessee clinic, and provided the first clear indication that the Tennessee cluster was only part of a much larger problem.

A rapid and intensive investigation involving local, state and federal agencies quickly determined that all of these infections were linked to fungal contamination of three lots of preservative-free methylprednisolone acetate prepared by New England Compounding Center in Massachusetts. It is estimated that approximately 14,000 patients received injections from these

Disease Branch continues to work with providers to follow up with each and every patient exposed in North Carolina and to provide critical information to CDC about cases in our state. State and local public health also continue to provide needed information to the public and to communicate complex and rapidly-evolving guidance to physicians.

As of Feb. 25, 714 cases (17 in North Carolina) and 48 deaths (one in North Carolina) had been reported among patients who received the contaminated steroids and these numbers continue to grow. Without the rapid response from state, local and federal public health, the morbidity and mortality caused by this outbreak would undoubtedly be higher.¹ This tragic situation has already led to increased scrutiny of infection prevention measures in compounding pharmacies. It also serves as a reminder of the need for a strong public health infrastructure that is ready and able to respond to the unexpected.

National Fungal Meningitis Outbreak Response

by Dr. Zack Moore, Communicable Disease Branch

Since late September, epidemiologists in the Communicable Disease Branch of the Epidemiology Section have been working closely with the CDC, other state and local health departments, the North Carolina Board of Pharmacy and providers to investigate and respond to the largest outbreak of fungal meningitis ever reported. This outbreak was first detected when a cluster of meningitis cases was identified among patients who had received epidural steroid injections at a single pain management clinic in Nashville, TN. This cluster was

FOR MORE INFORMATION

¹ Bell BP and Khabbaz RF. Responding to the Outbreak of Invasive Fungal Infections: The Value of Public Health to Americans. *JAMA*. 2013;1-2. doi:10.1001/jama.2013.526

Changes in Store for Vaccine-Preventable Disease Surveillance

by Dr. Zack Moore

The Epidemiology Section and the Women's and Children's Health Section have begun working to transfer vaccine-preventable disease (VPD) surveillance and response activities from the Immunization Branch to the Communicable Disease Branch. Two positions have been reassigned to accommodate this transfer. Once these positions have been filled and the transfer becomes effective, the Communicable Disease Branch Epidemiologist On-Call (919-733-3419) or Technical Assistance and Training Program (TATP) regional nurse consultants will become the primary point of contact for local health departments for questions regarding investigation, reporting and control of VPDs. Questions regarding vaccine distribution and administration will continue to be handled by the Immunization Branch On-Call Nurse (919-707-5575) or regional immunization nurse/program consultants. More details about the timing of this transfer will be coming soon.

Toxic Substances Surveillance

by Jeanine Schultz, Occupational and Environmental Epidemiology

Interagency communication and situational awareness can be vital for a successful public health response. One initiative that the Epidemiology Section uses to effectively communicate situations of concern is the interagency distribution of situation reports. These reports provide the date, time, location, and description of incidents that affect public health in North Carolina. Dissemination of these reports provides situational awareness to a variety of pertinent agencies ranging from local health departments to federal agencies.

As a part of the Epidemiology Section, the Occupational and Environmental Epidemiology Branch (OEEB) contributes to this interagency effort by providing situational awareness of chemical, radiological, and other non-infections disease incidents. The National Toxic Substance Incidents Program (NTSIP) plays a lead role in the generation of reports by OEEB.

NTSIP is a federally awarded state-based surveillance program that tracks acute toxic substance releases that occur in North Carolina. This program is supported by the Agency for Toxic Substance and Disease Registry (ATSDR). In North Carolina, when a release is identified by NTSIP surveillance, OEEB staff ascertains what material was released, where it happened, how the release occurred, and whether people were exposed or harmed. This information is obtained primarily from National Response

Center (NRC) reports and North Carolina Division of Emergency Management EM-43 Incident Reports.



From Nov. 2012 to Jan. 2013, NTSIP surveillance contributed incident information to 10 of the 15 situation reports generated by OEEB. These reports detailed incidents ranging from unintentional pesticide releases to uncontrolled wildfires to mercury spills resulting in human exposure. NTSIP strives to detect and report incidents within 48 hours of the incident, which contributes to the timeliness of situation report distribution. The sooner all relevant agencies are informed of incidents from situation reports the more effective this interagency communication and response can be.

SUPPORT FOR THIS PROGRAM

This report was supported by funds from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) trust fund provided to the NC DPH under cooperative agreement from CDC.

Dr. Denise Pettit joins the State Laboratory

by Dr. Lou Turner, Epidemiology Section

The North Carolina State Laboratory of Public Health (NC SLPH) welcomes Dr. Denise (Dee) Pettit as the new Assistant Laboratory Director. Dr. Pettit joined the NC SLPH on Feb. 11. Dr. Pettit obtained her PhD in the Department of Microbiology and Immunology at the Medical College of Virginia, Virginia Commonwealth University. She has over 14 years of experience as a Lead Scientist at the Virginia Division of Consolidated Laboratory Services (DCLS), a large complex and diverse laboratory that provides analytical support to approximately 26 state agencies and federal partners. The position of Lead Scientist afforded her the unique opportunity to build, manage and



Commonwealth University and has mentored APHL/CDC Emerging Infectious Disease Fellows.

Towards an Integrated North Carolina Electronic Disease Surveillance System (NCEDSS)

by Evelyn Foust,
Communicable
Disease Branch

direct laboratory emergency response teams comprised of scientists and administrators from a variety of disciplines working together to meet DCLS customer's needs for responsiveness, efficiency and quality.

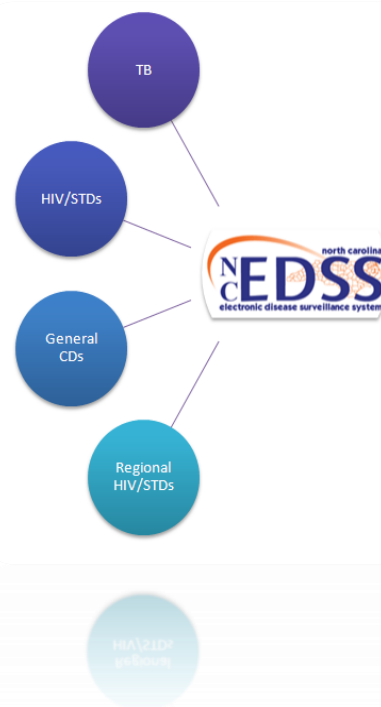
Dr. Pettit also brings experience in the development, implementation and validation of new and standard testing strategies to detect and characterize unique biological agents that affect the environment and/or promote disease. She has been involved with the development and implementation of laboratory-based surveillance strategies to detect the presence of bio-threat agents during national events, such as the presidential inauguration, and emerging infectious disease agents during outbreaks, such as those associated with West Nile and influenza viruses. She not only serves on a number of national scientific and public health committees but she also maintained a faculty appointment in Microbiology and Immunology at the MCV Campus of Virginia

PAST: In 2004, NCDPH utilized 13 CDC-supported surveillance systems to manage reportable infectious diseases. These 13 surveillance "silos" were managed by four separate units. Specifically, general communicable disease surveillance was managed by the General Communicable Disease Control Branch, TB surveillance and case management was operated by the TB Control Unit, and STD and HIV/AIDS systems were managed by the HIV/STD Prevention and Care Branch. Additionally, the HIV/AIDS and STD surveillance systems further operated as nine independent regional units managed by the HIV/STD Regional Offices to support local partner services and case management.

PRESENT: Over the past eight years, staff from the Epidemiology Section, the Immunization Branch in the Women's and Children's Health Section, and the DPH IT group have successfully customized a commercial off-the-shelf surveillance and data

management application called Maven (Consilience Software) to serve as North Carolina's Electronic Disease Surveillance System (NCEDSS) solution. NCEDSS was designed to integrate disease reporting by all local health departments as well as case management for TB, HIV/AIDS and syphilis. In addition, NCEDSS was designed to both consume electronic laboratory reports and transmit disease reports to CDC on a routine basis. The integrated Communicable Disease Branch was then created to manage these programs and become the home for NCEDSS.

THE FINAL ROLL OUT: Beginning in December 2012, NC DPH began to roll-out the HIV/Syphilis modules statewide. By Feb. 2013, all DIS regions were live with HIV/Syphilis case entry into NCEDSS.



FUTURE: As of Dec. 2012 all current and historic HIV/AIDS as well as all syphilis cases and all related partner services data were successfully merged into NCEDSS. We now have general communicable disease data from 1993 forward, HIV/AIDS reports from 1984 to the

present, syphilis reports from 1999 forward, and partner services and case management data from 1993 to present all integrated on one platform. NCEDSS now gives us the ability to monitor comorbidities and co-reporting for all reportable diseases. We are the first state to successfully integrate all legacy surveillance, case management, and partner services databases. As a result, these previously disparate programs are able to leverage screening, case reporting and management, and partner notification efforts. Moving forward, NCEDSS will become even more robust as it continues to receive electronic laboratory reports and interfaces with electronic health records from facilities across North Carolina.

Epidemiology Section Winter 2012 Employee Recognition

Constance Jones

Ms. Jones serves in many different roles within the Communicable Disease Branch. She is responsible for presiding over HIV/STD outbreaks across the state. Ms. Jones is currently working as a senior member of the Field Services Unit. In 2009, North Carolina reported a total of 937 cases of early syphilis. Ms. Jones was asked by the Branch Head and Section Chief to head the Syphilis Epidemic Response Team. As head of this team, she was responsible for coordinating a statewide team to determine the cause of the increase of syphilis cases and create a plan to help to



Pictured L-R: Evelyn Foust, Dr. Megan Davies, recipient Connie Jones and Dr. Victoria Mobley.

reduce the number of reported syphilis cases. She worked with the team to create "a men who have sex with men" (MSM) Task Force that is comprised of several teams throughout the state. As a result of these efforts, in 2010 there was a 22 percent decrease in the number of new syphilis cases reported.

Ms. Jones was also asked to lead the "Safe Space" project, which is part of the Minority AIDS Initiative (MAI). Since MAI Safe Space project began, there have been multiple Safe Space events held across the state. These Safe Spaces are designed for young men who have sex with men to meet in a "safe space" and discuss issues that affect their lives. She, along with members of her team, suggested that the Branch should host a meeting and educational event that is geared towards young MSM of color. She played a key role in developing the first MSM Conference in 2012. Because of the success of that event, the Branch is continues to work with the MSM community to offer education on the importance of HIV care and treatment.

Ms. Jones is always willing to lend her time and expertise with a smile on her face!

EPINOTES

EpiNotes is a quarterly newsletter from the NC DPH Epidemiology Section. Questions or comments regarding content:

Dr. Aaron Fleischauer
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New Facility for the State Laboratory of Public Health and the Office of the Chief Medical Examiner

by Lou Turner

From Dec. 14, 2012 to Jan. 23, 2013, the N.C. State Laboratory (SLPH) of Public Health and the Office of the Chief Medical Examiner (OCME) moved into their new facility in Raleigh. In 1973, both the SLPH and the OCME moved into then new facilities. The Bath Building housed the SLPH.

OCME moved into two floors of a laboratory building on the campus of the UNC Medical School and Hospital complex in Chapel Hill. After 40 years, both the lab and the OCME outgrew these facilities which could no longer accommodate the sophisticated equipment, sample processing and staff needed to process the number of laboratory tests and autopsies required.

The new facility project took eight years to complete. In 2004, then State Health Director, Dr. Leah Devlin, understood the laboratory's role in high profile testing during numerous public health crises and OCME's critical activity in death

investigations. She gained the attention of several key legislators, and multiple laboratory tours pointed to the disadvantages and challenges of performing state-of-the-art testing and other examinations in a then 37-year-old building. The concurrent need for a new OCME facility made a compelling case of co-located laboratories in one building. In 2006, a small group of legislators, the Department of Health and Human Services Secretary and Deputy Secretary, the State Health Director, the Chief Medical Examiner and State Public Health Laboratory Director toured the new state-of-

CUH2A (now HDR) began in 2008. The building construction project began Feb. 8, 2010, and was completed for occupancy on Nov. 30, 2012. The new building has a total of 220,000 square feet and is located on District Drive, near the northeast corner of the intersection of Edwards Mill Road and Wade Avenue near the new North Carolina National Guard's Joint Forces headquarters and new State Emergency Operations Center.

The new facility allows for enhanced efficiencies and work flow as well as increasing the capacity for growth for both programs. The design of the facility allows for the new

functions of centralizing sample accessioning and centralized data entry for the SLPH. The OCME will triple its capacity to conduct autopsies which will be essential in the event of a mass fatality event in North Carolina.



the-art Virginia state laboratory and new chief medical examiner facilities.

Following approval by the General Assembly, bonds for the project were sold in 2006. The process of designing the building with a local architectural firm O'Brien/Atkins and laboratory planning consultants from nationally recognized firm

SLPH AND OCME LEADERSHIP

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Chief Medical Examiner: Deborah Radisch, MD, MPH (Deborah.radisch@dhhs.nc.gov)

Dr. Megan Davies, State Epidemiologist



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919.733.3421



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Tuberculosis (TB) Program	919.733.7286
Occupational and Environmental Epidemiology Branch	919.707.5900
State Laboratory of Public Health	919.733.7834
Office of the Chief Medical Examiner	919.743.9000
Public Health Preparedness and Response	919.715.0919
Public Health Preparedness and Response Emergency 24/7	919.820.0520
Rabies Emergency (Nights, Weekends, Holidays)	919.733.3419
Communicable Disease Emergency	919.733.3419

Table 1. Annual Reportable Diseases Case Counts by Year, North Carolina 2008 – 2012.

DISEASE	CASES 2012	CASES 2011	AVERAGE CASES/YEAR 2007 to 2011
AIDS	N/A**	830	868
Botulism ¹	1	2	1
Brucellosis	5	0	2
Campylobacter Infection*	1,091	909	725
Chlamydia ²	50,638 	54,883	34,472
Creutzfeldt-Jakob Disease	18	6	8
Cryptosporidiosis	88	115	120
Dengue	8	4	6
Diphtheria	0	0	<1
Eastern Equine Encephalitis	2	0	1
E. coli O157:H7/ STEC Infection*	208	155	132
Ehrlichiosis ³	133	107	80
Gonorrhea	14,327	17,478	15,368
Group A Strep Infection, Invasive	147	181	148
Haemophilus Influenzae	99	84	92
Hepatitis A	34	31	50
Hepatitis B (acute)	74	124	134
Hepatitis B (perinatal)	0	1	2
Hepatitis B (chronic) ⁴	876	1,309	1,164
Hepatitis C (acute)	64	61	36
HIV Infection	N/A**	1,563	1,657
Influenza Death, Adult ⁵	28	26	32
Influenza Death, Pediatric	2	10	4
LaCrosse Encephalitis	26	27	44
Legionellosis	67	86	62
Leptospirosis	0	1	1
Listeriosis	14	21	25
Lyme Disease	124	91	79
Malaria ⁶	34	49	37
Measles	0	2	1

Meningococcal Invasive Disease	6 	15	19
Mumps	2 	9	10
Pelvic Inflammatory Disease	626	679	498
Pertussis**	612 	205	385
Q Fever	9	5	3
Rubella	0	1	<1
Spotted Fever Rickettsiosis	596	332	417
Salmonellosis*	2,208	2,517	2,037
Shigellosis*	137	225	254
Syphilis, Early (1°, 2°, Early Latent)	N/A**	768	703
Toxic Shock Syndrome ¹	7	16	8
Tularemia	1	0	2
Tuberculosis	226	244	294
Typhoid Fever	4	8	8
Vibrio Infections	31 	15	18
West Nile Encephalitis	7	2	7

Case counts are based on date cases were closed in the system not disease onset date. Report does not include HIV, Syphilis and TB. ¹Infant, foodborne and wound botulism cases combined; ²Chlamydia annual case average calculated for 2008-2010; ³Includes HE, HME and unspecified; ⁴Represents an artificial increase in 2011 due to review and disposition of 2008-2010 cases; ⁵Influenza-associated adult deaths became reportable in 2009. ⁶All cases are imported; ⁷Includes non-streptococcal and streptococcal infections. *Per CSTE case definition, includes suspect cases. **Not available – 2012 case counts not yet available.

 = significant increase (≥ 3 standard deviations above average).  = significant decrease (≥ 3 standard deviations below average).

Because cases are routinely updated, case numbers may change (data was extracted on 3/1/12). Case definitions for these diseases are available at: <http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/toc.html>