

DSHS Grand Rounds

April 8

The Texas Ebola Experience

Presenters: Wendy Chung, MD, Chief Epidemiologist, Dallas County Health Department; Grace Kubin, PhD, Director Laboratory Services, DSHS; and Jeff Hoogheem, Deputy Director, Community Preparedness, DSHS



Logistics

Registration for free continuing education (CE) hours or certificate of attendance through TRAIN at:

<https://tx.train.org>

Streamlined registration
for individuals not requesting CE hours
or a certificate of attendance

1. webinar: <http://extra.dshs.state.tx.us/grandrounds/webinar-noCE.htm>
2. live audience: sign in at the door

For registration questions, please contact Laura Wells, MPH at
CE.Service@dshs.state.tx.us

Logistics (cont.)

Slides and recorded webinar available at:

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For those in the auditorium, please come to the microphone to ask your question.

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Participants requesting continuing education contact hours or a certificate of attendance must register in TRAIN, attend the entire session, and complete the online evaluation within two weeks of the presentation.

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Kirk Cole
Interim DSHS Commissioner
is pleased to introduce our
DSHS Grand Rounds speakers

The Texas Ebola Experience



Wendy Chung, MD, Chief Epidemiologist, Dallas County Health Department



Grace Kubin, PhD, Director Laboratory Services, DSHS



Jeff Hoogheem, Deputy Director, Community Preparedness, DSHS

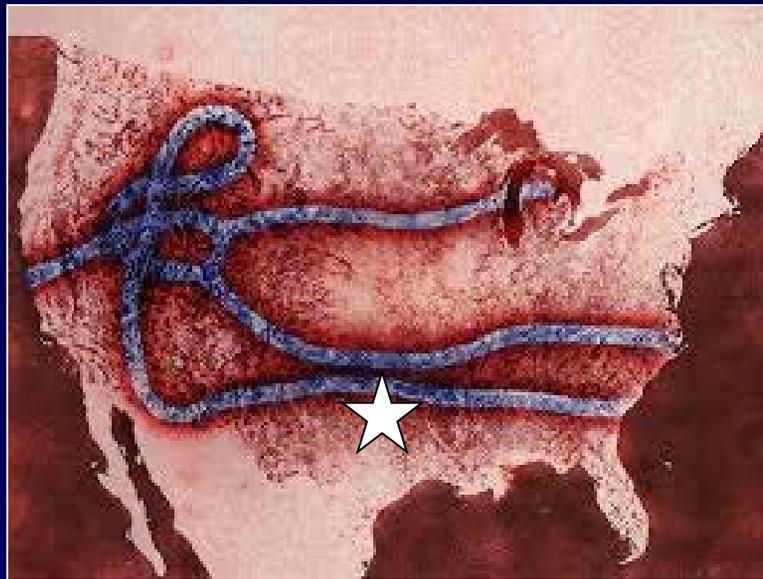
Learning Objectives

Participants will be able to:

1. Discuss the series of events that took place in mobilizing response resources.
2. Identify two public health system strengths discovered during the response effort.
3. Identify two public health system challenges faced during the response effort.

Ebola in Dallas, 2014:

Local Public Health Epidemiology Perspectives



Wendy Chung, MD, Dallas County Health and Human Services
Texas Department of State Health Services Grand Rounds
April 8, 2015

Ebola Virus

- Viral hemorrhagic fever pathogen

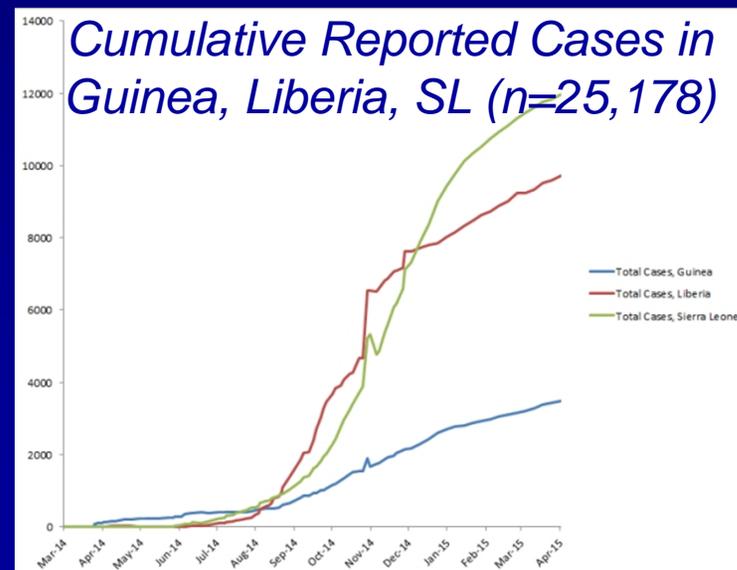
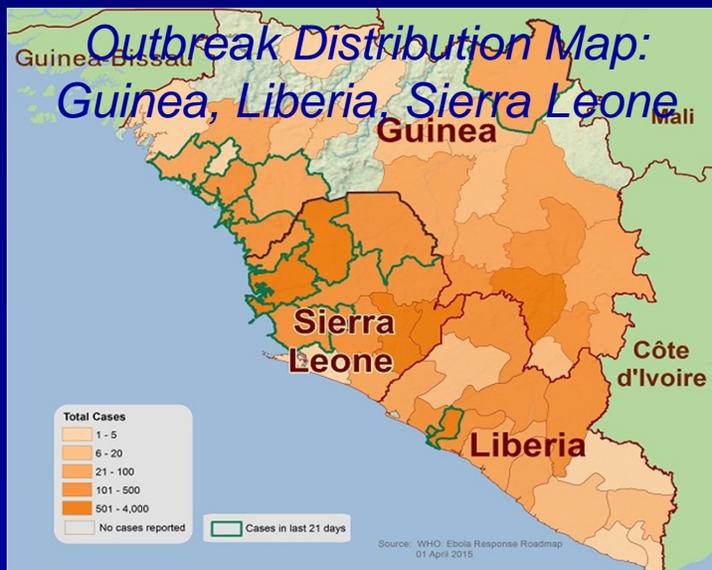


- Filovirus: Enveloped RNA virus
 - Ebolavirus genera: Ebola (EBOV), Sudan, Tai Forest, Bundibugyo, and Reston
 - Zoonotic – fruit bats natural reservoir
- 1st discovered 1976; >20 Ebola and Marburg outbreaks since then, mostly in equatorial Africa
 - Aggregated case-fatality rate 78% (range 43-90%)
 - Infection by contact of infected body fluids with skin, mucosal surfaces, or parenteral injection
 - Treatment primarily supportive & symptomatic

Features of Current Epidemic

- Current EBOV outbreak largest in history, first detected March 2014, in southern Guinea
- Countries previously unaffected by Ebola
- Urban areas affected—potential for air travel

Baize S. NEJM 2014



www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html [Accessed April 4, 2015]

www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/cumulative-cases-graphs.html [Accessed April 4, 2015]

The Constant Public Health Commute

Guidelines
(Science)

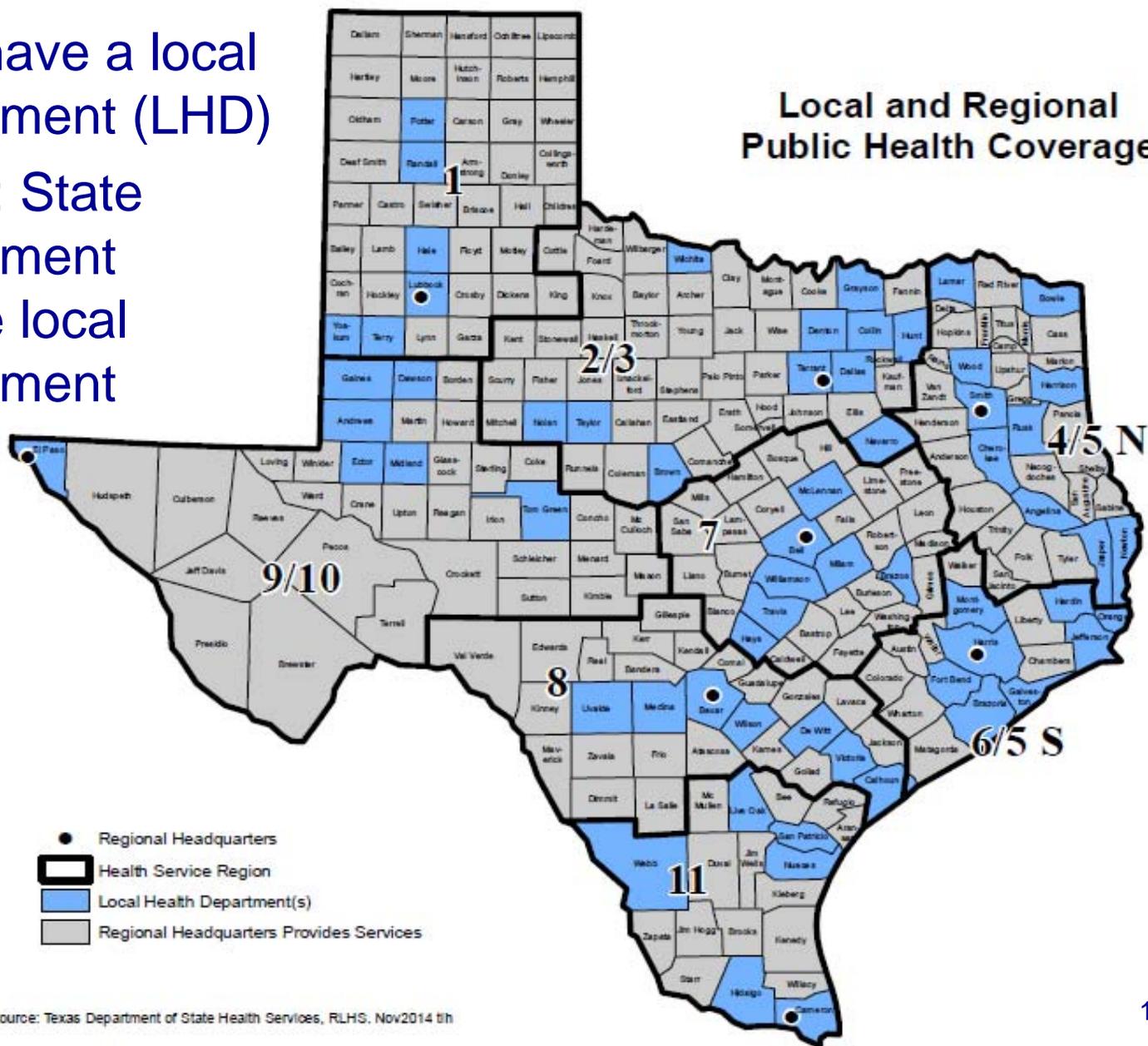


Frontlines
(Implementation)

- Dynamic processes are expected
- Familiar aspects are encountered
- Unfamiliar twists are inevitable, and result in refinements to both guidelines and implementation approaches

Texas: 254 Counties, population 27 million

- 62 counties have a local health department (LHD)
- 192 counties: State health department serves as the local health department



Dallas County, Texas

- County population 2.5 million
- ~19 malaria diagnoses annually; 47% from W. Africa
- ACS survey estimates of foreign-born population, 2012:

	Texas	Harris	Dallas
W. Africa	61,249	22,197	9,446
Nigeria	47,358	18,275	5,562
Sierra Leone	1,824	457	666
Liberia	2,809	1,137	657



County Health Department Epidemiology Division: July – Sept 2014

- 8 epidemiologists (0.32 per 100,000 population)
2012 MMWR 61(12):205
- Disseminated > 17 guideline documents, advisories from CDC and professional societies to area infection control practitioners and >7,500 area physicians
- Creation of testing decision tools and questionnaires to assist clinicians evaluating possible patients with Ebola
- Participation in planning meetings with area major hospital systems

Timeline: Case #1

- Sept 20: 45 yo M arrives from Monrovia, Liberia
- Sept 24: Develops headache, fever, abd pain
- Sept 25: Presents to ED for symptoms and discharged several hours later
- Sept 28: Returns to ED Sunday with new diarrhea, persistent fever, abdominal pain; patient placed in standard, droplet, contact precautions. CDC, DCHHS and Texas DSHS informed of patient. Contact tracing initiated by hospital and DCHHS.

Timeline: Case #1 (cont.)

- Sept 29: Lab specimens shipped to CDC and DSHS for testing. Patient transferred to MICU.
- Sept 30: Ebola confirmed in Case #1. CDC Epi-Aid Team arrives in Dallas to provide assistance.
- Oct 4: Hospital waste removal begins after US DOT permits issued. Case #1's household contacts transferred to undisclosed location.
- Oct 4: Finalized list of 48 “high” or “some” risk contacts for daily direct active monitoring.
- Oct 8: Case #1 dies.

Timeline: Cases #2 & #3

- Oct 11: Nurse (Case #2) diagnosed with Ebola
- Oct 12-16: All HCP contacts with “no known exposure” transitioned to direct active monitoring
- Oct 15: Nurse (Case #3) diagnosed with Ebola; transported to Emory bio-containment unit
- Oct 16: Case #2 transported to NIH Hospital; Texas issues movement restrictions for all HCP who had ever entered room of Case #1

Timeline: Cases #2 & #3 (cont.)

- Oct 20: CDC updates Ebola guidelines with respect to training, supervision, and use of PPE
- Oct 15–21: Contacts of Case #3 on Ohio flights from 10/10, 10/13 identified; 154 from Region 2/3
- Oct 24 & 28: Case #2 & #3 discharged, respectively
- Nov 7: Monitoring of periods for all 177 contacts completed

What is contact tracing?

Contact tracing can stop the Ebola outbreak in its tracks



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Contact tracing is finding everyone who comes in direct contact with a sick Ebola patient. Contacts are watched for signs of illness for 21 days from the last day they came in contact with the Ebola patient. If the contact develops a fever or other Ebola symptoms, they are immediately isolated, tested, provided care, and the cycle starts again—all of the new patient's contacts are found and watched for 21 days. **Even one missed contact can keep the outbreak going.**

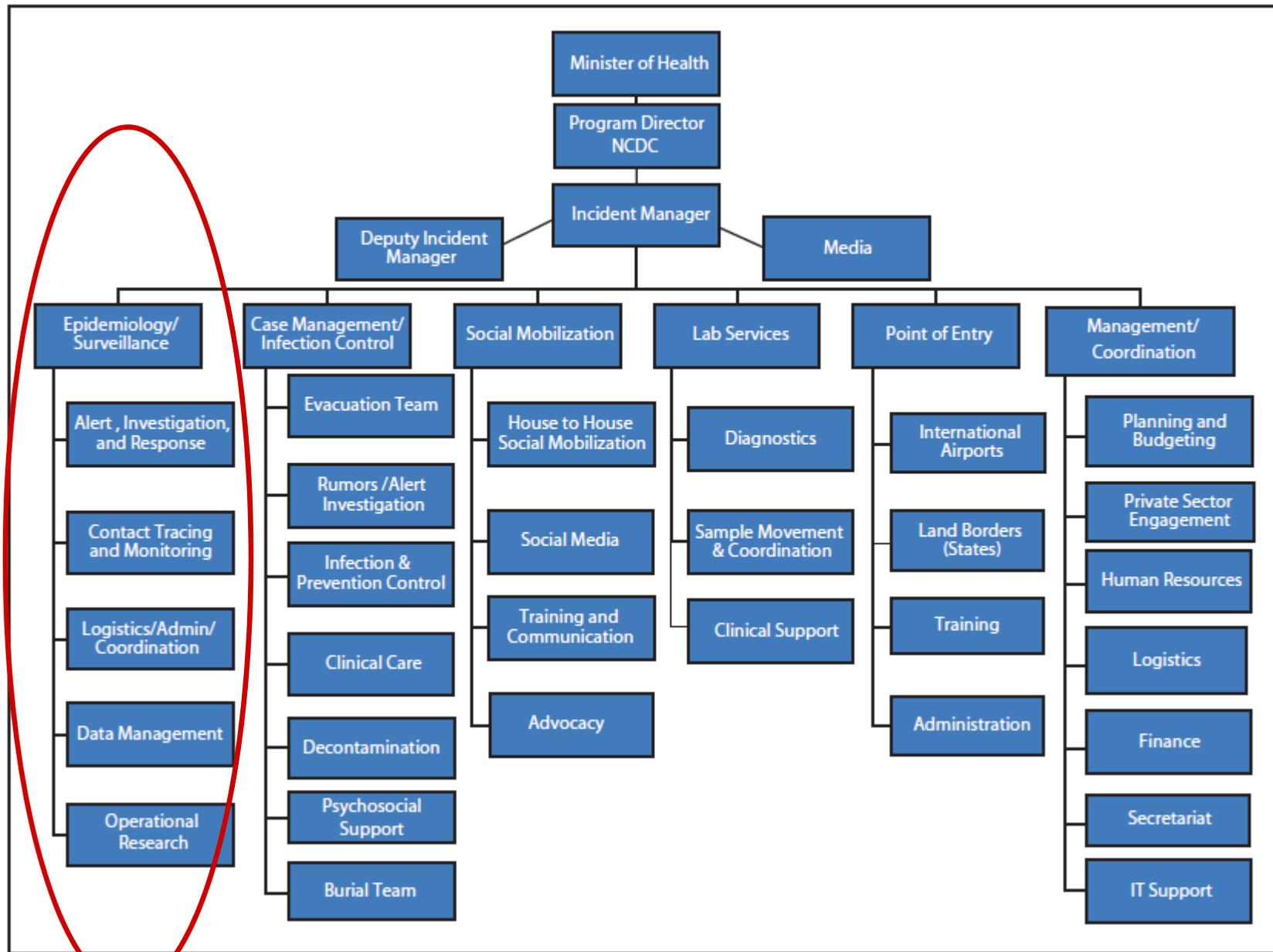


Contact Tracing:

Old concepts, new setting, new nuances...

- Tracing and identification
- Interviewing for risk stratification
- Monitoring procedures
- Movement restrictions
- Impact of media and social stigma
- Non-clinical needs of contacts

FIGURE 2. Organizational structure of the Ebola Response Incident Management Center — Nigeria, July–September 2014



Contact Identification & Tracing

- **Healthcare personnel (HCP) contacts:** Thorough identification of possibly exposed HCPs (*e.g. location tracking badges, manager shift records, medical charts*)
- **Non-HCP contacts:** Locating individual experiencing homelessness; persons without correct address/phone information; persons refusing to be interviewed
- **Non-contacts:** Rumors of alleged “contacts”; emergency on-call phone line inundated

Contact Monitoring

- Resource-intensive nature of Direct Active Monitoring (1 in-person visit + 1 phone call daily)
- Initially for 48 “high” and “some” risk contacts, expanded to all contacts after HCP diagnoses
- Coordination among multiple agencies: Hospital; Dallas, Tarrant, Collin, Denton Counties; Texas DSHS; CDC field team
- Enforcement plans: welfare checks, control orders

Data Systems

- Entire data team located on-site at hospital
- CDC data support essential, including server to enable multiple-user data entry and access
- Need for data systems which can be easily configured for new variables (*e.g. ongoing exposures of HCP*) during an evolving response
- NYC: *“Data management for worker monitoring initially required more than 12 full-time staff members of DOHMH and HHC...”*

Needs of Contacts

- 6/7 households of 20 community contacts required financial support for rent, utilities, household items
- Many contacts placed on leave from work
- Majority of HCP contacts experienced anxiety about possibly becoming ill or infecting family
- Access to medical care for minor illnesses
- Importance of engagement of wide range of community partners (businesses, schools, charitable foundations, faith based organizations, mental health) to ready resources prior to events



Dallas County
Voluntary Organizations
Active in Disaster

COOPERATION | COMMUNICATION | COORDINATION | COLLABORATION



CATHOLIC CHARITIES
OF DALLAS, INC.



CDC FOUNDATION

Helping CDC Do More, Faster



VOLUNTEER CENTER
of North Texas



American
Red Cross



TEXAS BAPTIST MEN
Love
more
than
words...
ANYWAY + ANYTIME + ANYWHERE



THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS



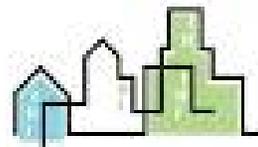
Dallas
Independent
School
District



Jewish
Family
Service
dallas



DALLAS COUNTY MEDICAL SOCIETY



D W E L L with D I G N I T Y

COMMUNITIES
FOUNDATION of TEXAS



Media

“The cycle of fear and stigma, amped up by the media, will continue to spiral, even though there’s little doubt that the epidemic will be contained in the US, which has the staff, space, and systems.” Paul Farmer, Ebola Diary. Oct 23, 2014



- Contacts not under control orders reported being effectively quarantined in their homes by media waiting outside their doors

Contacts & Social Stigma

- Non-contact household members of contacts were asked/required to stay home from work
- Childcare providers refused to care for children of contacts
- Schools asked children of contacts to stay home; district-wide closures were being considered
- 9 Texas school districts spent \$117,000 for precautionary cleaning (AP, Jan 20, 2015)



Essential Public Health Support: CDC

- Contact tracing & monitoring: locating contacts, interviews, risk classification, daily surveillance, data management
- Enabled DCHHS LRN capacity for Ebola PCR testing
- Design of triage unit for evaluating symptomatic contacts
- Subject matter expertise in clinical management of cases; clinical support to clinicians evaluating ill contacts
- Technical consultations with 5 Dallas hospitals to assist in planning for possible additional Ebola patients
- Training of 160 HCPs on PPE use and infection control practices for Ebola

Essential Public Health Support: Texas DSHS

- Established a multi-jurisdictional EMS transportation plan for possible Ebola patients
- Developed plan for safely handling and transporting waste and Ebola patient remains
- Communication and coordination with 3 additional county health departments for contact monitoring
- Assisted with handling of the pet dog of patient with Ebola
- On-site legal and communications staff important assets during rapidly evolving response
- Laboratory testing

Additional Local Response Activities

- DCHHS Public Information Officer development of educational materials and local community distribution by health educators
- DCHHS establishment of MRC-staffed Call Center M-F 8:00 am-6:00 pm for resident concerns
- DCHHS processing of hospital PPE requests
- Physicians from County Medical Society provided numerous presentations for schools, community centers, and town hall meetings

National Entry Screening Program for Ebola (1)

- All travelers to US from affected areas routed through 5 airports (ATL, EWR, IAD, JFK, ORD) for enhanced entry screening by CDC/CBP/State
- Identification of potentially exposed travelers
- Ensure medical care as needed; instruction to report fever, symptoms to public health authorities
- Provision of contact information to public health authorities for active or direct active monitoring

National Entry Screening Program for Ebola (2)

- Provided with booklet about Ebola monitoring, temperature log, thermometer, cell phone, list of state/local health department contacts



Ebola Fever: Reconciling Ebola Planning With Ebola Risk in U.S. Hospitals

Michael Klompas, MD, MPH; Daniel J. Diekema, MD; Neil O. Fishman, MD; and Deborah S. Yokoe, MD

Protecting Health Care Workers From Ebola: Personal Protective Equipment Is Critical but Is Not Enough

William A. Fischer II, MD; Noreen A. Hynes, MD, MPH; and Trish M. Perl, MD, MSc

Personal Protective Equipment for Filovirus Epidemics: A Call for Better Evidence

Armand G. Sprecher,¹ An Caluwaerts,¹ Mike Draper,² Heinz Feldmann,³ Clifford P. Frey,⁴ Renée H. Funk,⁵ Gary Kobinger,⁶ James W. Le Duc,⁷ Christina Spiropoulou,⁸ and Warren Jon Williams⁹

Guidance on Personal Protective Equipment To Be Used by
Healthcare Workers During Management of Patients with Ebola Virus
Disease in U.S. Hospitals, Including Procedures for Putting On
(Donning) and Removing (Doffing)

- All HCPs should have received repeated training and demonstrated competency ...specifically in donning/doffing proper PPE
- HCPs should have no skin exposed (full body coverage to reduce risk of self-contamination)
- Oversight by an onsite manager at all times, and each step of PPE donning/doffing must be supervised by a trained observer

PPE Donning/Doffing Scripts

Doffing Script Sheet

Before exiting patient room, use alcohol wipe to wipe down apron and arms.

1. Coach: Sanitize gloves, apron and arms with alcohol/wipe
2. Coach: Pull down the top of the apron to break the neck tie. Roll top of apron away from your body. Now pull forward to break the waist tie. Fold apron so that outside is folded inward. Place the apron in the red bag
3. Coach: Sanitize gloves with alcohol/wipe
4. Coach: Stabilize yourself on a firm surface. Remove one outer bootie and place it in the red bag don't touch the sole of your bootie
5. Coach: Sanitize gloves with alcohol/wipe
6. Coach: Remove the second outer bootie and place it in the red bag
7. Coach: Sanitize gloves with alcohol/wipe
8. Coach: Loosen PAPR buckle. Move the belt/blower/hose around your shoulder to the front and hold it in front of you (*Doffing coach will hold a red bag to receive the PAPR*).
9. Coach: Using your other hand, grasp the top of your hood and pull it off from back to front.
10. Coach: Place the PAPR in the red bag that I am holding. Disconnect the hose from the hood. (*Doffing coach will hold a red bag to receive the PAPR*)
11. Coach: Throw away the hood
12. Coach: Sanitize gloves with alcohol/wipe
13. Coach: Remove the outer pair of gloves and place it in the red bag
14. Coach: Sanitize gloves with alcohol/wipe
15. Coach: Using a wipe, wipe down the zipper of the coverall
16. Coach: Sanitize gloves with alcohol/wipe
17. Coach: Look in the mirror and find the blue crash cart tab. Completely unzip the coverall.
18. Coach: Grasp the back of the coverall and pull off coverall from both shoulders. Pull your arms out of the sleeve
19. Coach: Sanitize gloves with alcohol/wipe
20. Coach: Slide your hands down the front of your legs to push the coverall down towards feet. Be careful not to touch the outside of the coverall
21. Coach: Pull your legs out of the coverall (*You can use your right foot to step on the back of the left bootie to hold it in place to help your left foot out*)
22. Coach: Step back and off the coverall

Sample Courtesy Drs. Pierre Rollin, Mary Choi

Caring for Patients With Ebola: A Challenge in Any Care Facility

Mark G. Kortepeter, MD, MPH; Philip W. Smith, MD; Angela Hewlett, MD; and Theodore J. Cieslak, MD

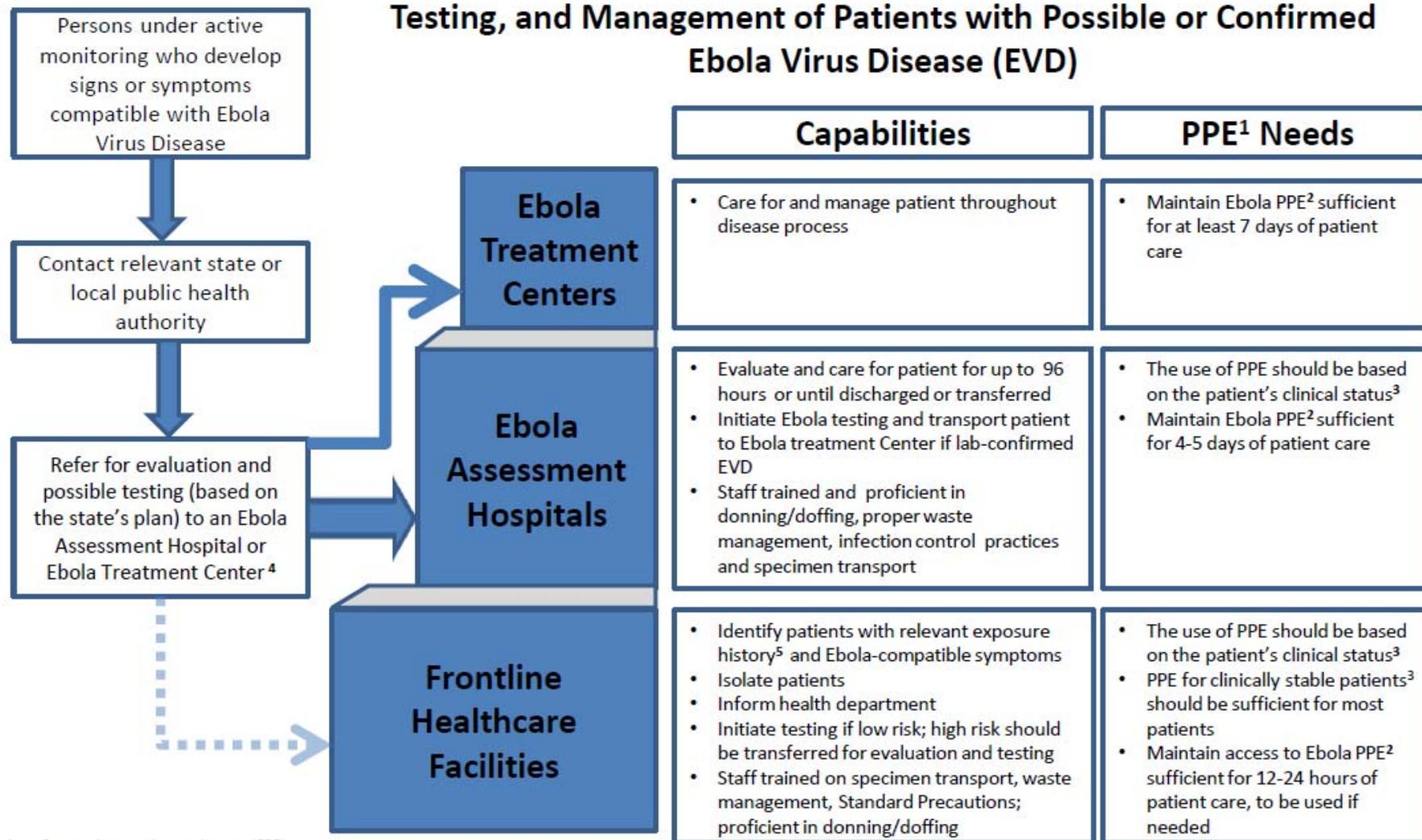
Challenges in Managing Patients who have Suspected or Confirmed Ebola Virus Infection at the National Institutes of Health

Tara N. Palmore, MD;¹ Kevin Barrett, RN, BSN;² Angela Michelin, BS, MT, MPH;¹ Amanda Ramsburg, RN, BSN;¹ Laura M. Lee, BSN, MS;³ Richard T. Davey, Jr., MD;⁴ David K. Henderson, MD³

Lessons Learned From Hospital Ebola Preparation

Daniel J. Morgan, MD;^{1,2} Barbara Braun, PhD;³ Aaron M. Milstone, MD;⁴ Deverick Anderson, MD;⁵ Ebbing Lautenbach, MD;⁶ Nasia Safdar, MD;⁷ Marci Drees, MD;⁸ Jennifer Meddings, MD;⁹ Darren R. Linkin, MD;⁶ Lindsay D. Croft, MS;² Lisa Pineles, MA;² Daniel J. Diekema, MD;¹⁰ Anthony D. Harris, MD²

Interim Guidance for Hospital Preparedness for Evaluation, Testing, and Management of Patients with Possible or Confirmed Ebola Virus Disease (EVD)



1 Personal protective equipment (PPE)

2 See <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html> for information on recommended personal protective equipment (PPE) for all healthcare workers entering the room of a patient hospitalized with Ebola Virus Disease (EVD). All staff who may be required to use Ebola PPE should be trained for their roles and demonstrate proficiency in putting on (donning) and taking off (doffing) of PPE

3 Follow Emergency Department Algorithm for guidance on PPE <http://www.cdc.gov/vhf/ebola/pdf/ed-algorithm-management-patients-possible-ebola.pdf>.

4 Patients should be preferentially referred to an Assessment Hospital for testing and evaluation. If severely ill and/or high clinical suspicion of EVD referral to an Ebola Treatment Center could be considered, based on the state's plan. Confirmed EVD patients should be transferred to an Ebola Treatment Center. Rarely, patients may be temporarily referred to Frontline Healthcare Facilities when it is not feasible to refer to an Assessment Hospital or Treatment Center (e.g. based on distance, bed availability, or other considerations). In some cases, a hospital may be prepared to serve in more than one role.

5 Patient has lived in or traveled to a country with widespread Ebola transmission or a country that has had cases in urban settings with uncertain control measures or had contact with an individual with confirmed EVD within the previous 21 days <http://www.cdc.gov/vhf/ebola/exposure/risk-factors-when-evaluating-person-for-exposure.html>.

Designated Ebola–Treatment Hospitals

Announced 12/2/2014; 55 as of 2/18/2015

Ebola (Ebola Virus Disease)

Ebola (Ebola Virus Disease)

About Ebola

2014 West Africa Outbreak

Outbreaks

Signs and Symptoms

Transmission

Risk of Exposure

Prevention

Diagnosis

Treatment

U.S. Healthcare Workers and Settings

Non-U.S. Healthcare Settings

Current Ebola Treatment Centers

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The 55 hospitals with Ebola treatment centers as of 2/18/2015 are:

- Maricopa Integrated Health Systems; Phoenix, Arizona
- University of Arizona Health Network; Tucson, Arizona
- Kaiser Los Angeles Medical Center; Los Angeles, California
- Kaiser Oakland Medical Center; Oakland, California
- Kaiser South Sacramento Medical Center; Sacramento, California
- University of California Davis Medical Center; Sacramento, California
- University of California Irvine Medical Center; Orange, California
- University of California Los Angeles Medical Center; Los Angeles, California
- University of California San Diego Medical Center; San Diego, California
- University of California San Francisco Medical Center; San Francisco, California
- Children's Hospital Colorado; Aurora, Colorado
- Denver Health Medical Center; Denver, Colorado
- Emory University Hospital; Atlanta, Georgia
- Grady Memorial Hospital; Atlanta, Georgia

Summary

- Collaborative strengths of federal, state, and local public health systems essential throughout this response
- No secondary cases from community exposure
- Additional Ebola introductions into US remain possible while epidemic in West Africa continues
- Experience in Dallas is informing improvements in national preparedness and response capacity for communicable diseases such as Ebola

Thank You

DSHS Grand Rounds

The Texas Ebola Experience: Lessons Learned

April 8, 2015

Grace Kubin, Ph.D.

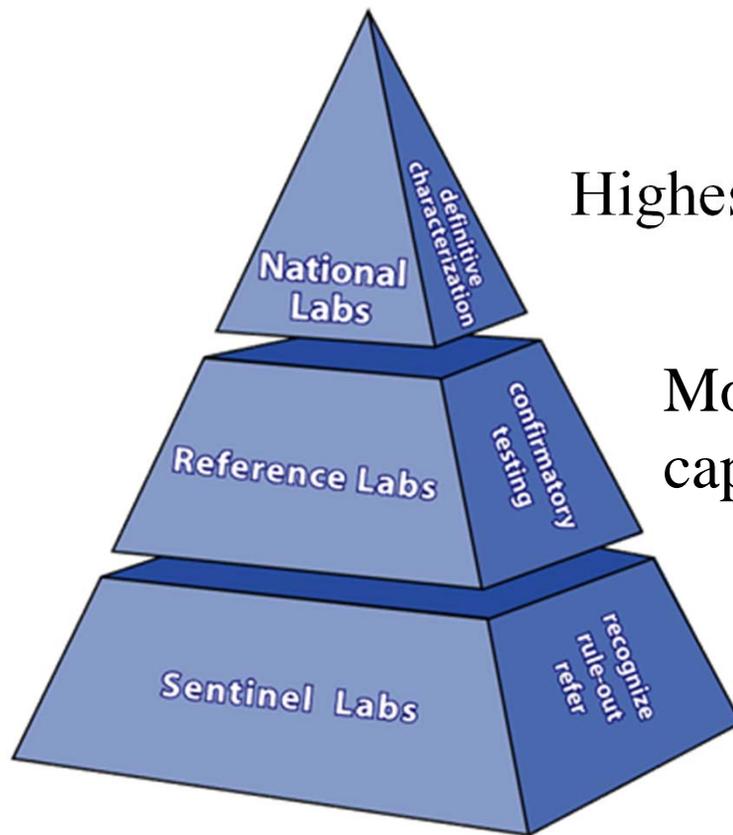
Director, Laboratory Services Section



- CDC LRN
- Preparations and Testing
- Packaging and Shipping
- Key Relationships



Laboratory Response Network (LRN) For Bioterrorism



Highest level characterization (Federal)

Molecular assays, reference capacity, confirmation, and transport

Rule-out and forward organisms

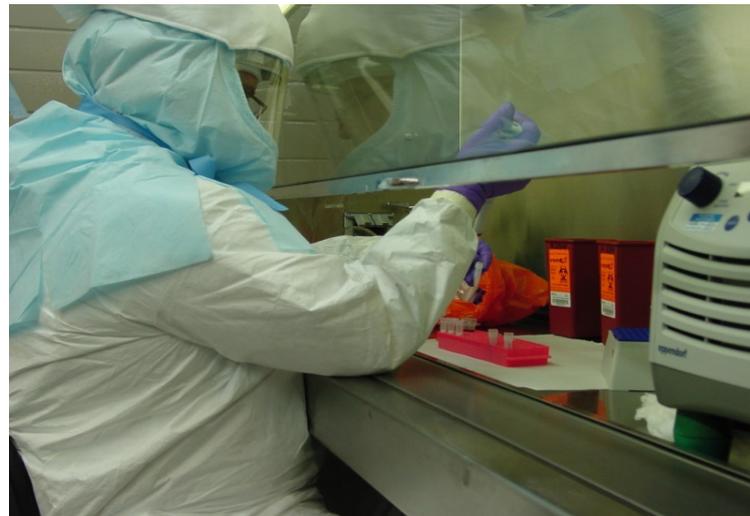
Texas Laboratory Response Network

- Reference laboratories for FBI and local law enforcement for bioterror specimens
- Train hospital personnel in procedures to refer bioterror specimens to local LRN
- All LRNs use same procedures and equipment
- Partner with 1st responders, law enforcement, military



Getting Ready for Ebola

- Department of Defense Ebola Zaire Polymerase Chain Reaction (PCR) test – EUA approved
- Developed communication procedure and approval algorithm with epidemiologists
- Performed laboratory risk assessment for testing of Ebola specimens

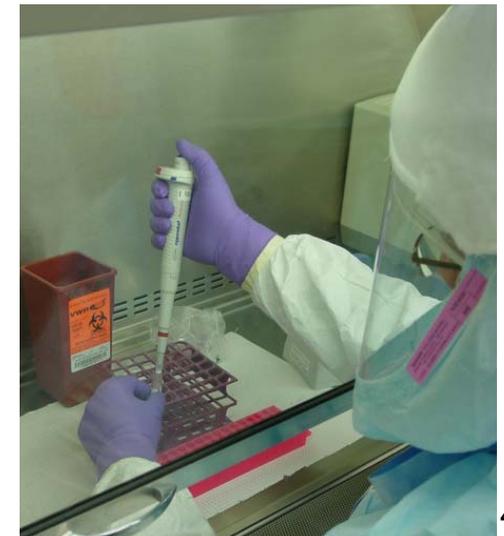


Training, Training, Training



The First Real Sample

- Excellent coordination between DSHS and CDC
- Specimens arrived at DSHS and CDC via FedEx at about the same time
- Test results for the DSHS test and the CDC test were ready almost at the same time
- **AND THE RESULTS MATCHED!**



More Testing

- Subsequent specimens arrived at unusual hours requiring 24/7 operations
- Developed a mini surge plan to help with specimens arriving at all times
- Two more specimens would arrive at DSHS that would be the first and second cases of Ebola Zaire acquired in the US



Packaging & Shipping

- Ebola suspect specimens had to be packaged as an infectious substance affecting humans
 - Category A – UN 2814
 - Shipped cold (4 C)
- Some commercial carriers would not ship Ebola suspect specimens
- Relationships developed from other response activities helped with timely specimen delivery to DSHS



Coordination Was the Key

- Planning with our epidemiologists and development of an algorithm for requesting testing
- Coordination with CDC
- Working with the DSHS State Medical Operations Center staff
- Using the network Texas LRN laboratories



Thank You





Texas Ebola Experience

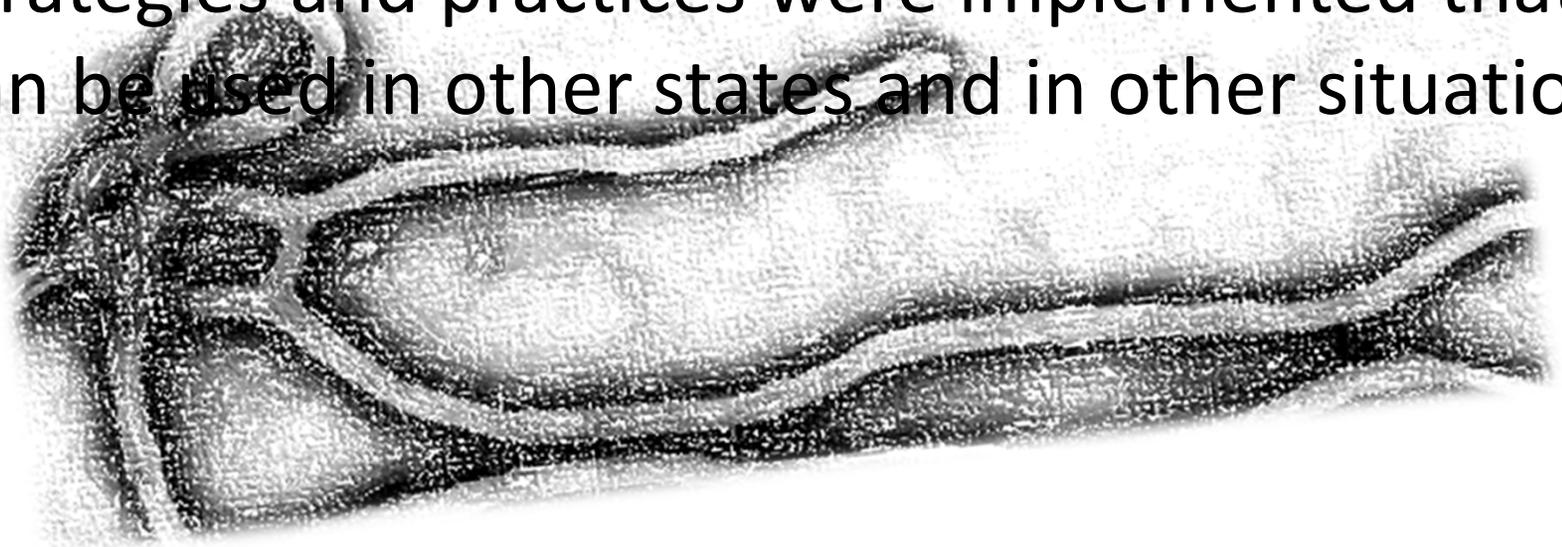
◆ Response Activities ◆

Jeffrey Hoogheem

Texas Department of State Health Services

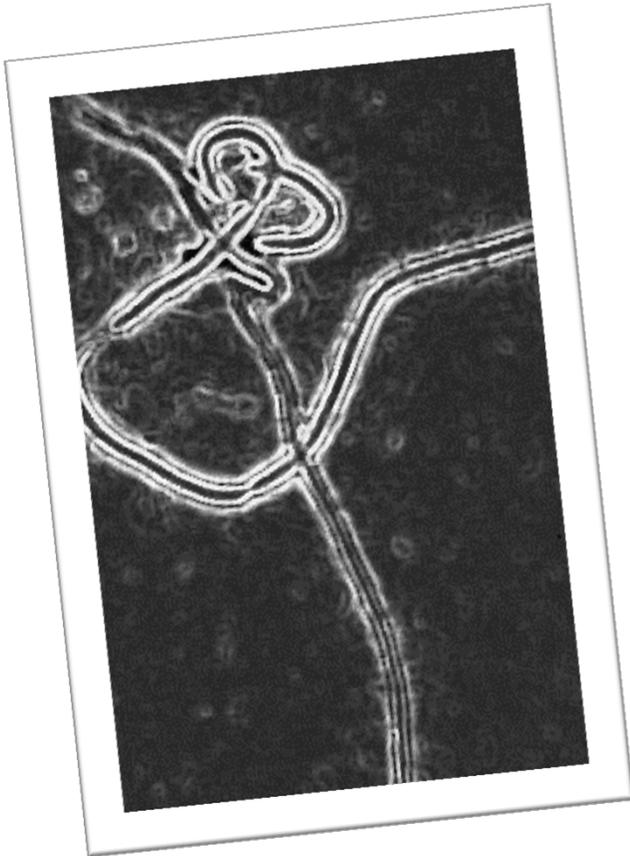
Introduction

- The 2014 Ebola incident was historic and unlike anything we have faced before
- Many of the challenges were not unique to Dallas or the state of Texas
- Strategies and practices were implemented that can be used in other states and in other situations



Goals

- Present challenging situations which occurred during the 2014 response
- Discuss strategies that were implemented to overcome challenges
- Highlight unique aspects of the response
- Showcase the success stories and practices that could be used in future responses



911 Call Taker Protocol

- Assist 911 call takers if contacted by:
 - Monitored (known) Ebola Contact
 - Individual Complaining of Ebola Symptoms
- Algorithm for handling Ebola related calls
 - Symptoms?
 - Travel History?
 - Contact with Ebola Patient?
 - Actively monitored?
 - Notify first responders of patient status prior to dispatch
- Allowed 911 to handle large number of calls related to Ebola

911 Call Taker Protocol



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

P.O. Box 149347
Austin, Texas 78714-9347
1-888-963-7111
TTY: 1-800-735-2989
www.dshs.state.tx.us

DAVID L. LAKEY, MD
COMMISSIONER

October 10, 2014
Revision 001

911 Call Taker (PSAP) Phone Screening Guide

There are 48 individuals identified as Ebola contact cases being monitored by Dallas County Health and Human Services (DCHHS). The following protocols are recommended for 911 Call Takers (PSAP) employees in the event that they are contacted by a monitored (KNOWN CONTACT) or individual complaining of Ebola symptoms (UNKNOWN CONTACT).

KNOWN CONTACT with possible symptoms CALLS 911.

[For the group of 48 that are currently under observation: These individuals have been instructed to contact Dallas County Health Department if they begin to show any signs or symptoms of Ebola and may have already notified the Epidemiologist on-call]

- Individual reporting fever or symptoms of Ebola should immediately be screened by the call taker utilizing the "Communications" algorithm.
 - Should the caller answer "Yes" to the fever AND one of the contact questions, notify **first responders** of a possible "Patient Under Investigation of Ebola exposure" and provide the Dallas County Health and Human Services Epidemiologist On-Call Phone number if requested: (214) 677-7899

UNKNOWN CONTACT with possible Ebola symptoms CALLS 911.

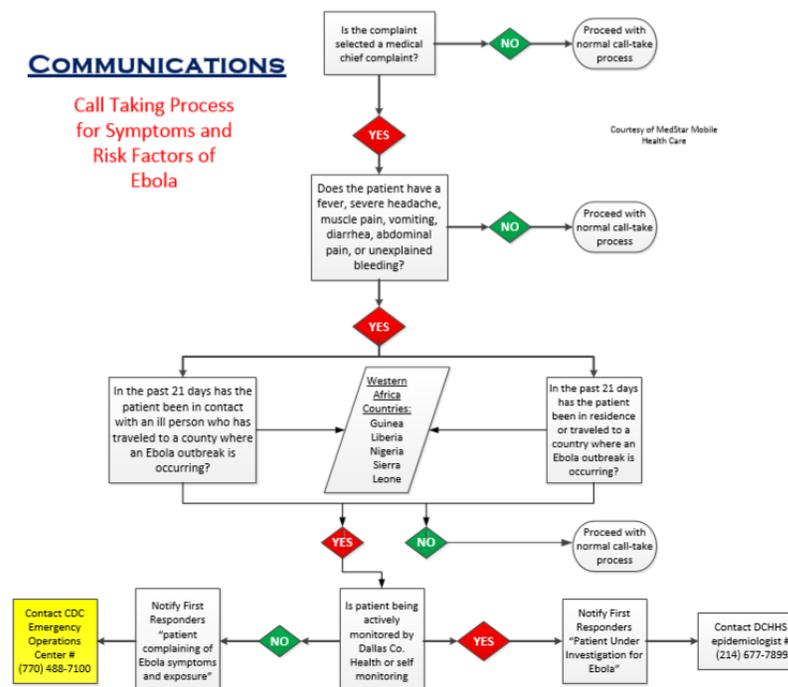
- Individual reporting fever or symptoms of Ebola should immediately be screened by the call taker utilizing the "Communications" algorithm.
 - Should the caller answer "Yes" to the fever AND one of the contact questions, notify **first responders** of a possible "Patient complaining of Ebola symptoms and exposure" and provide the CDC Emergency Operations Center number to the first responders if requested: (770)488-7100

October 10, 2014
Revision 001
Page 2

COMMUNICATIONS

Call Taking Process for Symptoms and Risk Factors of Ebola

Courtesy of MedStar Mobile Health Care



DL Lakey

David L. Lakey, MD
Commissioner

EMS Practices Protocol

- Assist EMS in responding to suspected Ebola patients
- Addressed on-scene safety
 - PPE
 - Handling patient
 - Possible patient behaviors
 - Cautions regarding bodily fluids
- Patient Assessment
- Transport

EMS Practices Protocol



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

DAVID L. LAKEY, M.D.
COMMISSIONER

P.O. Box 146347
Austin, Texas 78714-9347
1-888-963-7111
TTY: 1-800-735-2989
www.dshs.state.tx.us

October 9, 2014

EMS Practices on Possible Ebola Exposure Patients

Address scene safety:

If Public Safety Access Point (PSAP) call takers advise or initial patient contact suggest that the patient is suspected of having Ebola, Emergency Medical Services (EMS) personnel should don appropriate Personal Protection Equipment (PPE) for suspected cases of Ebola before entering the scene. Appropriate includes:

- Gloves
- Gown (fluid resistant or impermeable)
- Eye protection (goggles or face shield that fully covers the front and sides of the face)
- Facemask
- Additional PPE might be required in certain situations (e.g., large amounts of blood and body fluids present in the environment), including but not limited to double gloving, N-95 Face mask, disposable shoe covers, and leg coverings.

- Keep the patient separated from other persons as much as possible.
- Minimize EMS staff exposure
- Use caution when approaching a patient with Ebola. Illness can cause delirium, with erratic behavior that can place EMS personnel at risk of infection, (e.g., flailing or staggering.)
- If blood, body fluids, secretions, or excretions from a patient with suspected Ebola come into direct contact with the EMS provider's skin or mucous membranes, then the EMS provider should immediately stop working. They should wash the affected skin surfaces with soap and water and report exposure to an occupational health provider or supervisor for follow-up.

Patient Assessment and Transport:

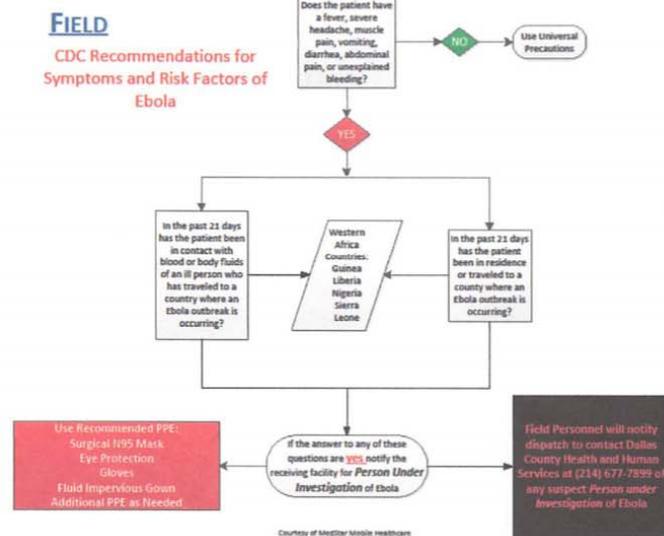
- All patients should be assessed for symptoms of Ebola (Fever, with additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage). If the patient has symptoms of Ebola, then ask the patient about risk factors within the past 3 weeks before the onset of symptoms, including:
 - In the past 21 days, has the patient had contact with blood or body fluids of a patient known to have or suspected to have Ebola;
 - Residence in—or travel to—a West African country such as; Guinea, Nigeria, Sierra Leone and Liberia where an Ebola outbreak is occurring or Direct handling of bats or nonhuman primates from disease-endemic areas.
- Based on the presence of symptoms and risk factors, put on or continue to wear appropriate PPE and follow the scene safety guidelines for suspected case of Ebola.
- If there are no risk factors, proceed with standard EMS care.

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If the Patients meets Criteria for Patient Under Investigation for Ebola exposure, contact Dallas County Health and Human Services at (214) 677-7899 and transport to recommended facility. Notify receiving facility as soon as possible to give adequate time for facility preparation.

SEE ATTACHED ALGORITHM



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Hospital Protocol

- Protocols if a contact case presents at hospital or emergency treatment facility
- Procedures for:
 - Known Contact (monitored)
 - Unknown
- Screening criteria
- Travel History
- Coordination with Dallas County

Hospital Protocol



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

DAVID L. LAKEY, M.D.
COMMISSIONER

P.O. Box 149347
Austin, Texas 78714-9347
1-888-963-7111
TTY: 1-800-735-2989
www.dshs.state.tx.us

October 9, 2014

HOSPITAL AND EMERGENCY TREATMENT CENTER PRACTICES FOR TRANSPORT OF EBOLA PATIENTS

There are 48 individuals identified as Ebola contact cases being monitored by Dallas County Health and Human Services. The following protocols are recommended in the event that a contact case presents to a hospital or emergency treatment facility, or if a patient that is not a known contact presents. The practices below have been coordinated with information provided to EMS, dispatch agencies, and emergency medical directors.

Texas Health Presbyterian Dallas has agreed to accept patients ages 14 and older.
Children's Medical Center Dallas has agreed to take pediatric patients ages 0 – 14.

KNOWN CONTACT presents with possible symptoms:

[For the group of 48 that are currently under observation: These individuals have been instructed to contact Dallas County Health Department if they begin to show any signs or symptoms of Ebola]

- **Individual reporting / presenting fever or symptoms:** Immediately contact Dallas County Health and Human Services at: (214) 677-7899. Follow the DCHHS Epidemiologist recommendations to determine necessity for further treatment or transport.

UNKNOWN CALLER presents with possible Ebola symptoms:

- Administer screening questions found below.
- If the patient meets the fever requirement and any one of the two questions, then the patient should be considered as a Person Under Investigation. Immediately contact Dallas County Health and Human Services at: (214) 677-7899. Follow the DCHHS Epidemiologist recommendations to determine necessity for further treatment or transport.
- If patient does not meet screening questions criteria, follow normal triage and treatment protocols

****The DCHHS Epidemiologist will arrange transport of the patient if needed.****

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SCREENING QUESTIONS

Does the patient have a fever >38.6 C or 101.5 F AND

1. In the past 21 days has the patient been in contact with blood or body fluids of a patient known to have or suspected to have Ebola?
2. In the past 21 days been in residence or travel to a West African country where Ebola outbreak is occurring or direct handling of bats or nonhuman primates from a disease-endemic area? Countries include:
 - a. Guinea
 - b. Liberia
 - c. Nigeria
 - d. Sierra Leone


David L. Lakey, MD
Commissioner

Mortality Planning/Protocol

- Planning for potential death of initial case
 - Planning
 - Post Mortem Protocols
- Identifying a funeral director to process remains
- Control Order for cremation
- Coordination between DSHS, CDC & TCEQ
- Coordination between Dallas Presbyterian Hospital, Dallas County Sherriff's Office and Crematory

Post Mortem Checklist

Post-Mortem Checklist for EVD Infected Human Remains		
Event(s)	Responsible for Notification	Comments
Phase I		
Patient expires		
Notification of next of kin (NOK)	Hospital	Ensure primary NOK received notification before contacting other NOK
DSHS Commissioner receives notification	Hospital	
Dallas County Judge receives notification	Hospital	
City Mayor receives notification	DSHS Commissioner	
State notification: (A) DSHS Management (B) Governor	DSHS Commissioner	
Phase II		
Confirm NOK contacted	Dallas County Judge	
Dallas County Medical Examiner receives notification	Dallas County Judge	Or after hours on duty backup
Dallas County Health and Human Services Director receives notification	Dallas County Judge	
Dallas County Office of Homeland Security receives notification	Dallas County Judge	Duty Officer
Confirm ME issuance of cremation waiver	Dallas County Judge Staff	
Delivery of signed DSHS Control Order to Hospital	DSHS Commissioner Staff	
Mortuary Service receives notification	DSHS Staff	Provide mortuary services with NOK information
Notification to law enforcement for escort	Dallas County Judge	To escort mortuary services vehicle from the hospital to crematorium
Delivery of signed Control Order to Mortuary Services	Hospital	
Mortuary Services post mortem procedures: 1. Body removed from hospital 2. Body transported 3. Body cremation 4. Notification at start of and completion of cremation to DSHS Commissioner 5. Disposition of ashes	Mortuary Services	<ul style="list-style-type: none"> Mortuary Services follow CDC guidance for handling body Movement of body from hospital (escort by LE) follow CDC guidance for cremation of body
Notification to Mortuary Services of NOK desire for disposition of ashes	Hospital	If unable to determine at this time, Mortuary Services will follow up with NOK
Phase III		
Develop and finalize Press Release statement		Coordination of agencies
<ul style="list-style-type: none"> Hospital Press Release Notification: (A) Org (B) PIOs Dissemination of statement and Press Releases 	DSHS Dallas (city) Dallas County DSHS Commissioner Dallas County Judge	

Waste Management - Initial

- Not a public health area of expertise
- Cleaning the apartment
 - How to clean
 - Identifying waste
- Packaging waste
 - Procedures
 - Supplies & equipment
- Transportation
 - DOT Permit Category A Infectious Substance
- Destruction
 - Incineration & ash



Risk Communication

- High media and public interest
- After hours system and Ebola calls
- Little knowledge about Ebola Virus Disease (EVD)
- Response partners interest in Ebola Preparedness
 - Springboard into discussion about infection control
- Risk (likelihood vs. severity)
- Media images vs. guidance



Situational Awareness

- Response operations in Dallas
- Rapidly changing
- State Medical Operations Center (SMOC)
 - Response Operations
 - Programmatic Operations
- Emergency Management
 - State Operations Center (SOC)
 - Disaster District Committee (DDC)
- WebEOC



Pets & Ebola

- Pet issues in recent disasters
- Poorly understood Ebola risk
- Protocols non-existent
- Outcry - Spanish nurse's dog
- Dallas Nurse's small dog
 - Transported to Hensley Field, Decommissioned Naval Air Station
 - 21 day quarantine
 - Texas A&M vet providers
- Recommendation: Those monitored for EVD should avoid pets



Conclusion

- Ebola posed unique challenges
 - For Dallas
 - For Texas
 - For any and all communities
- Procedures and practices implemented during this incident can inform future responses
- What we knew about Ebola Virus Disease going into October 2014 still remains true today
- Core public health practices were effective in controlling the spread of Ebola Virus in the U.S.



Jeff Hoogheem
jeff.hoogheem@dshs.state.tx.us
(512)563-4455

Questions and Answers



David Guber, MBA
Assistant Commissioner
Division for Regional
and Local Health
Services, DSHS

Remote sites can send in questions by typing in the *GoToWebinar* chat box or email GrandRounds@dshs.state.tx.us.

For those in the auditorium, please come to the microphone to ask your question.

April 15

Ethical Issues in New Medical Technologies and Emerging Infectious Diseases

**Presenter: Nathan Allen, MD, FACEP,
Baylor College of Medicine**

