Ebola and Other Highly Pathogenic Infections: Keeping healthcare workers safe

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Photo: Seattle Times
HOSPITAL SAFETY OFFICER ROLE

A little bit of everything,
• Overall staff safety & OSHA compliance
• Training
• Hazardous Materials and Waste
• Regulatory Inspections
• Infection Prevention
• Industrial Hygiene
• Disaster Preparedness
• Authority to stop unsafe actions

All other duties as assigned…….

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Aria Kindred
10/15/14

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HMC WAS READY FOR....

Trauma✓
Burns✓
Mass Casualties ✓
Tuberculosis ✓
Influenza ✓
SARS, MERS ✓
And many other diseases, we thought...

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WHAT IS EBOLA VIRUS DISEASE (EVD)?

“*The first chapter of The Hot Zone is one of the most horrifying things I’ve read in my whole life—and then it gets worse....*”

–Stephen King

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WHAT IS EBOLA VIRUS DISEASE (EVD)?

A person is only contagious after Ebola symptoms begin.

50% Mortality Rate (WHO)

2014 EBOLA OUTBREAK

2 in 5 people who got Ebola in this outbreak died.

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2014 EBOLA OUTBREAK

Ebola cases and deaths by year, and countries affected

- 2nd-worst year: Sudan, Democratic Republic of Congo
- 5th: Democratic Republic of Congo
- 3rd: Uganda, Democratic Republic of Congo
- 4th: Guinea, Liberia, Nigeria, Senegal, and Sierra Leone

602 cases
431 deaths
Source: World Health Organization

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2014 EBOLA OUTBREAK


Supplements
September 30, 2014 / 40(15):E1-14

Corrected

Cumulative no. of cases (thousands)

Date

No intervention vs. Intervention

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2014 EBOLA OUTBREAK

EVD in Healthcare Workers

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Deaths</th>
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<tbody>
<tr>
<td>Guinea</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>Liberia</td>
<td>300</td>
<td>40</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>200</td>
<td>30</td>
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<tr>
<td>Total</td>
<td>600</td>
<td>90</td>
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2014 EBOLA OUTBREAK

EARLY INTERVENTIONS

Do we need to worry?
Symptoms include Fever?
• Flu season
• Must have epidemiological risk within 21 days
• Certified Labs

Town Hall staff meetings

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"Any hospital in this country that can do isolation, can do isolation for Ebola."

Thomas Frieden, 
CDC Director 
9/30/14
2014 EBOLA OUTBREAK

EVD CASES (UNITED STATES)

• **Index patient** – Symptoms developed on September 24, 2014 approximately four days after arrival, sought medical care at Texas Health Presbyterian Hospital of Dallas on September 26, was admitted to hospital on September 28, testing confirmed EVD on September 30, patient died October 8.

• **TX Healthcare Worker, Case 2** – Cared for index patient, was self-monitoring and presented to hospital reporting low-grade fever, diagnosed with EVD on October 10, recovered and released from NIH Clinical Center October 24. **DISCHARGED**

• **TX Healthcare Worker, Case 3** – Cared for index patient, was self-monitoring and reported low-grade fever, diagnosed with EVD on October 15 after having traveled to and from Ohio, received treatment at Emory University Hospital in Atlanta. **DISCHARGED**

• **NY Medical Aid Worker, Case 4** – Worked with Ebola patients in Guinea, was self-monitoring and reported fever, diagnosed with EVD on October 24, currently in isolation at Bellevue Hospital in New York City. **DISCHARGED**


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PERSONAL PROTECTIVE EQUIPMENT

**CDC Updates PPE Recommendations**

“We may never know exactly how [the Dallas infections happened], but the bottom line is the guidelines didn’t work for that hospital,”

Dr. Tom Frieden, director of the Centers for Disease Control and Prevention (CDC)

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PERSONAL PROTECTIVE EQUIPMENT

Original C.D.C. Guidelines

Changes to Ebola Protection Worn by U.S. Hospital Workers

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2014 EBOLA OUTBREAK

FEAR IN THE US

Airport screening
Limit travel from West Africa
Nurse Quarantined

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2014 EBOLA OUTBREAK

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EBOLA PLANNING

REGULATORY AGENCIES INVOLVED

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**Logistics**

- Transporting patients: ambulance, helicopter, airplane
- From the door to the patient room
- All diagnostic tests conducted in patient room, patient does not leave room
- Transporting blood samples to lab (internal and external)

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**EBOLA PLANNING: FACILITY**

**BIOCONTAINMENT UNITS**

Emory University Hospital's Isolation Unit

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EBOLA PLANNING: FACILITY

EBOLA PLANNING: FACILITY

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EBOLA PLANNING: FACILITY

Emergency Department

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EBOLA PLANNING: FACILITY

ICU Patient Room

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EBOLA PLANNING: FACILITY

Staff at risk
Direct Care Providers:
• MDs, PAs, RNs
• (double duty for tech positions)

Indirect Care/Support Services:
• Lab Specimen Processing, couriers
• Housekeeping
• Security

Not at risk, Indirect Care:
• Pharmacy
• Media Relations
• Facilities

All others, ‘Walking/Working Well’
Fulfilling care duties vs Volunteers
EBOLA PLANNING: STAFF

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EBOLA PLANNING: STAFF

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EBOLA PLANNING: ALL OTHER

Waste disposal
• Sewer discharge
• Disposable patient care items
• Biohazardous waste
• Terminal clean of patient room

EBOLA PLANNING: ALL OTHER

Medical ethical considerations
• Aerosolizing procedures
• Surgery
• Dialysis
• Balancing resources
EBOLA PLANNING

Ebola Plan Activation:

CDC Tiered-Approach
Jan 2015
And More Work….

- Handling of human remains
- Medical monitoring of laboratory workers, indirect care staff
- Standardization of PPE
- Maintenance of training
- Long term medical care of Ebola patients, sexual transmission
- What’s the next pathogen?
EBOLA PLANNING

Regional work
• Highly Infectious Pathogens Plan
• Ebola Assessment Hospital Surveys
Other options
  • Home-based evaluation and blood draw

EBOLA PLANNING

PPE for Healthcare Workers:

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Questions???

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