

Responding to Ebola Virus Disease on Commercial Airlines

The CDC Experience

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Objectives

- ❑ Describe the public health risk assessment used by CDC when a person with suspected Ebola is on a flight
- ❑ CDC process for use of passenger locator forms
- ❑ Messaging to passengers and partners
- ❑ Conducting an Ebola contact investigation involving exposure on a commercial flight

Ebola Public Health Risk Assessment

- ❑ **Ensure traveler is stable. If in doubt, immediate medical transport**
- ❑ **Ill traveler is typically removed from the plane to perform the risk assessment before other passengers disembark**
- ❑ **Assessment includes a review of possible exposures and symptoms**
- ❑ **Can quickly rule out Ebola in a majority of cases**
- ❑ **CDC has performed this assessment 40+ times involving commercial flights since July 2014**
- ❑ **If the incident takes place at an airport without CDC staff onsite, Emergency Medical Services can perform the assessment with telephone input from CDC**

Ebola Public Health Risk Assessment

Exposure Questions

- ❑ Ask flight crew to delay deboarding**
- ❑ Don personal protective equipment right before interacting with ill passenger**
- ❑ First, we confirm travel history to a country with Ebola in past 21 days**
- ❑ If yes, we remove ill traveler from aircraft for further assessment**

Ebola Public Health Risk Assessment

Symptoms

- ❑ If traveler is severely ill or unable to provide history due to illness, transport by Emergency Medical Services**
- ❑ Focus questions on symptoms that were present over the past 48 hours only**
- ❑ Take ill traveler's temperature**
- ❑ For the purpose of traveler evaluation, symptoms consistent with Ebola include:**
 - Fever: measured temperature of $\geq 100.4^{\circ}$ F / 38° C or feeling feverish***
 - Other symptoms: severe headache, muscle pain, vomiting, diarrhea, stomach pain, unexplained bleeding or bruising**

Ebola Public Health Risk Assessment

Triggers for medical evaluation

Classification	Medical Evaluation	No Medical Evaluation
High / Some Risk	Any of the following: fever, severe headache, muscle pain, vomiting, diarrhea, stomach pain, unexplained bruising or bleeding	Asymptomatic
Low (but not zero) risk	Any of the following: fever, vomiting, diarrhea, unexplained bruising or bleeding	No fever, vomiting, diarrhea, unexplained bleeding

Note: This slide refers to travelers who have traveled to a country with Ebola in the past 21 days.

Use of Passenger Locator Forms for Ebola

- ❑ **At this time, CDC protocol involves distributing passenger locator forms to all passengers and crew on flight if an ill traveler identified onboard is sent for medical evaluation for suspected Ebola**
- ❑ **Often helpful to have multiple team members to pass them out**
- ❑ **Announcement is read**
- ❑ **A traveler health alert notice (T-HAN) accompanies the form to provide additional information and action steps**

PUBLIC HEALTH ANNOUNCEMENTS (PHAS)

Read when assessment suggests possible risk of Ebola:

- Please remain seated for an announcement.
- An ill traveler on board our flight has been evaluated by public health officials.
- We would like to provide you with information.
- Please read this notice carefully and keep it for the next 3 weeks.
- We are also asking you to fill out a form with information about how you can be reached in the next 3 weeks, just in case public health officials need to contact you.



PASSENGER LOCATOR FORM (PLF) AND TRAVEL HEALTH ALERT NOTICE (T-HAN)

- ❑ If Ebola is suspected during an onboard response, distribute PLFs and T-HANs to **all passengers and crew on board**.
- ❑ Ask flight attendant to read onboard script for SCENARIO 2: POSSIBLE PUBLIC HEALTH RISK and PLF instructions.

- ❑ Collect PLFs before passengers disembark.
- ❑ Organize the PLFs according to exposure and proximity to ill passenger.
- ❑ Mark with a check those passengers and crew considered contacts and place these PLFs on top of pile.

TRAVEL HEALTH ALERT NOTICE (yellow)

October 13, 2014

Illness on a Flight What you need to do

- You are being given this card because a sick person who came from a country with Ebola:
 - Was on a plane with you OR
 - had contact with you in an airport.
- We don't know if the sick person has Ebola.
- Spread of Ebola on a plane or in an airport is NOT likely. However, CDC is being extra careful to ensure your safety.
- Ebola is a severe, often fatal disease that spreads through direct contact with an infected person's blood or body fluids (such as urine, saliva, sweat, feces, vomit, and semen).
- Symptoms appear within 21 days of exposure: fever, severe headache, muscle pain, vomiting, diarrhea, stomach pain, unexplained bleeding or bruising.
- People exposed to Ebola are not contagious unless they have fever and other symptoms of Ebola.
- If the person is found to have Ebola and CDC believes you were possibly exposed, a public health official will contact you.
- When CDC has more information about this incident, we will post this information at www.cdc.gov/ehf/ebola/flightinfo.
- Until more information is available, please protect yourself and others by taking these steps:
 - Take your temperature every morning and evening, and watch for symptoms of Ebola.
 - Call a doctor if you get a fever* and other symptoms.
*Fever: temperature of 100.4° F / 38° C or higher or feeling like you have a fever.
 - Tell the doctor you might have been exposed to Ebola on a plane.
 - Do not travel anywhere except to the doctor's office or hospital. Limit your contact with other people when you travel to the doctor. Do not use public transport to get to the medical facility.
 - Bring this notice and give it to health care staff when you arrive.

For more information

- Information about this incident: www.cdc.gov/ehf/ebola/flightinfo
- CDC-INFO Hotline: 800-CDC-INFO (800-232-4636) or TTY: (888) 232-6348 or www.cdc.gov/info

Messaging to passengers and partners

- ❑ Website link on T-HAN for updates:
<http://www.cdc.gov/vhf/ebola/flightinfo/>

Three template entries for the different scenarios. Cities listed here are just examples.

- ❑ **Month DD, 2014**
 - XXXX Airlines flight #XXX from Brussels, Belgium to Newark, New Jersey: The sick passenger is under observation. Suspicion of Ebola is very low.
 - **Follow up/Action requested:** As we learn more about this sick passenger's status, we will update this site. Revisit this page at a later date for updated information.
- ❑ **Month DD, 2014**
 - XXXX Airlines flight XXXX from Brussels, Belgium to Newark, New Jersey: The sick passenger does not have Ebola. You were not exposed to Ebola or any other illness of public health concern.
 - **Follow up/Action requested:** No action is needed.
- ❑ **Month DD, 2014**
 - XXXX Airlines flight XXX from Brussels, Belgium to Newark, New Jersey: The sick passenger has been confirmed to have Ebola.
 - **Follow up/Action requested:** If you were on this flight, please call this number for further information: XXX-XXX-XXXX.

Messaging to passengers and partners

- ❑ Rapid contact with airline partners also a priority
- ❑ Guidance for cleaning and managing plane can be found here:
<http://www.cdc.gov/vhf/ebola/prevention/cleaning-commercial-passenger-aircraft.html>

Conducting an Ebola air contact investigation

- <http://www.cdc.gov/vhf/ebola/prevention/cleaning-commercial-passenger-aircraft.html>

Centers for Disease Control and Prevention

MMWR

Morbidity and Mortality Weekly Report

Early Release / Vol. 64

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Public Health Response to Commercial Airline Travel of a Person with Ebola Virus Infection — United States, 2014

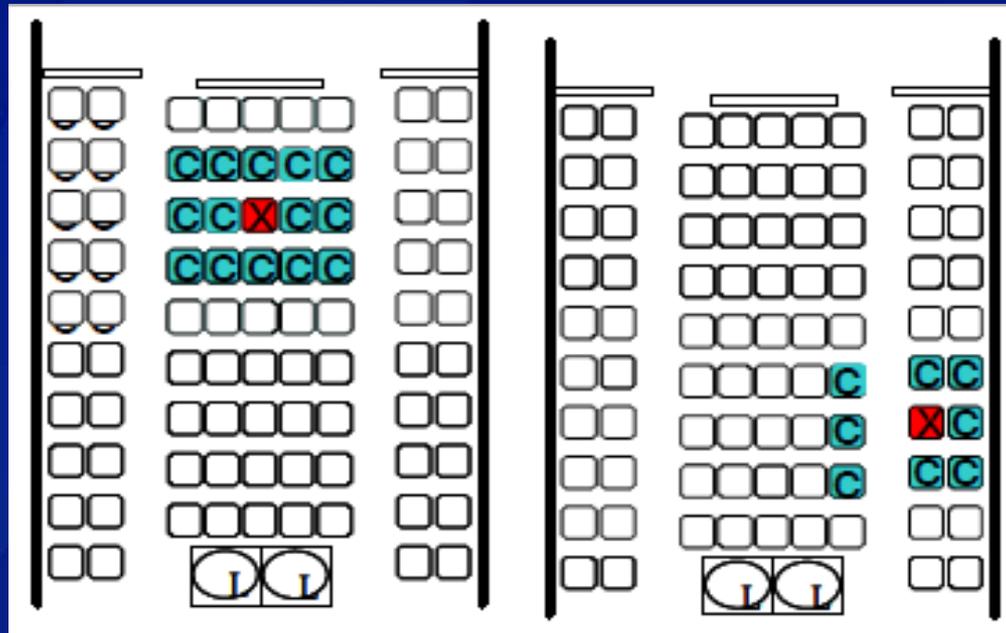
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Before the current Ebola epidemic in West Africa, there were few documented cases of symptomatic Ebola patients traveling by commercial airline (1,2), and no evidence of transmission to passengers or crew members during airline travel. In July 2014 two persons with confirmed Ebola virus infection who were infected early in the Nigeria outbreak traveled by commercial airline while symptomatic, involving a total of four flights (two international flights and two Nigeria domestic flights). It is not clear what symptoms either of these two passengers experienced during flight; however, one collapsed in the airport shortly after landing, and the other was documented to have fever, vomiting, and diarrhea on the day the flight arrived. Neither infected passenger transmitted Ebola to other passengers or

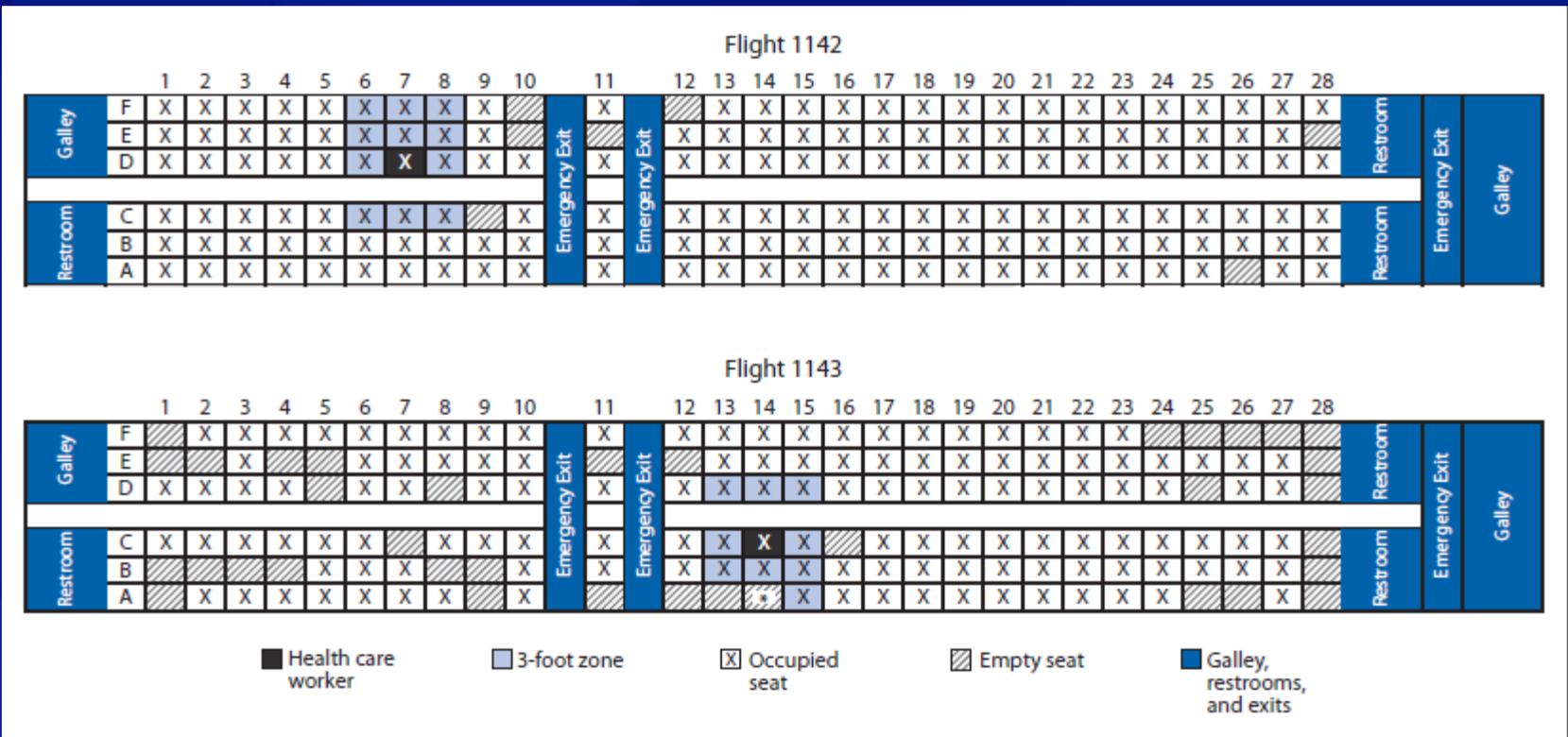
Investigation Protocols

On October 14, 2014, the health care worker, who was among those who had cared for a patient with confirmed Ebola in the United States (6), experienced fever and rash and sought medical care. On October 15, Ebola virus infection was confirmed in this health care worker, who had traveled by commercial airline from Dallas, Texas, to Cleveland, Ohio, on October 10, 2014, and from Ohio to Texas on October 13, 2014 (Figure). The date of symptom onset was uncertain; however, based on medical history and clinical and laboratory findings, CDC determined that a contact investigation should be performed for persons aboard either flight (5).

Conducting an Ebola air contact investigation



Conducting an Ebola air contact investigation



Conducting an Ebola air contact investigation

TABLE 1. Number of contacts (N = 268) followed from two flights taken by a health care worker later diagnosed with Ebola, by flight role — United States, October 10 and 13, 2014

Flight role	Flight 1* (Oct 10, 2014)	Flight 2† (Oct 13, 2014)	Total contacts
Passengers	164	134	247 [§]
Flight crew	6	6	12
Cleaning crew	5	3	8
Airport staff	1	0	1
Total contacts	176	143	268

* Contacts by state of location on day 21 (Texas 122 persons, Ohio 46, Colorado 5, Illinois 1, Maryland 1, and North Carolina 1).

† Contacts by state or country of location at day 21 (Texas 93 persons, Ohio 36, Colorado 5, Ireland 2, Illinois 1, Maryland 1, Nevada 1, and North Carolina 1).

§ 51 passengers traveled on both flights.

Conducting an Ebola air contact investigation

TABLE 2. Symptoms reported by contacts (n = 32) from two flights within 21 days of exposure to a health care worker later diagnosed with Ebola — United States, 2014

Symptom*	Symptoms reported by 32 contacts	Symptoms reported by 21 contacts in 3-foot zone
Fever ($\geq 100.4^{\circ}\text{F}$ [$\geq 38^{\circ}\text{C}$])	1	0
Abdominal pain	3	0
Unusual bleeding	0	0
Body aches	6	2
Diarrhea	2	0
Headache	24	3
Hiccups	0	0
Rash	1	0
Sore throat	14	2
Vomiting	0	0
Weakness	2	0

* Contacts could report more than one type of symptom.

CDC's "Monitoring and Movement" Guidance



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

SEARCH



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Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure

Updated: November 28, 2014

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Language: English ▾

This guidance was updated November 16, 2014, to reflect the following:

1. **All healthcare workers who engaged in direct patient care in any healthcare setting in a country with widespread transmission or cases in urban settings with uncertain control measures are considered to be in the "some risk" category.**
2. **Laboratory workers in Biosafety Level 4 facilities are considered to have "no identifiable risk".**

The guidance was updated November 28, 2014, to incorporate language about countries with cases in urban settings with uncertain control measures.

The world is facing the biggest and most complex [Ebola](#) outbreak in history. On August 8, 2014, the Ebola outbreak in West Africa was declared by the [World Health Organization \(WHO\)](#) to be a [Public Health Emergency of International Concern \(PHEIC\)](#) because it was determined to be an

"extraordinary event" with public health risks to other countries. The possible consequences of further international spread are particularly serious considering the following factors:

1. The virulence (ability to cause serious disease or death) of the virus.

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- [Definitions used in this document](#)
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- [Table: Summary of CDC Interim Guidance for Monitoring and Movement of People Exposed to Ebola](#)

Selected CDC Resources

- <http://www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html>
- <http://wwwnc.cdc.gov/travel/page/ebola-outbreak-communication-resources>
- <http://www.cdc.gov/quarantine/air/managing-sick-travelers/commercial-aircraft/infection-control-cabin-crew.html>
- <https://www.youtube.com/embed/DgOsEFtLDIU?autoplay=0&enablejsapi=1&playerapiid=491822&modestbranding=1&rel=0&origin=http://www.cdc.gov&showinfo=0&wmode=opaque>
- <http://www.cdc.gov/vhf/ebola/prevention/cleaning-commercial-passenger-aircraft.html>

Conclusions

- ❑ Ebola public health assessment is very similar to all DGMQ responses to illnesses on commercial flights and a general set of principles can be used.
- ❑ The initial assessment is not a physical exam and can be conducted by non-medical staff.
- ❑ Symptoms and exposure risk level of the ill traveler play a role in multiple decision points.
- ❑ Guidelines for contact investigations are based on expert opinion and may change over time.

References

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Questions?

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