



Emerging and Re-Emerging Infectious Diseases

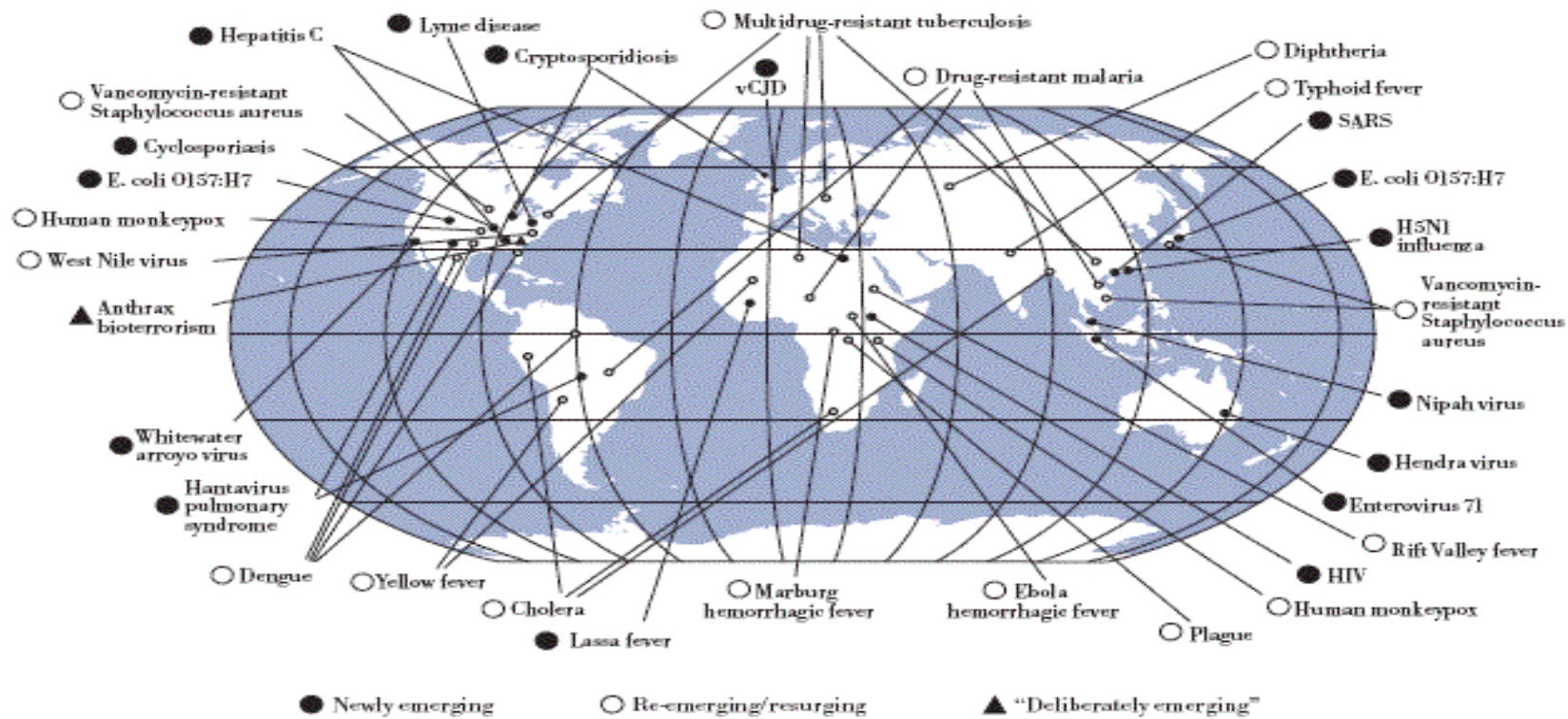
# It's a Small World After All

# Objectives

- Look at examples of emerging and re-emerging infectious diseases and their public health implications.
- Review the role of public health nurses in preparing for and responding to their various impacts.
- Initiate discussion identifying the challenges PHNs face in maintaining readiness to respond and ways to mitigate those challenges.

# Infectious Diseases at the Turn of the Century

**FIGURE 1 EXAMPLES OF EMERGING AND RE-EMERGING INFECTIOUS DISEASES THROUGHOUT THE WORLD.**

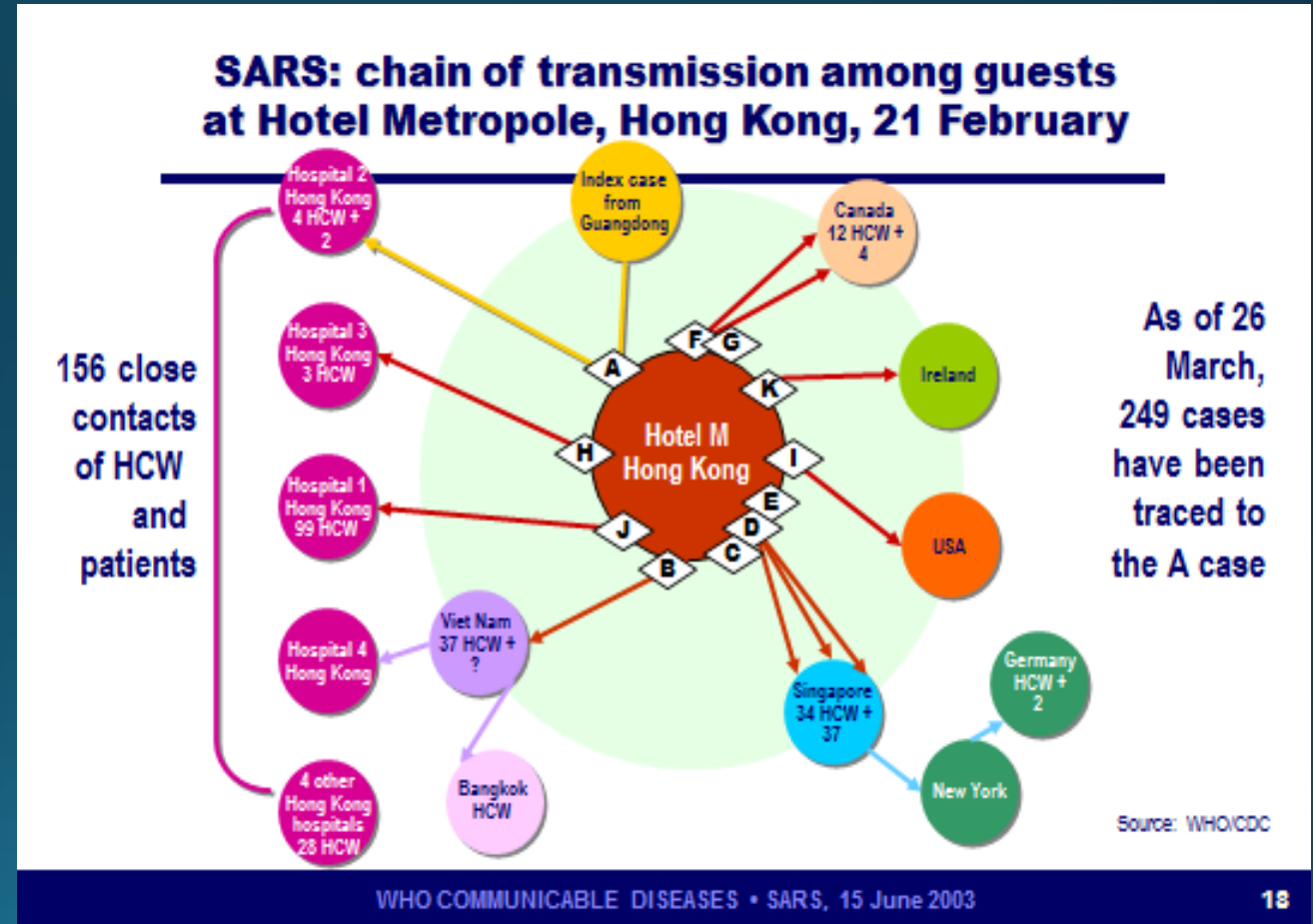
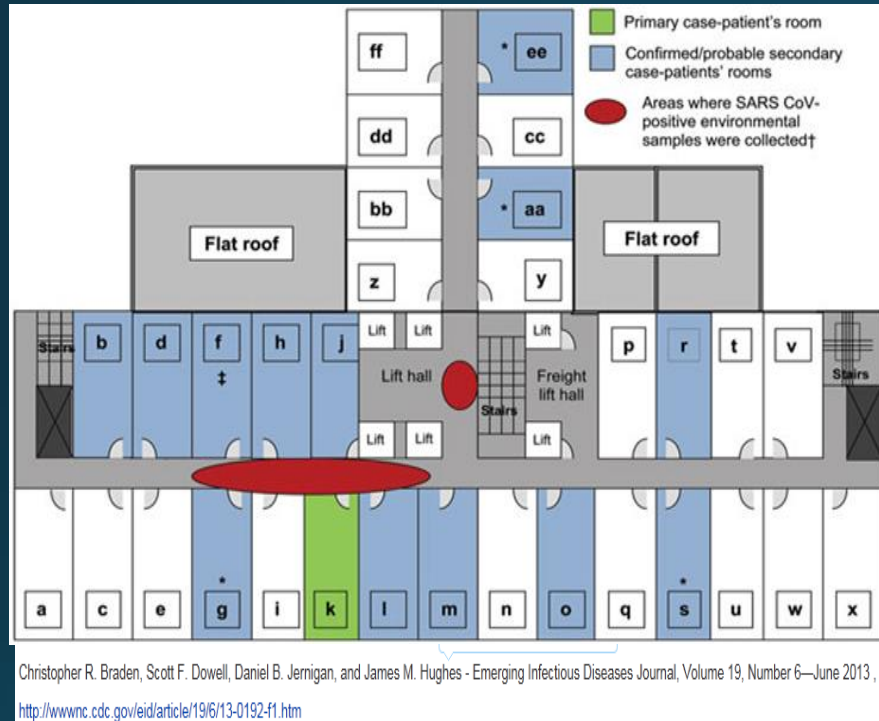


Adapted from Morens, D.M., et al. 2004. The Challenge of Emerging and Re-emerging Infectious Diseases. *Nature* 430:242-49.

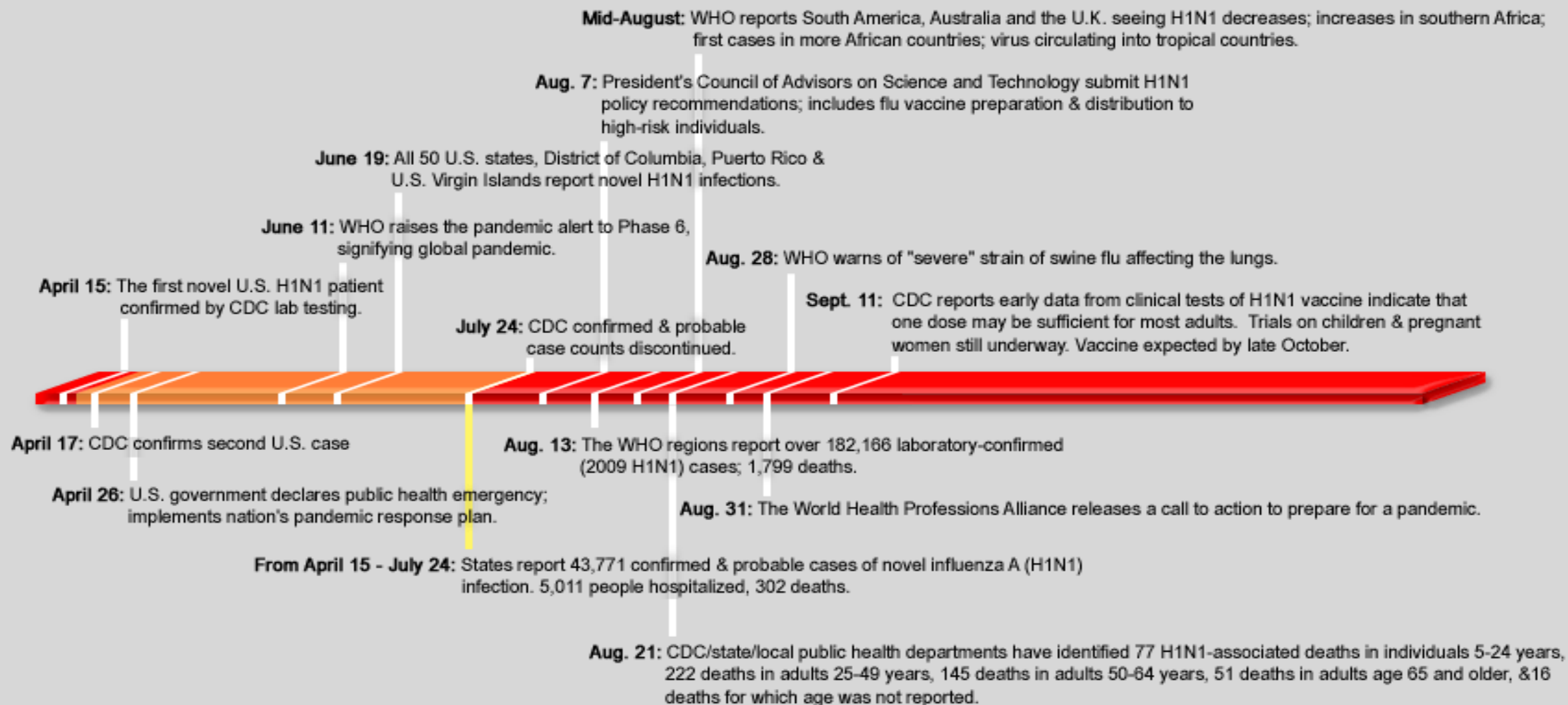
A man walks into a hotel...



# Metropole Hotel - Hong Kong



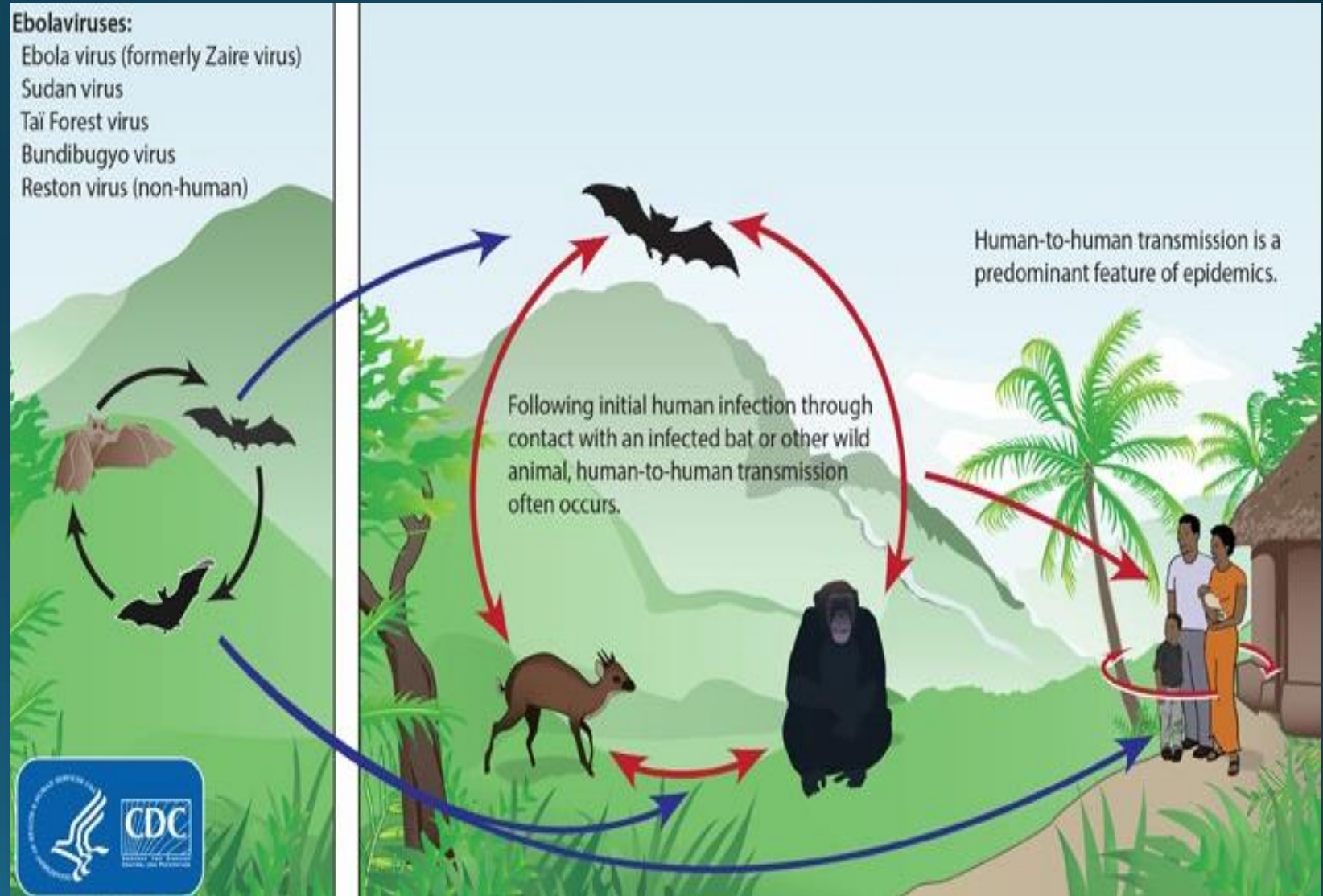
**The 2009 H1N1 Timeline:** Here is a brief look at how H1N1 Flu became one of the most important public health issues of 2009



# Ebola Virus

- Prototype Viral Hemorrhagic Fever Pathogen

- Filovirus: enveloped, non-segmented, negative-stranded RNA virus
- Severe disease with high case fatality
- Absence of specific treatment or vaccine




# A Cascade of Contacts from One Ebola Case in Dallas – New York Times

By HAEYOUN PARK **UPDATED** Nov. 7, 2014

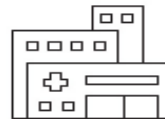
Federal health officials have tracked hundreds of individuals who may have had direct or indirect contact with the three people in Dallas who were confirmed to be infected with Ebola. All were being cleared by officials this week. [RELATED ARTICLE](#)



**Thomas Eric Duncan**, a Liberian man who traveled to Dallas to visit family, died while being treated for Ebola at Texas Health Presbyterian Hospital.

 Confirmed Ebola case

**PEOPLE IN CONTACT WITH MR. DUNCAN**

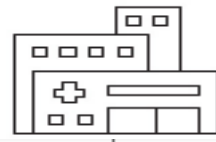


**About 120 people**, mostly health workers, were checked daily by officials who looked for fever and other symptoms. Texas had asked hospital workers who cared for Mr. Duncan to sign a document agreeing to stay away from public places for 21 days.

**48 people** whom Mr. Duncan may have had contact with before being hospitalized had been monitored for 21 days.

**43 contacts** were cleared after three weeks of twice-daily monitoring. Louise Troh, Mr. Duncan's fiancée, who had been under state-ordered quarantine with her 13-year-old son and two other men, was among them.





**HOSPITAL WORKERS TESTED OR TREATED FOR EBOLA**

**Nina Pham**, a nurse who became infected, was transferred to the National Institutes of Health in Maryland for treatment, and recovered.

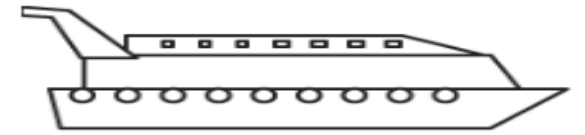
**1 person** who had contact with Ms. Pham was monitored by health officials.

**Amber Joy Vinson**, the second nurse to become infected, had flown to Ohio to plan her wedding after helping treat Mr. Duncan. She was transferred to Emory University Hospital in Atlanta for treatment, and recovered.

**PEOPLE IN CONTACT WITH MS. VINSON**

**16 close contacts** of Ms. Vinson's, including her family, were monitored in Ohio. Ohio health officials said that three people who had direct skin-to-skin contact with Ms. Vinson were

**More than 1,000 Frontier Airlines passengers** were tracked by both the airlines and health officials.



**A lab supervisor** who handled Mr. Duncan's blood samples caused a stir by boarding a cruise ship. She was isolated in a cabin on the ship until health officials confirmed she did not have Ebola.

**The worker's husband** was also isolated in a cabin on the ship.



The **bridal store** in Ohio where Ms. Vinson shopped had a sign out front saying it was closed "until further notice." Its owner was told to quarantine herself.



More than **1,000 Frontier Airlines passengers** were tracked by both the airlines and health officials.

**PASSENGERS OF FRONTIER AIRLINES FLIGHTS**



**153 passengers** on the Oct. 10 flight from Dallas to Cleveland were contacted by officials.



**132 passengers** on the Oct. 13 flight from Cleveland to Dallas were contacted by phone.



**750 passengers** on five other flights that used the same plane afterward were contacted by the airline. Frontier said it would tell them to contact the Centers for Disease Control and Prevention if they had health concerns.



**At least 6 schools** in Texas and Ohio were closed for disinfection because some students had been on the same

**6 crew members** from Ms. Vinson's return flight to Dallas were put on a three-week paid leave.

Sources: Centers for Disease Control and Prevention; Texas Department of State Health Services; Ohio Department of Health; Frontier Airlines

Additional work by Larry Buchanan and Archie Tse

# Measles Outbreak Fraser Valley, British Columbia 2014

FROM

**The Netherlands**

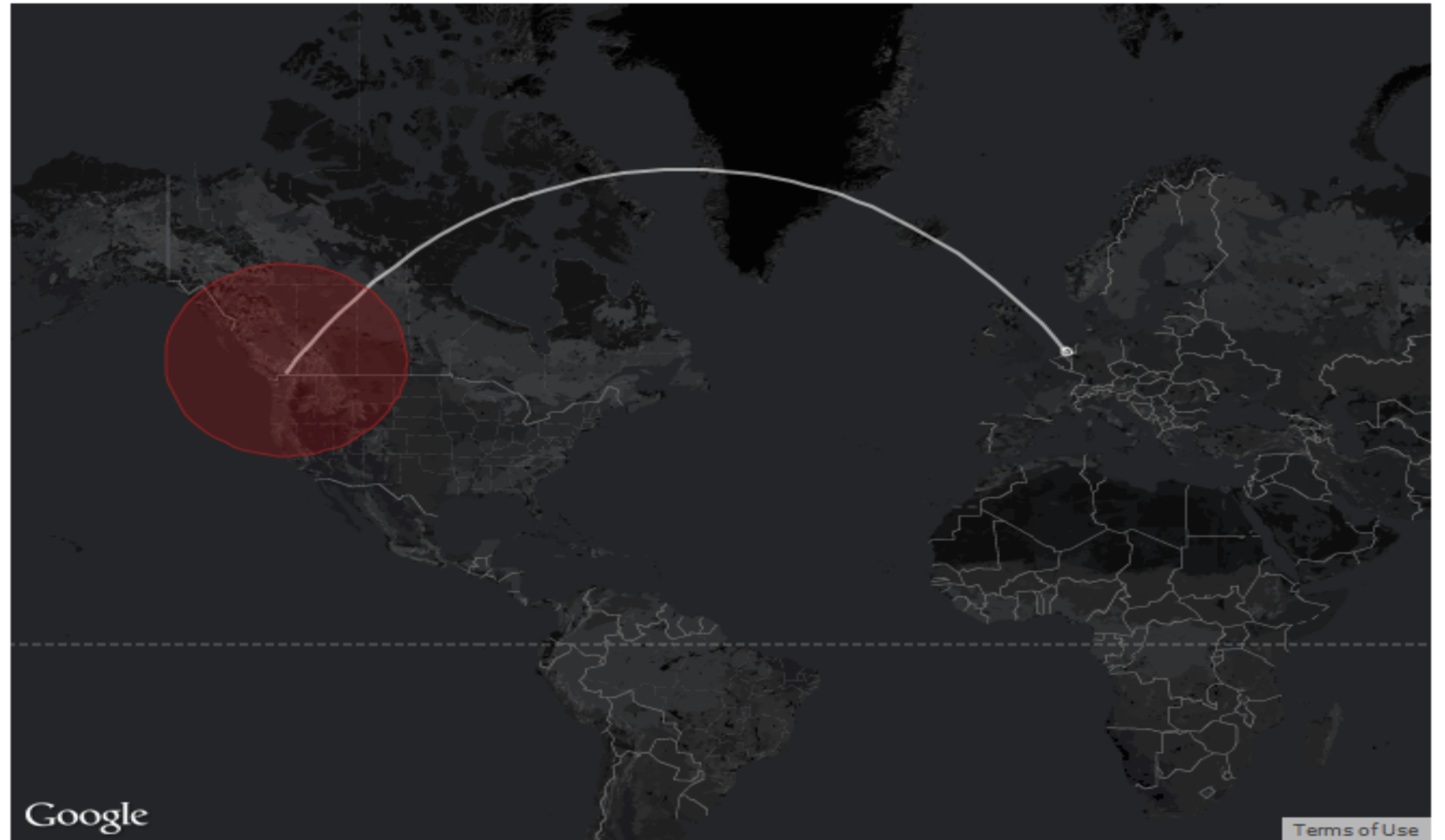
TO

**Fraser Valley, B.C.**

**Affected: >400**

A significant breakout of measles swept through communities in B.C. including Abbotsford, Mission, Chilliwack, Agassiz, Harrison Hot Springs and Hope.

B.C.'s "Patient Zero" is believed to be a member of a family that took a trip to the Netherlands in January.





# Measles Epidemic 2015: A Timeline Of The Outbreak

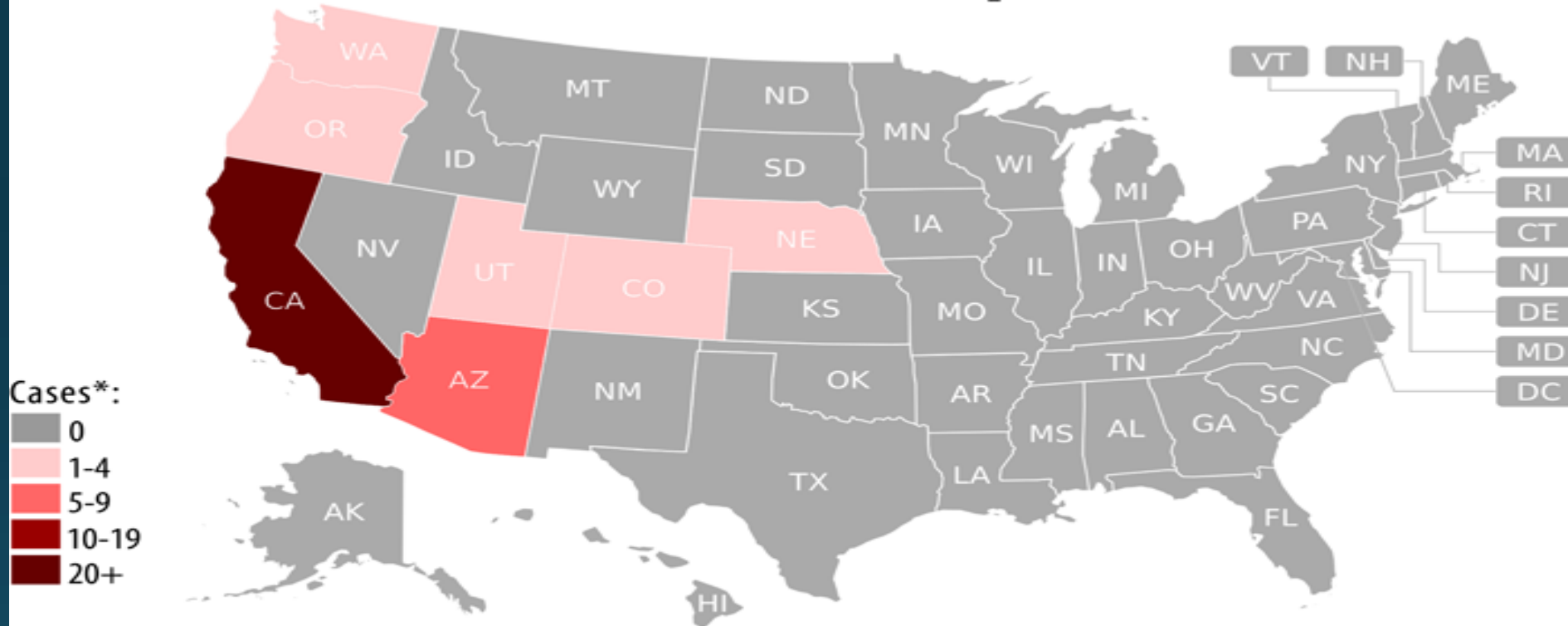


Health officials recently announced that an outbreak of measles they believe originated in Disneyland last December has now spread to multiple states, and experts have linked the epidemic to the growing anti-vaccination movement among parents. Here is a timeline of the recent outbreak in California:

- **February 28, 1998:** British physician Andrew Wakefield publishes the first in a long line of scientific studies that link vaccines to autism
- **June 9, 2004:** Mother of three Karen Myers tells new mom Ashley Wheeler about a “great new parenting blog”
- **April 5, 2011:** Group of negligent parents decide to start calling themselves “anti-vaxxers”
- **September 7, 2011-2014:** Anti-vaccination movement spreads to thousands of other parents through direct online contact
- **December 1, 2014:** Herd immunity still holding up
- **December 15, 2014:** Measles outbreak in Southern California reduces San Diego classroom to manageable size
- **January 10, 2015:** Infected Beckwith family pushes through the pain for a second day at Disneyland because they spent 900 damn dollars for five two-day passes
- **January 11, 2015:** CDC epidemiologists conduct victim surveys in some very weird California homes
- **January 18, 2015:** Ben’s mom gives Jessa’s mom withering glance in preschool parking lot
- **January 26, 2015:** CDC angrily changes answer to “Has measles been eliminated in the United States?” on FAQ page of website
- **January 27, 2015:** Unvaccinated 9-year-old Hunter Warren still fine, so who’s to say who’s right?
- **August 12, 2020:** 2015 outbreak starting to look really quaint

# 2015 Disneyland Measles Outbreak *(From a more credible source)*

## U.S. Multi-state Measles Outbreak December 28, 2014 - April 24, 2015



From December 28 to April 24, 2015, 147 people from 7 states [AZ (7), CA (131), CO (1), NE (2), OR (1), UT (3), WA (2)] were reported to have measles and are considered to be part of a large outbreak linked to an amusement park in California\*.

\*Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases



# Role of the Public Health Nurse

## MASS VACCINATIONS

### PLANNING

Medical Operations in the Clinic

### TRAINING

All Med Staff Positions

### LEADERSHIP

Run the Clinics

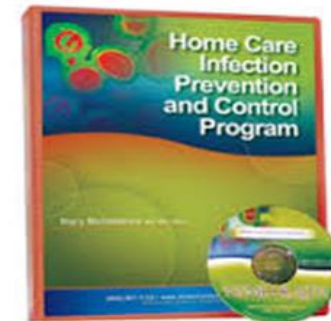
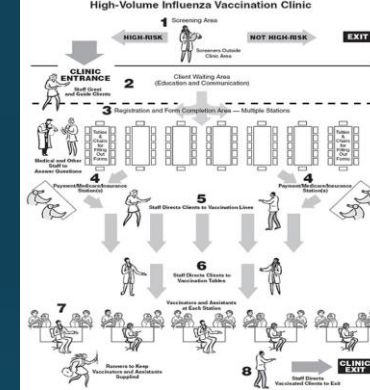
### NURSING

## CD/EPIDEMIOLOGY

- Investigations
- Surveillance
- Home Visits/Assessments
- Specimen Collection

## INFECTION CONTROL

- PPE/Fit Testing
- Community Partners Training
- Educating and Providing Resources to the Community



# Challenges

- Staffing Shortages
- Lack of Time
- Short Term Memory
- Culture of Re-Inventing the Wheel

# Strengthening the PHN Workforce

- Share Resources
- Build Collaboration
- Make it Happen
- Be Creative



# Thank You

Sharon Hofer, RN, BSN

Washington County Public Health