Imported Case of Measles (Rubeola): A Multi-agency Mitigation Approach Mary Jane Lowrey, Martin Chin, Tai Fasoranti MD, Salma Khuwaja MD, MPH, DrPH,



Background

- The ease of international air travel between countries continues to make infectious disease transmission across borders a challenge to public health agencies.
- This has also made it difficult to effectively and timely monitor, prevent and control communicable diseases.
- This case study describes an imported case of measles.

Objectives

- To describe the steps taken in the investigation of an imported case of Measles (Rubeola) into the Houston area.
- To demonstrate the importance of multi-agency collaboration in prompt and timely investigation and intervention in responding to an infection like Measles (Rubeola).

Timeline of Events

The imported measles case was a 36 year-old Caucasian male from South Africa on a business trip to Houston, Texas.

• <u>September 30, 2009:</u>

-Onset of illness was in South Africa when he started experiencing fever, dry cough and sore throat. • <u>October 1, 2009</u>

- -Arrived in the USA
- October 3, 2009 -Onset of rash.
- <u>October 4, 2009</u>

-Presented with rash at a local hospital emergency care center and was tested for possible rash like illnesses and discharged with symptomatic treatment and antibiotics.

• <u>October 6, 2009</u>

-Patient returned to a local hospital emergency care center when the rash had not resolved. • October 6 through 10, 2009

-He was admitted to hospital.

-Patient told hospital staff that he would be en route to Florida (City and mode of transportation) unknown) on October 14, 2009.

-HDHHS was informed by hospital staff that patient's wife said there was a measles outbreak in South Africa before they left for the USA.

-Patient was unable to provide information about his immunization history.

• October 10, 2009

-Patient left the hospital against medical advice (AMA).

-The laboratory results were received after the patient had left the hospital. -Laboratory tests showed an elevated liver function test and positive Rubeola IgM results

- (12.33 AU.).
- <u>October 15, 2009</u>

-Patient was reported to HDHHS.

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Figure 2: Real-time Outbreak and Disease Surveillance System (RODS)



Timeline of Events (Cont'd)

- October 15, 2009 -Patient was reported to HDHHS.
- October 20, 2009

Actions Taken by HDHHS

- illness.
- Network (HAN).

- Florida Department of Health was notified.
- flights during his travel.
- investigation.

Conclusions

- No secondary Measles cases were identified.
- contentment in future.



HDHHS received an update from CDC quarantine officer about the case.

The following timeline about patient's travel was received:

-Arrived in the USA on October 3, 2009 through Atlanta and took a connecting flight to Houston. (Airports and airline identified by CDC)

-Patient departed USA on October 14, 2009 flying from Miami into Atlanta and onward to Johannesburg, South Africa. (Airports and airline identified by CDC) He took a connecting flight to Houston on October 3rd (Airport and Airline identified by CDC).

• An active surveillance system was established to identify any secondary cases by contacting all possible locations of transmission within the incubation period of 7 to 18 days.

• Real-time Outbreak and Disease Surveillance (RODS) system was used to monitor any cases of rash like

• A region wide alert was sent to local area providers regarding the case using Houston Area Health Alert

• All hospitals were notified via Electronic Messaging system.

• Vaccine for Children providers and local health departments in the region were notified.

• Local hotel where the patient stayed while in the Houston area was contacted to inform them about the case and inquire about any other secondary cases or contacts.

• CDC Quarantine Officer at George Bush International Airport was notified. The officer worked with the airlines to obtain travel manifests and identify individuals that had close contact with patient on the

• CDC notified appropriate jurisdictions through EPI-X for further follow up after completing their

• The investigation was closed after three weeks of active surveillance with no secondary cases.

• Use of multiple tools for epidemiological investigation enhanced active monitoring of disease.

• A very extensive multi-agency epidemiological investigation prevented further spread of the disease.

• Timely reporting with provisional diagnosis will promote cost effective investigation through early