

Measles

Matt Linam, MD, MS

Associate Professor of Pediatric Infectious Diseases

Emory University School of Medicine

Hospital Epidemiologist for Scottish Rite Hospital

Children's Healthcare of Atlanta



Patient information

- Patient is a previously healthy 17-year-old female from Equatorial Guinea who recently arrived in the US as part of a student exchange program.
- **Timeline:**
 - **Day 1:** Departed Equatorial Guinea on flight. During the flight, she developed chills, headache, decreased appetite, diffuse abdominal pain and diarrhea.
 - **Day2:** During travel, she developed fever, bilateral conjunctivitis, pharyngitis and wet cough
 - **Day 3-4:** She developed a rash, predominantly on her trunk and extremities.



Patient information

- **Day 4:** She was taken to an urgent care by the program director.
 - Tested negative for influenza, SARS-CoV-2 and Group A Strep
 - Referred to Children's Emergency Department (no communication with the ED)
- **Day 4:** Children's ED:
 - Not initially masked until screened by triage (15 minutes)
 - Once identified, masked and taken to private room (no AIIR)
 - Physical exam: febrile (38.3), ill-appearing, gray spots on buccal mucosa, bilateral cervical adenopathy, abdominal pain
 - Rash (maculopapular rash on bilateral extremities and trunk, coalescing on inner thighs, sparing face)



Patient information

- Admitted to the hospital in Airborne Isolation
- Measles testing sent in coordination with Georgia Department of Public Health (throat rRT-PCR, urine rRT-PCR, serum IgM) on Day 5
 - **Testing was positive**
- Patient did not receive vitamin A
- Clinically improved over 48 hours but remained hospitalized until Day 8 (4 days after onset of the rash)



Patient information

- Past medical history: episode of thyrotoxicosis approximately 1 year ago.
- Social considerations:
 - Lives in the city with parents and twin brother
 - Pet duck, no other animal exposures
 - Brother developed fever and pneumonia and was hospitalized back in EG
 - No other ill people in the travel group



Vaccination History

- Initial vaccination status:
 - Unknown
 - Per report, vaccinations were supposed to be up to date prior to travel and confirmed by the local embassy.
- Vaccination status was later confirmed with the father
 - **Unvaccinated** except for yellow fever
 - No history of prior measles infection



Other Observations

- Patient was part of a travel group of approximately 90 African students traveling to the US.
- Later confirmed that vaccination status had not been confirmed in travelers, so likely other students without measles immunization.
- Students were to leave Atlanta on 3-4 flights going to different US cities where they would be staying with host families.
- Potential for unimmunized members of the host families.
- Unable to halt travel, so students left on the planned flights. No one was symptomatic at the time.
- Students were quarantined in hotels once they landed.



Takeaways

- Patient was likely contagious while on the trans-Atlantic flight.
- Recently changed to no longer requiring universal masking in our ED waiting room and a miscommunication at arrival in the ED resulted in 15 minutes of potential exposure in the ED waiting room.
- There were approximately 40 patients in the waiting room who were potentially exposed to measles.
 - 29 patients with age-appropriate MMR immunization
 - 8 patients considered non-immune (too young, unknown or immunocompromised)
 - No healthcare worker exposures
 - 1 secondary case
- Additional measles cases in the travel group
 - 2 identified cases so far

