

Measles

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Case

- Patient is a previously healthy 2-year-old male, who had spent the previous 8 months in Sierra Leone. **Timeline:**
 - **July 28:** Fever and diarrhea. He was diagnosed with malaria and given 2 doses of an IV medication and discharged on an oral medication for malaria.
 - **August 2:** He arrived back in the US.
 - **August 3:** Seen in the ED for fever and mild cough. His evaluation was unremarkable and his malaria smear and blood culture were negative. Chest x-ray with peribronchial thickening. He was discharged home and fever resolved after 2 days.
 - **August 10-14:** He returned to the ED with fever. Still with a mild cough. Malaria smear positive (0.44%). He was admitted and treated with artemether-lumefantrine for 3 days (8/11-13). Fever gradually resolved. Malaria smear 0%.
 - **August 15:** The patient returns to the ED with a return of his fever and new onset of a rash.



The Story Continues...

- **History:** The patient presented to the ED with fever and a morbilliform rash that started on the face and spread to the rest of the body, sparing the palms and soles. There was nasal congestion but no reports of conjunctivitis. He had 3 episodes of emesis.
- **Physical Exam:** notable for fussiness, white spots on buccal mucosa bilaterally, rhinorrhea, no conjunctivitis, diffuse morbilliform rash
- Measles IgG < 0.2
- Respiratory PCR, blood culture and malaria smear all negative



Additional History

- Past medical history: healthy
- Vaccination history:
 - Up to date on age-appropriate immunizations
 - **Including 1 MMR**
- Social considerations:
 - While in Sierra Leone: no animal exposures, no sick contacts, drank bottled water
 - Lives in the city with parents and younger sister



Illness Course

- **Testing:**

- Measles IgM: **Positive**
- Throat swab, Measles RT-PCR: **measle virus detected**
- Urine, Measles RT-PCR: **measles virus detected**

- **Management:**

- Admitted for dehydration
- Vitamin A 200,000 Units once daily x 2 days
- Airborne isolation through 4 days after the onset of the rash
- Discharged after 4 days (August 18)
- Readmitted on August 24 for return of fever, hospitalized for 2 days and treated with amoxicillin/clavulanate for sinusitis



Takeaways

- Patient was contagious during the entire hospitalization (8/11-14).
- The patient was not in Airborne isolation during the initial hospitalization.
- Same air compartment
 - Waiting room
 - Same HVAC compartment
- Exposure window
 - 30 minutes before
 - 2 hours after
- Immunization status
 - Unimmunized
 - 1 MMR (protected in the community, at-risk in the hospital)
 - 2 MMRs (considered protected)
 - Severely immunocompromised (chemotherapy, BMT, etc)
- Includes staff, parents, caregivers, siblings, visitors, etc.



Takeaways: Exposure Impact

- Patient exposures: **381**
 - 163 were considered susceptible (1 or fewer MMR)
- Employee exposures: **275**
 - All considered protected
- Other identified exposures (caregivers, visitors, etc.): **877**
- **Total exposures: 1,533**
- Only other case was the patient's 14-month-old sister



Takeaways: Response

- 67 exposed at risk
 - 11 IG
 - 3 MMR
 - 53 refused, outside PEP window, or unknown (managed by local health departments)
- 12 patients were still in the hospital
 - 1 IVIG, 1 refused
 - 0 MMR
 - 13 measles IgG (10 protective)

