It’s Friday at 5:31 pm….
Everyone else has left.
You’re locking the door and savoring the weekend.
The pager goes off.

“Could you just drop by and look at this rash?
We’re a little worried….”

Rash #1

• 15 year old Brazilian boy presents to the ER with a new rash after a few days of fever and severe URI symptoms
• He had just attended an international summer camp in the Sierras
• Rash began on face, spread downward

Rash #1 - Question #1

If you had seen this patient on the first day of his rash, where might you have looked to confirm the diagnosis?
a) on the palms of his hands
b) in his mouth
c) on his genitalia
d) in his ears
Rash #1 - Question #2
What infection control measures need to be taken?

a) None
b) Contact precautions
c) Droplet precautions
d) Airborne precautions

Rash #1 - Question #3
The patient sat in the waiting room for an hour before being seen. What post-exposure prophylaxis should be offered those who are susceptible?

a) None
b) Ribavirin
c) Vaccine or IG
d) Vaccine or IG and airborne precautions (starting in 5 days)

Rash #1 - Question #1
If you had seen this patient on the first day of his rash, where might you have looked to confirm the diagnosis?

a) on the palms of his hands
b) in his mouth
c) on his genitalia
d) in his ears

Measles
Caused by measles virus
- 8th leading cause of death in the world
  - 40 million cases/year
  - 1 million deaths/year
  - ~100 cases/year in US (mostly imported)
- 2-6 day prodrome before rash
  - Cough
  - Conjunctivitis
  - Coryza
  - Koplik’s spots
  - Fever

Koplik’s spots

Dermatology Online Atlas
http://www.dermis.net/doia/
Rash #1 - Question #2

**What infection control measures need to be taken?**

a) None  
b) Contact precautions  
c) Droplet precautions  
d) **Airborne precautions**

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Measles

- Highly contagious by airborne droplets and nasal secretions
- Droplets can remain in the air for hours
- Incubation 7-18 days
- Most contagious from 3-5 days before to 2-4 days after rash appears

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Rash #1 - Question #3

**The patient sat in the waiting room for an hour before being seen. What post-exposure prophylaxis should be offered those who are susceptible?**

a) None  
b) Ribavirin  
c) Vaccine or IG  
d) **Vaccine or IG and airborne precautions**

---

Measles

- Susceptible:  
  - born after 1957 and  
  - no serologic evidence of immunity and  
  - no history of 2 doses of vaccine  
- **Prophylaxis**  
  - MMR Vaccine within 3 days or  
  - gamma-globulin within 6 days  
  - can still develop "modified measles" after prophylaxis -- still contagious!

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Rash #2

**A respiratory therapist presents to Occupational Health complaining of a painful rash on her thumb for the past few days, associated with axillary lymphadenopathy.**

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herpetic whitlow

[Image of herpetic whitlow]
Infectious Rashes of Interest to Infection Control and Occupational Health
Dr. Justin Graham
A Webber Training Teleclass

Rash #2 - Question #1

This rash was most likely acquired from
a) an infected patient’s secretions
b) a pet Gambian pocket rat or prairie dog
c) contaminated mail or goat hides
d) gardening with roses or other thorny plants

Rash #2 - Question #2

What infection control measures need to be taken? Should she be allowed to work?
a) No precautions
b) Can work as usual, but with gloves
c) Probably shouldn’t see patients
d) Admit with airborne precautions

Rash #2 - Question #3

What treatment should the therapist be offered?
a) Valacyclovir
b) Vaccine
c) Ciprofloxacin
d) Interferon

Herpetic whitlow

- Herpes simplex virus infection of a finger
- Direct inoculation from primary oral herpes through a break in the skin
- Occupational hazard of respiratory therapists, dentists, anesthesiologists

http://www.mds.qmul.ac.uk/bonnet1/hb/pathology/factma/pics/images/patherp2.jpg
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Rash #2 - Question #2
What infection control measures need to be taken? Should she be allowed to work?
a) No precautions
b) Can work as usual, but with gloves
c) Probably shouldn't work until resolved
d) Admit with airborne precautions

Herpetic whitlow
• Virus shedding through open lesions
• Especially dangerous to infants and immunocompromised
• Risks of transmission, even with gloves, are not well studied

Rash #2 - Question #3
What treatment should the therapist be offered?
a) Valacyclovir
b) Vaccine
c) Ciprofloxacin
d) Interferon

Herpetic whitlow
• Can treat with anti-herpes antivirals x 7-10 days
  – acyclovir
  – valacyclovir
  – famcyclovir
• No documented evidence of benefit of treatment
• Nearly all cases resolve in 2-3 weeks
• Lesions can recur

Bioterrorism break!

Brown Recluse Spider Bite Anthrax!
Cutaneous aspergillosis

Hosted by Paul Webber  paul@webbertraining.com
www.webbertraining.com
Rash #3

A 27 year old woman is brought to the ER in shock with an unusual rash that developed after one day of fever and myalgias without headache. She works in a local restaurant that was just shut down for public health violations.

Rash #3 - Question #1

Among all patients, which of the following is not a known risk factor for acquiring this infection?

a) food service industry employment
b) military boot camp
c) travel to the Middle East
d) living in a freshman college dormitory

Rash #3 - Question #2

What infection control measures are needed until the diagnosis is ruled out?

a) None
b) Contact precautions
c) Droplet precautions
d) Airborne precautions

Rash #3 - Question #3

The laboratory identifies the causative organism and finds it is susceptible to penicillin, which is the first line drug for treatment. What drug should you use for post-exposure prophylaxis for the infectious disease consultant who made the diagnosis?

a) None
b) Penicillin VK 500mg for three days
c) Ciprofloxacin 500mg, one dose
d) Rifampin 600mg BID for 2 days

Meningococcemia

Image by Justin Graham, MD MS
Meningococcemia

- Neisseria meningitidis sepsis
- Does not have to cause meningitis
- Very high mortality
- Survivors often have severe sequelae
  - amputations
  - adrenal hemorrhage
  - congestive heart failure

Rash #3 - Question #1

Among all patients, which of the following is not a known risk factor for acquiring this infection?

a) food service industry employment
b) military boot camp
c) travel to the Middle East
d) living in a freshman college dormitory

Meningococcemia

- Sporadic and epidemic cases
- Many asymptomatic carriers
- Risk for epidemics linked to close crowding of people from different geographic locales
  - exposure to unfamiliar serotypes?
Infectious Rashes of Interest to Infection Control and Occupational Health
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Meningococcemia
- Respiratory pathogen spread by aerosol
- Transmission within the hospital is rare
  - Meningococcal pneumonia presents highest risk of transmission
- Patients are no longer infectious after 24-48 hours of therapy

Rash #3 - Question #3
The laboratory identifies the causative organism and finds it is susceptible to penicillin, which is the first line drug for treatment. What drug should you use for post-exposure prophylaxis for the infectious disease consultant who made the diagnosis?

a) None
b) Penicillin VK 500mg for three days
c) Ciprofloxacin 500mg, one dose
d) Rifampin 600mg BID for 2 days

Meningococcemia
- Antibiotic prophylaxis should be reserved for those with direct contact with respiratory secretions (intubation, suctioning) or household contacts who spent > 4 hours with patient
- Recommended drugs
  - rifampin 600mg PO q12 x 4 doses
  - ciprofloxacin 500mg PO x 1 dose
  - ceftriaxone 250mg IM x 1 dose
- Penicillin treats patient, but not carrier state

Bioterrorism break!

Rash #4
Chemotherapy nurse presents to occupational health complaining of an itchy rash on her hands.

She has just returned from a 2 week vacation to the Philippines.
Rash #4 - Question #1

She recalls treating a cancer patient with a dry crusted rash on his hands. It was 4 weeks earlier & it didn’t itch. Your first thought is:

a) This was the probable index case
b) This patient also traveled to East Asia
c) There are contaminated meds
d) The two cases are similar but unrelated

Rash #4 - Question #2

What can be done right now to prevent others in the hospital from getting this rash?

a) Send the nurse home with appropriate treatment
b) Change soaps to non-reactive formulations
c) Change to non-latex gloves
d) Require pre-travel immunization for all staff traveling to Asia

Rash #4 - Question #3

What is the appropriate treatment for the nurse?

a) None
b) Hydrocortisone cream
c) Trimethoprim-sulfamethoxazole
d) Permethrin

http://medlib.med.utah.edu/kw/derm/pages/n12_3.htm
Scabies

- Cutaneous infestation by Sarcoptes scabei
- Transmitted by skin-skin contact
- Incubation is 2-6 weeks after first exposure; 1-4 days after repeated exposure
- Immunocompromised patients can get scabies crustosa (Norwegian scabies)
  - extensive crusting
  - minimal itching
  - highly contagious

Rash #4 - Question #1

She recalls treating a cancer patient with a dry crusted rash on his hands. It was 4 weeks earlier & it didn’t itch. Your first thought is:

a) This was the probable index case
b) This patient also traveled to East Asia
c) There are contaminated meds
d) The two cases are similar but unrelated

Rash #4 - Question #2

What can be done right now to prevent others in the hospital from getting this rash?

a) Send the nurse home with appropriate treatment
b) Change soaps to non-reactive formulations
c) Change to non-latex gloves
d) Require pre-travel immunization for all staff traveling to Asia

Rash #4 - Question #3

What is the appropriate treatment for the nurse?

a) None
b) Hydrocortisone cream
c) Trimethoprim-sulfamethoxazole
d) Permethrin

Thank you!

(Broad Street pump, London England)
Justin Graham, MD MS

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