

<https://en.wikipedia.org/wiki/Dryvax>

Infection Control
University of South Florida
College of Public Health

PHC 6517
"Post-exposure Prophylaxis & Work Restrictions"
DJIH©2016

USF HEALTH

Post-exposure Prophylaxis (PEP)

- Treatment given following an exposure (**defined or suspected in some cases**) to prevent acquisition of a disease/infection
- This is a **secondary** infectious disease prevention strategy

<http://www.dreamstime.com/stock-photo-hepatitis-b-vaccine-vial-syringe-white-background-image50023502>

<https://en.wikipedia.org/wiki/Tenofovir/emtricitabine>

DJIH©2016

What if No PEP?

- May be a specific type of test (e.g., TST or blood test)
- May be followed up with serological tests (B 19 IgG & IgM) for a defined period
- Examples (tuberculosis, syphilis, Erythrovirus B 19)

DJIH©2016

Work Restrictions

- Time periods **off duty, duty modifications, or clinical requirements for employees** with infectious/contagious conditions
- This is a **secondary** infectious disease prevention strategy

DJIH©2016

What are the Steps**?

- Suspected or diagnosed condition** exists
- An **exposure** to a diagnosed or suspected condition **occurs**
- Definition of exposure** by IC/Employee Health or Emergency Department (or other medical practitioner)
- Administration of medication **if applicable**
- Work restrictions** or modifications
- Employee Health evaluation prior to **return to work**

https://commons.wikimedia.org/wiki/File:Gargrave_stepping_stones.jpg

DJIH©2016

PEP/Work Restrictions for HCWs

- Bloodborne pathogens (**HIV, HBV, HCV**)
- Hepatitis A**
- Meningococcal meningitis**
- Measles
- Pertussis**
- Scabies & lice**
- Tuberculosis**
- Varicella & herpes zoster

DJIH©2016



References



https://en.wikipedia.org/wiki/Desktop_computer

- Required Readings
- CDC website (www.cdc.gov), Topics A-Z
- Find others? *E-mail me!*

<https://www.flickr.com/photos/61423903@N06/7357608430>

DJH©2016

Example #1: Tuberculosis



- **Exposure:** Same room contact (**unmasked**) with expiratory efforts of case (**coughing, sneezing, singing, during bronchoscopy**)
- **Post-exposure:** TST or IGRA of close contacts
- **Preventive treatment:** 4 regimens for LTBI
- **Work restrictions:** Can't return to work until 3 sputum smears (-), clinical improvement & on therapy for at least 2 weeks (**all 3 conditions**)

DJH©2016

Case Example #2: Scabies

- Overview
- Exposure definition
- Post-exposure prophylaxis
- Work restriction



<https://www.flickr.com/photos/liverpoolhs/10819023226>

DJH©2016

What is Scabies?

- Skin condition caused by mite infestation "*Sarcoptes scabiei*"
- Characterized by *intense pruritus* & cutaneous tracks
- **Mites burrow under skin**
- **Conventional & crusted (Norwegian)**
- **Worldwide**

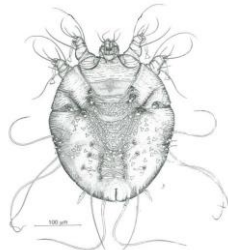


https://upload.wikimedia.org/wikipedia/commons/thumb/4/48/Scabies_4.jpg/137px-Scabies_4.jpg

DJH©2016

The Scabies Mite

http://www.afpmh.org/pubs/FieM_Guide/Images/original/fig.%2052.JPG



<http://www.stanford.edu/class/humbio103/PanSites2004/Scabies/scabies2.jpg>

DJH©2016

Scabies



[https://commons.wikimedia.org/wiki/File:An_introduction_to_dermatology_\(1905\)_scabies.jpg](https://commons.wikimedia.org/wiki/File:An_introduction_to_dermatology_(1905)_scabies.jpg)

DJH©2016

Conventional & Norwegian (crusted) Scabies



<https://en.wikipedia.org/wiki/Scabies>

<http://www.huidziekten.nl/afbeeldingen/scabies-norvegica-2.jpg>

DJH©2016

How is Scabies Transmitted?

- Prolonged *skin-to-skin contact* with infested person with **conventional** scabies
- Persons with **crusted/Norwegian scabies** **highly contagious**
- **How?** Bathing, lifting, application of lotions **in ungloved**
- **Who?** HCWs, physical therapists, massage therapists

DJH©2016

Nosocomial Outbreaks

- Intensive care units
- Rehabilitation centers
- Long-term care units
- Hospital wards
- Daycare centers
- Dialysis unit
- Healthcare laundry



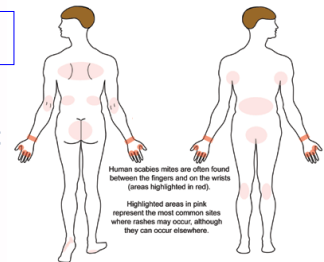
“nosocomial”
aka
“healthcare associated”

DJH©2016

What is Exposure Definition?

Typical scabies rash distribution

Skin-to-skin contact with infected case



DJH©2016

Treatment

- **Scabicides**
 - Permethrin 5% cream- **topical** (“Elimite”)
 - Ivermectin 200 ug/kg-**oral** (“Stromectol”)
 - 10% Crothamiton lotion/cream **topically** (“Eurax”, “Crotan”) once daily X 2
 - Lindane 1% lotion **NOT** first line choice
- **Second treatment may be necessary**
- Bedding, clothing, towels washed in hot water & dried in hot dryer



Source: <http://www.cdc.gov/parasites/scabies/treatment.html>

DJH©2016

Precautions for Hospitalized Case



- **Contact Precautions**
- Use **gown, gloves** for handling patient & articles contaminated by patient **until treatment completed (usually 24 hours)**
- Occasionally transmitted by **inanimate objects** (laundry) (not **as efficient**)

DJH©2016

Post-exposure Prophylaxis (PEP)



- **DO NOT** routinely provide PEP scabicide treatment to personnel with skin-to-skin contact with scabies patients (Cat. II)
- **Consider PEP** scabicide to HCW when transmission has occurred (Cat. II)

<https://pcpacer.org/about/>

DJH©2016

Work Restrictions

- **Exclude personnel with confirmed scabies from care of patients** until they have received appropriate treatment & have been shown, by medical evaluation, to be effectively treated

- **Category II**



DJH©2016

Case Example #3: Herpes Zoster

- **Exposure definition**
- **Post-exposure prophylaxis?**
- **Work Restriction?**

vesicles of herpes zoster



<https://www.flickr.com/photos/ajk-1/8622262954>

DJH©2016

What is Herpes Zoster?

- Local manifestation of reactivation of **varicella zoster** virus infection
- **AKA shingles**
- Secondary infection (**follows primary infection with varicella**) [chickenpox]
- **Some may never get shingles**
- **Triggers (pregnancy, immune suppression, sunlight, stress, etc.)**

DJH©2016

Types & Transmission of Herpes Zoster

- **Localized** (limited to 1-2 dermatomes) (transmitted by **contact with lesions**)
- **Disseminated** (spread through more than 1-2 dermatomes-may be transmitted by **aerosol(?), droplet route & contact with lesions**)

Localized herpes zoster



<http://risaimoga.net/Trieu-chung-sui-mao-ga/Page-2.html>

DJH©2016

Localized vs. Disseminated Zoster

- **Localized Herpes Zoster**
- **Disseminated Herpes Zoster** (affecting **multiple dermatomes**)

<http://www.health-pictures.com/disease/images2/shingles.jpg>



http://www.microbiologybook.org/virol/zoster_disseminated.jpg

DJH©2016

What is a VZV Exposure**?

- Contact with lesions of *localized herpes zoster (HZ)*
- Contact with lesions, droplets, airborne secretions of *disseminated HZ*
- Contact with lesions, droplets, airborne secretions of *chickenpox*

****To those who have not had chickenpox**

DJH©2016

HZ PEP & Work Restrictions

PEP examples:

- immune HCW exposed to disseminated HZ
- non-immune employee exposed to disseminated HZ

<https://www.flickr.com/photos/36243589@N04/14471106513>



Other scenarios:

- see Required Readings excerpts from Isolation/Precautions, PEP & varicella case example lectures

DJH©2016

Can These People with Herpes Zoster Work?

<https://www.huidhuis.nl/huidaandoening/gorde-troos>



<http://medicine.medscape.com/article/1133465-clinical>



Nurses with localized HZ
Physical therapist with localized HZ

https://commons.wikimedia.org/wiki/File:Herpes_zoster_back.png

DJH©2016

Isolation/Precautions for Varicella

- **Varicella: Airborne, Contact**
- Maintain precautions until all lesions crusted. Average incubation period is 10-16 days (range 10-21). After exposure, use Varicella Zoster Immune Globulin (VZIG) when appropriate, & discharge susceptible patients ASAP
- Place *exposed susceptible* patients on Airborne precautions from 10-21 days after exposure (*up to 28 days if VZIG given*)
- Susceptible persons should not enter room of patients on precautions if other immune caregivers are available

DJH©2016

Chickenpox



https://commons.wikimedia.org/wiki/File:Chickenpox_Adult_back.jpg

DJH©2016

Isolation/Precautions for Herpes Zoster

- **Disseminated in any patient; Localized in immunocompromised patient until disseminated ruled out: Airborne, Contact**
- Persons susceptible to varicella are also at risk of developing varicella when exposed to patients with herpes zoster lesions; susceptible persons should not enter the room if other immune caregivers are available
- **Localized in normal patient: Standard**

DJH©2016

Synthesis/Application

The challenge of
varicella exposures
in healthcare
settings & the
varicella vaccine

(next lecture)



<http://www.vaccineinformation.org/photos/varic-de014.jpg>

DJH02016