

1.	Welcome to the lecture entitled “Post-exposure Prophylaxis (PEP) and Work Restrictions”. This lecture covers PEP for the most common diseases/conditions encountered in infection control practice.
2.	Post-exposure prophylaxis (PEP) is a measure taken to maintain health and prevent the spread of disease. It is a treatment you give after exposure to prevent acquisition of disease or infection. Thus, it is very important for you to realize that it is a <b>secondary infectious disease prevention strategy</b> , even if it is an immunization. This exposure can be very definitively defined in some cases and in others it can be just suspected. The treatment could be an immunization, it could be an antibiotic, it could be a toxoid or an immune globulin. One thing that may be a bit confusing is that the term “post-exposure prophylaxis” is actually an oxymoron, with two opposite terms. Just remember that when given after an exposure, an immunization or antibiotic is a secondary infectious disease prevention strategy. This is a very important part of the infection control program and the certification exam.
3.	What if there is no PEP? In other words, what if there is not a treatment that we can give someone who was exposed to prevent them from contracting a disease? There may be some other tests or procedures that can be done after an exposure. One example would be a TB exposure. If someone was exposed to TB because a patient wasn’t isolated, you could do screening with a tuberculin skin test (TST) or a tuberculosis blood test. So you could follow up to see if someone has converted to a positive test, which means they may be infected with tuberculosis. The exposed persons who convert to a positive TST or blood test could then be offered anti-TB meds ( <i>more about this in the TB case example</i> ). Serological tests are another example of a non-medication PEP. Say someone was exposed to syphilis and there is not a PEP medication for this, but a serological test to follow up to see if that person acquired syphilis. In that case, treatment could be started early, but the serological test needs to be done first. Another example of a disease without PEP is Erythrovirus B19, also known as human parvovirus B19, slapped cheek disease or Fifth disease. The problem with this disease is that by the time someone gets the symptoms (a red rosy, slapped cheek appearance, or sometimes there is swelling and pain in the joints), they have already been infectious. So it is too late because there has already been an exposure and there is no medication to give to prevent infection. If the exposure has occurred to pregnant women, there is a risk to the unborn child. Post-exposure recommendations include performing B19 serologies (IgG & IgM) and serial ultrasound examinations in an obstetric situation to determine if the mother has become infected, and to see if there is a problem with the fetus. These are three examples of what needs to be done following an exposure if there is no specific PEP medication indicated.
4.	Besides PEP, as a secondary infectious disease prevention strategy, there are also work restrictions. These are specifically designed so that an employee is not going to be allowed to come back to work until considered noninfectious or they are going to be placed in a work situation where they won’t be a risk to others of causing an infectious condition. So a work restriction consists of time periods either completely off duty or duty modifications, (e.g., an obstetric nurse can’t work doing patient care if she has been exposed to measles and isn’t immune to this disease). Someone who is immune-suppressed may not want to take care of patients with a specific infection until that condition has subsided, as some types of infection could place that employee at risk of transmission. Therefore, work restrictions can range from completely sending employees off work or modifying their

	<p>duties or clinical requirements for employees with contagious or infectious conditions. Another example would be if someone who works in the cafeteria had a positive culture for <i>Salmonella</i> for example, he/she cannot come back to work until they have two negative stool cultures one day apart or three negative stool cultures one day apart and not have diarrhea. That would be a clinical requirement for someone to come back to work. A third example would be to require some type of personal protective equipment to be worn, such as gloves or a mask, for employees who may have an infectious condition, while at work, until that condition subsides or clears. In your Control of Communicable Diseases text, there are many examples of these situations. They will tell you that if an employee has a specific condition, then they have this work modification or restriction. One of the Required Readings for this week is a table of work restrictions for healthcare workers according to specific infectious diseases/conditions and how long the duration of that work restriction is. This is a very important reference for Employee Health aspects of Infection Control and one with which you should become very familiar.</p>
5.	<p>What are the steps or sequence of events with a PEP situation? The first step is that there is either a suspected condition or a diagnosed condition present in an employee, visitor or patient. There has to be a situation where someone is suspected to have a disease or they are diagnosed to have an infectious disease/condition. Next, an exposure has to occur: e.g., ungloved, unmasked, contact with secretions from someone with suspected or diagnosed meningococcal disease or a needle-stick exposure to someone with HIV/Hepatitis B or C, etc. After that happens, the employee health and infection control department, in concert, will provide a definition of what is considered an exposure. Let's give an example of what typically will happen. A patient comes in to the ER with suspected meningococcal meningitis, they develop petechiae (which is a symptom of meningococcal meningitis) and that patient goes into a cardiac or respiratory arrest. The patient is given mouth to mouth resuscitation and perhaps a healthcare worker gives CPR (cardiopulmonary resuscitation) unmasked or without a protective field between them and the patient. The employee health and infection control departments will say "Let's check this out." Do they have a lumbar puncture from the source patient that shows meningococcal meningitis, do we have a strong suspicion of this disease, enough to consider this an exposure? They then will send out an exposure memo and say "A possible exposure to meningococcal meningitis occurred on June 3rd to employees of the ER and paramedics. An exposure is defined as unmasked ungloved contact, while suctioning, CPR, or resuscitation." This provides an exact definition of what the exposure is and then this will be posted, so that all employees who were possibly exposed can see the notice. Employees would then come to Employee Health, or the Emergency Department if Employee Health isn't open, to be assessed and given the medication or vaccine if it is warranted. It also might be necessary at that point to put a work restriction on people depending on what the situation is. For example, if they are exposed to this disease, they can't come back to work until the disease is ruled out or they have had three days of negative cultures or they have had five days of pertussis medication, etc. You will see all of these examples in this lecture. Once a work restriction or modification has run out, then it is imperative that an employee doesn't just show up back at work. They need to go to Employee Health to be evaluated. Let's say someone had chickenpox (and as you'll learn in Part II, are infectious until all lesions are dried and crusted). This infected employee thinks all of his/her lesions are dried and crusted and goes to Employee Health. Employee Health examines the back and sees brand new lesions. As long as there are new lesions, a person is considered infectious, so he/she would not return to work. There has to be someone to officially evaluate employees before returning to work, that cares about not exposing patients, visitors, and/or other employees. Employee or Occupational</p>

	Health departments are often charged with this responsibility. Thus, these are the steps in a PEP situation. There has to be some condition that exists, whether it be suspected or diagnosed, as the first step.
6.	I have tried to select the most important situations that an infection preventionist should know (from all of my years of experience and five times taking the certification exam), to represent what is necessary to know regarding PEP. There is usually a question regarding each of these diseases on the CIC exam. So by the end of this, by use of examples in the lectures, the Required Readings and Assignment #3, you should be familiar with the PEP for all of these.
7.	The best references that I can recommend for the topic of PEP are listed on this slide. The Required Readings are excellent resources and I recommend the full version from which each excerpt was taken, if you plan to enter the field of infection prevention. Another excellent resource is on the CDC website, Topics A-Z, by clicking on each disease. There are many other references and you may find some more that you would like to recommend. If so, please do not hesitate to share this information and feel free to e-mail me.
8.	Let's go through some examples, starting with a tuberculosis exposure. An unfortunate occurrence that we sometimes see in a healthcare facility, is an exposure to tuberculosis (TB). Sometimes a patient is not suspected to have TB and is not put into isolation soon enough. Sometimes a patient is taken out of isolation/precautions too soon when still infectious. Sometimes the engineering controls, like negative air ventilation, are not working. In terms of what causes outbreaks or exposures to TB, it is not putting someone into isolation when they have it, taking them out too soon, or not having the right engineering controls. Therefore, an exposure to TB would occur if someone were in the same room, unmasked, when a TB patient was either coughing, sneezing, or having a respiratory procedure that produces tubercle bacilli into the air. So that would be an exposure. Post-exposure, tuberculin skin testing (TST) or a blood test called an interferon-gamma release assay (IGRA) tests of close contacts, could be conducted among healthcare workers who experienced such an exposure to a diagnosed TB case. If someone, after an exposure to TB, comes up with a positive TST or IGRA and is determined to have latent TB infection (LTBI), treatment to prevent progression to TB disease, can be given with 1 of 4 different regimens, using Rifampin, Isoniazid (INH) or Rifapentine from lengths of time ranging 3-6 months, depending upon the regimen). Latent TB infection means that the tubercle bacillus has entered the body but has not caused disease. So preventive treatment would be some kind of medication for those people that have a positive skin or blood test as a result of the exposure and have been evaluated to have LTBI. There are NO work restrictions for a person with LTBI, as it is not contagious but the drug regimen may prevent progression from LTBI to TB disease. Using another example, if a healthcare worker has TB disease, it is contagious and there are work restrictions. The employee can not come back to work, until there are 3 negative sputum smears, clinical improvement and at least 2 weeks of effective therapy. It is not just one of those conditions, but all three of those that are required. Thus, if asked, "how long does someone have to stay in isolation for TB". It is after 3 negative sputum smears, clinical improvement and therapy for 2 weeks. So that is a case example for TB PEP and work restrictions for someone with TB disease. <b>(Note: If you are interested in more information on LTBI and TB disease, skin testing or IGRA, visit <a href="http://www.cdc.gov">www.cdc.gov</a> and select "tuberculosis".)</b>

9.	Let's do case example number two, scabies. This is commonly covered on the CIC exam and unfortunately has occurred in some healthcare facilities. We are going to provide a brief overview on scabies, define a scabies exposure, outline the post exposure recommendations, provide some pictures of scabies infestations, and describe the work restrictions.
10.	Scabies is a skin condition that is caused by an infestation of the skin by the " <i>Sarcoptes scabiei</i> " mite. It is characterized by intense itchiness and scratching. Under a microscope, cutaneous tracks where the mites burrow under the skin and deposit their eggs, can be visualized. There are conventional scabies or crusted (aka Norwegian) scabies. Norwegian scabies can manifest with extensive scaling and crusting in immune deficient and elderly patients. Scabies can be passed easily by an infested person to his or her household members and sexual partners. Scabies in adults frequently is sexually acquired. Scabies is a common condition found worldwide; it affects people of all races and social classes. Scabies can spread easily under crowded conditions where close body and skin contact are common.
11.	Here is a picture of the scabies mite.
12.	Here is an illustration of the scabies mite.
13.	The picture on the top left shows a very good example of the skin folds where scabies are often located. The picture on the right shows more of an area where there is a wrist infestation, where that larger red area is. Scabies does not always look the same on every infected person. It depends on the age of the patient, the skin condition, and what type of scabies it is. So as you can see, these pictures show variable presentations of scabies.
14.	Here are two photos of conventional scabies on the left and Norwegian scabies on the right. Some immunocompromised, elderly, disabled, or debilitated persons are at risk for a severe form of scabies called crusted, or Norwegian, scabies. Persons with crusted scabies have thick crusts of skin that contain large numbers of scabies mites and eggs. The mites in crusted scabies are not more virulent than in non-crusted scabies; however, they are much more numerous (up to 2 million per patient). Because they are infested with such large numbers of mites in exfoliating skin scales, persons with crusted scabies are very contagious to other persons. In addition to spreading scabies through brief direct skin-to-skin contact, persons with crusted scabies can transmit scabies indirectly by shedding mites that contaminate items such as their clothing, bedding, and furniture. Persons with crusted scabies should receive quick and aggressive medical treatment for their infestation to prevent outbreaks of scabies.
15.	This is an extreme case of Norwegian scabies.
16.	How would one get exposed to scabies? Humans are the source of infestation; animals do not spread human scabies. <b>Scabies is transmitted by prolonged direct skin to skin contact with infested skin, and also through sexual contact.</b> It is usually not a transient contact with conventional scabies that will result in transmission of this condition. An infested person can spread scabies even if he or she has no symptoms. As mentioned

	<p>previously, persons with crusted (or Norwegian) scabies are highly contagious. How would such contact occur in a healthcare setting? Bathing a patient (<i>you usually do not wear gloves to do that</i>), lifting a patient (<i>this could take a long time</i>), turning the same patient (<i>if you have them for 8 hours you do this numerous times, giving more opportunity for contact</i>), putting lotions on a patients (<i>if you are not gloved, because mites do not go through gloves</i>). Therefore, you probably want to think about who is at a higher risk for an exposure to scabies. Obviously this includes HCWs, but also physical therapists, (who are known for their hands-on care). One does not often see a physical therapist wearing gloves while working with a patient. Also, massage therapists are another high risk occupation for acquiring scabies.</p>
17.	<p>In the literature, there have been documented nosocomial (or healthcare-associated) outbreaks in intensive care units, rehab centers, and facilities where people are in for prolonged periods, such as long term care units. It can also occur on a hospital ward, daycare centers, and there is a report of an outbreak in a dialysis unit. Even though it is not as efficient, there can be transmission via inanimate objects, or “fomites”, such as contaminated laundry, if there is prolonged contact without wearing gloves. There have been scabies cases linked to laundry workers. The hospital that I worked at in California had long term care units and we had a scabies outbreak on one of them. We had numerous patients and a HCW that came down with scabies and published about this experience.</p>
18.	<p>So what is the <b>definition of an exposure</b> to scabies? Skin to skin contact with an infected case. Obviously that means while not wearing gloves. If you have gloves on, then it isn't skin-to-skin contact. This picture shows a typical distribution of a scabies rash on an infected person.</p>
19.	<p>Products used to kill scabies mites are called <i>scabicides</i>. <b>No “over-the-counter” (non-prescription) products have been tested and approved to treat human scabies.</b> There are several different effective agents for the treatment of scabies available only by prescription. One is permethrin 5% cream which is applied topically. <b>Permethrin</b> is approved by the U.S. Food and Drug Administration (FDA) for the treatment of scabies in persons who are at least 2 months of age. Two (or more) applications of permethrin, each about a week apart, may be necessary to eliminate all mites, particularly when treating crusted (Norwegian) scabies. Ivermectin 200µg per kg, administered in one oral dose, is an antiparasitic agent approved for the treatment of worm infestations. Evidence suggests that oral Ivermectin may be a safe and effective treatment for scabies; however, it is NOT FDA-approved for this use. Oral Ivermectin has been reported effective in the treatment of crusted (Norwegian) scabies; its use should be considered for patients who have failed treatment with or who cannot tolerate FDA-approved topical medications for the treatment of scabies. A total of two or more doses of Ivermectin may be necessary to eliminate a scabies infestation. Crotamiton 10% lotion and cream 10% are approved by the U.S. FDA for the treatment of scabies in adults but not children, is considered safe when used as directed, but frequent treatment failures have been reported with this. Lindane lotion 1%, although FDA-approved for the treatment of scabies, is <b>not recommended as a first-line therapy</b>. Overuse, misuse, or accidentally swallowing Lindane can be toxic; its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. Lindane should NOT be used to treat premature infants, persons with a seizure disorder, women who are pregnant or breast-feeding, persons who</p>

	<p>have very irritated skin or sores where the Lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.</p> <p>Bedding, clothing, and towels used by infested persons or their household, sexual, and close contacts (as defined above) anytime during the three days before treatment should be decontaminated by washing in hot water and drying in a hot dryer, by dry-cleaning, or by sealing in a plastic bag for at least 72 hours. Scabies mites generally do not survive more than 2 to 3 days away from human skin.</p> <p>Sources:  <a href="http://www.cdc.gov/parasites/scabies/health_professionals/meds.html">http://www.cdc.gov/parasites/scabies/health_professionals/meds.html</a> and  <a href="http://www.cdc.gov/parasites/scabies/treatment.html">http://www.cdc.gov/parasites/scabies/treatment.html</a></p>
20.	<p>Here are some pictures of scabies treatments, with Permethrin on the bottom, Crothamiton on the top and Ivermectin, on the right. <i>(These are NOT intended to endorse any products)</i></p>
21.	<p>If a patient in the hospital has scabies, he/she is put on “Contact Precautions”. Gowns and gloves should be worn not only when handling that patient, but for articles of clothing, linens, etc. contaminated by the patient until treatment is completed. When you look this up in the 2007 Appendix A Guidelines (one of your Required Readings) it says to use Contact Precautions until 24 hours after the initiation of effective therapy. Even though it is not as efficient, I mentioned earlier that scabies can be occasionally transmitted by inanimate objects or fomites, such as laundry.</p>
22.	<p>In terms of categorization, both of the recommendations for scabies PEP are Category II. This is defined as “Suggested for implementation in many hospitals. Recommendations may be supported by suggestive clinical or epidemiologic studies, a strong theoretical rationale, or definitive studies applicable to some but not all hospitals” (Guideline for Infection Control in Healthcare Personnel, 1998). The first recommendation is, “Do not routinely provide PEP scabicide treatment to personnel with skin to skin contact with a scabies patient”. Just having skin to skin contact with an infected case does not necessarily mean you will develop scabies; therefore PEP is not automatically recommended. The second says “Consider PEP scabicide to a healthcare worker(s) when transmission has occurred”. When there has been evidence that transmission of scabies has occurred from patients to HCWs, then PEP should be considered for HCWs. But the guideline does not automatically give PEP if you have a scabies exposure. I can tell you that this is a question very often on the certification exam: Is scabicide treatment routinely recommended for HCWs for skin to skin contact with a known scabies case? The answer is “NO”.</p>
23.	<p>There is also a Category II recommendation regarding work restrictions for persons with scabies. If a HCW has confirmed scabies, obviously you don’t want that employee caring for patients until he/she has had treatment; it’s been shown to work, and the employee is medically evaluated before returning to work to make sure that person is not still infested.</p>
24.	<p>The 3rd case example is herpes zoster. On the bottom right of this slide is a very good picture of the lesions of localized herpes zoster. We are going to talk about what the definition is, what you give for PEP, and any work restrictions.</p>

25.	<p>There are usually questions on the certification exam about herpes zoster (also known as “shingles”). Herpes zoster is a local manifestation of reactivated varicella zoster virus (VZV) infection. Herpes zoster is a secondary infection, following primary infection with varicella. If you have not had chickenpox (varicella) and you are exposed to someone who has herpes zoster, you will not get herpes zoster, you will get chickenpox. Chickenpox is the primary infection. You may never, for the rest of your life, get shingles after you have had chickenpox, but there are triggers that can cause the secondary infection with shingles or herpes zoster. Pregnancy, sunlight, stress, chemotherapy drugs, and immune suppression are some of those triggers. I have seen two colleagues undergoing major life events (such as a job change and a move) who have gotten shingles, so stress is a trigger. Thus, it is very important to realize that herpes zoster is the secondary infection with varicella zoster. The primary infection is (varicella) chickenpox. Be sure that you understand the difference between chickenpox and herpes zoster.</p>
26.	<p>Let’s explore types and transmission of herpes zoster. Before doing that, you need to know how the varicella zoster virus (VZV) infection works. Once a person has primary varicella infection (chickenpox), the virus settles in nerve tissue (dorsal root ganglia) where it lies dormant, usually for years. Shingles, the secondary varicella virus infection, is unpredictable and can crop up at anytime in anyone who has had chickenpox. There are two types of herpes zoster: localized or disseminated. Localized herpes zoster, by definition, is reactivation of the VZV in the distribution of 1-2 dermatomes. A dermatome is the area of skin innervated by a single posterior spinal nerve (sensory nerve). In the localized form, the virus can be transmitted by direct contact with open, draining zoster lesions. When it is localized, a person does not transmit the virus by airborne or droplet particles. Immunocompromised patients with zoster are at risk of developing widespread infection with VZV, called disseminated herpes zoster. With this syndrome, skin lesions may develop over the entire body (outside of 1-2 dermatomes) and infect internal organs. Once it becomes disseminated and it spreads to more than 1-2 dermatomes, there is a possibility of droplet transmission, and there is always the potential for transmission by contact with the lesions. There is also a question of transmission by very small airborne particles as well.</p>
27.	<p>On the left, is a picture of localized herpes zoster and on the right, one of disseminated herpes zoster that affects multiple dermatomes.</p>
28.	<p>Given this background, what is the definition of an exposure to varicella zoster virus (VZV)? This gets a little tricky because we have primary and secondary infections with the varicella zoster virus. Contact with lesions from localized herpes zoster is an exposure. Contact with lesions, droplets, and possibly airborne secretions of someone with disseminated herpes zoster is an exposure. Contact with lesions, droplets, or airborne secretions from a person with chickenpox all constitute an exposure. In all of these cases, it is only a VZV exposure if you have NOT had chickenpox. If you have had chickenpox, you can jump up and down, rub your skin against a lesion, go in there and do breathing exercises without a mask and you will not get chickenpox.</p>
29.	<p>Let’s discuss PEP and work restrictions for herpes zoster. Remember that PEP and work restrictions only apply to those exposed persons who have never had chickenpox. Let’s say a HCW goes to Employee Health and reports, “I went in to Mr. Smith’s room and he’s got disseminated herpes zoster”. Employee Health looks up that employee and sees that he/she has a positive varicella titer on file that indicates immunity to chickenpox. This is NOT going to be considered an exposure.</p>

	<p>Given another example, there is a HCW who has a documented negative varicella titer indicating susceptibility to varicella who experienced the same exposure as the first HCW. In this case, the PEP would be as follows: “Exclude from duty unless receipt of the second dose of varicella vaccine is given within 3-5 days of exposure. If not, the work restriction would be to exclude from duty from 8 days after the first exposure through the 21st day after the last exposure. If VARI-ZIG given, then extend work restriction until 28 days after last exposure.”</p> <p>There are several other situations that could occur: an employee with active varicella, a non-immune employee exposed to varicella, localized herpes zoster in an employee (which we will cover in the next slide), disseminated or localized HZ in an immunocompromised person (which we will cover in the next slide), and a HCW without evidence of immunity exposed to localized zoster with contained/covered lesions. We will not cover all of these as case examples. If interested, you are encouraged to review all of these scenarios from the Immunization lectures and the readings from PEP lectures from “Immunization of Healthcare Personnel: Recommendations of the Advisory Committee on Immunization Practices”, Table 5 and the varicella section.</p>
<p>30.</p>	<p>Let’s use 2 case examples here. On the left, are two nurses with localized herpes zoster. The top left is a female, the bottom left is a male. Can either nurse work? Yes or no or with what conditions? If the nurse is immunocompetent and these lesions are in an area that can be covered, he/she can work but the care of high-risk persons must be restricted and he/she needs to keep the area covered. High-risk patients that could NOT be cared for would be defined as patients who are susceptible to varicella and at increased risk for complications of varicella (e.g., neonates, pregnant women and immune compromised persons of any age). Remember the definition of work restrictions covers off duty, work with restrictions, or work with clinical requirements. On the right you have a physical therapist on chemotherapy with localized herpes zoster. Can that person work? In this case, the employee is immune suppressed due to chemotherapy and the chance of dissemination is unknown but possible. In addition, the lesions cannot be covered. This person would be excluded from duty until all lesions dry and crust.</p>
<p>31.</p>	<p>Let’s now talk about precautions. Varicella is one of those diseases requiring two categories of precautions: Contact and Airborne, because it can be transmitted by lesions and the airborne route. So if you have someone with varicella in the hospital, they have to be on both kinds of precautions until all lesions are dried and crusted. The average incubation period is 10-16 days, but it can range from 10-21. We will learn that if you give VARI-ZIG, a form varicella zoster immune globulin (VZIG), that can lengthen the period a person has to be in precautions. The top bullet on this slide is for someone who has varicella. The second bullet applies to patients exposed to varicella in the healthcare setting. They are NOT forbidden to go home, but if for any reason they CANNOT go home yet, and they are going to be in a hospital over the potential incubation or infectious period, patients should be placed on airborne precautions only if or until something happens. If they don’t have a rash and they don’t get chickenpox, there is no reason to put them on Contact Precautions during the potential incubation period. You only have to protect against airborne transmission that can occur 1-5, but more notably 3 days, before rash develops. So by placing that patient who is exposed or susceptible in airborne precautions, you are going to prevent an exposure if he/she develops chickenpox. If that patient DOES get varicella, it bumps them up to this top bullet, which is someone who has varicella. This is a common question asked on the CIC exam. Finally, if you as a HCW haven’t had</p>



	chickenpox, you should not go into the room if you have other caregivers available who have had it.
32.	Here is a person with disseminated chickenpox lesions on the back. How many of you have had chickenpox? Do you remember how you would have different crops of lesions, some would be all dry and some brand new? That is a characteristic that differentiates the chickenpox rash from smallpox. With smallpox, all of the lesions come at the same time in a particular area. Chickenpox has an asynchronous rash distribution and smallpox has a synchronous distribution.
33.	Let's talk about isolation for herpes zoster. If you have someone with disseminated zoster, you are going to place them on Airborne and Contact precautions because VZV can be transmitted by lesions and the airborne route. Until dissemination in an immune-compromised person with localized zoster is ruled out, this same recommendation for Airborne and Contact applies. Persons susceptible to varicella are also at risk when exposed to lesions of herpes zoster. So that same guideline about non-immune caregivers is in effect. If you have a patient who has localized herpes zoster and he/she is not immune suppressed, you only need to use Standard Universal Precautions. Think about this one a minute. You are telling people who have not had chickenpox to NOT go into a room and if they do go in the room and they have had chickenpox, you tell them to use Standard Precautions. What does that mean? It means you would wear gloves if you have contact with herpes zoster lesions. Because if you have had chickenpox and you touch that patient without gloves, it is NOT going to transmit herpes zoster to you. Using that same example, however, it is possible to transmit the chickenpox virus to a susceptible person you touch without washing your hands. And you could still transmit other things, so that is why gloves should be worn for contact with any blood, body fluids or non-intact skin (such as herpes zoster lesions). Thus, the need for Standard Precautions.
34.	<p>The whole topic of varicella, the vaccine and work restrictions presents many infection control challenges to healthcare facilities. For these reasons, I like to present an application lecture next, to synthesize several issues together: isolation, vaccination, PEP, and work restrictions. Remember that infection preventionists need to be familiar with all of these issues for the infectious diseases listed on slide #6 as well as the ones on the Assignment for this week.</p> <p>This concludes the lecture entitled "Post-exposure Prophylaxis (PEP) and Work Restrictions".</p>