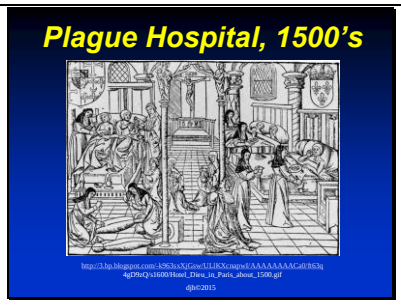
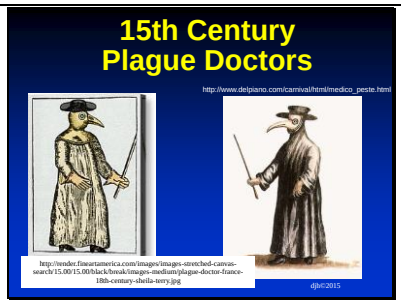
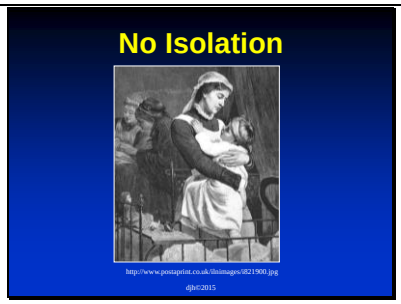
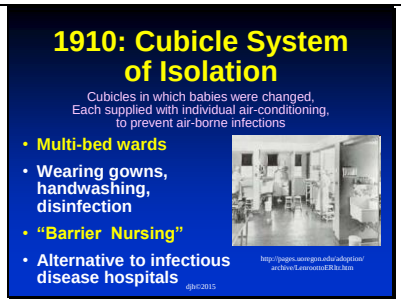
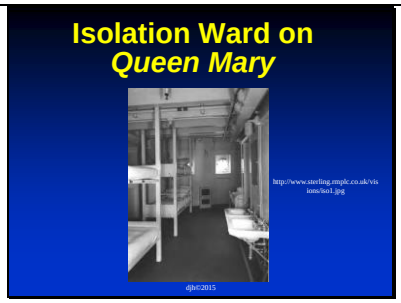
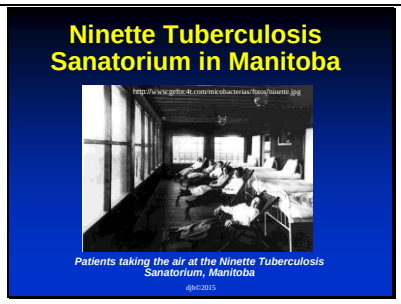
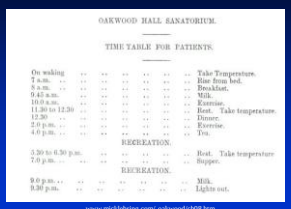
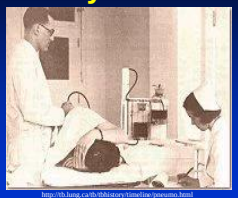
Slide 1		This is the second lecture under "Isolation/Precautions" entitled the "Evolution of Isolation Precautions in Healthcare Facilities". In this section, we will take an historical look at how the system of isolation/precautions has evolved, ending right before the most currently updated CDC (Centers for Disease Control & prevention) Guidelines from 2007. It is recommended that you review Table 1 of the Required Reading entitled "History of Guidelines for Isolation Precautions in Hospitals" prior to viewing this part of the lecture. This is a 2-page table summarizing the different systems of isolation/precautions used up until the CDC's most current recommendations. Those most current recommendations will be presented in the third lecture.
Slide 2		This is a plague hospital from the 1500s depicted in historical art, and this would be called an infection control nightmare. You see you have two plague patients in a bed. They had pneumonic plague, which is highly transmissible from person to person and very likely to occur during the 1500s when bubonic plague seeded into the lymph nodes and became secondary pneumonic plague. You have post-mortem care going on and the plague bodies are highly infectious. You have no personal protective equipment in use, which they did not know about then. This lack of any type of isolation/precautions certainly contributed to the transmission of this disease over three centuries.
Slide 3		An interesting phenomenon occurred in this time period. There were two groups of medical practitioners: the plague physician and the plague surgeon. The plague physician wore the costume depicted in these pictures, which consisted of a leather hat, a mask with herbs, garlic, and/or arsenic in the beak, heavy leather gloves, and a big long gown often made with very heavy material. The stick was to ward off the evil spirits that persons at that time believe caused plague. The other doctor was the plague surgeon. The plague surgeon's job was to cut open the buboes of bubonic plague, and they wore no personal protective equipment. The infection rate in the surgeon was 5 to 7 times higher than that of a physician. In a way, plague physicians used the first crude personal protective equipment before they really knew about it.
Slide 4		Thus, we started out with no isolation when caring for persons with infectious diseases. This was the practice for centuries, before it was discovered that germs cause disease.

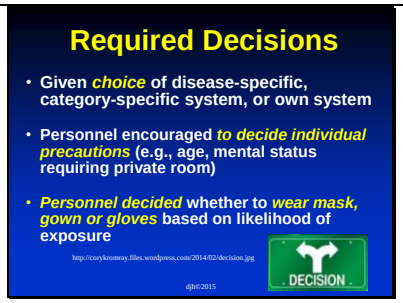
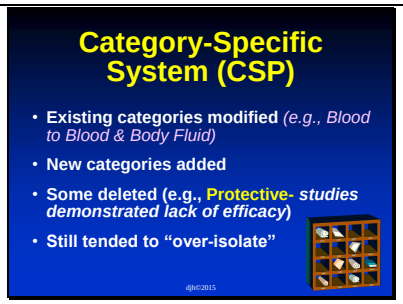
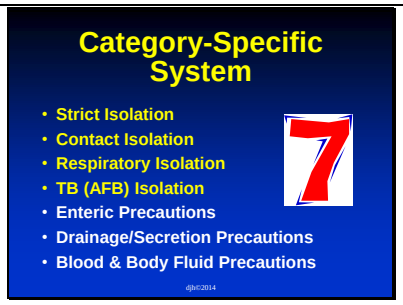
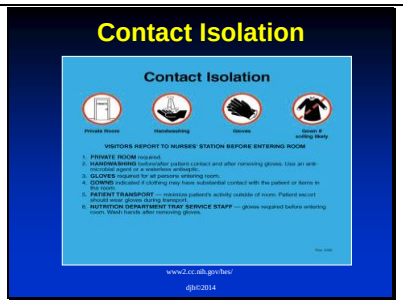
Slide 5	**Historical Overview** • **1877: first published recommendations for Isolation/Precautions (I/P)** • **Hospital handbook for nurses- place patients with infectious diseases in separate facilities, AKA infectious disease hospitals** djh©2015	As early as 1877, the first published recommendations on hospital isolation precautions surfaced. They were in the form of a hospital handbook for nurses that recommended placing patients with infectious diseases in separate facilities. These became known as infectious disease hospitals. Not a plague hospital, meningitis hospital, and a tuberculosis hospital, rather a hospital where all infectious patients would be housed together.
Slide 6	**Infectious Disease Cottage**  icu-web.org/icuweb/images/687/160x128.jpg djh©2015	This is an original picture of one of several cottages built at a hospital in 1919 to serve as infectious disease wards.
Slide 7	**This Didn't Work** **Why?** • **Infected patients not separated from each other according to their disease** • **Few, if any, aseptic procedures followed** djh©2015	This concept didn't work, because there was no physical separation between the types of diseases. For example, a tuberculosis patient would be placed in a ward with other types of infected patients. This resulted in nosocomial transmission of infectious diseases.
Slide 8	**Setting aside a floor or ward for patients with similar diseases**  http://whyfiles.org/195bird_flu/images/army.jpg djh©2015	Personnel in infectious disease hospitals began to focus efforts towards reducing nosocomial transmission. One way to do this was to set aside a floor or award for patients with similar diseases. In other words, patients with like infectious conditions were placed together; not just patients with any infectious disease.
Slide 9	**1890-1900: Aseptic techniques recommended in nursing textbooks** Early Johnson & Johnson sterile surgery products  http://chestofbooks.com/food/household/Woman-Encyclopaedia-4/images/Making-an-ice-poultice-The-block-of-ice-on-a-plate-a-basin.jpg http://www.kilmerhouse.com/ djh©2015	The practice of aseptic technique was staring to be recommended in nursing textbooks from 1890-1900 until the present, where it continues to be an essential principle of infection control. One definition of "aseptic technique" is "the effort taken to keep patients as free from hospital micro-organisms as possible" (Crow 1989).

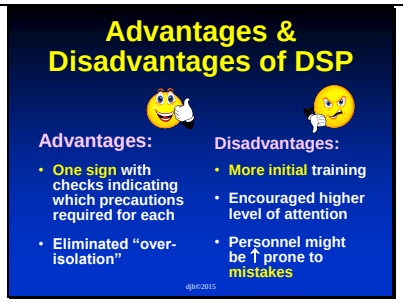
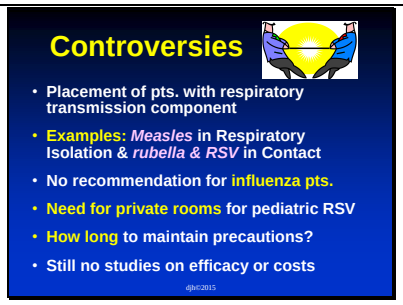
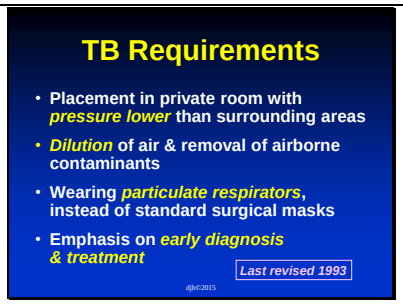
Slide 10		In 1910, a cubicle system of isolation started. Here they placed a patient in multi-bed wards and hospital personnel used separate gowns, washed their hands and disinfected patient objects after use. This was known as "barrier nursing" and provided, for general hospitals, an alternative to placing patients in infectious disease hospitals. This term is still used today. If you look at the outbreaks reported of Ebola virus in Kikwit and other places in Africa, they use the term "barrier nursing". Reports will mention that when barrier nursing was used, cases of Ebola transmission between HCW's and patients remarkably decreased.
Slide 11		This is an example of an isolation ward on the Queen Mary.
Slide 12		About this time we started seeing a rise in the development of TB hospitals, also known as sanatoriums. These were hospitals just for TB patients in the US and in other countries, such as England. I have several different pictures of these in the upcoming slides. On this slide is a photograph of a TB observation ward at the Army Base Hospital No. 20 in 1919.
Slide 13		Here is a picture taken at the Ninette Tuberculosis Sanatorium in Manitoba. One of the treatment protocols was to be out in the sun and in the fresh air. Here are some patients sitting out in the fresh air.
Slide 14		Here is an interesting picture, because this is an actual illustration of a hospital showing the concept of open air treatment. This is not a cross-section of the hospital-this is actually how it looked. One side of the hospital was completely opened to the outside. The main treatment was quiet, rest, and good food. The average stay in this facility was 86 days.

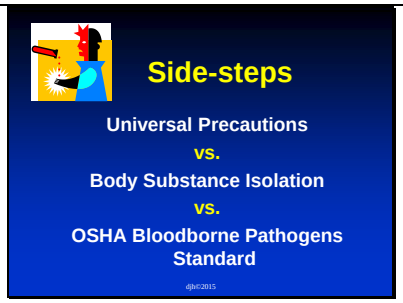
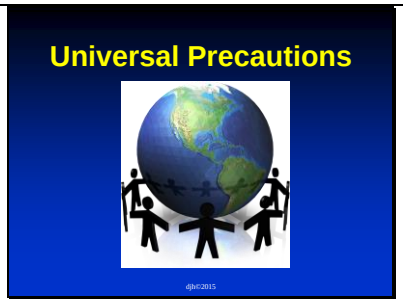
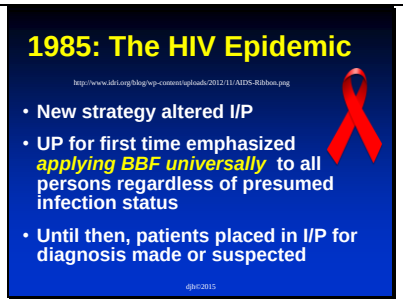
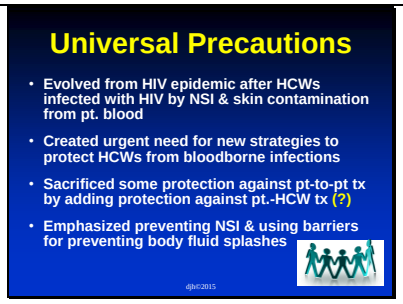
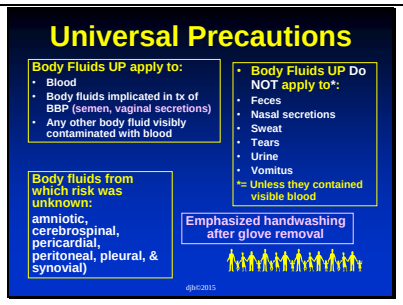
Slide 15	**Oakwood Hall Sanatorium**  OAKWOOD HALL SANATORIUM. TIME TABLE FOR PATIENTS. On waking ... Take Temperature. 7 a.m. ... Rise from bed. 8 a.m. ... Breakfast. 9.45 a.m. ... Milk. 10.0 a.m. ... Exercise. 11.30 to 12.30 ... Rest. Take temperature. 12.30 ... Dinner. 2.0 p.m. ... Exercise. 4.0 p.m. ... Tea. RECREATION. 5.30 to 6.30 p.m. ... Rest. Take temperature. 7.0 p.m. ... Supper. RECREATION. 9.0 p.m. ... Milk. 9.30 p.m. ... Lights out. www.nicklebring.com/ oakwood/ch08.htm djh©2015	Here is a schedule for the day at this TB facility. Get up and take your temperature, have breakfast, have milk, exercise, rest, take temperature again, have dinner, more exercise, have tea, recreation, rest, take temperature again, supper, more recreation, milk, and then finally, lights out. During rest periods, patients had to remain completely still and silent.
Slide 16	**X-ray Machines**  http://cmsimg.nurse.com/apps/pbcs.dll/bilde?Site=CM&Date=20090504&Category=NEI02&ArtNo=105040198&Ref=H2&MaxW=195&hoeds=0 djh©2015	Here is one of the older chest x-ray machines.
Slide 17	**TB Treatments in the early 1900s**  http://th.lung.ca/tb/tbhistory/timeline/pneumo.html djh©2015	One of the treatments for TB in the early 1900s was to actually do this procedure. A chest tube used to cause a pneumothorax (collapse) in the lung. The theory was that the unaffected lung would recover if TB was only in one lung. That was actually done, but not very effective.
Slide 18	 **1950's**  http://esparis-spartans.com/gallery/The-Fifthys/America-in-the-1950s-old-time-radio-on-cassettes http://www.scrippshilly.com/webcam/vigs/mickeymouseclubvig.jpg • Infectious disease hospitals began to close – outpatient & general hospital preferred • Exception: those designed for TB djh©2015	Then we come to the 1950s and we have hospitals for infectious disease beginning to close and instead patients were seen in outpatient and general hospitals, with the exception of TB hospitals. TB hospitals stayed around a little longer until the mid 60s.
Slide 19	 **1960's**  collegefashion.net http://www.dresstheman.com/pics/pant/pant425b.jpg • In mid-1960's, TB hospitals began to close • By late 1960's, patients with IDs housed ii general hospital wards, either in specifically designed, single-patient isolation rooms or in regular single or multiple patient rooms djh©2015	By the late 60s, patients with infectious diseases were housed in wards in the general hospital, either in a specifically designed single patient isolation room or in regular single or multiple patient rooms. The hospital I worked at until 2000 had 4 bed wards in the medical unit, 4 bed wards in the spinal cord unit, and 4 bed wards in pediatrics. When you are trying to put patients who have been exposed to a disease, versus those who have had it, versus those who may have it and decide what patients can room together, that gets really tricky with multiple bed wards. It is always desirable for infectious patients to have a single room, but older hospitals aren't designed that way. In such cases, the concept of cohorting must be employed. You will learn about this a bit later.

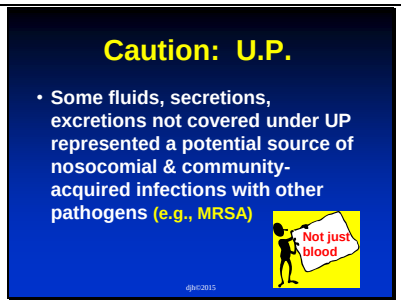
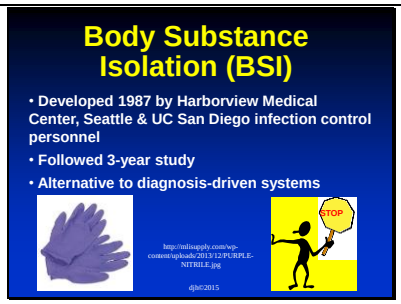
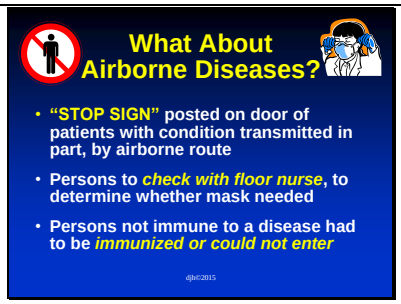
Slide 20	**CDC Isolation Systems** • **1970: CDC published *"Isolation Techniques for Use in Hospitals"* to assist general hospitals with isolation precautions (revised 1975)** • **Could be used in small community hospitals with limited resources, & large, metropolitan, university-associated hospitals**	Then the CDC came along and in 1970, published their Isolation Techniques for Use in Hospitals. These guidelines were designed to apply from the smallest community hospital to the largest teaching hospital and to assist hospitals with general isolation precautions.
Slide 21	**7 Category-System** • **Strict Isolation** • **Respiratory Isolation** • **Protective Isolation** • **Enteric Precautions** • **Wound & Skin Precautions** • **Discharge Precautions** • **Blood Precautions (Hep B)**	CDC first started out with 7 categories: Strict, (which required all types of personal protective equipment whenever you go in the room); Respiratory (which required wearing a mask); Protective Isolation (designed to protect people with an immune suppressed status and you would have sterile gowns, sterile gloves, sterile sheets, etc.); enteric precautions (for those diseases transmitted by the fecal-oral route); Wound and Skin Precautions (for large draining wounds that couldn't be contained with a dressing); Discharge Precautions (not precautions against going home, but precautions for a smaller wound that could be contained using a dressing); and Blood Precautions (designed for Hepatitis B infection because at that time HIV was not in the picture). The precautions recommended for each category were determined almost entirely by the epidemiologic features of the diseases grouped in each category, primarily their routes of transmission.
Slide 22	**Abbreviations** **BBFP:** Blood & Body Fluid Precautions **CSP:** Category-specific precautions **DSP:** Disease-specific precautions **Dx:** Diagnosis **HCWs:** Healthcare workers **I/P:** Isolation/Precautions **NI:** Nosocomial infections **NSI:** Needlestick injuries **Pts.:** Patients **Tx:** Transmission	Here are some abbreviations that you should probably be familiar with because they are often used when discussing isolation and precautions systems.
Slide 23	**Advantages** • **Convenience of *small # of categories*** • ***Simple* system to learn few established routines** • **Instructions printed on *color-coded cards***	The advantages of this first series of isolation precaution categories from the CDC were several. They were considered a small number of categories. It was considered a simple system and they had a different color coded sign with printed instructions for each of these categories. So you would know, based on the color of the sign, which isolation precaution the patient was in. You could put smaller stickers on the chart when you were going to another department for a procedure.
Slide 24	**Sample isolation door sign** ARE REQUIRED	Here is an example of a door sign for isolation, showing what precautions to take and what NOT to bring into a room to avoid contamination.

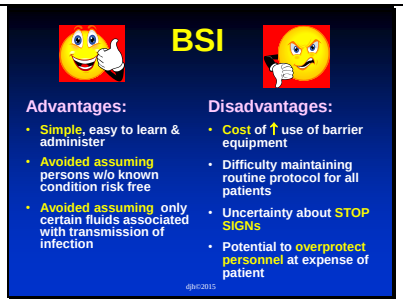
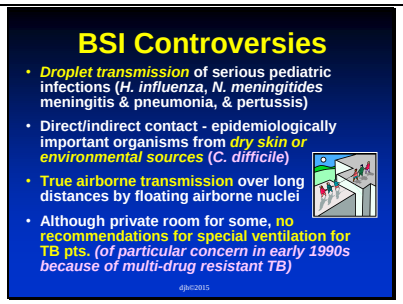
Slide 25	**Disadvantages**  • All diseases in category not spread exactly the same • Some required fewer precautions • One required more precautions • Result: *"over-isolation"* of some diseases djh©2015	There were disadvantages of this system of isolation. It was not possible for every single disease in the category to be transmitted exactly the same way. Some required fewer/more precautions than in the designated category. As a result, some diseases were over isolated. So this system wasn't as efficient as it could be.
Slide 26	**Mid-1970's**  • *93%* of U.S. hospitals had adopted the isolation system recommended in manual • *Neither efficacy* of approach in preventing spread *nor costs* evaluated by empirical studies djh©2015	By the mid 70s, 93% of hospitals in the U.S. had adopted this system. However, no studies were done to demonstrate their efficacy to prevent the spread of infection or the costs, and as you know, this is a big determinant.
Slide 27	**1980's**  http://envisioninc.files.wordpress.com/2010/05/iv-cath-related.jpg • New endemic & epidemic nosocomial infection problems • *Multi-drug-resistant* organisms; newly recognized pathogens • Requiring *different I/P* than any existing isolation category djh©2015	These categories were going along until the 80s when hospitals then started to have endemic and epidemic nosocomial infection problems. They had the emergence of multi-resistant pathogens and these multi-resistant pathogens really required a different type of isolation precaution than any other existing category. So it made it hard to fit them in the previously-developed categories.
Slide 28	**1980's Needs**  artistdirect.com • I/P directed at nosocomial transmission in *special-care units* • Isolation systems to tailor modes of transmission for each infection & *avoid "over-isolation"* • New facts about epidemiology & modes of transmission djh©2015	So the needs at that time were to have an isolation precaution that specifically targeted special units, like neonatal intensive care (where the patients did not have mature immune systems), burn units (where patients had compromised immune systems), and intensive care units (where nosocomial ventilator associated pneumonia is one of the highest risks of infection). They also needed categories to avoid over isolation and they were learning new things about epidemiology and transmission, because infection control was a relatively new field.
Slide 29	**1983 *"CDC Guideline for Isolation Precautions in Hospitals"*** • To take place of 1975 guidelines • Increased emphasis on decision-making of users http://www.stochasticgeometry.ie/wp-content/uploads/2010/01/glove1303_228x338.jpg  http://tisgaderatalnews.com/wp-content/uploads/2014/02/woman-putting-on-surgical-mask.jpg http://corykunmay.files.wordpress.com/2014/02/decision.jpg   djh©2015	This led to the 2nd wave, the 1983 CDC "Guideline for Isolation Precautions in Hospitals". This set of precautions put an emphasis on decision making of the "users", such as healthcare workers (HCWs).

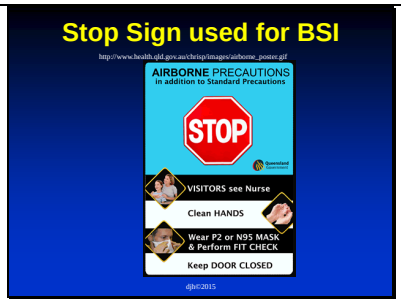
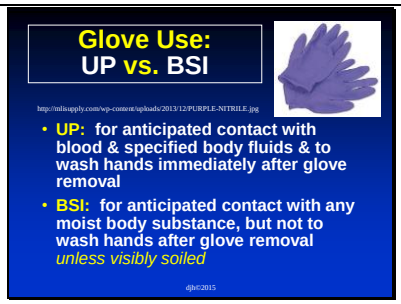
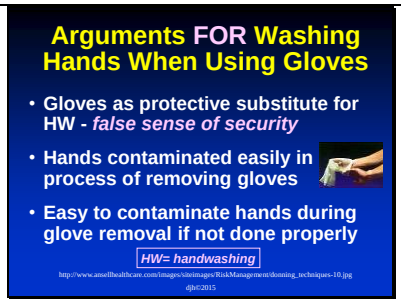
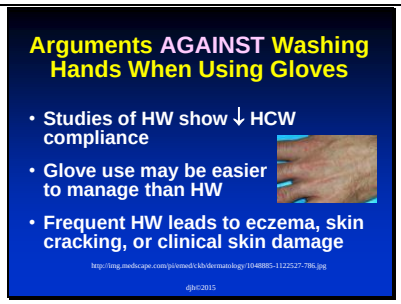
Slide 30		These new proposed isolation/precautions systems required several decisions on the part of HCWs. The people who had to place the patients in precautions had to decide, based on their age and mental status, whether they needed a private room or not. Personnel had to decide whether they had to wear a mask, a gown, or gloves based on exposure likelihood from a particular type of infectious material, whether it be sputum, wound drainage, etc. Then, you had a choice. You could use "category-specific isolation" or "disease-specific isolation" system.
Slide 31		The first of the two types of isolation systems that were given as a choice was the category-specific system. This took the original categories and modified them. They changed blood precautions to blood and body fluid precautions, for example. They added some new categories and they deleted protective precautions. Protective precautions had been studied and did not result in reducing infections in the immune suppressed. So they had a costly category like that and it didn't work, so it was deleted as a recommendation. This system still tended to over isolate, because you can't really put every disease in every category.
Slide 32		These were the 7 modified categories. They used "Strict" again. "Contact" took into account large wounds and some diseases spread by droplets. Respiratory Isolation was for diseases spread by the airborne route. TB went into AFB, which is "Acid Fast Bacilli Isolation". They still kept Enteric, Drainage/secretion Precautions, and as I mentioned, Blood Precautions became Blood and Body Fluid Precautions.
Slide 33		Here is an example of a "Contact Isolation Sign." It required a private room and hand washing, and gowns if soiling was likely. So you were given a choice whether you wanted to wear a gown. If you were going into a room to put a meal tray down then you might not need a gown, but if you were going to go into a room to change a dressing or do suctioning, then you would need to wear a gown.
Slide 34		The second choice was Disease-Specific Precautions or DSP. In the disease-specific system, the epidemiology of each infectious disease was considered individually by practicing only those precautions (e.g., private room, mask, gown and gloves) needed to interrupt transmission of the infection. In place of the categories and signs with the CSP system, a chart listed all disease posing the threat of in-hospital transmission, with checks in columns indicating which precautions were required for each.

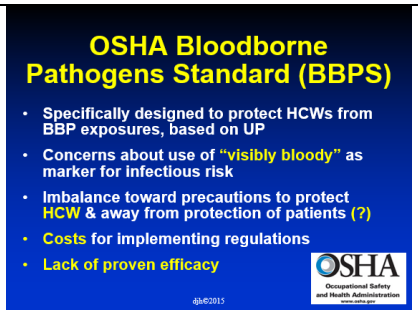
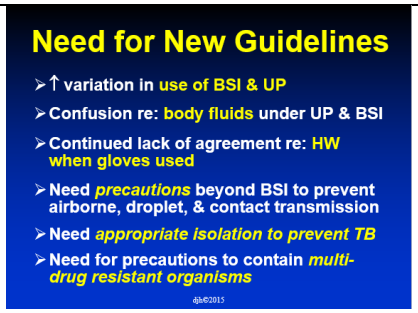
Slide 35		Like everything, there were disadvantages and advantages to this DSP system. With disease-specific isolation, there was only one sign. You took this sign and you made check marks on it, after deciding whether you needed to wear a mask, to wear gloves, to wear gowns, or to designate special equipment to this one person. So with disease-specific isolation, each disease was considered individually, and they didn't have any other isolation category. You only checked what needed to be checked for that disease. This eliminated "over isolation". There was only one sign with only one color. The disadvantages were that disease-specific isolation required more initial training and it encouraged a much higher level of attention from patient care personnel. They had to really be on the ball to make sure that they didn't make a mistake. What if this was a disease that they were not used to seeing in a hospital, what if there was a misdiagnosis and they were isolating in a particular way that was not effective, and/or what if that diagnosis was delayed? This would result in incorrect isolation and potential transmission. Think about what responsibility this placed on healthcare workers, because they had to be right in which disease they were selecting. Those were definite disadvantages to this system.
Slide 36		In addition, this whole isolation system had some controversies. The first was regarding placement of patients with respiratory diseases. For example, measles was placed in Respiratory Isolation and rubella and RSV in Contact. AFB isolation was only for TB, but there are diseases that are transmitted by airborne droplet nuclei, like measles, and they were not placed in the right category. They needed to be in the same type as AFB isolation, because that required special ventilation. At that time there was no recommendation if you had influenza or pediatric patients who had respiratory syncytial virus (RSV) as they didn't have a private room back then. That is one of those situations where if you had RSV and you have kids who have it, kids who might have it, kids who already have it, kids who don't have it, you have to be careful how you place them in a multi-bed ward. With Disease-Specific Isolation, how long did you need to maintain precautions? There were still no studies on the efficacy or the costs of maintaining this type of isolation.
Slide 37		For TB, it was determined that there needed to be lower pressure in a TB patient's room than the outside because then air would be drawn into the room. You wouldn't want airborne droplet nuclei to go out in the ventilation system. They also recommended diluting the air to remove the airborne contaminants. There is a saying in Infection Control "Dilution is the Solution," because the larger the air mass into which an organism is released, the faster it will be dissipated and diluted. Wearing something stronger than the standard surgical mask was recommended (e.g., N-95 respirators). When reviewing outbreaks of TB in hospitals, one of the common causes was that people did not recognize TB early or treat it early and that contributed to its spread.

Slide 38		So up until now we have CDC's first set of guidelines, CDC's second set of guidelines, then category-specific or disease-specific guidelines, TB guidelines, then multi-drug resistance organisms, and the epidemic of AIDS and HIV. To respond to these issues, there were what I call "side-steps", three of them: Universal Precautions, Body Substance Isolation, and the OSHA Blood borne Pathogens Standard.
Slide 39		Let's first discuss Universal Precautions.
Slide 40		Universal Precautions (U.P.) were specifically designed after the first cases of AIDS emerged. The concept was that because every patient was not going to be routinely tested for HBV or HIV, then you had to treat every patient's blood and infectious body fluids as if they had HIV or Hep B. Until then, you only placed patients in isolation precautions for **suspected** or **known** diagnoses. Universal Precautions was a whole new infection control concept.
Slide 41		Unfortunately, several HCW were infected with HIV from needle stick injuries or by blood contamination before UP came out. This created an urgent need for new isolation strategies and this time to protect hospital personnel. The impetus was more on protecting hospital personnel from HIV or Hep B. In doing so, you treat all patients as if they had a bloodborne infection. I have a question mark by the third bullet, because some said that you sacrifice protecting the patient in exchange for preventing patient to HCW transmission, because you use these precautions. It is important to realize that if we don't protect HCWs, then there will be no HCWs to take care of the patients. What was important for universal precautions was the emphasis on needle stick precautions. It also emphasized protecting HCWs from blood and body fluid exposures, such as splashes.
Slide 42		Universal Precautions applied to blood and body fluids in which blood was present. So, with any body fluid that was visibly contaminated with blood, you had to use Universal Precautions. Those fluids which were considered unknown to be infectious included amniotic, cerebrospinal, pericardial, peritoneal, pleural and synovial fluid unless they contained visible blood. Blood and body fluid precautions did not apply to feces, nasal secretions, sweat, tears, urine or vomitus unless they contained visible blood. You are all probably too young to remember reports of kids with HIV and how some people didn't want HIV-infected kids to go to school, because they sweat or they cried and they

		might transmit it. None of these fluids, in the absence of blood, have been known to transmit HIV.
Slide 43		However, some fluids, secretions, and excretions, not covered under Universal Precautions, have a potential to spread other diseases. So you may not have a risk from a body fluid or wound drainage for HIV, but you could get a nosocomial infection or a resistant organism from them. That was something not covered by Universal Precautions.
Slide 44		Thus, a second side step to come along, was Body Substance Isolation or BSI. This is another interesting concept and was developed by two Infection Control practitioners from Seattle and San Diego. What was interesting about this system is that is followed a three year study. They first did a study on Body Substance Isolation and then they came out with these guidelines. This was proposed as an ALTERNATIVE to using any isolation system based on a diagnosis.
Slide 45		BSI eliminated, for the most part, reliance on diagnoses. Body Substance Isolation focused on any moist or potential infectious body substance from any patient regardless of their infection status. Body substances included blood, feces, urine, saliva, wound drainage and others. So the thinking here was, you protect yourself from every moist body fluid and do not focus on the diagnoses. Body Substance Isolation (BSI) heavily used gloves and allowed gloves to be a substitute for hand washing (HW) in some situations. The focus of BSI was for personnel to put clean gloves on before contact with mucous membranes or non-intact skin from a patient so that you wouldn't get that body fluid on a HCW. So anytime you anticipated having contact with moist substance, you put on gloves. Body Substance Isolation replaced, for some people who used it, Universal Precautions, because instead of using care with bloody fluids, they used care with any body fluid.
Slide 46		Some of you may be thinking, that is fine, but what about airborne diseases? Their solution for airborne diseases was to put a stop sign on a door of the patient if they had a condition transmitted by the airborne route. So whoever wanted to enter the room, had to go to the nurse and ask what they needed to do before entering the room. If someone was not immunized to a disease that was in that room, they couldn't enter. The motto for BSI airborne diseases was "See Nurse Before Entering".

Slide 47		As with the CDC's systems, there were advantages and disadvantages to BSI. So let's first look at the advantages. It is pretty simple to say that you wear protective equipment for anything that is wet. You avoided the assumption that a person without a known condition would be risk free. In other words, before, if you had a diagnosed category of isolation and you had someone that was not in a category of isolation, then the assumption was that that person not in the diagnosed category had nothing you needed to worry about. In this system, you assume that everyone has something to worry about and that is why you protect yourself. BSI also avoided the assumption that only certain body fluids were associated with transmission, like bloody body fluids, and they said "any body fluids" could be associated with infection. As for disadvantages, imagine all of the barrier equipment used for this system. In addition, to maintain a routine protocol for all patients when there are many different situations going on was a huge challenge. The uncertainty of using stop signs and the over protection of personnel at the expense of the patient were criticisms. I can tell you at a hospital in California that I worked at for 15 years, where the three main languages were Spanish, English, and Vietnamese, if you put a stop sign on a door, that was not going to work. It really disrupts service and then you have to rely on finding a nurse that isn't busy who can then tell you it's ok to go in that room or not. That nurse probably has 20 other patients. So this aspect was not practical in large teaching hospitals. It would maybe work in a very small community hospital, but that is my opinion.
Slide 48		There were some controversies regarding BSI. BSI didn't have a mechanism for droplet precautions or transmission so for *Haemophilus influenza, Neisseria meningitidis, or* pertussis, those diseases were not covered by wearing moist body protection. Pertussis is transmitted by droplets, so if you didn't anticipate a cough and someone coughed on you, then that wouldn't work. What about **dry** skin? Someone with dry skin could have scabies or a multi-resistant organism so, if you are just worried about moist substances or environmental sources, or contaminated objects, then that is not going to cover it either. Additional controversies were that true airborne treatment of infections over a long distance would not be covered and they had no special recommendations for ventilation for TB patients. If there were TB patients, they had a stop sign on the door and hoped that people would go see a nurse and get the proper type of respiratory protection before entering.

Slide 49		This is an example of a stop sign used for BSI. Do you notice something about this sign that would be an issue today? This sign would an issue with HIPAA. A diagnosis gets written on the sign, which is on the patient's door, which violates patient confidentiality. I can tell you something else. We had a patient at the VA in Miami where I worked for a while. We had a sign up that said "do not enter room unless you have had chickenpox." Not only was that a violation of patient confidentiality, but they then documented that for 62 hours nobody went into that room because they did not want to get chickenpox. So this labeling of a sign with a disease diagnosis is problematic.
Slide 50		There was a difference in concepts regarding using gloves for Universal Precautions versus Body Substance Isolation. With Universal Precautions, glove use was recommended whenever you anticipated contact with blood and body fluids and you were to wash your hands immediately after such contact. It is important mention that U. P. emphasized handwashing after glove removal. For BSI, gloves were worn for anticipated contact with any moist substance via suctioning, changing a dressing, changing a catheter, etc. However, with BSI, you did not have to wash your hands after glove removal unless they were visibly soiled.
Slide 51		Arguments FOR washing hands after glove removal were: 1) using gloves as a protective substitute for hand washing could provide a false sense of security. In other words, if you have gloves on, then you don't need to wash your hands and you may go on and touch many different surfaces. Even when you are working on the same patient on a dirty area and then you go and change, for example, an IV dressing, you need to change your gloves in between and wash hands. 2) Hands can become contaminated in gloves. Under a gloved hand you have two conditions: moisture and warmth. These proliferate the growth of microorganisms on your hands. So when you take your gloves off you need to wash your hands. 3) it is easy to contaminate hands when removing gloves if you don't do it correctly.
Slide 52		There were arguments against having to wash hands after removing gloves. Studies of HCWs have shown that HCW don't always wash their hands anyway. Glove use may be easier to manage than handwashing. In addition, glove overuse can contribute to skin cracking, eczema and clinical damage and then HCWs won't wash their hands anyway. What do YOU think?

Slide 53		The third side-step consisted of the 1989 OSHA Bloodborne Pathogens Standard (BBPS), specifically designed to protect health care workers (important to know) and it was based on the UP concepts. There were controversies about the BBPS. One was the focus on visibly bloody body fluids, when it was known that other body fluids can contribute to infection even if they are not bloody. Two examples are cytomegalovirus from urine and herpetic whitlow from saliva. Again, there was concern over an imbalance of protecting HCWs and away from protecting patients. It costs money to wear gloves and other personal protective equipment. The BBPS is a mandated standard. Upon its release, the impact of BBPS on the cost of patient care and on nosocomial infection had remained unidentified.
Slide 54		All of this contributed to the fact that healthcare facilities needed new guidelines. There was much variation between the use of BSI and UP, what body fluids to use caution with, and when to wash hands after removing gloves. Airborne, contact, and droplet transmission needed to be expanded beyond BSI. There needed to be appropriate isolation for TB and multi-drug resistant organisms. The CDC then developed a new set of guidelines, which will be described in the next lecture. This concludes the lecture entitled 'Evolution of Isolation/Precautions in Healthcare Facilities" It would be a good idea to now review Table 1 on the history of isolation/precautions as a review and reinforcement of this material.