

The November issue of Volume of the Journal of Hospital Infection continues the 'state of the art' in Infection Prevention and Control theme. In this issue we mark World Antibiotic Awareness Week with a special section featuring a number of articles on antibiotic stewardship.

Sterilization[edit] Sterilization is a process intended to kill all microorganisms and is the highest level of microbial kill that is possible. Sterilizers may be heat only, steam, or liquid chemical. Second heat sensitive indicators or tape on the sterilizing bags change color which indicate proper levels of heat or steam. And, third most importantly is biological testing in which a microorganism that is highly heat and chemical resistant often the bacterial endospore is selected as the standard challenge. If the process kills this microorganism, the sterilizer is considered to be effective. It should be used for the cleaning of the medical instruments or gloves , and basically any type of medical item that comes into contact with the blood stream and sterile tissues. There are four main ways in which such items can be sterilized: The first two are the most used methods of sterilizations mainly because of their accessibility and availability. Steam sterilization is one of the most effective types of sterilizations, if done correctly which is often hard to achieve. Instruments that are used in health care facilities are usually sterilized with this method. The general rule in this case is that in order to perform an effective sterilization, the steam must get into contact with all the surfaces that are meant to be disinfected. On the other hand, dry heat sterilization, which is performed with the help of an oven, is also an accessible type of sterilization, although it can only be used to disinfect instruments that are made of metal or glass. The very high temperatures needed to perform sterilization in this way are able to melt the instruments that are not made of glass or metal. In these conditions, rubber items must be sterilized for 20 minutes, and wrapped items C with pressure of kPa for 7 minutes. The time is counted once the temperature that is needed has been reached. Steam sterilization requires four conditions in order to be efficient: Dry heat sterilization is performed at C F for one hour or two hours at a temperature of C F. Dry heat sterilization can also be performed at C, for at least 16 hours. The items sterilized with cold sterilization are usually those that can be damaged by regular sterilization. Commonly, glutaraldehydes and formaldehyde are used in this process, but in different ways. Chemical sterilization is generally more expensive than steam sterilization and therefore it is used for instruments that cannot be disinfected otherwise. After the instruments have been soaked in the chemical solutions, they are mandatory to be rinsed with sterile water which will remove the residues from the disinfectants. This is the reason why needles and syringes are not sterilized in this way, as the residues left by the chemical solution that has been used to disinfect them cannot be washed off with water and they may interfere with the administered treatment. Although formaldehyde is less expensive than glutaraldehydes, it is also more irritating to the eyes , skin and respiratory tract and is classified as a potential carcinogen. These methods include gas , UV, gas plasma , and chemical sterilization with agents such as peroxyacetic acid or paraformaldehyde. **Cleaning**[edit] Infections can be prevented from occurring in homes as well. In order to reduce their chances to contract an infection, individuals are recommended to maintain a good hygiene by washing their hands after every contact with questionable areas or bodily fluids and by disposing of garbage at regular intervals to prevent germs from growing. Ultraviolet light has also been used to disinfect the rooms of patients infected with *Clostridium difficile* after discharge. The hazard in a health care setting is exposure to blood, saliva, or other bodily fluids or aerosols that may carry infectious materials such as Hepatitis C , HIV , or other blood borne or bodily fluid pathogen. PPE prevents contact with a potentially infectious material by creating a physical barrier between the potential infectious material and the healthcare worker. The United States Occupational Safety and Health Administration OSHA requires the use of Personal protective equipment PPE by workers to guard against blood borne pathogens if there is a reasonably anticipated exposure to blood or other potentially infectious materials. How many components are used and how the components are used is often determined by regulations or the infection control protocol of the facility in question. Many or most of these items are disposable to avoid carrying infectious materials from one patient to another patient and to avoid difficult or costly disinfection. Antimicrobial copper-alloy touch surfaces

Products made with antimicrobial copper alloy brasses , bronzes , cupronickel , copper-nickel-zinc, and others surfaces destroy a wide range of microorganisms in a short period of time. H7, methicillin -resistant Staphylococcus aureus MRSA , Staphylococcus , Enterobacter aerogenes, and Pseudomonas aeruginosa in less than 2 hours of contact. Other investigations have demonstrated the efficacy of antimicrobial copper alloys to destroy Clostridium difficile , influenza A virus , adenovirus , and fungi. The synthetic hard surface is being installed in the United States as well as in Israel. Vaccines are available to provide some protection to workers in a healthcare setting. Depending on regulation, recommendation, the specific work function, or personal preference, healthcare workers or first responders may receive vaccinations for hepatitis B ; influenza ; measles, mumps and rubella ; Tetanus, diphtheria, pertussis ; N. Disease surveillance Surveillance is the act of infection investigation using the CDC definitions. Surveillance definitions exist for infections of the bloodstream, urinary tract, pneumonia,surgical sites and gastroenteritis. Surveillance traditionally involved significant manual data assessment and entry in order to assess preventative actions such as isolation of patients with an infectious disease. Increasingly, computerized software solutions are becoming available that assess incoming risk messages from microbiology and other online sources. By reducing the need for data entry, software can reduce the data workload of ICPs, freeing them to concentrate on clinical surveillance. As of , approximately one third of healthcare acquired infections were preventable. CDC found in the s that hospitals reduced their nosocomial infection rates by approximately 32 per cent by focusing on surveillance activities and prevention efforts. Isolation health care In the health care context, medical isolation refers to various physical measures taken to interrupt nosocomial spread of contagious diseases. Various forms of isolation exist, and are applied depending on the type of infection and agent involved, to address the likelihood of spread via airborne particles or droplets, by direct skin contact, or via contact with body fluids. In cases where infection is merely suspected, individuals may be quarantined until the incubation period has passed and the disease manifests itself or the person remains healthy. Groups may undergo quarantine, or in the case of communities, a cordon sanitaire may be imposed to prevent infection from spreading beyond the community, or in the case of protective sequestration , into a community. Public health authorities may implement other forms of social distancing , such as school closings, to control an epidemic. If a true outbreak is discovered, infection control practitioners try to determine what permitted the outbreak to occur, and to rearrange the conditions to prevent ongoing propagation of the infection. Often, breaches in good practice are responsible, although sometimes other factors such as construction may be the source of the problem. Outbreak investigations have more than a single purpose. These investigations are carried out in order to prevent additional cases in the current outbreak, prevent future outbreaks, learn about a new disease or learn something new about an old disease. Reassuring the public, minimizing the economic and social disruption as well as teaching epidemiology are some other obvious objectives of outbreak investigations. The results of outbreak investigations are always made public in the means of a report in which the findings are communicated to the authorities, media, scientific community and so on. These reports are commonly used as pedagogical tools. Training in infection control and health care epidemiology[edit] Practitioners can come from several different educational streams. Many begin as nurses, some as medical technologists particularly in clinical microbiology , and some as physicians typically infectious disease specialists. Specialized training in infection control and health care epidemiology are offered by the professional organizations described below. Physicians who desire to become infection control practitioners often are trained in the context of an infectious disease fellowship. In the United States, Certification Board of Infection Control and Epidemiology is a private company that certifies infection control practitioners based on their educational background and professional experience, in conjunction with testing their knowledge base with standardized exams. It is recommended that one has 2 years of Infection Control experience before applying for the exam. Certification must be renewed every five years.

Chapter 2 : Infection Control In Healthcare | Hospital Infection Control

Of these measures, hand hygiene (HH) 1 has been recognized as an effective, evidence-based, low-cost infection control strategy to help prevent the spread of disease. 2 Despite wide dissemination of information among health care workers of the benefits of HH in the health care setting, a systematic review of studies conducted over the last decades indicates that compliance with HH guidelines remains poor.

The most important and frequent mode of transmission of nosocomial infections is by direct contact. Microorganisms carried in this manner can be dispersed widely by air currents and may become inhaled by a susceptible host within the same room or over a longer distance from the source patient, depending on environmental factors; therefore, special air-handling and ventilation are required to prevent airborne transmission. Microorganisms transmitted by airborne transmission include Legionella, Mycobacterium tuberculosis and the rubeola and varicella viruses. Common vehicle transmission This applies to microorganisms transmitted to the host by contaminated items, such as food, water, medications, devices, and equipment. This occurs when vectors such as mosquitoes, flies, rats, and other vermin transmit microorganisms. Contact transmission is divided into two subgroups: Routes of contact transmission

Description	Direct-contact transmission
This involves a direct body surface-to-body surface contact and physical transfer of microorganisms between a susceptible host and an infected or colonized person, such as when a person turns a patient, gives a patient a bath, or performs other patient-care activities that require direct personal contact. Direct-contact transmission also can occur between two patients, with one serving as the source of the infectious microorganisms and the other as a susceptible host. Indirect-contact transmission This involves contact of a susceptible host with a contaminated intermediate object, usually inanimate, such as contaminated instruments, needles, or dressings, or contaminated gloves that are not changed between patients. In addition, the improper use of saline flush syringes, vials, and bags has been implicated in disease transmission in the US, even when healthcare workers had access to gloves, disposable needles, intravenous devices, and flushes. For those with ventilator-associated or hospital-acquired pneumonia, controlling and monitoring hospital indoor air quality needs to be on agenda in management, [8] whereas for nosocomial rotavirus infection, a hand hygiene protocol has to be enforced. Furthermore, patients are often prescribed antibiotics and other antimicrobial drugs to help treat illness; this may increase the selection pressure for the emergence of resistant strains. It kills all microorganisms on equipment and surfaces through exposure to chemicals, ionizing radiation, dry heat, or steam under pressure. Isolation health care Isolation is the implementation of isolating precautions designed to prevent transmission of microorganisms by common routes in hospitals. See Universal precautions and Transmission-based precautions. Because agent and host factors are more difficult to control, interruption of transfer of microorganisms is directed primarily at transmission for example isolation of infectious cases in special hospitals and isolation of patient with infected wounds in special rooms also isolation of joint transplantation patients on specific rooms. Handwashing[edit] Handwashing frequently is called the single most important measure to reduce the risks of transmitting skin microorganisms from one person to another or from one site to another on the same patient. Washing hands as promptly and thoroughly as possible between patient contacts and after contact with blood, body fluids, secretions, excretions, and equipment or articles contaminated by them is an important component of infection control and isolation precautions. The first is represented by the micro-organisms taken by workers from the environment, and the bacteria in it are capable of surviving on the human skin and sometimes to grow. The second group is represented by the permanent micro-organisms living on the skin surface on the stratum corneum or immediately under it. They are capable of surviving on the human skin and to grow freely on it. They have low pathogenicity and infection rate, and they create a kind of protection from the colonization from other more pathogenic bacteria. The skin of workers is colonized by 3. The microbes comprising the resident flora are: Staphylococcus epidermidis, S. The goal of hand hygiene is to eliminate the transient flora with a careful and proper performance of hand washing, using different kinds of soap, normal and antiseptic, and alcohol-based gels. The main problems found in the practice of hand hygiene is connected	

with the lack of available sinks and time-consuming performance of hand washing. An easy way to resolve this problem could be the use of alcohol-based hand rubs, because of faster application compared to correct hand-washing. Patients who are bed-bound often do not have as much access to clean their hands at mealtimes or after touching surfaces or handling waste such as tissues. By reinforcing the importance of handwashing and providing sanitizing gel or wipes within reach of the bed, nurses were directly able to reduce infection rates. A study published in demonstrated this by improving patient education on both proper hand-washing procedure and important times to use sanitizer and successfully reduced the rate of enterococci and "S. Moreover, multidrug-resistant infections can leave the hospital and become part of the community flora if steps are not taken to stop this transmission. It is unclear whether or not nail polish or rings affected surgical wound infection rates. Gloves are worn for three important reasons in hospitals. First, they are worn to provide a protective barrier for personnel, preventing large scale contamination of the hands when touching blood, body fluids, secretions, excretions, mucous membranes, and non-intact skin. In the United States, the Occupational Safety and Health Administration has mandated wearing gloves to reduce the risk of bloodborne pathogen infections. Third, they are worn to reduce the likelihood that the hands of personnel contaminated with micro-organisms from a patient or a fomite can transmit those micro-organisms to another patient. In this situation, gloves must be changed between patient contacts, and hands should be washed after gloves are removed. Wearing gloves does not replace the need for handwashing due to the possibility of contamination when gloves are replaced, or by damage to the glove. Doctors wearing the same gloves for multiple patient operations presents an infection control hazard. Use of hydrogen peroxide vapor has been clinically proven to reduce infection rates and risk of acquisition. Hydrogen peroxide is effective against endospore-forming bacteria, such as *Clostridium difficile*, where alcohol has been shown to be ineffective. Touch surfaces commonly found in hospital rooms, such as bed rails, call buttons, touch plates, chairs, door handles, light switches, grab rails, intravenous poles, dispensers alcohol gel, paper towel, soap , dressing trolleys, and counter and table tops are known to be contaminated with *Staphylococcus* , MRSA one of the most virulent strains of antibiotic-resistant bacteria and vancomycin-resistant *Enterococcus VRE*. This is why touch surfaces in hospital rooms can serve as sources, or reservoirs, for the spread of bacteria from the hands of healthcare workers and visitors to patients. A number of compounds can decrease the risk of bacteria growing on surfaces including: While antibiotic drugs to treat diseases caused by gram-positive MRSA are available, few effective drugs are available for *Acinetobacter*. *Acinetobacter* bacteria are evolving and becoming immune to existing antibiotics, so in many cases, polymyxin -type antibacterials need to be used. Their cell structures make them more difficult to attack with antibiotics than gram-positive organisms like MRSA. In some cases, antibiotic resistance is spreading to gram-negative bacteria that can infect people outside the hospital. The CDC estimates 2 million people in the United States are infected annually by hospital-acquired infections, resulting in 20, deaths. Belgium[edit] In Belgium the prevalence of nosocomial infections is about 6. Annually about , patients become infected by a nosocomial infection, resulting in almost deaths. Around , about 9, people died each year with a nosocomial infection, of which about 4, would have survived without this infection.

Chapter 3 : Infection Control: MedlinePlus

Every year, lives are lost because of the spread of infections in hospitals. Health care workers can take steps to prevent the spread of infectious diseases. These steps are part of infection control. Proper hand washing is the most effective way to prevent the spread of infections in hospitals.

For example, all staff need to be taught the importance and appropriate technique of hand hygiene. In addition, medical staff should be educated about appropriate antibiotic use. Hospitals should educate staff during orientation and throughout the year as needed, such as when new policies are instituted. As part of infection control education at South Nassau Communities Hospital, employees take a quiz to ensure their understanding of best practices. Create a multidisciplinary team. Goldstein notes that committee personnel should include the hospital epidemiologist, infection preventionists, a microbiologist and representatives from the main hospital departments. IT and secretarial support are also essential. Data collection is the initial step in the surveillance function performed by infection preventionists. It is important to establish baseline rates for surgical site and bloodstream infections, ventilator associated pneumonia, urinary tract infections and others as needs arise. The next step is to analyze the data for trends and risks. Goldstein says if an increase in bloodstream infections is noted, they would immediately analyze the data in detail to identify any potential causes. They would identify the type of cases that had bloodstream infections, the time period, the area of the hospital where the infections were reported, the physicians and other staff members who managed the case and any other factors that could correlate with the infection. The infection control department needs to communicate surveillance data to staff to ensure awareness of any issues. Data is communicated by several methods at South Nassau Communities Hospital. After the infection control committee meetings, the department representatives communicate the data they learned to their respective staff members. Written minutes of the meetings are disseminated to committee members as well as to the medical board of the hospital. In addition, the infection preventionists make daily rounds on the hospital units and communicate any important or new information to staff at that time. Lectures and emails are also used to keep the staff up-to-date. When the team identifies an increase in infections or risks of increased infections through data analysis, members meet to develop action plans. For example, in the case of bloodstream infections, the hospital may choose to start using silver-coated central IV catheters, create a central line insertion kit and ascertain that procedures for IV placement are standardized. Analysis of data collected through surveillance therefore enables the hospital to improve practice and procedures. Additional activities of the infection control department. Stay up-to-date on policies and news. Goldstein recommends that infection control staff be continually aware of news and updates from organizations such as CDC, The Society for Healthcare Epidemiology of America, the Association for Professionals in Infection Control and Epidemiology, the Infectious Diseases Society of America, as well as state and local health departments. One must stay connected and be aware of infections in the community or nationwide that could enter the hospital. Goldstein says one of the biggest challenges is ensuring infection control as patients move between different care settings. Communication with neighboring medical facilities can help prevent the spread of infections. Another challenge is the emergence of new infections over the last years. For example, the recent epidemic of H1N1 influenza virus, and severe acute respiratory syndrome before that forced hospitals to develop new policies and procedures with little data or experience to rely on. Goldstein says hospitals should monitor new developments in infection control and update policies as needed using evidence-based guidelines from infection control organizations. In summary, effective hospital infection control involves ongoing processes of infection surveillance, data collection and analysis, data reporting, implementation of policies and action plans, education and constant vigilance. Related Articles on Infection Control:

Chapter 4 : Hospital-acquired infection - Wikipedia

For infection control objectives to be achieved, the activities of the personnel health service must be coordinated with the infection control program and with various hospital departments. This coordination will help assure adequate surveillance of infections in personnel and maintenance of effective infection control programs.

These Ratings reflect how hospitals performed in a snapshot in time, based on data hospitals reported to the CDC between October and September. For complete and the most current Ratings, online subscribers can go to ConsumerReports. What Safe Hospitals Do Good hospitals focus on the basics: Such programs often monitor the use of broad-spectrum antibiotics. Doctors at some hospitals use three times more of those all-purpose bug killers than others. To prevent that, hospitals must be kept scrupulously clean. In fact, fastidious hand washing slashes rates of C. How to wash your hands What More Needs to Be Done Steps such as those, plus federal mandates for some public reporting of infections data, have already led to reduced rates of certain infections. Still, McGiffert says hospitals need to do more: Consistently follow the established protocols for managing superbug infections, such as using protections including gowns, masks, and gloves by all staff. Be held financially accountable. But they should also have to cover all costs of treating infections patients pick up during their stay. Have an antibiotic stewardship program. That should include mandatory reporting of antibiotic use to the CDC. Accurately report how many infections patients get in the hospital. And the government should validate those reports. Be transparent about infection rates. For instance, Cleveland Clinic acknowledges its below-average performance in C. Promptly report outbreaks to patients, as well as to state and federal health authorities. Those agencies should inform the public so that patients can know the risks before they check into the hospital. Fighting Bad Bacteria With Good Ones Antibiotics kill off not only bad bacteria that make you sick but also good bacteria that help keep you healthy. So replenishing the good bugs in your digestive tract seems to make sense. And an analysis of 23 clinical trials found that taking probiotics with antibiotics can greatly cut the risk of diarrhea caused by C. People older than 65 and those who take an acid-blocking drug such as Nexium or Prilosec are at higher risk for C. Research suggests that the most effective probiotics are combinations of L. To reduce the risk of diarrhea caused by C. Yogurts we tested several years ago contained an average of 90 billion to billion CFU per serving. Probiotic supplements contained less, from just fewer than 1 billion to 20 billion CFU per capsule. Read more about probiotics and yogurt. The idea is to repopulate the colon with good bacteria to fight off C. Research shows that it works about 90 percent of the time. In the Food and Drug Administration decided to allow doctors to perform the procedure in C. Some recent reports suggesting that fecal transplants may have other benefitsâ€”including weight loss. Some people are even going the DIY route. For example, there have been reports of people developing autoimmune disorders after the procedure and even suddenly gaining weight. Instead, if you have C. The stool can come from a friend or family member, or doctors can buy frozen specimens from screened donors. Check with your insurance company to see whether it will cover fecal transplants to treat C. Protect Yourself Against Superbugs First step: But bad things can happen even in good hospitals. For example, Terry Otey developed his infection after a surgery in a hospital that now gets one of our higher ratings against MRSA. Those include fever, diarrhea, worsening pain, or an incision site that becomes warm, red, and swollen. People at particular risk include adults 65 and older as well as infants, anyone on antibiotics, and people with a compromised immune system. Clean frequently touched surfaces with 1 part bleach mixed with 10 parts water. Reserve a bathroom for the infected person. A nasal swab can detect low levels of MRSA and allow medical staff to take precautions, such as having you wash with a special soap before you are admitted. Ask to have your room cleaned if it looks dirty. Bring bleach wipes for bed rails, doorknobs, and the TV remote. Insist that everyone who enters your room wash his or her hands. Keep your own hands clean, washing regularly with soap and water. Make sure that any anti-biotics prescribed to you in the hospital are needed and appropriate for your infection. Medications such as Nexium or Prilosec increase the risk of C. So ask whether the drug is needed and, if so, request the lowest dose for the shortest possible time. Ask every day whether catheters, ventilators, or other tubes can be removed. The risk of infection increases the longer they

are left in place. Say no to razors. If you need to be shaved, use an electric hair remover, not a razor, because any nick can provide an opening for infection.

Chapter 5 : Journal of Hospital Infection - Elsevier

Hospital infection control programs can help healthcare organizations monitor and improve practices, identify risks and proactively establish policies to prevent the spread of infections. Judith Goldstein, MD, chief of infectious diseases at South Nassau Communities Hospital in Oceanside, N.Y.

The spread of these infections, however, can be controlled. There are several simple and cost-effective strategies that can help prevent infections, from the basic tenet of hand hygiene to the team-oriented approach of Comprehensive Unit-based Safety Programs. Four infection prevention and process improvement experts weigh-in on the 10 best strategies for prevention of infections. According to the CDC, this is the simplest approach to preventing the spread of infections and needs to be incorporated into the culture of the organization. Surgical team personnel should wash their arms and forearms before a procedure and put on sterile gloves, according to CDC guidelines for infection control. Certain types of microbial bacteria are capable of surviving on environmental surfaces for months at a time, according to Mr. When healthcare providers or patients touch these surfaces with their skin, the bacteria can be transmitted, causing infection. Thus, it is essential that the environment be kept clean and disinfected. Patients and their families are now the biggest advocates of medical safety, and Mr. Garrett suggests including them in infection prevention protocols, especially with respect to maintaining a clean and sanitary environment. It is also important to involve multidisciplinary environmental hygiene teams in meetings regarding adherence to infection prevention protocols. Kenneley, PhD, APRN-BC, assistant professor at the Frances Payne Bolton School of Nursing at Case Western Reserve University in Cleveland and member of the Association for Professionals in Infection Control and Prevention, says that meeting with environmental services and sharing in-house surveillance data helps them relate housekeeping tasks with the spread of infection and helps ensure optimal environmental hygiene. Screening and cohorting patients. These patients must then be treated prior to surgery or any other procedure. However, it is essential that patients who are suffering from the same disease or infection should be kept together in a designated area. Infections can spread easily from one patient to another if they are being treated in the same area, with the same staff and shared patient care equipment. Some infectious agents are even airborne, says the CDC. Organizations must also evaluate whether the staff is adhering to specific protocols for specific infections, Dr. The staff at a healthcare organization may sometimes be the cause of the spread of infections. They come into contact with patients with different types of diseases and may contract infections, according to the CDC. As a result, organizations must make sure that recommended vaccinations are being administered to their staff as recommended. It results in decreased transmission risk to co-workers and patients. Through surveillance, organizations should gather data regarding infection patterns at their facility. They should also regularly assess current infection prevention protocols. Having a robust infection surveillance program helps organizations measure outcomes, assess processes of care and promote patient safety, says Mr. Sharing the data that the infection surveillance program gathers is the next step. The misuse and overuse of antibiotics can put patients at a risk of contracting infections, according to the Association for Professionals in Infection Control and Epidemiology. Inappropriate antibiotic use may also result in patients becoming resistant to some drugs. If those patients contract an infection, it becomes harder to treat them and the risk of it spreading increases. Schweon suggests establishing a program to assist with appropriate antibiotic selection and dosing. This helps optimize patient outcomes and minimize adverse events like C. Breakdown of communication in the surgical preparation, planning and postoperative care management among various care providers during the care transition process can lead to surgical site infections that could otherwise be avoided, says Ms. Often, the concept of "stopping the line" is not practiced, which is when care providers are doubtful if certain necessary infection prevention or surgical preparation activities have been completed by the previous care providers, and they halt the care transition process until the matter is resolved. Organizations must avoid situations where a certain process is overlooked by a department that assumes another department has already completed that it. There needs to be coordination of care and communication within the surgical team as well. There is a risk of breaking the sterile field in the

surgery room particularly around the portion of the surgical procedure when multiple, critical activities are taking place at the same time that require staff to multitask, she says. Care coordination goes a long way in preventing surgical site infections. Keeping abreast of the latest findings regarding the spread of infections and strategies for prevention is essential for a successful infection prevention program. What is new in the infection prevention field may not necessarily be the best fit for your organization, says Ms. Appreciating all the departments that support the infection prevention program. All caregivers are accountable, and to encourage infection prevention protocols, healthcare professionals should show appreciation for all the people who help keep infections at bay, from the people who prepare surgical instruments for the operating room to those preparing the food safely for patients, staff and visitors, says Mr. Comprehensive Unit-based Safety Programs. The Comprehensive Unit-based Safety Program is a structured strategic framework for patient safety improvement that integrates communication, teamwork and leadership, according to the Agency for Healthcare Research and Quality. Each unit should have its own infection prevention champions, with these individuals becoming an extension of the infection prevention and control department, adds Mr. Each of these strategies helps organizations keep the spread of infections at bay. When implemented, supported and carried out together, these 10 strategies are instrumental in ensuring the success of an infection prevention program at an organization. More Articles on Infection Prevention:

Chapter 6 : Process of care measures and infection control

Safe management of wastes from health-care activities 14 Hospital hygiene and infection control Objective Management of health-care waste is an integral part of hospital hygiene.

Bacteria, fungi, and viruses spread mainly through person-to-person contact. This includes unclean hands, and medical instruments such as catheters, respiratory machines, and other hospital tools. This can lead to bacteria that are resistant to multiple antibiotics. Anyone admitted to a healthcare facility is at risk for contracting a HAI. For some bacteria, your risks may also depend on: A study found that nearly 11 percent of roughly people who underwent operations contracted a HAI. Contaminated areas can increase your risk for HAIs by almost 10 percent. HAIs are also more common in developing countries. How are nosocomial infections diagnosed? Many doctors can diagnose a HAI by sight and symptoms alone. But you should still tell your doctor if any new symptoms appear during your stay. You also may be required to talk a blood and urine test as to identify the infection. How are nosocomial infections treated? Treatments for these infections depend on the infection type. Your doctor will likely recommend antibiotics and bed rest. To encourage a natural healing process and prevent dehydration, your doctor will encourage a healthy diet, fluid intake, and rest. What is the outlook for nosocomial infections? Early detection and treatment are vital for HAIs. Many people are able to make a full recovery with treatment. But people who get HAIs usually spend 2. In some cases, a HAI can seriously increase your risk for life-threatening situations. About , of those cases result in death. Preventing nosocomial infections The responsibility of HAI prevention is with the healthcare facility. Hospitals and healthcare staff should follow the recommended guidelines for sterilization and disinfection. Taking steps to prevent HAIs can decrease your risk of contracting them by 70 percent or more. Some general measures for infection control include: Identifying the type of isolation needed, which can help to protect others or reduce chances of further infection. Observing hand hygiene, which involves washing hands before and after touching people in the hospital. Wearing appropriate gear, including gloves, gowns, and face protection. Cleaning surfaces properly, with recommended frequency. Making sure rooms are well ventilated. To reduce the risk of UTIs, your healthcare provider can: Follow the aseptic insertion technique to minimize infection. Insert catheters only when needed and remove when no longer needed. Change catheters or bags only when medically indicated. Make sure the urinary catheter is secured above the thigh and hanging below the bladder for unobstructed urine flow. Keep a closed drainage system. Talk to your doctor about any concerns you have during a procedure. Takeaway Nosocomial infections, or healthcare associated infections occur when a person develops an infection during their time at a healthcare facility. Infections that appear after your hospital stay must meet certain criteria in order for it to qualify as a HAI. If new symptoms appear within 48 hours of admission, three days after discharge, or 30 days after an operation, talk to your doctor. New inflammation, discharge, or diarrhea could be a symptom of a HAI.

Chapter 7 : Infection control - Wikipedia

The Journal of Hospital Infection is the editorially independent scientific publication of the Healthcare Infection Society. The aim of the Journal is to publish high quality research and information relating to infection prevention and control that is relevant to an international audience.

Wayfinding Infection Control Controlling the spread of disease and minimizing the number of healthcare-associated infections are primary concerns for any healthcare facility. There are elements in the environment of a healthcare facility that could actually facilitate the development and spread of infectious disease. Everything from the air in the building to the people who work there can be potential carriers of contamination. Due to the invasive nature of many modern medical procedures, the opportunity for unrelated infections to develop in hospitals and other healthcare facilities is high. The number of surgeries performed in recent decades has increased, opening patients up to infections at incision sites. There are also a number of diagnostic instruments and other medical devices used in the treatment of disease. It is more critical than ever for hospitals to ensure that infectious diseases do not spread. The improved visibility provides a means for healthcare facilities to prevent the spread of infection, increase patient safety and receive immediate contamination alerts. What is Infection control in Healthcare? Infection control is a series of steps that healthcare facilities and hospitals take to prevent the spread of infectious diseases. It is estimated that approximately 1. To prevent further spreading of disease, steps that many facilities take include: Benefits of this highly-effective system include: Reports that include missed hand hygiene opportunities as well as successful visits to hand hygiene stations Battery powered Dispenser Monitors that are easy to install Monitors that mount to any canister, dispenser, sink, or pump Personal staff reminders that encourage compliance in real-time Potential integration with CenTrak full RTLS or operational as a stand-alone system Posting signs in key locations is helpful, but a proactive reminder that points out when a healthcare worker is missing an opportunity to wash hands is even more effective. Providing reminders for healthcare workers to wash their hands at all of the appropriate points in their day can help increase compliance. Knowing where a particular patient is within the facility, whom he has come in contact with and which medical scopes and other equipment have been used on him, can help reduce the spread of infectious disease. In the event of an infectious outbreak, it is important to be able to trace every person or entity that has potentially come in contact with the disease. Patient tracking systems collect data that can be used retroactively to track the spread of disease within the facility. By recording every contact a patient has with staff, visitors and other patients, a list of people who have been exposed to an illness can quickly be generated. This helps to effectively contain an outbreak without shutting down a hospital, as well as provide targeted communications to only those at risk, minimizing the possibility of unnecessary panic throughout the facility. An electronic data collection system also allows for faster response times. When needed, the patient tracking information can be reported within seconds from anywhere in the facility. When it comes to limiting the spread of infectious disease, time matters. The faster the infection can be contained, the more control can be gained over the size of the potential outbreak. An accurate record of which instrument contacted which patient is helpful in tracking potential contamination in case an infection is discovered. Asset management also includes recording the steps of the disinfection process and storing data on which piece of equipment is clean and which is contaminated. This information, when stored electronically and made easy to retrieve, is essential to positive outcomes in a variety of procedures. An asset management system that can proactively recognize a potential infection risk and send an alert can reduce infections by eliminating sources of human error. Medical Scope Management Tracking the cleaning lifecycles, usage and storage of medical scopes is critical to containing the potential risk of infection. This effective tracking mechanism helps health care facilities maintain the safety of their staff and patients while improving clinical workflow and guarding against equipment loss. To prevent stubborn bioburden, scopes need to enter the initial stage of the reprocessing cycle rinse and manual brush within one hour of use. Alerts to scopes being placed in a soiled area, so that the proper personnel can begin reprocessing immediately. Complete tracking information for the entire cycle of use of each scope visible across the whole

medical facility without any gaps GI, OR, ED, Imaging, Biomed, SPD, storage locations, warehouse, in-transit, etc. Locate soiled medical scopes based on their degree of sterilization and location. Instant alert capability to staff if a stage in the sterilization process is missed Tags for asset tracking that are almost indestructible – capable of withstanding high-pressure washing and harsh disinfection chemicals – and can remain with the item through the sterilization process. Ability to synthesize tracking information from scopes, staff, and patients and update location and condition in seconds. Download our Medical Scope Management Overview Environmental Monitoring Hospitals include several different environmental zones that need to be monitored and managed. Maintaining proper environmental conditions with a compliance monitoring system protects assets and reduces costly exposures. Be alerted to conditions that measure outside of set parameters – Timely alerts let staff address condition issues on critical assets quickly, maintaining the viability of temperature-sensitive materials. Temperature, pressure, and humidity can spoil assets if they are not monitored properly. That means expensive losses or worse, such as harming a patient, are at stake. Reports are automatic; they do not require staff to spend time recording data, eliminating the chance for human error, as well. Bacteria and viruses are living organisms, and they need specific conditions to grow. By monitoring environmental conditions such as temperature and humidity, hospitals can reduce the amount of time these organisms can live and, therefore, reduce the potential for infection. The potential sources of infection, like blood, lab samples and vaccines, should all be protected vigilantly. All of these materials need to be stored, transported and disposed of in a safe manner that reduces the chance of contamination. A monitoring system with alarms to notify of pressure changes can allow for a safer clinical environment. Surgical Sterile Processing There are a lot of potential infection risks in the operating room. All of the instruments on the surgical tray need to go through a thorough a rigorous sterilization process. Safety can be increased with an automated system to alert staff if a step of the sterilization process is missed. The air in the room should also be monitored to ensure airborne illnesses are not being circulated. Maintaining proper air quality in the operating room can reduce the risk of infection for the patient. If the ventilation system fails, an immediate notification from the system helps to quickly mitigate the situation. Healthcare Associated Infection The infections patients can contract while they are receiving medical care are referred to as healthcare associated infections HAI. The CDC developed guidelines to help healthcare facilities prevent these unnecessary infections. They have identified types of HAI that are common in hospitals and other healthcare facilities such as Clostridium difficile infections and surgical site infections. The CDC estimates that there are roughly 1. The CDC guidelines for preventing HAIs are specific to each type of infection, but they all include proper instrument sterilization, hand hygiene compliance and cleanliness procedures for the insertion site. Any time the protective skin layer is breached, there is an increased risk of serious infection. The longer the insertion site is exposed, the more opportunity there is for infection to be carried to the site by instruments, hands or airborne pathogens. A few of the general guidelines for preventing all types of HAI include: Comply with hand hygiene recommendations Maintain a sterile environment around open incisions Disinfect equipment thoroughly Educate patient, family and healthcare workers about infection control procedures The CDC considers HAIs to be both unnecessary and preventable. They are not related to the condition for which the patient is being treated, but they can cause major complications and cost more money to treat than the initial disease. This results in significant financial losses for a healthcare facility. Request a demo for your facility today!

Chapter 8 : 10 Best Strategies for Infection Prevention and Control

Infection control refers to policies and procedures used to minimize the risk of spreading infections, especially in hospitals and human or animal health care facilities. The purpose of infection control is to reduce the occurrence of infectious diseases. These diseases are usually caused by.

Surveillance for outcome measures is problematic. The preventable fraction of HAIs is not known therefore making it difficult to evaluate if infection prevention measures are adequate in any given patient care unit or facility. Some of the limitations of outcome-based infection surveillance may be addressed by performing surveillance and feedback for infection prevention processes of care measures. The use of central venous or urinary catheter insertion and maintenance practices that have been proven to reduce the rate of device associated infections. First, these measures provide unambiguous performance targets for infection prevention risk reduction and allow for focused prevention efforts. In addition, as process of care are measures are common events relative to infections, these allow for simple detection of significant deviations in adherence easier to detect than would be significant deviations in outcomes. Lapses in infection control may then be easier and faster to detect than variances in outcome rates and can be ideally addressed before an increase in infection rates has occurred. However, for some infection control process of care measures, studies have shown that adherence to these quality measures is not necessarily associated with improved outcomes. Adherence to these processes was thought to lead to improved outcomes. Livingston Based on observational studies demonstrating associations between process and outcome, experts concluded that adherence to these process measures would result in better care. Medicare adopted these and published them on its Hospital Compare website as measures of hospital quality. Surprisingly, there has not been an improved outcome with the process measure for perioperative antibiotic use and the outcome of postoperative wound infection nor for the outcome of pneumonia. Adherence to process of care measure is also an issue when clinicians and healthcare personnel are not convinced guidelines are evidence-based and therefore scientifically valid. Consequently, they may simply disagree and refuse to follow the process of care measures recommended. Thus, Process of care measures for infection need to be supported by clinical studies. The correlation between multiple variables i. But process of care measures and short term indicators though well correlated with clinical outcomes cannot always detect the magnitude of difference. What national and international guidelines exist for process of care measures and infection control? The most significant International Guidelines that include process of care measures for infection control are written by the World Health Organization e. Professional organizations that have contributed guidelines or position papers include: What other consensus group statements exist and what do key leaders advise? Beginning 30 years ago, professional organizations dedicated to infection control e. Am J Infect Control. Infection Control and Hospital Epidemiology. J Am Coll Surg. No sponsor or advertiser has participated in, approved or paid for the content provided by Decision Support in Medicine LLC.

Chapter 9 : Hospital Acquired Infections Are a Serious Risk - Consumer Reports

Infection control and hospital epidemiology are akin to public health practice, practiced within the confines of a particular health-care delivery system rather than directed at society as a whole. Anti-infective agents include antibiotics, antibacterials, antifungals, antivirals and antiprotozoals.