Frequently Asked Questions

What are the requirements for license renewal?

Licenses Expire	CE Hours Required	Mandatory Courses
Funeral Directors and Embalmers - Biennial renewals are due on August 31, 2017	12 (All hours are allowed through home-study)	1 hour HIV/AIDS

How do I complete this course and receive my certificate of completion?

On-Line Submission: Go to ***Funeral.EliteCME.com*** and follow the prompts.You will be able to print your certificate immediately upon completion of the course.

Fax or E-mail Submission: Fax to (386) 673-3563, be sure to include your credit card information. All completions will be processed within 2 business days of receipt and certificates e-mailed to the e-mail address provided.*

Mail Submission: Use the envelope provided or mail to Elite, PO Box 37, Ormond Beach, FL 32175. All completions will be processed and certificates issued within 10 business days from the date it is mailed.*

*Please note - providing a valid e-mail address is the quickest and most efficient way to receive your certificates when submitting via fax, e-mail or mail.

Submissions without a valid e-mail address will be mailed to the address provided at registration.

How much will it cost?

Cost of Courses		
Course Title	**CE Hours**	**Price**
HIV/AIDS Communicable Disease Education - **Mandatory**	1	$15.00
Aftercare - Extending a Helping Hand All Year Round	1	$15.00
Current Trends in the Funeral Industry	3	$20.00
Infectious Disease Control for Funeral Directors and Embalmers	4	$30.00
Modern Restorative Arts & Embalming Techniques	3	$20.00
★ **BEST VALUE** ★ **SAVE $25** ★ **Entire 12-hour Course**	**12**	**$75.00**

Are you a Florida board approved provider?

Elite is an approved provider by the Florida Department of Financial Services; Division of Funeral, Cemetery and Consumer Services, Provider No. 113.

Are my credit hours reported to the Florida board?

Yes, Elite will report your hours electronically to the board within one business day of completing your test.

Is my information secure?

Yes! Our website is secured by Thawte, we use SSL encryption, and we never share your information with third-parties.

What if I still have questions? What are your business hours?

No problem, we have several options for you to choose from! Online – at Funeral.EliteCME.com you will see our robust FAQ section that answers many of your questions, simply click FAQ in the upper right hand corner or Email us at office@elitecme.com or call us toll free at 1-888-857-6920, Monday - Friday 9:00 am - 6:00 pm EST.

Important information for licensees:

Always check your state's board website to determine the number of hours required for renewal, and the amount that may be completed through home-study. Also, make sure that you notify the board of any changes of address. It is important that your most current address is on file.

Table of Contents

CE for Florida Funeral Professionals

CHAPTER 1: HIV/AIDS - COMMUNICABLE DISEASE EDUCATION – 1 CE Hour – MANDATORY **Page 1**

Communicable diseases pose a significant risk to those within the funeral profession. It is important for funeral industry professionals to be aware of these risks and be reminded of best practices to employ to avoid exposure and/or transmission of bloodborne pathogens that could lead to disease or death.

HIV/AIDS - Communicable Disease Education Final Exam ***Page 11***

CHAPTER 2: AFTERCARE - EXTENDING A HELPING HAND ALL YEAR ROUND – 1 CE Hour **Page 12**

Aftercare programs help people through the difficult process of grief. Each funeral home will use different levels and different forms of aftercare based on the needs of its customers and local community.

Aftercare - Extending a Helping Hand all Year Round Final Exam ***Page 15***

CHAPTER 3: CURRENT TRENDS IN THE FUNERAL INDUSTRY – 3 CE Hours **Page 16**

Current trends in the funeral industry require competitive funeral businesses to develop new skills as the industry becomes a mix of old and new traditions. These new skills and traditions include: The use of technology; environmental safety; personalized presentations; natural and/or "green" practices; home funerals; and pet cremation and burials. These trends are changing the funeral industry across the United States.

Current Trends in the Funeral Industry Final Exam ***Page 34***

CHAPTER 4: INFECTIOUS DISEASE CONTROL FOR FUNERAL DIRECTORS AND EMBALMERS – 4 CE Hours **Page 35**

Professionals in the funeral industry must have knowledge concerning different types of infectious diseases, modes of transmission, and virulence that make them dangerous and difficult to contain. This course includes information on infectious diseases that rise to the level of serious public health concerns, as well as also providing specific references for downloading guidelines and training resources from the CDC, OSHA, and the WHO for further information.

Infectious Disease Control for Funeral Directors and Embalmers Final Exam ***Page 50***

CHAPTER 5: MODERN RESTORATIVE ARTS AND EMBALMING TECHNIQUES – 3 CE Hours **Page 51**

Funeral homes or mortuaries may vary in size, number of employees, services offered, organization of job duties, and community customs. In some cases, the funeral director may do embalming and restorative work. This course was written for professionals working in the field as a way to update and enhance proficiency. It is not meant to teach fundamental skills at the entry level.

Modern Restorative Arts and Embalming Techniques Final Exam ***Page 63***

Student Final Examination Answer Sheet **Page 65**

Course Evaluation **Pages 66**

Chapter 1: HIV/AIDS – Communicable Disease Education

1 CE Hour

By: Staff Writer

Learning objectives

- Understand OSHA's Bloodborne Pathogen Standard.
- Understand proper sterilization and sanitation techniques for your instruments and workplace.
- Know the difference between HIV infection and AIDS.
- Describe how HIV/AIDS infected employees should be treated.
- Describe the precautions you should take to limit exposure to bloodborne pathogens.

Bloodborne pathogens

Bloodborne pathogens are microorganisms such as viruses or bacteria that are carried in the blood and can cause disease in people. There are many different bloodborne pathogens including malaria, syphilis, and brucellosis, but Hepatitis B Virus (HBV) and the Human Immunodeficiency Virus (HIV) are the two diseases specifically addressed by the OSHA Bloodborne Pathogen Standard. Hepatitis C Virus (HCV) is another virus that has dramatically increased in the United States.

Background
In March 1992, OSHA's Bloodborne Pathogen Standard, 29 CFR 1910.1030 took effect. This standard was designed to prevent more than 200 deaths and 9,000 infections every year. While the standard was primarily aimed at hospitals, funeral homes, clinics, law enforcement agencies, emergency responders, and HIV/HBV research laboratories, anyone who can "reasonably expect to come in contact with blood or potentially infectious materials" as part of their job is covered by the standard.

Purpose
The purpose of the standard is to limit occupational exposure to blood and other potentially infectious materials since any exposure could result in transmission of bloodborne pathogens which could lead to disease or death.

Scope
The Standard covers all employees who could be "reasonably anticipated," as the result of performing their job duties, to face contact with blood and other potentially infectious materials. OSHA has not attempted to list all occupations where exposure could occur. "Good Samaritan" acts such as assisting a co-worker with a nosebleed would not be considered occupational exposure. Infectious materials include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, ammonic fluid, saliva, any body fluid visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. They also include unfixed tissue or organ other than intact skin from a human (living or dead), Human Immunodeficiency Virus (HIV) containing cell or tissue cultures, organ cultures and HIV or Hepatitis B Virus (HBV)-containing culture medium or other medium or other solutions as well as blood, organs or other tissues from experimental animals infected with HIV or HBV.

Exposure control plan
The Exposure Control Plan requires employers to identify, in writing, tasks and procedures as well as job classification where occupational exposure to blood occurs without regard to personal protective clothing and equipment. It must also set forth the schedule for implementing provisions of the standard and specify the procedure for evaluating circumstances surrounding exposure incidents. The plan must be accessible to employees and available to OSHA. Employers must review and update it at least annually and more often if necessary to accommodate workplace changes.

Methods of compliance
The Standard mandates universal precautions, (treating body fluids/materials as infectious) emphasizing engineering and work practice controls. The Standard stresses hand washing and requires employers to provide facilities and ensure that employees use them following exposure to blood. It sets forth procedures to minimize needlesticks, minimize splashing and spraying of blood, ensure appropriate packaging of specimens and regulated wastes and decontaminate equipment or label as contaminated before shipping to servicing facilities

Employers must provide, at no cost, and require employees to use appropriate personal protective equipment such as gloves, gowns, masks and must clean, repair and replace these when necessary.

The Standard requires a written schedule for cleaning, identifying the method of decontamination to be used, in addition to cleaning following contact with blood or other potentially infectious materials. It specifies methods for disposing of contaminated sharps and sets forth standards for containers for these items and other regulated waste. Further, the standard includes provisions for handling contaminated laundry to minimize exposure.

Hepatitis B vaccination
Vaccinations need to be made available to all employees who have occupational exposure to blood within 10 working days of assignment, at no cost, at a reasonable time and place, under the supervision of a licensed physician/licensed healthcare professional and according to the latest recommendations of the U.S. Public Health Service (USPHS). Pre-screening may not be required as a condition of receiving the vaccine. Employees must sign a declination form if they choose not to be vaccinated, but may later opt to receive the vaccine at no cost to the employee. Should booster doses later be recommended by the USPHS, employees must be offered them.

Post-exposure evaluation and follow-up
Specific procedures are to be made available to all employees who have had an exposure incident plus any laboratory tests must be conducted by an accredited laboratory at no cost to the employee. Follow-up must include a confidential medical evaluation documenting the circumstances of exposure, identifying and testing the source individual if feasible, testing the exposed employee's blood if he/she consents, post-exposure prophylaxis, counseling and evaluation of reported illness. Healthcare professionals must be provided specified information to facilitate the evaluation and their written opinion on the need for hepatitis B vaccinations following the exposure. Information such as the employee's ability to receive the hepatitis B vaccine must be supplied to the employer. All diagnoses must remain confidential.

Hazard communication
Warning labels including the orange or orange-red biohazard symbol should be affixed to containers of regulated waste, refrigerators and freezers and other containers which are used to store or transport blood or other potentially infectious materials. Red bags or containers may be used instead of labeling. When a facility uses universal precautions in its handling of all specimens, labeling is not required within the facility. Likewise when all laundry is handled with universal precautions, the laundry need not be labeled. Blood which has been treated and found free of HIV or HBV and released for clinical use, and regulated waste which has been decontaminated, need not be labeled.

Information and training
Training of the OSHA Bloodborne Pathogen Standard should be completed within 90 days of effective date, and annually thereafter. Training must include making accessible a copy of the regulatory test of the standard and explanation of its contents.

Recordkeeping
Medical records are to be kept for each employee with occupational exposure for the duration of employment plus 30 years. They must be kept confidential and must include name and social security number; hepatitis B vaccination status (including dates), results of any examination, medical testing and follow-up procedures; a copy of the healthcare professional's written opinion; and a copy of information provided to the healthcare professional. Training records must be maintained for 3 years and must include dates, contents of the training program or summary, trainers name and qualifications, names and job titles of all persons attending the sessions. Medical records must be made available to the employee, anyone with written consent of the employee, OSHA and NIOSH. Disposal of records must be in accord with OSHA's standard covering access to records.

Tuberculosis

Tuberculosis, also known as TB, is an infectious disease that may affect almost any tissue in the body especially the lungs. It is caused by the bacteria mycobacterium tuberculosis and characterized by tubercles, the characteristic lesion of tuberculosis.

Nearly one-third of the world's population is infected with tuberculosis (TB), which kills almost 3 million people a year. TB is the leading cause of death due to an infectious agent in the world. In the mid-1980s a resurgence of outbreaks in the United States brought new attention to TB.

Increases in the incidence of TB are related to the high risk among immunosuppressed persons, particularly those infected with human immunodeficiency virus (HIV). Drug resistant strains of this deadly disease have contributed to the problem. Outbreaks have occurred in hospitals, correctional institutions, homeless shelters, nursing homes, and residential care facilities for AIDS patients. Nationwide, at least several hundred employees have become infected and have required medical treatment after workplace exposure to TB.

TB is spread through the air from one person to another. The bacteria are put into the air when a person with TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected. When a person breathes in TB bacteria, the bacteria can settle in the lungs and begin to grow. From there, they move through the blood to other parts of the body, such as the kidney, spine, and brain. TB in the lungs or throat can be infectious. This means that the bacteria can be spread to other people. TB in other parts of the body, such as the kidney or spine, is usually not infectious.

People with TB disease are most likely to spread it to people they spend time with everyday. This includes family members, friends, and coworkers. In most people who breathe in TB bacteria and become infected, the body is able to fight the bacteria to stop them from growing. The bacteria become inactive, but they remain alive in the body and can become active later. This is called TB infection.

People with TB infection:
- Have no symptoms.
- Don't feel sick.
- Can't spread TB to others.
- Usually have a positive skin test reaction.
- Can develop TB disease later in life if they do not receive preventive therapy.

Many people who have TB infection never develop TB disease. In these people, the TB bacteria remain inactive for a lifetime without causing disease. But in other people, especially people who have weak immune systems, the bacteria become active and cause TB disease.

The basic facts on hepatitis

Viral hepatitits
Hepatitis is an inflammation of the liver caused by medications, alcohol, or a variety of other agents including the viruses that cause mumps, measles, herpes and infectious mononucleosis. However, when health professionals talk about viral hepatitis, they usually mean hepatitis caused by the hepatitis A, hepatitis B, or hepatitis C virus.

The differences between hepatitis A, B and C
Although hepatitis A, B and C have similar symptoms, the viruses themselves are quite different. The hepatitis A virus can enter a person's body when he/she eats or drinks something contaminated with the stool or blood of someone who has the disease. Symptoms usually appear within 2-6 weeks, but are not followed by the chronic problems that hepatitis B and C viruses can cause. The hepatitis B and C viruses can infect a person if his/her mucous membranes or blood are exposed to an infected person's blood, saliva, wound exudates, semen or vaginal secretions. Symptoms appear more gradually than in hepatitis A. Unlike the hepatitis A virus, the hepatitis B and C viruses can stay in the body - sometimes for a lifetime - and eventually cause chronic, serious liver diseases.

Protections against infection
Because the different viruses that cause hepatitis enter the body in different ways, there are several steps you can take to protect yourself from infection. Practicing good hygiene and safer sexual behaviors is a good first step. For more specific information, see the individual sections for hepatitis A, B and C.

The symptoms of viral hepatitis
Early symptoms of viral hepatitis include:
- Fatigue.
- Tenderness in the upper right abdomen.
- Sore muscles & joints.
- Loss of appetite.
- An altered sense of taste & smell.
- Nausea, vomiting & diarrhea.
- Low-grade fever.
- Malaise.

Other symptoms can include:
- Jaundice - abnormally yellow skin & eyes caused by bile entering the blood.
- Darkened urine; light-colored or gray stool.

Diagnosis of hepatitis
Although health providers use information about a person's symptoms, health history and behaviors to help make a diagnosis, only blood tests can confirm the diagnosis and pinpoint which type of hepatitis a person has.

Treatments for viral hepatitis
Since there's no medication that can treat the initial illness that viral hepatitis causes, health professionals manage symptoms as they occur and try to help the body's immune system fight the infection. If you have viral hepatitis, your health care provider may tell you to:

- Avoid alcohol and other drugs, large doses of vitamins, and prescription drugs metabolized by the liver (sometimes including birth control pills).
- Drink high-calorie fluids such as fruit juices and eat a balanced diet that includes dairy products; meat, poultry or seafood; breads and cereals; and fruits and vegetables. (To control nausea, try eating several smaller meals.)
- Limit activity if your hepatitis is symptomatic; this typically means bed rest at first, progressing to normal activity as symptoms disappear.

Your health professional may recommend hospitalization if you experience severe vomiting or do not feel better after several weeks. You should know that researchers are making gains in treating the chronic liver disease associated with both hepatitis B and C. There is not much available for treatment. Interferon has been approved in chronic hepatitis B and C cases for those aged 18 or older. Prevention is still the best option.

Hepatitis A (HAV)

Hepatitis A infects 125,000 - 200,000 people each year and can be easily transmitted. You can become infected by eating or drinking something that has been contaminated with the stool (feces) or blood of someone who has the disease.

Facts about hepatitis A
Symptoms occur 2-6 weeks after exposure and can last from several days to six months.

The virus usually causes mild illness and is often mistaken for a stomach virus, although occasionally symptoms are more serious. It is rarely fatal and does not cause permanent liver damage.

A person with hepatitis A is considered contagious, which means they can transmit the virus to others as early as two weeks before symptoms appear.

The hepatitis A virus does not cause the long-term, chronic symptoms that other hepatitis viruses can cause.

Behavior practices associated with hepatitis A infection

- Eating contaminated food, such as undercooked shellfish from contaminated water or food handled by someone who has hepatitis A.
- Using silverware, cups or glasses that an infected person touched with unwashed hands.
- Changing diapers or linens that contain stool from someone with hepatitis A and neglecting to wash your hands.
- Sharing food with an infected person or drinking water contaminated with sewage.
- Oral or anal sexual contact with an infected person.
- Traveling to developing countries where the disease is common.
- Sharing needles can also put you at risk. The hepatitis A virus can be transmitted through blood if needles are shared. However, poor hygiene - either among people who use drugs or among drug producers - is probably a more important reason for the high prevalence among drug users.

Prevention of hepatitis A
Practice good personal hygiene. Always wash your hands after postmortem contact with blood or fecal matter, when cleaning or after using the toilet, and before preparing or eating food. Avoid foods that could be contaminated, such as under-cooked shellfish or food that's been prepared by someone who has the virus. When traveling to developing countries, drink only bottled or boiled water, don't use ice, and don't eat raw fruits or vegetables unless they've been peeled. It is also a good idea to get the hepatitis A vaccine.

Exposure to hepatitis A
If you think you've been directly exposed to the hepatitis A virus, visit your health care provider immediately for treatment. Some treatments can help ward off the infection if administered in time (hepatitis A vaccine and IgG). All people who have close household or sexual contact with an infected person also need treatment.

Preventing the spread of hepatitis A
If you think you may be infected with hepatitis A:

- Always wash your hands well after using the toilet.
- Don't prepare or handle food for others while you are infectious.
- Avoid sexual contact with other people until you are fully recovered.

Hepatitis B (HBV)

In the United States, approximately 300,000 people are infected with HBV annually. Of these cases, a small percentage are fatal.

"Hepatitis" means "inflammation of the liver," and its name implies, hepatitis B is a virus that infects the liver. Hepatitis B is transmitted through 'blood-to-blood` contact. Hepatitis B initially causes inflammation of the liver, but it can lead to more serious conditions such as cirrhosis and liver cancer.

There is no "cure" or specific treatment for HBV, but many people who contract the disease will develop antibodies, which help them get over the infection and protect them from getting it again. It is important to note, however, that there are different kinds of hepatitis, so infection with HBV will not stop someone from getting another type.

The hepatitis B virus is very durable, and it can survive in dried blood for up to seven days. For that reason, this virus is the primary concern for employees such as housekeepers, funeral directors, custodians, laundry personnel and other employees who may come in contact with blood or potentially infectious materials in a non first aid or medical care situation.

Symptoms
The symptoms of HBV are very much like a mild "flu." Initially there is a sense of fatigue, possible stomach pain, loss of appetite, and even nausea. As the disease continues to develop, jaundice (a distinct yellowing of the skin and eyes), and darkened urine often develop. However, people who are infected with HBV will often show no symptoms for some time. After exposure it can take 1-9 months before symptoms become noticeable. Loss of appetite and stomach pain, for example, commonly appear within 1-3 months, but can occur as soon as 2 weeks or as long as 6-9 months after infection.

Hepatitis B (HBV) and sexually transmitted disease prevented by HBV vaccine
The hepatitis B virus infects people of all ages. It is one of the fastest-spreading sexually transmitted infections (STI), and also can be transmitted by sharing needles or by any behavior in which a person's mucus membranes are exposed to an infected person's

blood, semen, vaginal secretions, or saliva. While the initial sickness is rarely fatal, 10 percent of people who get hepatitis B are infected for life and run a high risk of developing serious, long-term liver diseases such as cirrhosis of the liver or liver cancer which can cause serious complications or death. A safe, effective vaccine that prevents hepatitis B is available. If you or someone you know practices behaviors that can spread hepatitis B, ask a medical professional about the vaccine. Don't become one of the 300,000 Americans who contracts hepatitis B every year.

Facts about hepatitis B (HBV)

- Symptoms, if they occur, appear from one to six months after exposure to the virus.
- An infected person can begin infecting others four to six weeks before symptoms appear, and can continue infecting others long after symptoms subside.
- About one in ten people infected with hepatitis B become chronic carriers; they continue carrying the virus and spread it to others even though their symptoms have disappeared. About one-quarter of these chronic carriers eventually die of severe, chronic liver diseases, including cirrhosis - a serious scarring of the liver - and liver cancer.
- About half of the people infected with hepatitis B virus never develop symptoms; but they can become chronic carriers.
- Since some areas of the world have high rates of infection, people from places such as Southeast Asia, South Pacific Islands, sub-Saharan Africa, Alaska, Amazon, Bahia, Haiti, and the Dominican Republic are at risk.

Risk behaviors for contracting HBV

Practicing unsafe sex. The more partners with whom you have vaginal, anal or oral contact, the higher your risk of becoming infected with hepatitis B. Abstinence is the most effective way to prevent sex-related transmission. If you have vaginal, anal or oral contact, always use barrier protection. People who have sex with multiple partners should ask their health provider about getting vaccinated for hepatitis B.

Sharing needles. No matter what drug is injected, whether it's crack, heroin or steroids, sharing needles is extremely risky. In fact, an estimated 60-80 percent of the people who share needles are or have been infected with hepatitis B. Similarly, beware of needles that could be contaminated when getting tattoos, having acupuncture or your ears pierced. Select a reputable professional for these services.

Close, frequent contact with the blood, semen, vaginal secretions or saliva of infected patients. If you are a health care worker, consider getting vaccinated. Occasionally, people who share living quarters for a long time with others who have hepatitis B have gotten infected. Receiving a blood transfusion or other blood products no longer carries the threat of hepatitis B that it once did. Today, all blood is screened for hepatitis B before it is used.

Prevention of hepatitis B

If you are at risk of contracting hepatitis B, get vaccinated. The hepatitis B vaccine is an inactivated antigen (genetically engineered; not a live or killed virus). It is administered in a series of three injections over a six-month period. Approximately 95% of persons who receive the three injections obtain full immunity after receiving the vaccine. You are asked to report side effects (rash, nausea, joint pain, and/or fatigue) to your health care provider. Also, avoid high-risk behaviors and practice good personal hygiene when sharing food, handling human remains, and using bathrooms. Don't share razors, toothbrushes or pierced earrings with anyone.

Exposure to hepatitis B

If you have not been vaccinated against hepatitis B but are exposed to the virus, your health professional can treat you with hepatitis B immune globulin (HBIG), combined with the hepatitis B vaccination. Don't delay - get immunized and vaccinated as soon as possible after exposure.

Preventing the spread of hepatitis B

- Don't engage in sexual contact without a condom.
- Don't donate blood. Bandage all cuts and open sores.
- Don't share anything that could be contaminated with your blood, semen, vaginal secretions or saliva - such as needles, razors or toothbrushes.
- Wash your hands well after using the toilet or handling human remains.
- If you have hepatitis B and you're pregnant, your baby must be immunized at birth. All pregnant women should be screened for hepatitis B.

Hepatitis B vaccinations

As previously discussed, employees who have routine exposure to bloodborne pathogens (such as doctors, nurses, embalmers, first aid responders, etc.) shall be offered the hepatitis B vaccine series at no cost to themselves unless:

- They have previously received the vaccine series.
- Antibody testing has revealed they are immune.
- The vaccine is contraindicated for medical reasons.

Although your employer must offer the vaccine, you do not have to accept that offer. You may opt to decline the vaccinations series, in which case you will be asked to sign a declination form. Even if you decline the initial offer, you may choose to receive the series at anytime during your employment thereafter, for example, if you are exposed on the job at a later date.

The hepatitis B virus vaccination is given in a series of three shots. The second shot is given one month after the first, and the third shot follows five months after the second. This series gradually builds up the body's immunity to the hepatitis B virus.

The vaccine itself is made from yeast cultures, there is no danger of contracting the disease from getting the shots, and, once vaccinated, a person does not need to receive the series again.

Hepatitis C (HCV)

HCV is widely viewed as one of the most serious of the five hepatitis viruses. The hepatitis C virus is spread primarily through contact with infected blood and can cause cirrhosis (irreversible and potentially fatal liver scarring), liver cancer, or liver failure. Hepatitis C is the major reason for liver transplants in the United States, accounting for 1,000 of the procedures annually. The disease is responsible for between 8,000 and 10,000 deaths yearly. Some estimates say the number of HCV-infected people may be four times the number of those infected with the AIDS virus. Hepatitis C is less likely than the other hepatitis viruses to cause serious illness at first (only one-quarter of the people infected actually develop symptoms); about 70% of those infected develop chronic liver disease.

Like hepatitis B, hepatitis C can be spread by contact with infected blood, and possibly semen, vaginal secretions and saliva. Hepatitis C infects about 150,000 Americans each year.

Risk behaviors

You are at risk if you share needles; receive contaminated blood during a blood transfusion; work with contaminated blood as a funeral director or embalmer; or have vaginal, oral or anal contact without barrier protection with infected partners.

Prevention of hepatitis C

Since hepatitis C is transmitted in much the same way as hepatitis B, you can help avoid infection by using some of the same precautions. Always use barrier protection during vaginal, anal or oral contact;

practice good personal hygiene; and never share needles, razors, toothbrushes or pierced earrings with anyone.

All donated blood is screened for the virus. Drugs are licensed for treatment of persons with chronic infection, though they are only about 15-30% effective. Currently, there is no vaccine available.

Hepatitis D (HDV)

The delta virus (also known as hepatitis D) is a defective virus that may cause infection only in the presence of active hepatitis B infection. The symptoms and routes of transmission are similar to those of hepatitis B infection, but are particularly significant with intravenous drug abusers and pregnant women.

Modes of transmission
Bloodborne pathogens such as HAV, HBV, HCV and HIV can be transmitted through contact with infected human blood and other potentially infectious body fluids such as:

- Semen.
- Vaginal secretions.
- Cerebrospinal fluid.
- Synovial fluid.
- Pleural fluid.
- Amniotic fluid.
- Saliva (in dental procedures); and
- Any body fluid that is visibly contaminated with blood.

Human immunodeficiency virus (HIV)

What is HIV?
The human immunodeficiency virus or HIV for short, is the virus that causes AIDS. HIV is transmitted from one person to another through blood-to-blood and sexual contact. Additionally, infected pregnant women can pass HIV to their unborn child during pregnancy, delivery and breast-feeding. Most people that have the HIV infection will develop AIDS.

What is AIDS?
AIDS stands for acquired immunodeficiency syndrome. An HIV-infected person receives a diagnosis of AIDS after developing one of the defined AIDS indicator illnesses. A positive HIV test result does not mean that a person has AIDS. A diagnosis of AIDS is made by a physician using certain clinical criteria (e.g., AIDS indicator illnesses). Infection with HIV can weaken the immunes sytem to the point that it has difficulty fighting off certain infections. These types of infections are known as “opportunistic” infections because they take the opportunity a weakened immune system gives to cause illness. Many of the infections that cause problems or may be life-threatening for people with AIDS are usually controlled by a healthy immune system. The immune system of a person with AIDS is weakened to the point that medical intervention may be necessary to prevent or treat serious illness.

Today there are medical treatments that can slow down the rate at which HIV weakens the immune system. There are other treatments that can prevent or cure some of the illnesses associated with AIDS. As with other diseases, early detection offers more options for treatment and preventative care.

The origins of HIV and AIDS
Scientists have different theories about the origin of HIV, but none have been proven. The earliest known case of HIV was from a blood sample collected in 1959 from a man in Kinshasha, Democratic Republic of Congo. (How he became infected is not known.) Genetic analysis of this blood sample suggests that HIV-1 may have stemmed from a single virus in the late 1940s or early 1950s. We do know that the virus has existed in the United States since at least the mid- to late 1970s. From 1979-1981 rare types of pneumonia, cancer, and other illnesses were being reported by doctors in Los Angeles and New York among a number of gay male patients. These were conditions not usually found in people with healthy immune systems.

HIV and AIDS statistics
United States: The Center for Disease Control (CDC) estimates that between 800,000 and 900,000 people are living with HIV with approximately 40,000 new infections every year. Through December 2001, a total of 816,149 cases of AIDS had been reported to the CDC. 666,026 reported among men, 141,048 reported among women, and 9,074 reported among children under 13.

New infections
By gender - 70% of new infections each year occur among men. Males account for 83% of all AIDS cases.

By risk group – Homosexual men represent the largest proportion of new infections, followed by heterosexuals and intravenous drug users.

By race – More than half of new HIV infections occur among blacks though they represent only 13% of the population. Hispanics, who represent 12% of the general population, are also disproportionately affected. 42% of all AIDS cases are white, 38% black and 18% Hispanic.

Since the beginning of this epidemic, 467,910 AIDS-related deaths have been reported in the United States. Of those deaths, 462,653 have been adults and adolescents, 5,257 have been children under age 15 and 388 whose age at death was unknown.

Worldwide: Based on estimates from the United Nations AIDS program (UNAIDS), During 2002 AIDS caused the deaths of an estimated 3.1 million people and an estimated 5 million people contracted HIV. An estimated 42 million people are living with HIV infection or AIDS and an estimated 26 million people have died since the beginning of the epidemic.

Nearly one-third of those living with AIDS are between the ages of 15-24 and 95% of all cases reported are in developing countries.

Symptoms
Symptoms of HIV infection can vary, but often include weakness, fever, sore throat, nausea, headache, diarrhea, a white coating of the tongue, weight loss, and swollen lymph glands.

HAV, HBV, HCV and HIV are most commonly transmitted through:

- Sexual contact (less likely for HCV).
- Sharing of hypodermic needles.
- From mothers to their babies at/before birth.
- Accidental puncture from contaminated needles, broken glass, or other sharps.
- Contact between broken or damaged skin and infected body fluids.
- Contact between mucous membranes and infected body fluids.

In most work situations, transmission is most likely to occur because of accidental puncture from contaminated needles, broken glass, or other sharps; contact between broken or damaged skin and infected body fluids; or contact between mucous membranes and infected body fluids. For example, if someone infected with HBV cut his or her finger on a piece of glass, and then you cut yourself on the now infected piece of glass, it is possible that you could contract the disease. Anytime there is blood-to-blood contact with infected blood or body fluids, there is a slight potential for transmission.

Unbroken skin forms an impervious barrier against bloodborne pathogens. However, infected blood can enter your system through:

- Open sores.
- Cuts.
- Abrasion.
- Acne.
- Any sort of damaged or broken skin such as sunburn or blisters.

Bloodborne pathogens may also be transmitted through the mucous membranes of the:

- Eyes.
- Nose.
- Mouth.

For example, a splash of contaminated blood to your eye, nose or mouth could result in transmission.

How does HIV research help with the cure of other diseases?
Many ask how does HIV/AIDS affect me and why is research so important. The fact is, HIV/AIDS research is helping solve many other medical mysteries.

Treatments for several types of cancer have grown directly out of AIDS research. One promising experimental therapy for advanced cancer is high dose chemotherapy followed by a bone marrow transplant. But the profound immune suppression necessary for a successful transplant often leads to devastating, even fatal, infections. New drugs to treat and prevent these infections have come directly from AIDS targeted research.

Treatments for other cancers are also emerging from AIDS research. Several natural body hormones called growth factors promote the activity of HIV. Many of these hormones also accelerate the growth and spread of cancer cells. Blocking the activity of these hormones is a strategy first used experimentally to treat kaposi's sarcoma, a cancer found in patients with HIV/AIDS. Now it is also being tested in bladder, vulvar, and breast cancers and has shown some exciting recent success in treating colon cancer. In addition, small proteins and drugs that can block the growth of new blood vessels (which is critical to the survival of tumor cells) were originally developed to treat Kaposi's sarcoma, but are now being tested in many other cancers as well.

Are other treatments for major diseases likely to emerge from AIDS research any time soon?
Absolutely, AIDS research is helping to improve treatments for Alzheimer's disease and heart disease. Alzheimer's disease is a progressive, global dementia whose cause is unknown. Profound dementia is commonly seen in the late stages of AIDS as well, so drugs that are successful in lessening nerve damage and dementia in AIDS, for example, may benefit patients with Alzheimer's. The characteristic plaques that fill the brain cells of an Alzheimer's patient are formed partly by enzymes called proteases, so scientists are now investigating the use if protease inhibitors to treat this debilitating dementia. Many HIV positive children and adults also suffer heart attacks and strokes because HIV appears to affect small blood vessels in the heart and the brain, which makes them vulnerable to spasm, blood clots, and early atherosclerosis. The small arteries of a two-year-old child with AIDS often resemble those of a 50 -year-old man. In HIV infection, a process of programmed cell death injures the cells that line the small blood vessels of the heart. Similar damage occurs in HIV-negative people with atherosclerosis. Discovering a way to block this process may benefit not only those with AIDS, but a much broader population as well.

How does the study of HIV/AIDS help in the treatment of other diseases?
HIV/AIDS therapies may be critical in the treatment of other diseases. For example, lamivudine and adefovir can help patients with hepatitis B who have no other options. In addition, protease inhibitors are being developed to combat infections, such as hepatitis C, influenza, and most recently, SARS is based on a concept similar to that of an anti-HIV entry inhibitor called enfuvirtide, or fuzeon, which was approved for use in 2003. A modified version of another AIDS drug called cidofovir, used to treat CMV eye infections in AIDS, is now being developed to treat and possibly prevent smallpox infection. AIDS drugs have been used to eliminate diseases in plants. Two of them, adefoir and tenofovir, can eradicate the banana streak virus, which infects a substantial proportion of the world's banana harvest.

Since HIV is a virus that attacks the immune system, what does AIDS research teach us about autoimmune disorders or immune-based therapies for other diseases?
HIV-positive people often develop autoimmune problems, such as psoriasis or blood abnormalities associated with lupus. For these autoimmune diseases, treatments developed for AIDS should also apply when the same conditions occur spontaneously. Certain hormones that modify the function of immune cells are now being tested as treatments for AIDS. Some of the most recent include IL-12 and TNF (tumor necrosis factor)-alpha inhibitors, which may also boost the immune systems of cancer patients.

Workplace accommodations for employees with HIV/AIDS

People living with HIV infection and AIDS can be productive workers for many years. Even in the best of circumstances, the challenges associated with HIV can be significant. In addition to complex medical and legal concerns, AIDS raises difficult emotional issues such as fear, stigma, death, and dying.

HIV/AIDS is an increasingly important issue in workplaces throughout the country. Two-thirds of large businesses and one in 10 small businesses have already encountered an employee with HIV infection or AIDS. More than 75 percent of all AIDS cases occur among people between the ages of 25 and 44 — the same group comprising the bulk of the U.S. workforce.

Employment provisions under the Americans with Disabilities Act of 1990
The Americans with Disabilities Act (ADA) prohibits discrimination against all people with disabilities or perceived disabilities, including people with HIV infection and AIDS. A detailed explanation of the ADA is beyond the scope of this publication but can be found at www.ada.gov.

Similar legal requirements have been in place for employers covered by the Rehabilitation Act and by certain State and municipal ordinances covering disability discrimination in employment.

The employment provisions of the ADA also require employers to provide "reasonable accommodations" for employees with disabilities. Reasonable accommodations are changes or adjustments in the job or work environment that permit individuals with disabilities to perform the essential functions of a job. The term "reasonable accommodation" is a legal term that refers to certain changes and adjustments in the workplace. An employer may choose to go beyond the ADA and provide an accommodation that would not be required under the law. For example, removing an essential function from an employee's job description and providing HIV education for all employees are not examples of reasonable accommodations. Similarly, while allowing an employee to work part-time is a type of reasonable accommodation, continuing to pay that employee a full-time salary is not required by the law. The ADA establishes a baseline — a floor, not a ceiling.

Specific legal boundaries of reasonable accommodation
Employers and employees trying to determine appropriate accommodations should be aware of the specific legal boundaries of "reasonable accommodation." Many of the employers profiled in these case studies provided assistance and accommodations that went above and beyond what the law would require. As a general rule of thumb, given that the ADA governs many of the actions in this area, employers should consider the ADA implications of any decisions involving an employee with HIV infection or AIDS. This includes any decisions about disclosing an employee's HIV status.

The ADA has strict rules about maintaining confidentiality of such information, and employers should ensure that they do not violate these rules. As awareness of the ADA and its employment provisions increases, more and more employees are stepping forward to disclose their HIV status to their employers, managers, coworkers, and friends. Disclosure often takes courage and is unlikely to happen without an environment in which the disclosure will be met with cooperation and support. Because of the stigma still associated with HIV, this disclosure — especially in the workplace setting — too often does not occur until a crisis forces the issue out into the open. By this time an otherwise manageable situation can become a crisis, and everyone loses — the HIV-positive employee, the employer, the manager, coworkers, and the worksite.

Many employers believe that encouraging disclosure may not be desirable because it creates certain obligations that might not have otherwise existed. An environment that discourages or is hostile to disclosure, however, may present altogether different problems, legal and otherwise, just as a company experiences similar problems when it does not encourage employees with harassment complaints to come forward.

Most human resource professionals agree that providing an environment where complaints or situations (such as the existence of a disability and the need for an accommodation) can be discussed and remedied without the fear of retaliation is a sound policy for both overall productivity and legal reasons.

There is no simple formula for accommodation of employees with HIV infection or AIDS
The dual goals of accommodation are to ensure that work assignments are accomplished and that the individual with HIV infection or AIDS continues working as long as possible. Accommodation is a process of ongoing problem solving between an employee with HIV infection or AIDS and his or her supervisor. Because the manifestations of HIV infection and AIDS are different in different people, accommodation is not a one-time alteration of a job or physical structure. Just as each person with HIV infection and AIDS experiences the disease differently, each person will also require different accommodations. An accommodation that is effective for an earlier phase of HIV infection may not be effective for a later phase; an accommodation is an ongoing process requiring ongoing evaluation, in part because the manifestations of HIV infection and AIDS change over time, and in part because some attempted accommodations may not work for either the employer or the employee.

Effective accommodation does not require lowering the expectations of the employee. Rather, it requires ongoing negotiation and creative problem solving to determine alternative means of accomplishing work assignments. This negotiation process may result in different outcomes in similar circumstances. For example, one employee might convert from a full-time job to part time.

Providing accommodation to employees with HIV infection or AIDS is a team effort with impact on a company's workforce, managers, and policies
Because of the fear and stigma still associated with HIV/AIDS, accommodating people with HIV infection and AIDS affects virtually everyone in the workplace. A fearful work environment is not a productive work environment. In the process of providing accommodation of employees with HIV infection or AIDS, an employer might consider addressing coworker attitudes. In order to dispel unwarranted fears and to ensure cooperation in the accommodation process, managers need accurate information about HIV infection and AIDS. Confronting AIDS also involves confronting grief. Coworkers and managers in these profiles responded constructively in a supportive environment where emotional responses to HIV could be addressed. Leadership is an important part of effective accommodation. A message from the manager about how an employee with HIV infection or AIDS will be treated is critical because it sets a clear standard.

The benefits of accommodating employees with HIV infection and AIDS balance the costs
Companies that effectively manage HIV/AIDS grow stronger. How a company treats one employee with a chronic illness is a clear indicator and a signal of the standard it will use in managing other employees. Witnessing support, accommodation, and respect for a coworker with a terminal illness strengthens worker morale, loyalty, and productivity. Coworkers and supervisors share a deeply human connection. Employers have the satisfaction of knowing they are making a contribution to the dignity and well-being of one of their own employees. Sometimes companies directly benefit financially from accommodations as well. One employee, working on commission-based pay, wanted to reduce the pressure caused by his income depending directly on his daily sales. His accommodation included converting from commission-based pay to a fixed salary. When his sales were high, this arrangement benefited the company since it kept the commissions he would have received.

Companies benefit when employees who become ill can help train other employees to share and eventually assume some of their responsibilities. The expertise of a knowledgeable and experienced employee is thus passed on to a new employee. This may also give ill employees some peace of mind knowing their responsibilities are being taken care of in their absence.

Employees who fully disclosed their HIV status in the workplace felt relieved and strengthened
Being an employee with HIV/AIDS, as one interviewee described it, is "not for cowards." The employee must manage the overwhelming emotions of facing a terminal and often stigmatizing illness while still continuing to be a productive worker. People with HIV infection and AIDS are challenged to manage and plan for an everchanging set of ailments, health care needs, and financial demands — all while maintaining motivation and self-esteem.

HIV-positive employees must decide whom to inform about their health status, how much information to reveal, and when to reveal it. The stigma still associated with HIV/AIDS makes such decisions all the more difficult. Fear of rejection, regrettably, is a fear based in reality.

The decision to disclose HIV status is the prerogative of the HIV-positive individual. It is illegal for an employer to ask a current or prospective employee about HIV status. Nonetheless, the HIV-positive employee may have to disclose some health information to managers or supervisors in order to seek an accommodation. Accommodations can be made without the supervisor's knowing that the individual is HIV-positive or has AIDS; the supervisor may know only that the individual is ill.

Disclosure of one's HIV status can take place in many settings. Some employees have chosen to disclose it in letters to colleagues or work groups; others do so in face-to face meetings with individuals or groups.

Intensive workplace AIDS education may precede or follow a disclosure. Employees may inform managers of their health condition

but request that the information be kept confidential; and by law, the employer must comply with that request.

Over time, however, if coworkers unaware of these circumstances become suspicious of perceived preferential treatment, they may become resentful and spend considerable time, energy, and effort trying to figure out "what's wrong." Rumors may circulate. When the performance of their work groups is called into question by superiors, managers may find themselves unable to adequately explain the situation. In such circumstances, the employee may be uncomfortable as well, knowing that rumors are circulating and feeling the unwanted attention from others. At that point, it may be helpful for the manager to discuss with the employee what, if anything, he or she wants to do to address the situation. The decision to disclose rests with the employee, but the employee may be willing to risk disclosure if the manager is not forcing the individual to disclose but, instead, offers support for whatever decision is made.

Finally, many employees with HIV/AIDS believe that continuing to work is critical to their mental and physical health and survival. Work can provide a sense of purpose, financial support, productiveness, continuity, involvement, peer support, and the opportunity to focus on something other than one's illness. In our culture and society, a person's work and profession often hold deep ethical, economic, and personal significance. The importance of work and the workplace context for people with HIV infection and AIDS should not be underestimated.

Confidentiality of a funeral service

Confidentiality should be observed throughout all aspects of funeral service and particularly when any infectious case is encountered. In cases where it is felt necessary to preserve confidentiality funeral directors may be told a cadaver is low, medium or high risk without giving a specific diagnosis. In this circumstance it is the responsibility of the certifying clinician (who should seek infection control advice if necessary) to ensure that the cadaver is correctly classified. Those refusing to disclose a diagnosis have a responsibility for ensuring that funeral directors are given sufficient information to protect themselves and their staff. Inaccurate or insufficient information may result in families being denied the right to view a body. Denying relatives the opportunity to view their deceased can be a source of great distress. If there is any doubt as to the validity of the information given to a funeral director, from whatever source, it is strongly recommended that they seek advice from the proper authorities.

Guidelines for viewing infected bodies
Medium and low risk
In cases of a known or suspected contagious disease where relatives have expressed a wish to view/kiss the body, providing that there is no obvious risk of exposure to potentially infected body fluids; the head, shoulders and arms may be exposed.

High risk
There are only four diseases specified within the high risk categories: Anthrax, plague, rabies and viral hemorrhagic fever. These remain extremely rare and are the only diseases for which cadavers should not be viewed. There may be occasions, such as severe trauma, or decomposition of bodies, when funeral directors, in discussion with families advise against viewing.

Guidelines for handling cadavers with infections
As well as using body bags for medium/high risk cases, some hospitals, as a continuation of universal precautions, have adopted the use of body bags for all deceased patients. Others are using body bags where a possibility of continued body fluid leakage is expected. Funeral directors should be routinely informed if the body poses an infectious risk. It should not be assumed by the funeral directors that the use of a body bag alone implies the cadaver is infected.

Immunization
All funeral directors and embalmers and staff must ensure their immunizations are up to date. They should be protected against:

- Tetanus. Primary immunization should have been received as a child. A reinforcing dose ten years after the primary course and again ten years later maintains a satisfactory level of protection which will probably be lifelong.
- Poliomyelitis. A full course should have been received as a child and, generally, no further boosters are required. No adult should remain unimmunized against poliomyelitis. If a full course of either of these two vaccines was not received as a child you should consult your physician to complete the course.
- Tuberculosis. Immunization should have been received in the early teenage years – there will usually be a scar on the upper arm to indicate this.
- Hepatitis B. It is recommended that all staff should receive a full course of immunizations against hepatitis B and have their antibody level checked. It is the responsibility of the employer to ensure that their staff are protected.

Personal protective equipment, work practices and engineering controls

Universal precautions is the name to describe the prevention strategy in which all blood and potentially infectious materials are treated as if they are, in fact, infectious, regardless of the perceived status of the source individual. In other words, whether or not you think the blood/body fluid is infected with bloodborne pathogens, you treat it as if it is. This approach is used in all situations where exposure to blood or potentially infectious materials is possible. This also means that certain engineering and work practice controls shall always be utilized in situations where exposure may occur.

Personal protective equipment
Probably the first thing to do in any situation where you may be exposed to bloodborne pathogens is to ensure you are wearing the appropriate personnel protective equipment (PPE). For example, embalmers should always wear latex or protective gloves. This is a simple precaution taken in order to prevent blood or potentially infectious body fluids from coming in contact with their skin.

Rules to follow:

- Always wear personal protective equipment in exposure situations.
- Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to bloodborne pathogens.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.

If you work in an area with routine exposure to blood or potentially infectious materials, the necessary PPE should be readily accessible. Contaminated gloves, clothing, PPE, or other materials should be placed in appropriately labeled bags or containers until it is disposed of, decontaminated, or laundered. It is important to find out where these bags or containers are located in your area before beginning your work.

Gloves
Gloves should be made of latex, nitril, rubber or other water impervious materials. If glove material is thin, or flimsy, double

gloving can provide an additional layer of protection. Also, if you know you have cuts or sores on your hands, you should cover these with a bandage or similar protection as an additional precaution before donning your gloves. Always inspect your gloves for tears or punctures before putting them on. When taking contaminated gloves off, do so carefully. Make sure you don't touch the outside of the gloves with any bare skin, and be sure to dispose of them in a proper container so that no one else will come in contact with them, either.

Goggles
Anytime there is a risk of splashing or vaporization of contaminated fluids, goggles and/or other protection should be used to protect your eyes. Again, bloodborne pathogens can be transmitted through the thin membranes of the eyes so it is important to protect them. Splashing could occur while cleaning up a spill, during embalming, or while providing first aid or medical assistance.

Face shield
Face shields may be worn in addition to goggles to provide additional face protection. A face shield will protect against splashes to the nose and mouth.

Aprons
Aprons may be worn to protect your clothing and to keep blood or other contaminated fluids from soaking through to your skin.

Normal clothing that becomes contaminated with blood should be removed as soon as possible because fluids can seep through the cloth and come in contact with skin. Contaminated laundry should be handled as little as possible, and it should be placed in an appropriately labeled bag or container until it is decontaminated, disposed of, or laundered.

Personal hygiene: Hand washing

Hand washing is one of the most important (and essential) practices used to prevent transmission of bloodborne pathogens. Hands or other exposed skin should be thoroughly washed as soon as possible following an exposure incident.

Resident and transient organisms
The two types of organisms found on the skin are resident and transient. Resident organisms can be individual's normal colonizing flora. They live on the skin, growing and multiplying, but rarely cause infections except when introduced into the body though invasive procedures. They are not easily removed by washing your hands and are usually aerobic, organisms. Aerobic means that the organism needs oxygen to survive.

Transient organisms are much the opposite of resident organisms. They survive less than 24 hours on the skin, and can easily be removed by washing your hands and are usually anaerobic, organisms. Anaerobic means that the organism cannot survive for long in the presence of oxygen. They use the hands as a short-lived mode of transportation while looking for a host or a reservoir where they can survive. Transient organisms can easily cause an infection once they enter a susceptible host. Examples of transient organisms are E. coli, and salmonella. These types of organisms become the focus of hand washing because they can be readily transmitted on hands unless removed by friction and soap and water washing.

The importance of hand washing cannot be overemphasized because infectious agents are easily and readily transmitted via the hands and everything the hands touch. Hand washing is absolutely essential to prevent and control bacteria and infections. There is no better substitute than hand washing. It is one of the oldest, simplest, and most convenient way to prevent the spread of infectious agents from one person to another.

Hand washing procedure
Yes, there is a proper way to clean your hands. The three components for washing hands are soap, water, and friction. Friction is the most important part of the procedure because it removes the transient organisms. This procedure should take 10 to 20 seconds and should be repeated after every client.

1. Wet hands with running water.
2. Apply soap in the middle of the wet hands. Use an FDA listed, antimicrobial liquid hand soap.
3. Lather well.
4. Use vigorous friction by rubbing the hands together; pay attention to nail beds and the webs between the fingers and thumbs.
5. Rinse hands thoroughly with water and leave the water running.
6. Pat hands dry with a paper towel.
7. Turn water off with a paper towel.

Hands should also be washed immediately (or as soon as feasible) after removal of gloves or other personal protective equipment.

Because hand washing is so important, you should familiarize yourself with the location of the hand washing facilities nearest to you.

If you are working in an area where there is reasonable likelihood of exposure, **you should never:**

- Eat.
- Drink.
- Smoke.
- Apply cosmetics or lip balm.
- Handle contact lenses.

No food or drink should be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or potentially infectious materials are present.

Decontamination and sanitation

All surfaces, tools, equipment and other objects that come in contact with blood or potentially infectious materials must be decontaminated and sanitized as soon as possible.

Cleaning of instruments
All instruments used for embalming or preparing bodies for the funeral should be cleaned in warm water (if the water temperature is higher than "hand hot" it may fix protein onto instruments) and detergent to remove blood and other deposits then disinfected by boiling for 5 minutes or soaking in a phenolic disinfectant for 10-20 minutes. An autoclave, if available, provides excellent decontamination.

Premises
Walls, ceilings, floors and ledges should be non-porous and easily washable where there is a possibility of fluid spillage. Surfaces which become contaminated should be cleaned immediately following use with hot water and detergent. The use of disinfectant is only necessary when surfaces are contaminated with potentially infectious materials such as feces, pus or blood.

Protective waterproof and chemical proof gloves and plastic apron must be worn while handling disinfectants and when cleaning contaminated surfaces. All body handling areas should have a wash-hand basin with liquid dispensed soap and disposable paper towels.

Vehicles
All removal vehicles should carry a supply of boots, overalls, gloves and body bags; including equipment and materials to clear away and deal with any spillages. The interior of the vehicle should be constructed so that it can be thoroughly washed and disinfected whenever it has become contaminated with body fluids. Hearses and removal ambulances should be easily cleanable. Removal shells must

be constructed in a material that prevents leakage of body fluids and should be washed and disinfected after use. All other equipment used in the removal of bodies should be of a washable material and washed and disinfected if visibly contaminated.

Decontamination should be accomplished by using:

- A solution of 5.25% sodium hypochlorite (household bleach) diluted with 1:10 ratio of water. The standard recommendation is to use at least a quarter cup of bleach per gallon of water.
- For the most protection you should use a disinfectant that is approved by the Environmental Protection Agency (EPA). Look for an EPA registration number before selecting a quality disinfectant. If you do not see an EPA registration number, it is not an approved disinfectant. When choosing a disinfectant for use, you should choose one that is of hospital quality.

If you are cleaning up a spill of blood, you can carefully cover the spill with paper towels or rags (to prevent splashing), then gently pour your 10% solution of bleach over the towels or rags, and leave it for at least 10 minutes. This will help ensure that any bloodborne pathogens are killed before you actually begin cleaning or wiping the material up.

If you are decontaminating equipment or other objects you should leave your disinfectant in place for at least 10 minutes before continuing the cleaning process.

Laundry

Although soiled linen may harbor large numbers of pathogenic microorganisms, the risk of actual disease transmission from soiled linen is negligible. However, it can happen, so you should follow some common-sense hygienic practices for processing and cleaning your linens.

Soiled linen should be handled as little as possible and with minimum agitation to prevent gross microbial contamination of the air and of persons handling the linen. All soiled linen should be bagged or placed in containers at the location where it was used and should not be sorted or rinsed in the location of use. Linen contaminated with blood or other body fluids should be bagged and transported in a manner that will prevent leakage. Gloves and other appropriate protective apparel should be worn by employees while sorting soiled linen.

Commercial laundry facilities often use water temperatures of at least 160°F and 50-150 ppm of chlorine bleach to remove significant quantities of microorganisms from contaminated linen. Studies have shown that a satisfactory reduction of microbial contamination can be achieved at water temperatures lower than 160°F if laundry chemicals suitable for low-temperature washing are used at proper concentrations. Normal washing and drying cycles including "hot" cycles are adequate to ensure personal safety. Instructions by the manufacturers of the machine and the detergent or wash additive should be followed closely.

Clean linen should be handled and stored by methods that will ensure its cleanliness. Remember to store clean lines in a closed cabinet or closet.

Sharps

Far too frequently, embalmers and others are punctured or cut by improperly disposing of needles and broken glass. This, of course, exposes them to whatever infectious material may have been on the glass or needle. For this reason, it is especially important to handle and dispose of all sharps carefully in order to protect yourself as well as others.

Needles

- Needles should never be recapped.
- Needles should be moved only by using a mechanical device or tool such as forceps, pliers, or broom and dustpan.
- Never break or share needles.
- Needles shall be disposed of in labeled sharps containers only.
- Sharps containers shall be closable, puncture-resistant, leak-proof on sides and bottom, and must be labeled or color-coded.
- When sharps containers are being moved from the area of use, the containers should be closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling or transport.

Broken glassware

- Broken glassware that has been visibly contaminated with blood must be sterilized with an approved disinfectant solution before it is disturbed or cleaned up.
- Broken glassware will not be picked up directly with hands. Sweep or brush the material into a dustpan.

By using Universal Precautions and following these simple engineering and work practice controls, you can protect yourself and prevent transmission of bloodborne pathogens.

Signs, labels, and color coding

Warning labels need to be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material, and other containers used to store, transport, or ship blood or potentially infectious materials. These labels are fluorescent orange, red, or orange-red. Bags used to dispose of regulated waste must be red or orange red, and they, too, must have the biohazard symbol readily visible upon them. Regulated waste should be double-bagged to guard against the possibility of leakage if the first bag is punctured.

Regulated waste refers to:

- Any liquid or semi-liquid or other potentially infectious materials.
- Contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed.
- Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling.
- Contaminated sharps.
- Pathological and microbiological wastes containing blood or other potentially infectious materials.

All regulated waste must be disposed in properly labeled containers or red biohazard bags. These must be disposed at an approved facility.

Emergency procedures

In an emergency situation involving blood or potentially infectious materials, you should always use universal precautions and try to minimize your exposure by wearing gloves, splash goggles, and other barrier devices.

If you are exposed however, you should:

1. Wash the exposed area thoroughly with soap and water. Use non-abrasive, antibacterial soap if possible.
    - If blood is splashed in the eye or mucous membrane, flush the affected area with running water for at least 15 minutes.
2. Report the exposure to your supervisor as soon as possible.
3. Fill out an exposure report form. This form will be kept in your personnel file for as long as you are employed plus 30 years so that you can document workplace exposure to hazardous substances. This report is available from your supervisor.

HIV/AIDS - COMMUNICABLE DISEASE EDUCATION

Final Examination Questions

Select the best answer for each question and mark your answers on the Final Examination Answer Sheet found on page 65, or for faster service complete your test online at **Funeral.EliteCME.com.**

1. Employers are allowed to deduct a reasonable amount of money from salaries to pay for personal protective equipment.
   ○ True ○ False

2. Many people who have tuberculosis (TB) infection never develop TB disease.
   ○ True ○ False

3. The hepatitis B virus vaccination is given in a series of 5 shots.
   ○ True ○ False

4. A positive HIV test result does not mean that person has AIDS.
   ○ True ○ False

5. Bloodborne pathogens may be transmitted through the mucous membranes of the eyes, nose and mouth.
   ○ True ○ False

FFL01HVE17

Chapter 2: Aftercare - Extending a Helping Hand all Year Round

1 CE Hour

By: Thomas Carver

Learning objectives

Upon completion of this course, the learner should be able to:

- Define aftercare.
- List several types of aftercare.
- Demonstrate how aftercare can help the funeral home's business grow.
- Analyze ethical issues within aftercare.

Introduction

For the past few decades, the face of the funeral industry has been changing. One of the biggest changes is the life expectancy of people today. In the 1800s and 1900s, most funerals were for young people, either children or young adults cut down in the prime of life. The mourner often would lament over a life unlived or potential lost. Today the average life expectancy is over sixty-five years. Though there is mourning, the service is usually called a "celebration of life." The person lived a full life and now their loved ones must learn to live without them.

In the past, most funerals had a viewing and the casketing rate was almost 100 percent. Today with cremations on the rise and viewings down, funeral homes are trying to find more ways to add value to the service. Repeat business is the lifeblood of any funeral home, and so each business needs to differentiate itself from competitors. The aftercare program is an additional opportunity for the funeral home and the funeral professional to show that they genuinely care for the family. Aftercare programs can also lead to repeat business.

The aftercare program involves more than just sending the family a thank-you card. Aftercare offers a myriad of services: helping the family complete forms where the funeral home takes no direct interest like non-assigned insurance and/or military benefit forms, calling to check up on the family to see how they are doing, and even having events through the year like a Christmas memorial program. These services help the family to continue to celebrate their loved one's life and help the bereaved to move forward. Each funeral home offers a different set of aftercare services for its customers based on the needs of the community it serves; therefore, using the correct services creates an effective aftercare program. Even though aftercare does not directly affect the bottom line financially, if done correctly, it will increase business in the long run.

What is aftercare?

According to the book, Ethical Practice in Grief Counseling (2009), aftercare means, "Attending to the social, emotional, and psychological aspects of grieving experienced by the bereaved that extend beyond the time frame of customary funeral rituals" (p. 178). In the past, the funeral home's focus was to take care of the deceased and then provide the family with a service to offer a chance to say goodbye; however, the grieving does not stop there. Aftercare aims to help survivors move forward after the death of their loved one. Aftercare is NOT grief counseling. Counseling must be done by a professional and would be a conflict of interest for the funeral home. However, funeral staff can use aftercare to can help with the grieving process by offering online resources, posting videos about grieving on the funeral home's website, and providing referrals to local grief workshops and support groups. Brochure displays on how to handle grief are very effective as well. Aftercare helps the griever continue in life without their loved one by offering support throughout the year via many different outlets. Some programs help the person with everyday challenges like money management, fixing a car, or grocery shopping. Many survivors do not consider these things, especially if the person who passed away handled those responsibilities. Aftercare also offers opportunities through the year to remember the loved one by having holiday programs and online memorials. In the past, the relationship with the funeral home ended with the interment of the deceased. Today, aftercare offers an opportunity for the funeral home to be an active part of the family long after the funeral.

Aftercare and its beginnings

In his article (2015) "Aftercare and Outreach – Completing the Service," Dan Isgard states:

"In 1900, of the total deaths 60 percent were under 25; 20 percent were between 21 and 65; and 20 percent were over 65. By 2010 those numbers had changed dramatically; of the total deaths, 20 percent were under 21; 3 percent were between 21 and 65; and 77 percent were over age 65. The deaths under 65 are down dramatically. The deaths that have the most crying are the minority of services now. The majority of deaths are those over age 65. These are lives that have been actualize. We are not dealing with a child who has not experienced life. We are not dealing with the death of someone who has dependents, or was taken from us during their prime. We are dealing with someone who lived a full life. The role of the funeral home is now to facilitate a dialogue with the mourners. It is to help the dependents of the deceased learn to survive without the deceased." (See chart 1.)

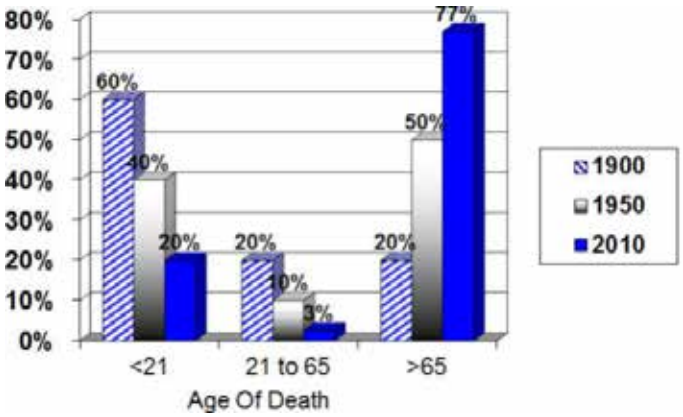

Chart 1: (Isard 2015).

The above statistics show people now live longer, fuller lives. The numbers show that in the first half of the twentieth century, the age of the majority of deaths were individuals under twenty-one years old. When a loved one dies there is a great sense of loss. That loss is even deeper when it is the death of a child. Today the majority of the people who die are over sixty-five years old. They have lived what society considers full or whole lives. Often the funeral service is called a "celebration of life." The mentality of the grievers is different when the life lost is an elderly person rather than a child or a young adult in the prime of life. A child has not had a chance to live life to its fullest. People may say things like "He was cut down in his prime," or "A parent is not supposed to bury the child; it should be the other way around." When an older person dies, the grief is still there but it is not the same. The elderly person is often said "to have lived a full life" and family and friends can reflect on that person's life and accomplishments. Aftercare comes into play now because often when a person dies today, they held a role in the family that no one else has handled before, like managing the finances or maintaining repairs on the house or car.

Types of aftercare

Dan Isgard in his article, "Aftercare, Outreach, and Pre-need the Next Frontier," states (2015) "Aftercare and outreach is the care, help, support or supervi¬sion given to people after the funeral service is concluded to help families be prepared to continue without the deceased in their life. They can be programs, meetings, or educational events."

Funeral home can reach out in many ways via aftercare. The book Understanding Dying, Death, and Bereavement (2011) states:

"The funeral industry has always known that 80 percent of its business is with families they served in the past. However, aftercare is one method to increase the likelihood of getting repeat business. The newest trend in funeral service is to provide extensive aftercare services and products for widows and widowers. Among these services and products are grief therapy, bereavement support groups, video tributes, and even greeting cards sent to survivors to mark the anniversary of death or the deceased's birthday."

Funeral One, a company that provides aftercare services, listed in their blog (Mar. 22, 2012) five ways to reach out to the families after the completion of the funeral service.

1. **Send frequent email affirmations** – This simple idea can uplift the families of the deceased, and at the same time, it keeps the name of the funeral home first on their mind. Product awareness helps to build brand loyalty. These emails could be as simple as a quote of the day or if they are religious a scripture a day. This simple technique can help aid in the healing and grief process.
2. **Provide interactive aftercare** – People do not grieve just between 9 am to 5 pm Monday through Friday. Posting videos about grieving and overcoming loss on the funeral home's website can help grievers when they are struggling, at any time of the day. Not only can individuals access these videos anytime, but they can do it from the privacy of their home. Once the funeral is over and the dust from all the funeral activity settles, the bereaved are often left alone. They return home to an empty house or an empty bed. There is a deep and profound silence. With this silence often comes pain and grief. This is when they need support and guidance. Offering general videos on the stages of grief or specialty videos, about dealing with the loss of a spouse or a twin, for instance, on the funeral home's website, can help those left behind when they need the help the most.
3. **Share grief resources** – After a funeral, the family often consults with the funeral provider to find resources to help them through this stressful event. The best way to provide this help is once again through the funeral home's website. Here, the funeral home can list times and dates for support groups and workshop available to the community. It can also provide a list of specialists that deal with death and loss. Finally, the website can offer links and information about books that deal with grief or specific losses.
4. **Permanent online memorial** – Today most funeral homes offer memorial video tributes to the family of the deceased. Some also offer a place on their website to house the video, which allows extended family and friends to participate in the process, even if they were not able to be at the funeral in person. People can go online and look at the pictures, upload photos of their own, and also leave comments and share stories. This can be especially helpful for those not able to attend the funeral. This also allows children who lost a parent, sibling, or friend at a young age an opportunity to share in the person's life through the online memorial.
5. **Offering ongoing support** – Grief is not something that just disappears one day; here today gone tomorrow. Also, grief can come and go. One day someone may feel fine, and the next week, they may feel overcome with sorrow. This is especially true on holidays and special events like birthdays and anniversaries. During this time, the pain can come back full force and the grief can become almost unbearable. In these situations, aftercare can once again help the bereaved push forward and start to come to terms with their loss. The key is to offer continuing service and support all year round and even beyond as needed. By doing this, the funeral home helps families through the process of grief and also adds value to their services by going above and beyond other providers.

There are several levels of aftercare based on the size of the particular program. Dan Isgard created the following list in an article in the Canadian Funeral News.

1. **Global programming**: Aftercare events that are unlimited in their scope of influence.

   For example: A staff member writes an article on survivor's benefits and places it on the funeral home's web page. The staff member may be surprised to see the amount of people who read the article and the wide area the readers come from.
2. **Large programming**: Events that involve a large group all participating at one time. Many funeral homes and cemeteries host Remembrance Days and other group events.
3. **Mid-sized programming**: Events that involve a mid-sized group all participating at one time. This can be a group of survivors of a particular disease, such as sponsoring a Breast Cancer Run for the Cure team.

4. **Boutique programs**: Events that appeal to a small group at one time, for example, a survivors' education series for twenty people at a funeral home.
5. **One-on-one programming**: Staff working with one person at a time. A funeral follow-up counselor works well to help a survivor complete the tedious paperwork required to turn over accounts and change titles.
6. **Reverse programming**: This is when families adopt a business. Imagine a special veteran's memorial program. Maybe veterans have memorabilia that they would like to display. If the funeral home displays it as part of their local exhibit, their donation of this material is akin to their adopting the business.

How does aftercare help a business grow?

In an article in the Dayton Business Journal, Tracy Kershaw-Staley states (May 2, 2005) "Industry experts say aftercare programs are long-term investments with results that are often difficult to track, but they can help funeral homes build a strong reputation in their market."

The book Understanding Dying Death and Bereavement (2011) states:

"Presently the majority of funeral homes providing extensive systematic aftercare are owned by individuals rather than large corporations. Funeral homes with local ownership have much more control over budget priorities and tend to be more responsive to community needs for involvement. These locally-owned funeral homes also recognize that aftercare services attract more business and therefore can be good for "the bottom line," even though aftercare is not directly responsible for revenue enhancement.

In its blog, Homesteaders Life Company suggests the following ways that an aftercare program can help build a funeral home's business.

1. **Build brand loyalty.**
   What is branding? According to Merriam-Webster dictionary, branding is "The promoting of a product or service by identifying it with a particular brand." People encounter brands every day, for instance individuals may drink Coke or Pepsi. They may drive a Chevy truck or a Toyota Prius. In the funeral business, many things are standard. For example, the funeral home gets a call and they go and pick up the deceased. Then they prepare the body for viewing. Next, they either cremate or bury the body. On this front, most funeral homes are the same except for the prices of all the services and products. So how can a funeral home brand itself? How can it add value to its services and stand out in the industry? This is where aftercare services can make the difference. Aftercare is considered a value-added service. There is no charge for aftercare services, but these services create value by maintaining a relationship with the families year-round, thus increasing the likelihood of repeat business.
2. **Stay connected.**
   Before the advent of aftercare services, there was not much dialogue with the family after the final disposition of the deceased. Aftercare offers an opportunity to have a dialogue with consumers year round. Using aftercare helps keep the funeral home in the forefront of the customers' mind, and thus, helps to create repeat business. There are many ways to stay connected. Offering online resources on grief and coping, holding grief-related seminars, and creating holiday programs that remember those who have passed during the year are all ways to stay connected. People want to be remembered and they want their loved ones to be remembered. Online memorials can accomplish this. They also allow extended family and friends feel like they were a part of the ceremony if they were not able to physically attend. Today, family members are often spread out all over the country. An online memorial allows all family members to come together virtually and participate in the process. Individuals can share photos and memories on the webpage of their loved one, allowing them to stay connected with the family.
3. **Offer support to everyone.**
   Each funeral is different and the needs of the people left behind also differ. The needs of the immediate family are not the same as the extended family or the friends of the one who passed. Everyone grieves differently and everyone heals at a different pace. Both people who come in for preneed and those that come in for at-need, need the funeral home's support. Aftercare can help to meet all of these different needs. This support can come in the form of helping to fill out forms, offering information on grieving, and holding classes on topics like car repair or money management. Conducting programs throughout the year that bring life once again to the deceased can be seen as a form of support. For example, a funeral home offers a holiday program that highlights the lives of some of the people it served throughout the year. Through this simple service, the business shows the family and friends that their loved one has not been forgotten.
4. **Provide continuity of care.**
   From the first contact with the consumer until the final disposition of the deceased, a relationship forms between the funeral director/ funeral home and the customer. Aftercare can help to continue that relationship long after the interment. Often there are several years between services for the same customer. Aftercare helps the customer remember the funeral home long after the service. Also, aftercare can generate other preneed and at-need leads by providing this continuity of care. Word of mouth is the best form of advertising and is free. When a customer feels like they matter and they are more than "just another" customer, they will pass this information to others. Many aftercare projects reach more than just the immediate family. These simple ideas create the brand loyalty mentioned earlier, while also helping the funeral home stay connected with the families and friends by providing support and continuity of care to all involved.

Ethical issues in offering aftercare services

Ethics are important in any business and the funeral setting is no exception. A situation that creates a conflict of interest can become an ethical issue. For example, a staff member of the funeral home is assigned as director of the aftercare program. However, he is also a minister in the community and has just been offered and accepted the position of chaplain of the local community hospice. Aftercare is not meant to generate leads; however, in the long run it may lead to more business. In the article "Aftercare, Outreach and Preneed," Dan Isgard states (2015):

"Aftercare is not a lead-generating faucet for pre-need. Imagine you have 200 people attend a holiday help program. If you do the program correctly and make it worth their time, you are going to have people who are impressed with your business. Are these people more inclined to want to prearrange with you when they are of the mind to do so? Of course. Now imagine you gather the same 200 people together and have your pre-need counselor take families off to the side to try and get them to prearrange before or immediately after the event. How are these people going to feel? They are going to feel betrayed."

New trend – using an aftercare company

Many funeral homes are outsourcing their aftercare programs to companies who specialize in this area to avoid ethical issues. Funeral One, Order of the Golden Rule, and Aftercare Solutions are just a few companies that provide aftercare services to funeral homes. These companies offer a variety of services based on the needs of the funeral home they serve.

Conclusion

Aftercare programs help people through the difficult process of grief. Each funeral home will use different levels and different forms of aftercare based on the needs of its customers and local community. "Make it about what is best for your families. They are the ones paying for your experience and guidance and using your assets ... They are the ones that need to recover from this undesired event. They are the ones that need help, and it doesn't end at the edge of the grave."

References

- Gamino, Louis A. & Ritter, Jr. R. Hal (2009) Ethical Practice in Grief Counseling – p. 178
- Isard, Dan (2015) Aftercare & Outreach Completing the Service. www.ogr.org | The Independent – p. 23
- The Independent (2015). [The graph shows age of death over the past 100 years]. Retrieved from http://www.f4sight.com/wp-content/uploads/Aftercare-Outreach-Completing-the-Service-Independent-Article-Winter-2015.pdf
- Isard, Dan (2015) Aftercare, Outreach and Pre-Need: The next frontiers. Canadian Funeral News - p. 31
- Leming, Michael R. & Dickinson, George E. (2011) Understanding Death, Dying, and Bereavement – p. 396
- Murad, Kelly. (Mar. 22, 2012). 5 Ways to Serve Your Families After the Funeral Service blog retrieved from http://blog.funeralone.com/grow-your-business/funeral-marketing/funeral-service-aftercare/
- Kershaw-Staley, Tracy. (May 2, 2005) Funeral Home Expands its Aftercare. http://www.bizjournals.com/dayton/stories/2005/05/02/story5.html
- Bloomquist, Barb (Aug. 24 2015) 4 Ways Aftercare Can Help Grow Your Funeral Home Business blog retrieved from http://www.homesteaderslife.com/blog/4-ways-aftercare-can-help-grow-your-funeral-home-business
- Isard, Dan (2012) Why Funeral Directors Should Engage in Aftercare. American Funeral Director. – p 61.

AFTERCARE - EXTENDING A HELPING HAND ALL YEAR ROUND

Final Examination Questions

Select the best answer for each question and mark your answers on the Final Examination Answer Sheet found on page 65, or for faster service complete your test online at **Funeral.EliteCME.com.**

6. The aftercare program is just sending the family a thank-you card.
   ○ True ○ False

7. Each funeral home offers a different set of aftercare services for its customers based on the needs of the community it serves.
   ○ True ○ False

8. Aftercare involves grief counseling.
   ○ True ○ False

9. Today, aftercare offers an opportunity for the funeral home to be an active part of the family long after the funeral.
   ○ True ○ False

10. The mentality of the grievers is different when the life lost is an elderly person rather than a child or a young adult in the prime of their life.
    ○ True ○ False

11. People typically grieve just between 9am -5pm Monday through Friday.
    ○ True ○ False

12. Aftercare services attract more business and therefore can be good for the bottom line.
    ○ True ○ False

13. Aftercare is considered a value-added service.
    ○ True ○ False

14. Word of mouth is an ineffective and expensive form advertising.
    ○ True ○ False

15. Aftercare programs help people through the difficult process of grief.
    ○ True ○ False

FFL01ACE17

Chapter 3: Current Trends in the Funeral Industry

3 CE Hours

By: Staff Writer

Learning objectives

- Identify and describe three significant changes in the funeral industry during the last decade.
- Explain the difference between preplanning and preneed contracts.
- Discuss the pros and cons of prepaid preneed contracts.
- Define the primary goals of green burials and requirements for certification.
- Describe alternatives for a viewing without embalming.
- Identify and explain four components of a home funeral and backyard burial.
- List three ways to make a funeral service less resource-intensive.
- Explain why most flowers purchased for funeral services are not "green."
- List five differences between traditional and natural cemeteries.
- Choose and explain two new guidelines from OSHA and NFDA for the safe use of formaldehyde.
- Define resomation, and describe the process.
- List three ways cremations can be made more "green."
- Identify four ways to use social media networking to market a business.
- Describe the most common services and/or merchandise associated with pet funerals.

Introduction

Current trends in the funeral industry require competitive funeral businesses to develop new skills as the industry becomes a mix of old and new traditions. These new skills and traditions include: The use of technology; environmental safety; personalized presentations; natural and/or "green" practices; home funerals; and pet cremation and burials. These trends are changing the funeral industry across the United States.

The U.S. death rate will peak in the 2020s as older "Baby Boomers" reach their mid-70s; however, the number of burials will continue to drop, the number of cremations will continue to increase, and consequently, a broader range of services and products will need to be available to a wider consumer base. According to Josh Slocum, executive director of the nonprofit Funeral Consumers Alliance, by 2017 the projected rate of cremation will reach 49% (Slocum, 2014). The National Funeral Directors Association projects the discrepancy between cremation and burial rates will grow even larger and that in 2020, cremation will represent 56%, while burial will represent 38% of decisions (NFDA, 2015). By 2030, cremation is projected to represent 71% of decisions while burial will decline to only 23%.

This indicates that competition will increase as funeral homes will be joined by a variety of vendors and industry specialists offering expanded services and products including comprehensive concierge support. Funeral professionals must stay informed on current trends, embrace new technology, and expand their roles to address the industry and consumers' preferences and demands.

Changing attitudes toward funerals

Widely held beliefs regarding death, funerals and burials worldwide are changing. A deceased's body is not considered a hazardous threat to public safety, unless diagnosed with a serious communicable disease. Materials used in preserving the body are increasingly the cause of environmental safety concerns. Industry professionals are aware that embalming fluid can be hazardous for personnel who work with it, and for the public. Concerns regarding the environmental risks associated with embalming chemicals lead the European Union to consider a ban. In the U.S., the Funeral Consumers Alliance has expressed dismay that funeral home effluent is not regulated, and that waste is often flushed into a sewer system or a septic tank.

There are between 76 to 79 million "Baby Boomers," i.e. persons born between 1946 and 1964, as of 2016. The majority will make end of life and/or funeral decisions that are better informed, more inquisitive, better funded, and less deferential to authority figures than their parents. Traditional open-casket funerals may not be the norm in these decisions as customers are increasingly comfortable considering other options.

In addition to the rise of cremation, consumer attitudes about funerals have changed significantly, shifting from traditional funerals toward options that are more environmentally friendly, cost effective, personalized, and/or natural. There are no current statistics on the number of U.S. citizens that are considering home funerals, but the number is increasing according to Lee Webster, president of the National Home Funeral Alliance (Webster, 2016). In all states, it is legal to have a home funeral, and most states do not require a licensed funeral director for final arrangements. The states that do mandate funeral director involvement, from signing the death certificate to overseeing burial or cremation, include Connecticut, Illinois, Indiana, Louisiana, Michigan, Nebraska, New York, and Utah (Irving, 2016).

The Green Burial Council, an advocacy group for natural and green burial, notes a growing membership and has nearly 600 members, up from 350 in 2014 (Webster, 2015). "People are looking for more affordable, earth-friendly, and meaningful," Webster said. "It all boils down to authenticity: They want their end-of-life processes and rituals to reflect their life in a way that we have not really seen before."

Changing responsibilities

Funeral professionals will likely see their responsibilities grow and this will require additional training and staff. The most successful companies will become "jack-of-all-trades" which will include the ability to use social networking and/or software apps to the company's advantage. Comprehensive services will encompass food services for catered events; travel and accommodations; off-site venues;

services for pets; eco-friendly funeral options; grief counseling; and technology. Marketing will requires services to be listed on the business website, and the business to be available via social media, and software applications, i.e. "apps" for smartphones and tablets. Community presentations will continue, but they will need to incorporate state of the art multimedia presentations to be competitive.

Changing ownership

Funeral homes were often family-run, and passed down through generations, usually from father to son. Funeral service professionals are no longer predominately male. Today many mortuary school graduates chose the profession independent of any family connections and often began the business as a second career after working as medical personnel, chemists, cosmetologists, nurses, or artists. According to NFDA 2016 statistics (NFDA, 2016b):

> Fifty-seven percent of mortuary science students in the U.S. are women. Many of these women have discovered and are attracted to the skills and traits needed as a funeral director, including communication skills, compassion, a desire to comfort those coping with a death as well as organizational and event-planning skills. Today, families or individuals privately own 86% of funeral homes in the U.S. with the remaining 14% owned by publicly traded corporations.

In the 1990s, large corporations purchased many smaller funeral homes, anticipating financial benefits as the aging "Baby Boomer" population began to pass away. This turned out to be a poor business decision as increasing numbers of individuals choosing cremation over burials upset the financial model, yielding much lower profits than expected. These large companies were unresponsive and inflexible to the increased demands for cremation, leading to lost revenue and the eventual sale or closing of many businesses unable to adapt.

The opposite is true currently with the growing trend of customer service dedicated to personalization, individualization, and creativity to meet the changing demands of the consumer.

Increasing competition

Funeral homes were traditionally secretive regarding their services, products, and prices, but this is no longer viable. With increased access to information via the Internet, and the ease of comparison, as well as more vendors and service providers, transparency is key, and competition is fierce. Vendors, e.g. Costco or Walmart, now provide products that were exclusively the domain of the funeral industry, and provide them at lower cost. Funeral professionals will need to provide additional value with their services and products to compete. Concierge funeral services accessed online or by phone, offer support for comprehensive funeral planning and services throughout the U.S. and Canada. These companies do not provide the services, but receive a commission from funeral industry providers. Concierge services include the following:

- Constant support for planning services.
- A national database of funeral products and services to meet personalized services demands.
- A confidential and secure database to store information.
- Price comparisons delivered in a consumer friendly format.
- Planning and selection of funeral services and product options tailored to the consumer.
- Communication, including assistance with price negotiation, by concierge staff directly with funeral providers, allowing families to avoid the traditional sales focus.
- Assistance in the selection of caskets and funeral products.
- Travel arrangements including flights, car rentals, and hotels.
- Event planning such as venues, restaurant(s), florist(s), design or catering services.
- Assistance with insurance claims.
- Pet funeral services including cremation, and burial with owners.

The Internet, social media, and software apps allow consumers access to extensive information regarding funeral practices and options twenty-four hours a day, seven days a week. Consumers can research religious traditions and incorporate these traditions into their funerals. They can learn about federal regulations and industry requirements that may require professional assistance in planning "green" events. They can even buy a casket at a chain store or from an independent carpenter. The new, mainstream funeral industry is likely to continue. When some states attempted to ban consumers from buying caskets from certain vendors, these regulations were not passed.

Funeral home function and design

Changes in funeral home function have produced a range of adaptations to traditional funeral home design in the last decade. Innovations are driven by technological improvements in mechanical systems, energy-efficient building materials, and green practices as well as new safety requirements for ventilation and chemical handling and disposal. Other innovations are associated with: the evolving nature of the funeral industry; the increased demand for cremation, including resomation; the reduced demand for traditional burials; and more flexible building designs that can accommodate a variety of community functions.

Cremation calls for drastically redesigned facilities including a crematorium, a dedicated cremation chapel with viewing access, a room to comfortably view a video about cremation services, and/or a location to attractively display urns, keepsakes, and other options for the interment of ashes. Pet cremations, which are becoming increasingly common, require a different setting, and in some states, must be conducted in a completely separate area from where human remains are processed.

Burial grounds are also changing. More people are asking to be buried with their pets, requiring revised regulations in some areas. Natural burials have strict rules regarding practices and materials as well as the land maintenance. As of 2013, there were 37 natural grounds certified in the U.S. Following this "green" trend, groundskeepers are turning to less resource-intensive maintenance practices.

Funeral homes are branching out by hosting a variety of functions beyond wakes, such as family reunions or community meetings. Community or social functions require a reception room that can accommodate a large group, availability in the evenings, and adequate parking, all of which are common to most funeral homes. Kitchen space and equipment, with access for catering staff, or banquet space and servers may be required. As funeral homes become more integrated into community life, assisted by new marketing strategies like social media networking, they can be a place to do more than grieve, as the recent trend in creative funerals suggests: they can be a place to celebrate life and need not be associated only with death.

The appearance and ambiance of funerals homes is also changing. Where traditional funeral homes may have felt intimidating and somber, and were decorated formally in dark wood, they are now friendly and inviting, elegant and comfortable, and decorated with attractive colors. Foyers and reception areas are warm, with comfortable furniture. There is a desire for bright, airy spaces that are not only welcoming, but provide a suitable environment for any

type of social gathering as well as a spiritual services. Colors are very important because they can influence mood, but visitation rooms typically have very simple decorations and muted wall colors to highlight floral arrangements.

Important emerging trends include:

- Growth in "green," natural, and home funerals and/or cremation as well as pet funeral services.
- Increasing demand for personalization and creative services.
- Expanded preplanning services including requests for specific restorative arts and individualized, themed body presentations.
- Increased reliance on comprehensive concierge services.
- Continued reduction in number of traditional burials and funerals.
- Legal changes associated with the industry, and with consumer safety and protection.

Preneed sales

Consumer organizations concerned with funerals, such as the American Association of Retired Persons (AARP) and the Funeral Consumers Alliance (FCA), encourage preplanning, noting that the process of making these arrangements can benefit customers and their families (AARP, 2015; FCA, 2015). Some people see death as the ultimate loss of control, and that preplanning for death allows an individual to confront these issues. Additionally, families that preplan tend to learn more about the preferences of the family member who is the customer, and are better prepared to carry out his or her end of life plans. Preplanning and prepaying are not the same, and the AARP and the FCA do not recommend prepayment, in general.

There are some pros and cons of to consider. Preplanning combined with prepaying through a preneed contract can offer the customer more control and peace of mind than simply preplanning. Ideally, the customer learns about all of his or her options for goods and services and can inspect the merchandise and facilities. Prepaying may lift a burden from loved ones by ensuring that a professional is lined up to handle what needs to be done right after a death, such as transporting and storing the body, and obtaining needed certificates.

In contrast, when a person does not preplan or prepay, his or her family must make important and costly decisions quickly and while they may be affected by of intense emotions including shock, grief, confusion or anger. Knowing what funeral home or services to use, if any, can be beneficial. Grieving loved ones may be unfamiliar with the process or the role of the funeral director, and may feel uncomfortable asking questions. They may be vulnerable to pressure from unscrupulous funeral homes to buy more expensive good or services, e.g. spending money "to show how much you care." Loved ones may struggle with not knowing how someone wanted to be commemorated. These decisions can create or exacerbate family conflicts.

There are no guarantees with preneed contracts and a number of issues may arise. The AARP has compiled an analysis of state law that governs preneed contracts to educate the consumer (Erskin, 2015):

- No federal regulation specifically addresses preneed contracts, and state-level regulation is inconsistent.
- Every state except Alabama regulates preneed contracts, but state laws vary greatly in scope, approach, and requirements.
- Twenty-four states regulate both funeral and burial contracts in a single statute, 17 states have two, separate preneed funeral and burial laws, and the remaining eight states have a single statute that cover only preneed funeral contracts.
- In many states, only licensed funeral home directors, cemeterians, or their employees or agents are allowed to sell preneed contracts. In other states, third-party sellers, i.e. persons who are neither funeral directors nor cemeterians, can sell preneed products as long as they obtain a license or permit from the state.
- Laws governing funding options and issues, e.g., trust funds, insurance policies, contract provisions, itemization of goods and services, portability restrictions, handling of escrowed funds, refund and redress mechanisms, i.e., a state consumer protection fund, the Unfair and Deceptive Acts and Practices (UDAP) law, and private right of action vary from state to state.
- There is generally a significant length of time between the signing of the preneed agreement and the need for the goods and services described in the agreement and mishandled funds may be undetected for years.
- It is often difficult to determine if specific provisions of the contract were fulfilled, e.g. the type of casket, since the person who signed the contract is likely deceased. Survivors rarely have knowledge of specific provisions, and they may unknowingly be charged for products and services included in the initial agreement, for services not requested by the deceased, or for more expensive goods or services.
- Preneed agreements are becoming increasingly complex with more decisions and more potential for fraudulent activity. Preneed agreements likely include a package of both funeral and burial goods and services from funeral directors and/or cemeterians that may overlap or result in duplicate payments.
- More third-party sellers are offering preneed agreements. Adequate oversight of these agreements is often hampered by state regulators' lack of authority and resources and a lack of understanding by the consumer of their rights and procedures for redress.

The Funeral Consumer Alliance (FCA) cautions consumers against prepayment through preneed contracts (Funeral Consumer Alliance 2015). They offer the following information to consumers:

> Insurance companies and funeral homes often tout the benefits of the pre-paid plans they sell. They urge customers to pay for their funeral in advance, in order to spare their survivors the trouble and expense, lock in current prices, or shelter their assets from Medicaid. The truth is that it is usually unwise to pay ahead. No matter how attractive the business makes it sound, there are serious drawbacks to pre-paying that the seller may not disclose. The children and survivors of those who have prepaid often misunderstand the contracts, are unaware of them, or find themselves surprised by additional fees. In addition, many states have inadequate laws protecting funds in preneed plans, and money invested could be at risk. Unless Medicaid requires you to "spend down" your money to qualify for benefits, you're better off planning ahead without paying ahead.

The FCA identifies the following risks of prepaying:

- If the purchaser decides to cancel, move, or change the plan, consumers may not receive a full refund.
- In many states, the seller may yearly withdraw part or all of the interest earned on the account.
- The cash-out value on an insurance policy is can be less than originally paid.
- The money paid for funeral arrangements is not available for emergencies if needed.
- Many insurance companies will not pay full benefits, or anything at all, during the first few years premiums are being paid.
- Money spent may not cover future funeral costs, which could result in the use of cheaper merchandise or requests for additional money.
- Survivors may not be aware that funeral costs have been paid, and may pay at a different funeral home.
- If the person dies out of town, and the family employs another funeral home, it may be difficult to get a refund.
- By the time of death, the funeral home may have a poor reputation or be out of business.
- Laws in many states do not offer much protection for prepaid funeral money. Only New York and New Jersey have somewhat

consumer-friendly preneed laws. New York requires one hundred percent of the money be deposited in trust.
- The consumer has the right to a full refund, with interest, on a revocable plan, and irrevocable plans are transferable although many individuals and families do not understand their rights.
- The money may not be secured in a federally insured bank and may be under the control of the seller.
- Funeral insurance plans are not tightly regulated and the plan may not provide a full refund with little or no penalty if cancelled.
- If the trust or insurance policy is transferable to another funeral establishment, the new funeral home is not obligated to honor the prices of the original funeral home.

The FCA promotes alternatives such as preplanning arrangements without prepaying or establishing a Pay-On-Death account (POD) to set money aside for funeral expenses without handing it over to a funeral firm. POD accounts deposit funds in a bank to cover current funeral costs, and interest accrues to cover any increases due to inflation. The account can be made payable upon death to a trusted family member or friend who will use the money properly for the funeral and funds are released immediately after death without the delay of probate. POD bank accounts are FDIC-insured, remain in the purchaser's name, and the money can be withdrawn at any time. Medicaid counts these accounts as assets, and the interest is subject to income tax (FCA, 2015).

The Federal Trade Commission (FTC) Funeral Rule addresses preneed contracts as well. The following is a brief summary from their website (FTC, 2015):

> Under the Federal Trade Commission's (FTC) Funeral Rule, consumers have the right to get a general price list from a funeral provider when they ask about funeral arrangements. They also have the right to choose the funeral goods and services they want, and funeral providers must state this on the general price list (GPL). If state or local law requires purchase of any particular item, the funeral provider must disclose it on the price list, with a reference to the specific law. The funeral provider may not refuse, or charge a fee, to handle a casket bought elsewhere, and a provider offering cremations must make alternative containers available. The FTC conducts undercover inspections every year to make sure that funeral homes are complying with the agency's Funeral Rule. The Funeral Rule applies anytime a consumer seeks information from a funeral provider, whether the consumer is asking about preneed or at need arrangements.

Relationship to Medicaid

Medicaid applicants must typically have only $2,000 available to them although this may vary among states. Seniors applying for Medicaid may need to "spend down" their assets to qualify. Only prepaid, irrevocable preneed funeral contracts are allowed to be used for this purpose so Medicaid planners, nursing home advisors, and social service and healthcare advisors often encourage senior citizens to use preneed contracts as a spend-down device. In this case, the customer would prepay a lump sum to transfer all assets, but would not be able to access the money.

According to the Medicaid fact sheet, burial funds are set aside and clearly designated for an individual's or spouse's burial, cremation, or other burial-related expenses (CMS, 2015). If managed correctly, these funds will not be counted as assets when qualifying for Medicaid. Funds must be kept separate, e.g. an account at a financial institution that is designated and labeled for this purpose. The limit on the amount of these burial fund accounts is $1,500. These accounts are revocable so they can be accessed if needed. It should be noted that proceeds from a life insurance funded burial contract would be counted toward this limit on burial funds. Because states' preneed regulations are not uniform, they may or may not address specific issues of concern to the consumer. It is important to know state regulations regarding funerals, embalming, preneed contracts, and Medicaid since each state has its own limit as to how much a person can put into a preneed account for Medicaid spend-down purposes. There are often state rules specifying that money left after a funeral paid for by a preneed account must be returned to the state, not kept by the funeral home or given to beneficiaries. Penalties for businesses found in violation usually require violators to take training, undergo additional testing and pay fines.

States use different agencies to regulate state policy. While states such as New York and Connecticut have strong laws covering many aspects of the preneed process, other states have weak laws. There is no reliable guide to current laws so consumers have to research each state's statutes individually. This fact underscores the need for an attorney or financial planner to review a preneed contract, and for a funeral director to thoroughly know state rules as well as how to research the rules of another state, e.g. if a customer dies there.

NATURAL OR "GREEN" FUNERALS

According to the NFDA, "green" funerals incorporate environmentally friendly options in order to meet the needs of a family requesting a "green" service. A "green" funeral may include any or all of the following: A small gathering in a natural setting; use of recycled paper products only; locally-grown organic flowers; carpooling; organic food; no embalming or embalming with formaldehyde-free products; the use of sustainable and/or biodegradable clothing, shrouds, or caskets; naturally occurring burial markers; and certified natural or "green" burial grounds (NFDA, 2016 a).

Another trend is a natural burial, which do not include any embalming. All parts of the funeral, including the clothing and casket must be made of materials that are non-toxic and biodegradable. Grave markers must also be naturally occurring and environmentally conscious so rocks, trees, or flowers may be used as markers rather than the traditional granite or quartz.

Burials

More cemeteries and funeral homes, especially those in the U.S. Pacific Northwest, are providing natural burials, and the demand is likely to continue to grow. The movement away from traditional funerals and burials is partly because they are resource-intensive. Traditional burials and funerals require many materials and those materials use an extensive amount of energy. In turn, this translates into a much more expensive funeral. The increased demand for "green" practices suggests that consumers are happy to reduce their costs and reduce their environmental impact. Some of the resources used for traditional funerals and burials are as follows (Green Springs Natural Funeral Preserve, 2015):

- **Chemicals**: More than 830,000 gallons of embalming fluid, along with ethanol and other chemicals, are used to prepare and preserve bodies buried in the ground.
- **Wood**: More than 39 million feet of hardwood lumber are used to build caskets each year.
- **Steel**: More than 90,272 tons of steel are used to make more than 800,000 steel caskets each year.

- **Concrete**: Cement and metal burial vaults, designed to keep the ground from settling as the casket and body decay, require 1.6 million tons of reinforced concrete each year.
- **Stone**: Thousands of headstones are made from granite and marble, which are quarried using fossil fuels and fuel-intensive processes.
- **Water**: Traditional cemeteries landscape with gas-powered mowers, synthetic fertilizers, and/or water irrigation systems.

Another strong incentive for green burials is the scarcity of land. Farmland and natural areas are under pressure: the amount of U.S. farmland has declined by an estimated one million acres annually due to development. The amount of land purchased for residential and commercial development is increasing at almost three times the rate of population growth (Lynch, 2016).

A traditional cemetery buries approximately 1,000 bodies per acre, requiring two square miles for new grave spaces each year. In contrast, a green cemetery normally holds 50 to 100 bodies per acre (GBC, 2007). This low density allows natural cemeteries to restrict burials from ecologically sensitive areas. Drainage spots, streams, dense wooded areas, and restoration areas can be left undisturbed. Land that might be unusable for traditional cemeteries is more likely to be suitable as a location for a natural cemetery.

New legal form: Formaldehyde-free embalming authorization
In keeping with the trend of moving the funeral industry toward environmentally safe embalming for "green" funerals, in 2012 the NFDA developed a form that authorizes formaldehyde-free embalming. According to the NFDA, this new form not only serves as an embalming authorization form, but also includes a clause indicating that the family wants the funeral home to use a formaldehyde-free embalming solution and understands that the results may differ from those of a solution containing formaldehyde. Members can download this and all sample legal forms and documents from the NFDA website (http://www.nfda.org/legalforms) at any time, and at no cost (NFDA, 2012 b).

Use of alternatives to embalming
Those who desire to view a body but are opposed to embalming because they want a green burial can be accommodated in a number of ways. While many assume that laws require embalming, embalming is primarily required to preserve the body for viewing. Refrigeration or dry ice can be an appropriate alternative, especially for the first seventy-two hours after death. Funeral homes with refrigeration units can easily refrigerate the body and have a short public or private viewing. Most families require only a few days for the funeral process before cremation or burial, and most human bodies do not deterioration quickly. If refrigeration is not available, ice or dry ice can be used to preserve the body until burial. When dry ice evaporates, it releases carbon dioxide, so proper ventilation is necessary.

Because family members may be unaware, funeral providers should inform individuals involved on the fact that refrigeration does not restore a lifelike appearance. If the family or funeral professional feels the body needs some type of preparation, it must be discussed and explained thoroughly to the family representative in keeping with the wishes of the deceased. Cosmetic restoration or intrusive process may not be desired. Funeral professionals should not make decisions regarding features or other standard restorative measures prior to discussion with the family member.

Ecobalming
The mission of ecobalming is to develop environmentally safe embalming practices that preserve the body as a part of the "green" burial process. The objective is to have:
- No toxins in the embalming or burial process.
- No secret or undisclosed ingredients.
- Full disclosure of all chemicals and processes.
- Documented environmental impact of all chemical components.
- Little to no impact on the environment.
- Full disclosure and provided material safety data sheets (MSDS, 2015).
- Only biodegradable items used in all aspects of the embalming and/or burial process.

The process of ecobalming, as a complement to a "green" burial, exemplifies newer views regarding death, funerals, and the celebration of the person. Ecobalming rejects traditional methods used in the funeral industry for hundreds of years. The goal is to provide funerals and burials that are more natural, affordable, practical, and personal, and to provide a more meaningful celebration at the end of life.

Natural funerals
Natural funeral services may include the following:
- The loved one is cared for, washed, anointed and dressed in a natural way, maintaining the natural appearance of the loved one and allowing the family to experience the changes that naturally occur after death.
- They may occur at home, in a funeral home or other location.
- The use of essential oils to control bacterial activity and herbs to scent the body.
- Cooling with the use of dried ice, ice packs and air-conditioning.
- Support by a funeral director if the family prefers assistance. Many funeral homes offer assistance for a home funeral and burial.
- Burial in a biodegradable casket or covered in a shroud and placed directly in ground.
- No commercially treated, cut or artificial flowers are used.
- Grave markers would be naturally occurring in the environment. A plant, tree, shrub or rock indigenous to the environment would be used.

Funeral directors willing to assist in natural funerals may contact the Green Burial Council to be listed as a provider at: http://www.greenburialcouncil.org.

Home funerals and burials
A home funeral is a family or community-centered celebration of an individual's life after his or her death. The care, visitation, memorial service, and burial are handled in the home environment. The emphasis is generally on minimal, noninvasive, and environmentally friendly care of the deceased in a manner that mirrors his or her lifestyle. Home funerals allow families and communities to become involved in the process of caring for the deceased including: washing, anointing, and dressing the body; preparing for the visitation or service; and arranging for final disposition, all in keeping with the religious or cultural practices of the individual. The control and participation in the care and preparation of the body is believed to help the family and/or community move through grief and acceptance of death in a positive, meaningful way that promotes emotional healing. The home is where life memories and family history are made so many believe it natural that the end of life stage occurs there as well. Home funerals historically were a time when families came together to share memories and celebrate the life of the individual in an authentic and familiar setting.

A growing number of U.S. citizens are returning to a hands-on, no-frills experience of death. They follow the body care and preparation steps for natural funerals. Unvarnished wooden or biodegradable boxes replace ornate caskets; viewings are in living rooms; and in some cases, burials occur on personal property, e.g. backyards. There is no count of home funerals but home funeral organizations have won battles in recent years in states like Minnesota and Utah that attempted to ban the practice. Most states have nearly eliminated any requirements that professionals play a role in funerals. It is now legal in all but seven states (Connecticut, Indiana, Louisiana, Michigan, Nebraska, New York, and Utah) to care for a family member after death.

The growth of community-based, nonprofit home funeral groups, and the establishment of burial grounds that support home burial indicate an increasing demand. A number of books provide guidelines for families in all phases of home burial. By bringing the body home, embalming is avoided; family members may even build casket. When ready for burial, family members can transport the body to a cemetery or call a funeral home to assist. A funeral home can help ensure that the person transporting the deceased has the proper permit and follows approved procedures regarding cooling, and length of time before burial that may be required in their state. Funeral homes willing to accommodate home funerals can help put family members at ease regarding necessary documentation or in making decisions. Flexible funeral homes can provide the level of assistance needed.

The number of backyard burials has increased dramatically in the past decade as have the number of businesses that assist with these services. The FCA reported only two companies that aided families holding home funerals in 2002, but now there are over 50 companies. According to http://www.lawyers.com (2013):

> Burial on private land is allowed in most counties in the U.S., as long as certain requirements are met. The site must meet "distance from municipality" requirements and have a minimum number of acres. A family burial plot or cemetery must be registered with the county government. A "declaration of use" should be accompanied with a plot map, showing the exact location of the burial place. This paperwork takes time and it should be completed well in advance of any anticipated death and burial.

The National Home Funeral Alliance provides the following tips to guide families in making a decision on a home funeral option (National Home Funeral Alliance 2015):

- Consider the condition of the body, the wishes of the deceased, and the level of comfort of those who will be caring for the body at home.
- A home funeral guide for preplanning is important. It is also possible to consult a funeral home that assists with home funerals.
- Know the state regulations regarding transportation, timelines, and burial on private land. Some states require a funeral director to assist with certificates and permits, such as a certified death certificate.
- Learn the principles of body care. Home funerals are typically handled by family members, but professional desairologists, i.e. funeral cosmetologists, are trained to prepare a body and can be hired to help. The National Home Funeral Alliance and other home funeral organizations recommend preparing the body according to certain guidelines: bodies need to be washed and kept cool to slow decomposition; if the time before burial is less than 24 hours, cold air conditioning may be enough; but for longer periods, cooling gels packs can be placed under the body.
- Consult books available to guide the home funeral process.

Trends in "green" funeral resources

Green funerals attempt to minimize resource consumption, practices associated with forest destruction, and unhealthy effects on the planet and workers, for example, mainstream high-volume flower production. To address these problems, products can be certified as fair trade or environmentally neutral. Forest certification was launched in the 21st century to help protect forests from destructive logging practices. Like the "organic" sticker on produce, forest certification was intended as a seal of approval, and a means of notifying consumers that a wood or paper product comes from forests managed in accordance with strict environmental and social standards.

Because flowers must enter the U.S. pest-free, farmers often saturate flowers with pesticides and other chemicals, many of which are banned or restricted in the U.S. Unfortunately, flower imports are not inspected for pesticide residues because they are not food products. As a result, these chemicals enter the soil, blow across landscapes, and enter the air via evaporation. Once chemicals leak into groundwater and soil, they can enter ecological food chains. They can also adversely affect pollinators, including bees.

Organic or local flower growers reduce the carbon and chemical footprint of flowers, but tend to cost more than non-certified bouquets because the cost of growing is higher. Premiums are often added for community development projects in flower farming communities. While organic flowers are not necessarily fair trade, and vice versa, these two green attributes help protect the health and livelihood of flower farmers. Buying organic, regards purchasing a product that has not been treated with pesticides or other chemicals which eliminates a major threat to the health of farmers and workers. Fair trade ensures that farmers are adequately compensated for their product and guarantees humane labor conditions, which often include chemical-free growing conditions. More people are choosing organic and/or Fair Trade flowers or flower alternatives, although only 20% of flowers sold in the U.S. are certified as eco-friendly and/or socially responsible (Flower Review, 2014).

Natural funerals may also try to cut down on transportation resources by reducing the number of cars in a funeral procession or by using hybrid vehicles. Funerals with graveside services might rent passenger vans or arrange families to carpool to reduce carbon emissions. There are even green limousines or car services for funeral cortèges, which can avoid some carbon emissions. Green cars, limousines and shuttle services can be hybrids, or use biodiesel or compressed natural gas (CNG). Having the memorial-related locations contained to a small area also cuts down on transportation costs and the use of resources. Often, good planning will allow a "green" funeral to maximize efficiency and minimize waste.

Product sales associated with "green" funerals

"Green" funerals and burials typically require a number of products whose sales are growing along with the "green" demand. This trend is likely to continue, with merchandising becoming an increasingly important part of overall sales. This section reviews the necessary product composition to be defined as "green" according to the Green Burial Council (GBC, 2013). All GBC approved caskets, urns, and shrouds must be constructed from plant-derived, recycled plant-derived, natural, animal, or unfired earthen materials, including the shell, liner(s), and adornments.

Caskets, urns, shrouds, and alternative containers

- Basic construction materials for shells, liners, fillers, hardware, handles and adornments are to be plant-derived or recycled plant-derived materials. Adhesives, finishes, and any other products applied to or integrated into the basic materials of construction are to be naturally occurring materials, and not contain acrylics, plastics, fiberglass, or similar synthetic polymeric materials.
- Materials must not be harvested in a manner that destroys natural habitat. In circumstances where such ecological degradation is suspected, the product manufacturer must retain a "trust provider."
- Products applied to or integrated into the basic materials of construction cannot contain chemical ingredients that are toxic or otherwise classified as hazardous. The mandatory reportable limits of exposure are defined and listed by the Occupational Safety and Health Administration (OSHA). An exception is made for generalized nuisance limits for dusts and mists.
- These products cannot contain chemical ingredients that, through their intrinsic course of action, evolve or release a chemical ingredient as previously defined. They must contain only chemical ingredients that are fully disclosed on a material safety data sheet (MSDS) and cannot contain any chemical ingredient described as a "trade secret."

Trends in "green" product manufacture and sales

More companies and individuals are undertaking for the industrialized funeral sector what organic farmers and food producers accomplished for the agricultural arena, i.e. meeting consumer demand for alternatives that challenge conventional practices which may have a detrimental environmental impact. These natural grave products are stimulating a renaissance in the weaving arts, with handcrafted or recycled paper and alternative fibers made into caskets and coffins. Artists fashion willow, bamboo, sea-grass, and fibers into woven containers, and sew fabric shrouds of organic cotton, silk and hemp. Each year, more natural versions of traditional funeral goods appear. While eco-friendly supplies for burial were previously sourced from outside the U.S., more U.S. manufacturers are taking part. Purchasing simple wooden caskets and fabric shrouds not only supports local businesses, but also reduces the need for fossil fuels in shipping heavy metal and wooden caskets.

Natural cemeteries

Given the increase in individuals requesting natural burials, the need for natural grounds to accommodate these numbers will also increase. Creating natural burial grounds is also a way to address limited available burial space, and increase open space with recreational, vegetative areas. The United Kingdom (U.K.), for example, utilizes natural burial sites to reestablish the countryside with woodlands and grassy meadows. In the next few decades, green cemeteries will provide a unique opportunity to mix commercial use and land conservation. Sites that had previous uses, e.g. quarries or industrial sites, may be rehabilitated to some extent, and traditional cemeteries with undeveloped land may open to green burials.

Natural grounds do not allow embalming chemicals, metal caskets or reinforced cement with the body. Like natural burials, the goal is to use as few resources as possible to allow the body to decompose quickly. According to Sara Marsden, funeral researcher, "There are approximately 93 registered green burial cemeteries and memorial woodlands in the U.S. These are recognized natural burial sites, although some are hybrid cemeteries where both natural and traditional burials take place (Marsden, 2015)." A green burial cemetery is also sometimes called an eco-cemetery (Marsden, 2015). Since 2005, the Green Burial Council has certified green cemeteries and funeral homes that follow their guidelines, but many more locations are offering natural or green burial options without certification. While different cemeteries have different standards for what they will allow to be buried with the body, minimum green burial standards typically require:

- No embalming fluids.
- Biodegradable casket, but no endangered tropical woods.
- No vault.

Most green cemeteries do not resemble traditional cemeteries, i.e. green manicured lawns and headstones lined up neatly. Natural cemeteries tend to look more like nature preserves, with trees, grasses, wildflowers, and shrubs. There are often walking paths leading visitors to burial areas, with inconspicuous engraved stones marking individual burial sites. Other common features of natural cemeteries are:

- Excavation of the burial site is usually by hand to minimize impacts on the surrounding land and to protect native plant diversity.
- Earth is mounded on top of the gravesite, and the mound eventually disappears as the earth settles. Native grasses, flowers, trees or shrubs may be planted on the mound to quickly rehabilitate the site.
- Caskets and burial shrouds must be made of biodegradable materials. No hardwood caskets are allowed.
- Grave markers are simple, engraved stones indigenous to the area. Sometimes a native tree or shrub is planted instead. To ensure family members will always be able to find a grave, the burial sites are typically marked on a survey map. Some cemeteries insert metal nails at a site so a metal detector can aid in searching. Others use global positioning systems (GPS) to locate sites.

Another important aspect of natural burial grounds is that they also accept cremated ashes for burial or for scattering in a dedicated area. A number of natural cemeteries in Germany house only cremated remains. In these areas, ashes may be scattered or buried, or placed in biodegradable urns buried along the drip line of mature trees and marked with small memorial tags.

Maintenance of grounds

Natural cemeteries' treatment of the grounds is also quite different from that of traditional cemeteries. Green cemeteries work to preserve natural habitat and wilderness areas instead of altering and manicuring landscapes with non-native plants or grasses that often require large amounts of water and chemical fertilizers. They place trees and plants to mimic the natural environment and try to restore the land to its natural contours.

Many of the trends in natural cemeteries dovetail with other landscaping strategies meant to reduce resource use and labor, and work with, rather than against, the natural environment. In the same way offices are trying to go "paperless" to minimize costs and waste, more grounds are turning to sustainable landscaping principles, also called Xeriscaping or green-scaping (Water Utility Authority, 2011). This means using native, non-invasive plants that are suited to the climate and provide can even provide habitat or food sources for animals such as nesting birds. Irrigation, pesticides and herbicides are not used, or are used sparingly. Sustainable landscaping is low impact, low maintenance, low resource use and low-cost landscaping that fits each particular site and climate.

Greening of the industry

Given the general "greening" of all aspects of society in recent years, it is certain that the funeral industry will continue to go "green" in a range of areas, including in responses to potential environmental risks or to personal risks for members of the profession, by reducing the risks of any toxic materials used or requiring the use of alternative materials.

A recent, closely watched issue of concern to many in the industry is the potential danger of formaldehyde and the possibility of a movement away from its use for both environmental and worker protections. As early as 2004, the International Agency for Research on Cancer (IRAC) released information suggesting that the use of formaldehyde may increase the risk of nasopharyngeal cancer or leukemia in embalmers. In November 2009, the Journal of the National Cancer Institute published even more definitive and disturbing data regarding exposure to formaldehyde. The study found that death from myeloid leukemia grew with increasing years of embalming experience, confirming that the risk of cancer is associated with the duration of employment, work practices, and estimated worker formaldehyde exposure levels.

Funeral professionals and the organizations responsible for protecting their welfare continue to monitor the international, federal and state regulatory landscape for changes or limits on the use of formaldehyde for embalming purposes in the U.S. Since the IARC and the National Cancer Institute (NCI) declared formaldehyde a carcinogen in 2009, in 2012 and again in 2015, OSHA developed new regulations limiting the use and exposure limits for formaldehyde.

As mentioned, the current trend is to move away from the use of hazardous chemicals in the embalming process. To date, formaldehyde is still the embalming fluid of choice because other non-toxic preservation fluids have not been developed that ensure similar results. OSHA and the NFDA continue to research and develop training and guidelines that warn of the hazards of formaldehyde and the precautions that must be taken to mitigate the harmful effects of the toxin on funeral personnel and the environment.

OSHA has produced a fact sheet, summarized below, to explain the effects of formaldehyde exposure as well as precautions that must be in place to protect funeral staff at high risk for exposure to the dangerous chemical. The OSHA Formaldehyde standard (29 CFR 1910.1048) and equivalent regulations in states with OSHA-approved state plans protects workers exposed to formaldehyde and apply to all occupational exposures to formaldehyde from formaldehyde gas, its solutions, and materials that release formaldehyde. The OSHA information is as follows (OSHA, 2015):

- Formaldehyde is a colorless, strong-smelling chemical often used in aqueous, water-based solutions. It is commonly used as a preservative in medical laboratories and mortuaries.
- The permissible exposure limit (PEL) for formaldehyde in the workplace is 0.75 parts formaldehyde per million parts of air (0.75 ppm) measured as an eight-hour time-weighted average (TWA).
- The standard includes a second PEL in the form of a short-term exposure limit (STEL) of 2 ppm that is the maximum exposure allowed during a 15-minute period.
- The action level, which is the standard's trigger for increased industrial hygiene monitoring and initiation of worker medical surveillance, is 0.5 ppm when calculated as an eight-hour TWA.

Harmful effects on workers

The OSHA fact sheet identifies formaldehyde as a sensitizing agent that can cause an immune system response upon initial exposure and also as a cancer hazard. Acute exposure is highly irritating to the eyes, nose, and throat and exposed individuals cough and wheeze. Subsequent exposure may cause severe allergic reactions of the skin, eyes and respiratory tract. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels in the air or on the skin can cause asthma-like respiratory problems and skin irritation such as dermatitis and itching. Concentrations of 100 ppm are immediately dangerous to life and health (IDLH). Note: The National Institute for Occupational Safety and Health (NIOSH) considers 20 ppm of formaldehyde to be IDLH.

Routes of exposure

OSHA clarifies that workers can inhale formaldehyde as a gas or vapor or absorb it through the skin as a liquid. Groups at potentially high risk include mortuary workers as well as instructors and students who handle biological specimens preserved with formaldehyde.

How employers can protect workers

Airborne concentrations of formaldehyde above 0.1 ppm can cause irritation of the respiratory tract. The severity of irritation intensifies as concentrations increase. In the event of an exposure, OSHA requires employers to do the following:

- Identify all workers who may be exposed to formaldehyde at or above the action level or STEL with initial monitoring, and then determine their exposure.
- Reassign workers who suffer significant adverse effects from formaldehyde exposure to jobs with significantly less or no exposure until their condition improves. Reassignment may continue for up to six months until the worker is determined to be able to return to the original job or is deemed unable to return to work.
- Implement feasible engineering and work practice controls to reduce and maintain worker exposure to formaldehyde at or below the eight-hour TWA and the STEL. If these controls cannot reduce exposure to or below the PELs, employers must provide workers with respirators.
- Label all mixtures or solutions composed of greater than 0.1 percent formaldehyde and materials capable of releasing formaldehyde into the air at concentrations reaching or exceeding 0.1 ppm. For all materials capable of releasing formaldehyde at levels above 0.5 ppm during normal use, the label must contain the words "potential cancer hazard."
- Train all workers regarding exposure to formaldehyde concentrations of 0.1 ppm or greater at the time of initial job assignment and whenever a new exposure potential of formaldehyde is introduced into the work area. Repeat training annually.
- Select, provide, and maintain appropriate personal protective equipment (PPE). Ensure that workers use PPE such as impervious clothing, gloves, aprons, and chemical splash goggles to prevent skin and eye contact with formaldehyde.
- Provide showers and eyewash stations if splashing is likely.
- Provide medical surveillance for all workers exposed to formaldehyde at concentrations at or above the action level or exceeding the STEL, for those who develop signs and symptoms of overexposure, and for all workers exposed to formaldehyde in emergencies.

Recordkeeping requirements

Employers are required to do the following regarding worker exposure records:

- Retain exposure records for thirty years.
- Retain medical records for thirty years after employment ends.
- Allow access to medical and exposure records to current and former workers or their designated representatives upon request.

For more information on this, and other health-related issues affecting workers, visit OSHA's web site at http://www.osha.gov.

NFDA Formaldehyde Best Management Practices 2012

The Formaldehyde Best Management Practices is a working document. It may be updated or modified as important new information about formaldehyde becomes available. The following information is a summary of the best practices guidelines and subsections. It is important to review this document in its entirety on the NFDA website (NFDA, 2012 a). Preparation room ventilation is the single most important factor in reducing health risks associated with formaldehyde exposure. Make sure that the ventilation system in your funeral home's preparation room is properly designed and operating effectively. An effective ventilation system assures that as

much formaldehyde as possible is drawn away from the embalmer's breathing zone. Consult an HVAC professional to assess and maintain the ventilation system and the heating and cooling needs of the work area. The NFDA provides the following guidelines:

1. Ensure adequate and effective ventilation in the preparation room.
2. Select and use the proper embalming product while considering the environmental, health, and safety characteristics of the product and the condition of the remains.
3. Take precautions in the preparation room to limit formaldehyde exposure and emissions during routine embalming.
4. Observe special precautions to limit formaldehyde exposure and emissions when embalming organ procurement cases and autopsied remains.
5. Be familiar with and follow federal, state, and local environmental, OSHA, and health requirements when embalming is performed.

Various environmental, OSHA, and health requirements apply when an embalming is performed. Often product selection will govern the application of these requirements. Periodically review and re-evaluate the products used in the preparation of the remains. Know the components of the products and the requirements that these components make applicable. Determine whether your locality has a mechanical code or other requirements that apply to ventilation systems.

Formaldehyde Vapor Reduction in the Funeral Home Preparation Room: NFDA Recommendations for Effective Preparation Room Ventilation 2010

This study reached a number of conclusions of critical importance to funeral directors. Several of the key findings are summarized below (NFDA, 2010). The report concludes that an effective ventilation system that is designed, operated, and maintained to meet the criteria in the study, can be effective in removing formaldehyde vapors from the breathing zone of the embalmer in the preparation room and in lowering overall levels of formaldehyde. The NFDA criteria are as follows:

1. The ventilation system should be a dedicated, non-recirculation system.
2. As a general proposition, the minimum air change rate for the preparation room should be no less than 15 air changes per hour.
3. The ventilation system should exhaust more air from the space than it supplies to the space to create a slightly negative pressure within the preparation room relative to adjacent spaces in the funeral home.
4. The number and location of supply diffusers and exhaust grilles should be adequate to direct a sufficient amount of air across the preparation table(s) so that formaldehyde vapors are transported away from and out of the embalmer's breathing zone.
5. Installation of an LEV device, designed to serve the preparation table(s), will control formaldehyde at its source and enhance the effective operation of a general ventilation system.

The design, installation, maintenance, and alteration of the preparation room ventilation system should always be in consultation with an HVAC professional to ensure the system is functioning effectively to reduce formaldehyde exposure to the greatest extent possible.

NFDA 5-step guide for effective preparation room ventilation

An essential preliminary step for a funeral home is to assemble all information about the current preparation room ventilation system (NFDA, 2010):

- STEP 1. Complete the Formaldehyde Ventilation Assessment: NFDA members may download the Funeral Home Preparation Room Formaldehyde Ventilation Assessment from the NFDA website.
- STEP 2. Complete Expert HVAC Consultation: The NFDA strongly recommends the periodic re-evaluation of the preparation room ventilation system by an expert HVAC consultant.
- STEP 3. Evaluate Recommendations: Evaluate the expert's recommendations to determine the actions to take that will provide the greatest short term and long term benefits.
- STEP 4. Make Simple Changes in Ventilation System: Simple changes in the ventilation system can often result in major improvements, examples of changes include: resizing the exhaust fan; and relocating and resizing the exhaust grille so that it is adjacent to the embalming table(s) near the floor.
- STEP 5. Scheduling Implementation and Maintenance: Establish a schedule to implement the expert's recommendations for improving ventilation system effectiveness and maintaining the funeral home's ventilation system.

Additional studies concerning formaldehyde hazards and precaution guidelines are ongoing and published on the NFDA website.

Resomation or alkaline hydrolysis

A new process, called "alkaline hydrolysis (AH)," is available in some states and may soon be available in others. This process may also be termed as bio-cremation, resomation, aquamation, green cremation, flameless cremation, or water cremation. Alkaline hydrolysis is a chemical process that uses a solution of 95% water and 5% potassium hydroxide or sodium hydroxide to reduce a body to liquids and bone. Embalming fluid and chemotherapeutic drugs are neutralized during the process.

A funeral involving resomation is similar to those involving cremation until the point at which the coffin is removed from view. The whole process takes about three to four hours. The following steps are from the Resomation website (Resomation, 2016):

- First, the body is placed in a stainless steel container, i.e. a resomation unit, that automatically weighs the body and calculates the appropriate amount of water and alkali needed. It then fills the vessel with a solution of lye and potassium hydroxide, heated from 300 to 350 degrees Fahrenheit by steam passing through an internal coil. The vessel is agitated and the potassium hydroxide solution is mixed throughout the process to encourage rapid decomposition.
- Temperatures up to 370 degrees Fahrenheit are maintained for an hour before the vessel is cooled via a water recirculation pump for another hour. When the process is complete, the vessel is drained, leaving bone fragments and a sterile, environmentally neutral liquid consisting of amino acids, peptides, sugars, and salts. The liquid can be used as fertilizer and is safe enough to be poured down a drain.

After resomation, bone fragments are bleached in appearance and are whiter than cremation remains (cremains). Like the liquid, the ash can be used in horticulture as fertilizer. Unlike other processes, resomation allows a body to be fully returned to the Earth without adding unwanted materials to the soil. Implants or prosthetics are left behind, and some in remain reusable after sterilization and repackaging.

Many have uncomfortably analogized this process to "pouring bodies down the drain". But this is a characterization that often overlooks the fact that body fluids and blood are routinely poured down the drain during traditional embalming practices (Irving, 2016). Resomation takes takes roughly the same amount of time as cremation, but uses less energy, produces significantly less CO2, and does not release mercury or other harmful contaminants into the atmosphere. The total carbon footprint of a resomation is 18 times less than that of cremation and is a 100% mercury-free process, unlike embalming or cremation.

The resomation unit is designed to work easily to accommodate a traditional ceremony. The body is placed in coffin lined with a silk bag that seals to become an enclosed silk coffin within the resomator. After

the cycle, the soft bone ash can be powdered and put in an urn, as used with cremation. From the early 1990s to the mid-2000s, AH was used only as a method for disposing animal remains or human bodies that had been left to medical schools for research. More recently, states have been considering adding AH to the methods consumers might choose for body disposition (Ibid).

Supporters of alkaline hydrolysis argue that it is the most environmentally friendly method of body disposition, with the potential to avert the millions of tons of wood, metal, and concrete, as well as hundreds of thousands of gallons of embalming fluid, buried each year in U.S. cemeteries (Ibid). Proponents note that alkaline hydrolysis neutralizes embalming chemicals, toxic drugs such as chemotherapy medicines, and infectious organisms.

Those who oppose alkaline hydrolysis believe there is not enough is known about possible health and safety risks, or feel that AH is not a dignified way to treat human remains. One group, the Catholic Conference of Ohio, was successful in defeating AH legislation. Ohio is reconsidering the issue as a bill proposing the legalization of alkaline hydrolysis is making its way through the state legislature (Irving 2016). Other Catholic groups have concluded that AH is "morally neutral," and much like cremation.

Alkaline hydrolysis set-up may cost a provider between $150,000 and $400,000 depending on the size of the machine as well as the temperature and pressure at which the system can operate. Higher temperature and greater pressure result in faster decomposition, which allows a provider to handle multiple bodies per day. The AH equipment costs more than traditional cremation machinery. In Minnesota, basic AH service costs about $2,400, while the cost of direct cremation without an on-site ceremony ranges from $800 to more than $4,300, depending on the provider. The national average cost for a traditional funeral, including burial and a headstone or monument, is about $10,000 (Ibid).

The major barrier to AH is the concern over wastewater discharge. The pH of the resulting solution is modified before disposal, which requires a holding tank. Extensive monitoring in St. Petersburg, Florida showed no adverse effects on water quality. In 2010, a bill, backed by the California Funeral Directors Association defining AH as a type of cremation, was introduced but failed in the California Senate due to concerns regarding the pH of the discharged water (Ibid).

Those who have studied the funeral industry have drawn parallels between this new technology and cremation. Both offer(ed) potential new business, but were/are changing the industry. Many, who at first did not provide cremation assistance because they deemed traditional funerals as the most financially stable, eventually learned that they should accommodate all special requests for business growth and maintenance. Since resomation is operational in some states it would be wise to be informed about this new technology before customers begin to ask for it.

Promession

Promession, developed in Sweden by Susanne Wiigh-Mäsak, is the process by which a body is broken down into compostable, environmentally friendly fragments via treatment with liquid nitrogen. It represents an emerging alternative to cremation. Promession employs a freeze-drying technique to reduce the body to a powdery substance. Advocates believe it is one of the most environmentally friendly means of disposition. The process follows these steps (FuneralSite, 2016):

- Within a week after death, the body is submerged in liquid nitrogen (i.e. 196 degrees Celsius) and is cryogenically frozen to remove water and crystalize the body.
- The brittle remains are then exposed to vibrations that reduce them into a fine, organic powder, weighing about 70% less.
- The powder is dried and any metals present can be removed for recycling.
- Remains can be stored indefinitely when contained in a vacuum-sealed container.
- Exposure to moisture allows natural decomposition,
- The option of a "green" eco-friendly burial includes: The remains are placed in a coffin made of cornstarch, buried in a shallow grave, and turn into compost within six to twelve months. Then a plant, bush or tree can be planted to signify the location of the deceased, and aid in the composting process.

Promession is not available in the U.S. although it is in the experimental stage. There are currently facilities in the U.K., South Korea, and Sweden.

TRENDS IN CREMATION

Cremation rates continue to rise, and funeral homes are adapting to this increased demand by providing the service directly or partnering with a firm. In addition to cremation and the service or ceremony, business revenue can come from video tributes, or merchandise such as urns, keepsake jewelry, chimes, or picture frames that display or hold a portion of the cremains. The reasons for the increasing popularity of cremation include lower costs, ease and convenience, reduced environmental impact, and growing societal acceptance. A variety of religious and cultural groups that considered cremation taboo have begun to accept cremation as morally neutral.

Preplanning may also have contributed to its increase. While an individual may feel uncomfortable choosing cremation for a parent, they are likely confident in choosing it for their own passing. While cremains are often scattered, they may also be buried in cemeteries or columbarium using minimal resources.

How green is cremation?

Cremation is "green" because traditional burials are resource-intensive and less land is required for housing human remains. It takes an average of 32 square feet to bury a single coffin. But, cremation is associated with drawbacks such as energy use and air pollution:

- Energy use: The natural gas or propane energy needed to accomplish the cremation process is significant. Cremation chambers are heated to between 1,400 and 1,800 degrees Fahrenheit for approximately two-and-a-half hours. Increasingly, the industry is investigating the use of alternative fuels as well as the use of carbon offsets to minimize the energy impact of cremations, but little progress has been made.
- Air pollution: Cremation chambers emit particulates, including carbon monoxide, nitrogen oxides, sulfur dioxide, hydrogen chloride, dioxin, furans, mercury, cadmium and lead. Mercury emissions from a body's dental amalgam fillings are a primary concern. The average cremation produces about 50 kg of carbon dioxide, which is the same as driving a car about 136 miles (EPA, 2009).

Making cremations greener

A number of steps that reduce the ecological impact of cremation are becoming standard practice and will likely be incorporated into industry policy soon. The following Green Burial Council aims to minimize the environmental effect of using natural gas, a nonrenewable fossil fuel that contributes to greenhouse gas emissions and air pollution (Green B Council):

- Choose a crematory with newer, high-efficiency equipment and ask whether emissions are monitored to ensure they do not exceed allowed limits. Older crematories can use twice as much energy as newer ones.
- To ensure that the crematory consumes a minimum amount of fuel for the task and releases fewer pollutants, all unnecessary items should be removed from the casket before cremation to minimize time and harmful fumes.
- The body should be cremated in a cardboard container or shroud, rather than a casket. If the family members prefer a more traditional looking casket, they can choose a "cremation casket," which burns more quickly and cleanly. Some prefer to use a temporary "rental casket" for the viewing and move the body to a shroud or cardboard casket before cremation. While no law requires that the body be cremated in a casket, some states do require an "alternative container," typically a cardboard box. Additionally, family members who want to save money or energy may want to transport the remains from the place of death to the funeral home or crematory. Be sure they are aware that they will need a number of documents including the death certificate, disposition and transit permits from the country registrar, and a cremation permit.
- Choose low-impact handling of cremated remains. Placing the urn in a columbarium, i.e. memorial shelter, requires resources to build the structure as well as for maintenance. Low-impact options include scattering on land or at sea, placement in a decorative urn, or burial.
- Bury the ashes in a biodegradable urn that will harmlessly become part of the earth. Avoid plastic, ceramic and glass or other non-porous containers that do not break down easily.
- Do not bury the urn in a solid burial container. Find a cemetery that does not require the urn to be placed in a concrete or metal container. These containers, designed to withstand the weight of the earth and foot traffic, use resources.
- Find a cemetery that buries urns in smaller plots, rather than in casket-sized plots, to conserve land.
- Choose low-energy methods to scatter the remains. For example, scattering in a local state park, after obtaining appropriate permits, has a lower eco-impact than shooting the remains into space, for example.
- If a business is handling details regarding a scattering of ashes over a body of water, try to minimize the number of vehicles used to limit fuel use as much as possible. Changes may include the number, size or type of vehicle.

While those seeking a simpler, less expensive, and more environmentally friendly funeral and burial alternative often choose cremation, the process does use fossil fuels that do not save land from development nor protect or restore wildlife habitat. Projects like artificial reefs (discussed below) are notable exceptions. In the future, there will likely be certification for crematories with emission controls. Newer cremation chambers often have water scrubbers installed in the exhaust ducts to clean the combustion gases and remove air pollutants, although their effectiveness is in question. A study released by the Cremation Association of North America (CANA) showed that these devices had little effect on emissions and pollutants (CANA, 2016). The Green Burial Council is currently formulating cremation standards, and technologies to reduce or eliminate mercury and other pollutants.

Mercury emissions

Perhaps the least "green" aspect of cremation is the potential mercury emissions that can result from the material used to make dental fillings. Mercury in dental amalgam was considered safe to be used in the mouth because the oral cavity does not come in contact with temperatures high enough for the mercury to vaporize. The heating processes used in crematoriums can vaporize the mercury in dental amalgams, which can eventually build up in the atmosphere, water, and soil.

The most extensive cremation equipment emissions research indicated that the design and operation of typical North American crematories provided significantly better emissions than regulations required (CANA, 2016). CANA provides the following information concerning mercury in the environment, and cremation as a contributing factor:

- Mercury is a naturally occurring element that cycles through our environment, particularly in water.
- The most notable way that mercury enters the cremation cycle is via silver amalgam dental fillings through crematory emissions.
- Silver amalgam fillings contain mercury alloys that volatize when introduced into the cremation process of intense heat.
- Within the last ten years, the percentage of fillings containing mercury has declined by thirty percent, a significant decrease.
- The changes in dental practices and consumer preferences have resulted in significantly less mercury entering the cremation emissions.
- One of the most detailed studies of mercury emissions impact was conducted in the U.K. where over seventy percent of individuals choose cremation. The study focused on a crematorium that had been in operation for over 40 years, processing more than 112,000 cremations. The concentration of mercury found in the crematory soil samples averaged less than .15 mg/kg, almost seven times lower than that allowed for food production and more than 100 times lower than that allowed for children's playgrounds.
- Consider that typical North American crematories operate at only twenty percent of the production levels from the study, and it becomes apparent the anticipated impact of mercury emissions are diminished.
- Proper training of crematory operators and managers must be encouraged and older cremation systems should be properly maintained and updated to keep them in prime operating condition.

Creative cremains

The increased demand for cremation has driven a number of other trends associated with the wearing, displaying, scattering or burying of cremains. One of these is the development of dedicated scattering grounds, a small number of which are certified as approved and protected in perpetuity by a deed restriction or a conservation easement. Many of these grounds also allow burial of cremains, though some require a biodegradable container.

One of the inventive ideas for the disposition of remains has been the construction of sections of artificial reef, augmenting existing reefs in the Atlantic Ocean and Gulf of Mexico. These memorial reefs are made from cremated remains and concrete, poured into a mold and hardened. They eventually become a marine habitat. Individuals may participate in the creation of the concrete ball, if desired. An outdoor viewing of the reef and its placement are usually arranged. Rules for

disposing or preserving of the cremains must be environmentally sound, if the item is being sold as "green." An undersea memorial reef must meet the following requirements (EPA, 2016):

- Be manufactured or fabricated from materials that are non-harmful to marine life.
- Be placed only in areas that have been recommended, approved, and permitted for placement by the appropriate governing authority for artificial reef placement.
- Be placed at depths below conventional maritime and recreational traffic.
- House human remains in a permanent manner that does not cause harm to the marine environment.
- Have proof of stability testing conducted by an independent agency to ensure that the reef can withstand a Category-3 storm.
- Have operators that use certified divers for all undersea placements of cremated remains.
- Have operators that document every interment.
- Have operators that develop, document and implement a plan to monitor reef growth and maturing of reef.

Keepsakes associated with cremation

The most common purchase associated with cremation is an urn to hold the ashes. Keepsake urns are kept for lengthy periods and must be sturdy enough for this purpose; they are often carefully chosen works of art. Make sure clients are able to distinguish a keepsake urn from an eco-friendly biodegradable urn.

Urns come in many shapes and sizes. Most urns have removable tops to allow placement of the ashes. Environmentally friendly urns are made from sustainable materials, like bamboo, a rapidly renewable wood. Some urns guarantee that they are made from at least fifty percent recycled materials. One urn type is made from post-consumer recycled plastics and claims to use the equivalent of 40 recycled one-gallon milk jugs. Another urn has a semi-porous top in which a tree seedling can be planted. Some urns are specially designed for scattering ashes on the ocean or other large bodies of waters. They float three to five minutes before sinking to the ocean floor and biodegrading. Urns placed in bodies of water may be made with unfired clay that is painted with water-soluble colors, suitable for burial or scattering at sea.

Keepsake and memory boxes are also perfect for keeping a few mementos, such as a photo, and can store a small sachet of the individual's ashes, if desired. Cremation jewelry is designed to hold some cremated ashes and comes in the form of pendants, bracelets and other items that have a small container. Most cremation jewelry is worn, but home display options, like glass cases, are available.

Other creative cremation options include:

- Fireworks.
- Launching into space.
- Placement in helium balloons.
- Placement in an hour glass.
- Generate into a diamond.
- Mixed into paint.
- Made into hand blown or stained glass.
- Mixed in tattoo ink.
- Made into a vinyl record.
- Planted as a tree.

FUNERAL MARKETING AND THE INTERNET

The Internet has radically changed the way purchases are made and will continue to influence marketing in every industry. It is estimated that more than 75% of funeral planning begins online. Each day, more consumers are finding potential businesses on the Internet, checking available products and services along with prices, reading reviews and references, and making the decision to contact a particular business for an appointment. All of this within minutes. Not only do a large number of people in the U.S. have access to the Internet, but these consumers are often the individuals with the most wealth, so a vital part of any business strategy is to assist them in locating services and products on the Internet. Funeral businesses are able to target people looking for their specific products and services. Funeral professionals can put their abilities in front of hundreds of people every day using their website and free social networking sites like Twitter, Facebook, and YouTube. This new technology considerably expands a funeral professional's ability to promote his or her business.

Importance of an Internet presence

Businesses need a home page with contact and other basic information and pages dedicated to frequently asked questions regarding services offered, prices, and information about experience and expertise. Funeral homes also may have pages dedicated to appointment reservation and scheduling, allowing clients to book services online. There can also be pages for product reviews, and descriptions or explanations of various services offered. An effective website is an essential part of any business presence and serves as the virtual front door. Research shows that more than half of all Web users evaluate websites based on home pages alone.

While traditional marketing methods and media are important promotional venues, new strategies in marketing utilizing social media networks have become increasingly important in and will continue to grow. Social media networking offers funeral professionals a powerful way to get the word out. It is important, however, that social networking strategies be integrated with other marketing practices and materials. For example, all materials and postings should refer back to the website.

Social media networking

Marketing in the funeral industry is very sensitive. Few people want to discuss their deaths or those of their loved ones before it is absolutely necessary. Internet marketing strategies have the potential to revolutionize funeral marketing, advertising, and sales because they advertise without coming across as "pushy." This is in part because the audience member, in many cases, has specifically searched for that information, has chosen to receive information, and is choosing to access it at the time and place of his or her preference. The key to this is becoming a preferred information provider, a "friend" on Facebook, for example. Sensitivity and rules of propriety on the Internet are critical and posting inappropriate or insensitive information will cause a reduction in status.

Social media is a broad term that defines various activities that integrate technology, social interaction and content creation. Through social media, individuals: create web content, organize content; edit or comment on content; and combine and share content. Social media uses many tools such as web feeds, blogs, micro-blogs, wikis, photo-sharing, video-sharing, podcasts, networking, bookmarking, mashups, widgets, virtual worlds and more. Social networking sites

are websites that connect people and create online communities. In these online communities, people can join, and establish a page. Many communities also have discussion groups, typically formed around a theme or industry subject, where members can interact and exchange questions, information and suggestions. Web-based discussion groups include blogging sites and chat rooms.

Social networking sites make it possible to build an audience or community with specialized interests. Web presence becomes intrinsically associated with the business, helping to develop and strengthen relationships. All social networking sites allow users to find people they know among the members or look for other members with similar interests or affiliations, making it easy to establish networks of contacts.

Social media use among seniors

Not only are young adults using social networking but an increasing number of "Baby Boomers" access social media sites. The number of U.S. citizens using the Internet every day has risen to about eighty-seven per cent of the population, according to Pew Internet data and it continues to grow at an astonishing rate (Pew, 2015). Media budgets are currently contributing about thirteen percent of total marketing dollars spent to social media, according to the American Marketing Association, a number expected to rise to twenty-one percent in the next five years (Brook, 2016).

Funeral services lag behind other businesses in their use of these strategies. This may be due to a natural reluctance to adopt new technologies, or because of a feeling that it is not "suitable" for a dignified funeral business. But many would argue that this is a natural fit, as funerals themselves are a product of social networks, and social networks are used for planning and informing the community when they occur. In the past, social networks operated primarily through religious institutions, like the church, or organizations like the Rotary Club. Now, the Internet has become a community center.

Some may also be reluctant to use social networking sites because they feel the audience is too young. Actually, customers over fifty-five years of age are increasingly using Facebook, Twitter and YouTube. The fastest growing group of Facebook users are 55 and older: 65% percent of ages 50 to 64, and 49% of people over 65 use social media (according to Pew Internet Research 2015). Not only does the Internet allow businesses to reach this target audience, but it also can target younger audiences interested in finding information.

It is important to remember that unlike like traditional marketing venues, social networking is not about selling. It stresses interaction, educating the public and increasing awareness of the business as a community member. Like traditional networking, social networking stresses community visibility and these sites can facilitate interaction with clients and potential clients. Rather than appearing in the consumer's life primarily when a person is elderly or ill, one can integrate into the community, present in life as well as death.

While the last generation largely built community ties through church, community, and school organizations, today it is through social media. The following sections briefly introduce the most common social media tools.

Facebook

Currently, Facebook is the biggest and most popular social networking site; it is increasingly becoming the "corner post office" or bank where people meet in neighborhood and beyond. Facebook has over one billion participants around the world. Over 32 million Internet users in the U.S. have a Facebook profile. Many social networking sites have a particular demographic, or range of characteristics associated with the site. Facebook, like Twitter and YouTube, has experienced exponential growth in a relatively short time, with huge numbers of new users checking in every day. This would be a good site to start building a social networking presence.

Blogs

A weblog, which is usually shortened to "blog," is a website where regular entries are made and presented in reverse chronological order. A blog where individuals write posts. A post is a written item, like a journal entry. Blogs may look like websites, but there are some significant differences in their design and function. In general, blogs are easier to build and maintain. Blogs can offer commentary or news on a particular subject, such as technology, politics or local news; some function as more personal online diaries. A typical blog combines text, images and links to other blogs, web pages and other media.

Most blogs are primarily textual, although many focus on photographs, videos or audio. Some blogs are very focused on the author's writing. Others take an editorial approach, with writers searching the Web for interesting content, then writing a short comment, and linking to the original content.

Twitter (i.e. microblogging)

Another form of blogging is the micro-blog. As its name suggests, micro-blogging is simply writing extremely short blog posts, somewhat like text messages. These messages can be viewed by anyone or by a restricted group chosen by the user. Users can read these messages online or have them sent as a message to a mobile device. Twitter has become the way people communicate during disasters as well as celebrations due to its immediacy, simplicity and flexibility.

Twitter limits the writer to 140 characters or less, and is a great way to send short updates to interested parties. Twitter also makes it possible to send messages through mobile phones which may include fees from the phone company. People can recieve updates in real time and can participate in two-way communication. Facebook, MySpace, and LinkedIn also have a micro blogging feature, i.e. the "status update." Micro blogging can offer:

- Quick answers to simple questions.
- A way to try out new ideas, and garner responses from people whose opinions you trust.
- A way to learn about issues that affect your business before they become common knowledge.
- A way to establish a network of people involved in similar interests, products, and complementary services.

YouTube, podcasts, and video casts

YouTube is the world's second largest search engine, but most know it for its video clips. YouTube provides is an easy way to upload short video clips on an unlimited number of topics.

YouTube is a great place to post, but videos can be posted on Facebook and many other networking sites. A video camera can be used to:

- Do a video tour of the funeral home or park.
- Highlight special services.
- Introduce new product information.

A variety of resources can be used to create podcasts and video casts. These are audio and video segments, respectively, of varying lengths that can be used like personal radio or TV shows, for interviewing, answering frequently asked questions, or discussing a professional topic. Podcasts can be linked to a business's website, blog, Facebook and Twitter accounts, and video casts can be uploaded to YouTube as well as shown on the website or linked to a blog.

Consider, with the family's permission, posting a slide show or video of the memorial of a well-known person in the community. Or, for example, create a radio show with a question-and-answer session regarding cremation. The audio can be played over a slide show of: images about cremation; a tour of the crematory; places to bury cremains; or creative ways to memorialize cremains.

Webcasting

Webcasting is a way to show a funeral in one location to viewers in any location. Large monitors can be set up for a more comfortable viewing experience. Webcasting is a natural solution to situations when family members are scattered or loved ones are unable to attend a funeral due to poor weather, illness or disability, or lack of funds. A recent widespread application of this technology was its use to show the funeral of soldiers to fellow troops who were unable to attend.

Each company providing this service will have its own particular styles. Some prefer that a live feed not be used, but offer viewing at an URL or on a DVD. The technology required for webcasting is relatively easy and inexpensive to implement, and will likely become more common.

All these technological innovations require technical skills and companies are available for instruction, design, development and troubleshooting as needed. The actual investment in resources to purchase the equipment required to provide these services is minimal, but, like all computer equipment, it requires maintenance and upgrades on a regular basis.

Software applications

The latest and most innovative technology, the funeral planner app, developed for the funeral sector, is an easy way for families to begin planning everything in the privacy of their home on their schedule. Software applications can empower families, providing them with information needed to create a funeral plan. They can select options with family or friends, enabling them to make informed decisions about the funeral service right for them in a comfortable, private setting. This format avoids the pressure of traditional sales tactics that may have been used in the past. Families may review the app so they are familiar with the range of products and services before they visit a funeral business. Apps can be used to simplify services such as:

- Access paperwork anytime.
- Order flowers.
- Capture and store photos, websites, lists, and more.
- GPS is convenient to find unfamiliar locations.
- Correct photos and documents instantly and share them without delay.
- A flight-tracking app can give updates when shipping or receiving remains from the airport or when meeting clients.
- Apps can fax messages by capturing an image and sending it to a fax number. Apps can relay information to newspapers, insurance companies, and other vendors in less time and without depending on a fax machine.
- Create customized databases that can be accessed and edited from a desktop or from a mobile phone. Funeral directors can use this app to access their general price list or other arrangement documents when meeting with families.
- Update information instantly.

Personalization and creative services

More individuals are planning their own funerals, creating a memory especially meaningful to the people who knew them. Creating one's own funeral can be a unique and lasting form of expression, providing peace and closure to the individual, and to the bereaved after the loved one's death. In many cases, these ceremonies are preserved in some form, e.g. as an online memorial where people can post their condolences, or a slide show of the individual's life.

"Baby Boomers", making plans for their parents' funerals, are increasingly considering their own services and imagining meaningful services that celebrate their lives, often consciously breaking from tradition. Recent years have seen a more open attitude toward discussions of death; many planning their own funeral get family input beforehand. It is likely that the increasing acceptance of preplanning services opened the door to this practical perspective on the inevitable.

Families may plan a trip to a sporting event rather than go to a wake, or enjoy a trip to a favorite location for the scattering of ashes. There are many other ideas that celebrate something enjoyed in life that could be significant to survivors after death. The demand for new and meaningful funerals and memorials has been met by a growing list of services and products. Websites with special software programs that allow the planning of funerals now populate the Internet, providing ideas as well as the means to upload photos, articles, slide shows, and video and audio clips as well as designing memorial boards.

New business models and specialties have also emerged. One funeral home, for example, hires individuals who can design a personalized ceremony, drawing from information provided to them by family and friends of the deceased. These professionals create full-service funeral ceremonies that retell the "life story" of the deceased, based on treasured memories. Writers and graphic artists work to create an emotional connection through words and images. Not only does the company create a beautiful memory, but it makes it a lasting one by creating a keepsake that is given to mourners.

Changing presentations and personalization for viewing

The demand for cosmetic surgery to improve appearances does not end with death. An NBC News documentary, entitled "Final Touch: A Cosmetic Lift for Your Funeral," interviewed a number of embalmers and restorative artists. The report found that many people consult funeral professionals to plan restorative procedures to enhance their appearance at their funeral. Some of the requests include smoothing lines, plumping lips and even lifting sagging areas for their funeral (NBC, 2008).

"People used to say, just throw me in a pine box and bury me in the back yard," says Mark Duffey, president and CEO of Everest Funeral, a national funeral planning and concierge service. "But that's all changing. Now people want to be remembered. A funeral is their last major event and they want to look good for it. I've even had people say, 'I want you to get rid of my wrinkles and make me look younger (Ibid).'"

Restorative artists and embalmers have always tried to restore a "lifelike" appearance. The difference now is the number of people who are preplanning their final touches. This is a new phenomenon in the funeral industry. "I've had people mention that they want their breasts to look perky when they're dead," says David Temrowski, funeral director of Temrowski and Sons Funeral Home in Warren, Michigan. "Or they'll say, 'Can you get these wrinkles out?' It's all in humor, but I think people do think more about what they're going to look like when they're dead and lying in a casket (Ibid)."

A 2014 ABC News report, "Lifelike Embalming Positions a New Funeral Trend," noted that funeral plans are becoming more extravagant (ABC, 2014). The trend calls for individuals to be embalmed and presented for viewing in ways that are personalized, and accurately celebrate their life. Rather than the traditional casket viewing and burial, some choose to have loved ones posed in ways that show their hobbies and personalities.

ABC News told the story of an 83-year-old self-professed "party girl" who was embalmed to look as if she was sitting at a party with a glass of champagne. Her "set" included a bright feather boa, patterned outfit, decorative benches, and décor (Ibid). Other stories include a man who was an avid boxer during life, posed standing like a boxer in the ring, complete with a hood and boxing gloves (Ibid), and a jazz musician, standing with instruments, or a young man dressed in leather and posed riding his motorcycle.

One embalmer told ABC that in doing these types of "extreme embalming," they used different mixtures of fluid so the body would stay stiff in an upright position (Ibid). This type of personalization in funeral presentation rejects the traditional way of displaying the body. Further investigation shows that these highly customized funeral presentations have been practiced for years in some sections of the country, but they are becoming more popular throughout the U.S.

PET FUNERALS

In 2003, the American Funeral Director magazine published its first issue focusing on pet loss and memorialization, signaling a change in the way the human funeral industry addresses companion animal aftercare. Pet memorialization is becoming a big business, associated with keepsake merchandise, formal funerals and scattering ceremonies. People love their pets and seek similar closure and peace after their deaths that they do with their human family members.

According to the American Veterinary Medical Association, almost half of all pet owners consider pets to be family members (AVMA, 2014). Some even refer to pets as "children" and prefer to call themselves "guardians," considering it a more accurate description of the relationship. Leading this group of pet owners are "Baby Boomers" who provide their pets a range of animal care services and products including doggy day-care, grooming appointments, chiropractic care, massage therapy, and expensive medical and preventative care. Increasingly, pet owners are also seeking meaningful ways to commemorate these beloved animals' lives when they die.

Pet disposition

Less than 200 of the thousands of pets that die every day are buried in pet cemeteries or cremated individually. Most other pets are mass cremated. In some cases, pet owners are unaware of what happens to the body if they make no specific demands regarding disposition when the veterinarian euthanizes the animal. Legal regulation involving pet cremation and burial is lacking. While some states are making explicit requirements for consumer protection and transparency, there is still negligence and misrepresentation in the pet loss industry.

Feeding into this is a general lack of knowledge regarding pet burial, cremation and funeral services among the general public who are largely unaware of the choices they have in pet aftercare. Pressed by consumer demand, the industry is changing: pet burial and funeral services are becoming much more mainstream, and professional pet cremation services are increasingly distinguished from permitted animal disposal personnel who transport, mass-cremate, and dispose of lab animals and road kill. This is in some part because new regulations in some states specify that deceased companion animals are not waste, and that it is illegal to treat them as such.

Those in the business note that memorial services for animals are essentially no different from those for humans. The depth of emotion, the sense of loss, and the need to grieve are very similar.

Many pet services imitate human funeral services, with pet funeral businesses having the facilities associated with human services, such as a chapel and viewing area where people can stay with the pet until the cremation. These facilities also sell urns, markers, caskets, vaults, cards, and jewelry associated with pet burial or cremation.

Those moving into the pet business from human funeral services have found that many best practices for human deaths are appropriate to pet services. Presenting a price list to every family, for example, and making the products and services as transparent as possible are critical.

Statistics

U.S. citizens spend 53 billion annually on their pets. Currently, about 25% of companion animals are buried, and 75% are cremated. Pet funeral business is over 95% dogs and cats, but other animals also require burial or cremation services. The American Society for the Prevention of Cruelty to Animals (ASPCA) estimates that 70 to 80 million dogs and 74 to 96 million cats are owned in the U.S. (ASPCA) (2016). Approximately 37% to 47% of all households in the U.S. have at least one dog, and 30% to 37% percent have at least one cat.

Not only are dog and cat populations on the rise, but many people own a series of pets in their lifetime as the average life span of a dog is 11 years, and of a cat is 14. While these statistics suggest that the potential demand for pet loss and memorialization services is great,

only 700 U.S. facilities offer pet-related services and products. Some funeral professionals came to the market when they themselves were confronted with the death of a family pet and found services lacking.

The primary service requested is cremation and the primary merchandise is urns. Some of the most common aftercare options for pet loss are burial and cremation. About five percent of those who cremate also opt for a funeral or memorial services, and about 20% request a private viewing. Memorials, scatterings and other services are also requested. A survey by the American Pet Products Manufacturers Association (2011) found that: about 18% of pet owners would buy an urn for the pet upon death; an additional four percent would buy a headstone for the pet; and about three percent expressed interest in purchasing a casket (American Pet Products Manufacturers Association 2011). In most cases, consumers are unaware of their aftercare options. This makes sense when you learn that the primary group interested in direct sales and pre-planning options, typically senior citizens, is very likely to be pet owners who have not made formal arrangements for the care of their pet. Individuals between 55 and 64 years have two million pets, while those between 65 and 74 years have one million. Individuals over 75 years old have about half a million pets. These pets are mostly dogs, cats, birds, horses, reptiles, and fish, in declining order.

Just as there are local ordinances that dictate how a person's death is handled, there are federal, state, and local regulations regarding the disposition of a pet. Most clients are unaware of the legal issues surrounding pet loss or disposition. Legal regulations associated with pet aftercare relate to a diverse range of issues, including crematory emissions regulation, animal burial restrictions and prohibitions on the misrepresentation or fraudulent claims related to the type of cremation specified. Regulation is likely to become more common in upcoming years.

Pet crematories may belong to the International Association of Pet Cemeteries and Crematories (IAOPCC), which has hundreds of members and offers one-day training sessions. The association also lists suppliers for pet cremation units, urns, caskets, and mementos.

Pet cremation

Perhaps the most significant feature of pet cremations is that they may involve more than one animal. Misrepresentation of this fact has caused pain for pet owners. Many have posted information on the Internet to expose fraudulent practices in pet cremation and keep others from making the same mistakes. However, sometimes the confusion is deliberate. A number of news exposes have appalled the public with cremation horror. A number of lawsuits have resulted in cases where animal remains have been lost or accidentally cremated.

The lack of standardized regulations for pet cremation means violations are likely. Given the lack of oversight, disreputable crematories may operate for years without inspection or registration. It is very important that pet owners and funeral directors engage in transparent cremation where the animal will be handled appropriately.

Practices associated with pet cremation
Many who choose cremation want to see the animal once more prior to cremation. Funeral professionals can preserve the body in a chilling unit, clean, and present the animal in a peaceful way, usually in a curled sleeping position and wrapped in a blanket.

In some cases, those who want private cremation are concerned with the chain of custody and the integrity of the cremation. Pet owners may be worried that they won't get the right animal's ashes back. Some funeral directors use a secure pet tracking system to ensure integrity of the ashes. For the sake of transparency, pet crematoriums typically allow the pet owner to witness the cremation without any additional fees. While most people choose not to witness the pet cremation, this demonstrates the crematorium's good faith operations. Retorts should be positioned so that the viewer can see that there is only one animal in the retort.

Pet cremation restrictions
In some states, there are no laws or legal requirements pertaining to pet cremation or burial services, nor any protection of the pet owner from misleading practices. Other states have developed regulatory structures in response to cases of misrepresentation or fraud in pet aftercare services, or to address safety issues related to potentially dangerous animal waste. This is likely to be the future trend for other states.

Burial or scattering of cremains
If the pet owner has no place to bury a body, especially that of a large pet, the idea of having the pet's remains cremated and returned, i.e. to bury in a memorial park or other place that has meaning, or kept in a keepsake urn in the home, may be appealing.

Many pet owners choose to scatter a pet's ashes rather than preserve them. Perhaps the favorite location is home's yard. Others choose to create a meaningful service or ceremony out of scattering the ashes, e.g. in a memorial park, over a body of water, or into the wind. While the practice of scattering a pet's ashes is subject to local legal guidelines, prohibitions are rarely enforced. Some aftercare providers mail the family a certificate commemorating the scattering with the details of time, date, and exact location.

Keepsakes associated with pet cremation
The most common purchase associated with pet cremation is an urn to hold the ashes. Pet cremation urns are typically decorative cremation containers that are designed to honor the memory of the beloved pet. They may be personalized with the pet's name, photo, or paw print.

The industry has seen an increasing demand for memorialization products of high quality. Artists create beautiful urns and cremation jewelry. Family members may want to keep some fur or cremains placed in keepsake jewelry, or place a paw print in clay before cremation or burial. Keepsake and memory boxes are also perfect for keeping a few mementos of a dearly departed pet after the burial. Keepsakes and memory boxes can store smaller items such as a small sachet of the pet's ashes, photos, a collar, or a bandana.

Animal burial restrictions

Perhaps the ideal burial location for most family pets is their backyard, but many towns and cities prohibit burying an animal anywhere but in an established cemetery; however, enforcement is not strict. The legalities of burying a pet vary greatly from place to place. In rural areas and small towns, one may be able to bury a pet on private property, as long as the owner gives permission. If the pet owner does not own the property, it is highly unlikely that they will be within their legal rights to bury a pet without the property owner's permission.

In cases where burial is legally permissible, many localities have rules intended to protect the environment. These may be county health regulations, or other rules that include specific details regarding the depth of the grave, the materials in which the pet is buried, the manner in which the grave is marked, and the vicinity of the grave to water sources. The rules are primarily intended to prevent health hazards, e.g. assuring that graves are deep enough to protect humans and other animals from disease, and shallow enough to avoid underground utility lines. Some areas require that a pet be buried in an approved pet casket to help assure that toxic materials are not buried with the animal, or that caskets will biodegrade. Regulations also stipulate that graves are properly marked so that future landscapers will not stumble upon

remains unexpectedly, exposing themselves to potential disease. And finally, the rules aim to protect public drinking water sources from contamination caused by the biological breakdown of a pet's body.

The county health department, city hall, or animal control department should be able to provide legal guidelines regarding pet burial.

Unfortunately, in many cases, rules regarding the burial of pets are vague and hard to discover. For those who do not have a backyard or for those who plan to move in the future, a backyard burial may not be not a viable option. In some cases, burial of ashes is preferred as the urn can be removed from the ground, if necessary.

Pet cemeteries

As of 2016, around 600 pet cemeteries existed in the U.S., with a location in just about every state; most are privately owned. Many pet cemeteries offer full burial and cremation services, typically picking up the pet from the family's home or a veterinarian's office. Some pet cemeteries and humane shelters offer communal burials, which mean that multiple animals are buried in a common location.

Private pet burial in a pet cemetery typically means a traditional burial, where the pet's body is placed into an air and/or watertight casket, or in case of a green burial, a biodegradable casket. This is followed by internment in a private grave at a deed-restricted pet cemetery where the family has visitation rights. Burial in a pet cemetery can be very comforting for the pet owner, as it ensures that the pet's remains will be cared for, and there is no need to worry about what will happen if the family moves.

Increasingly, pet owners are making formal funeral and memorial service arrangements for their departed pets. Family members may purchase a plot, casket and grave marker in a preplanning counseling session, just as one would for a family member. Full-service pet cemeteries can usually provide any type of memorial desired, with much the same products and services found in people cemeteries, with a variety of services and products ranging from several hundred to several thousand dollars.

Best practices suggest that cemeteries should always provide pet owners with a copy of their burial contract, i.e. a detailed list of information regarding the terms and conditions for burying the pet in that particular cemetery.

Pet funerals and memorials

Pet funerals are becoming more common, with some cemeteries offering multiple or tiered burials, where a number of cremated pets or multiple burials are placed in a single grave. Funeral and memorial providers offer burial and cremation services, and provide caskets, urns and grave markers designed specifically for pets.

Like a human funeral home, a pet funeral facility may include a viewing room, an arrangement room, a reception area, and a room with merchandise. If desired, pet loss specialists can provide information geared to parents and children to help them discuss death. Often a child's first loss is a pet. This type of information is very helpful, but must be geared to the appropriate age group.

There are many beautiful ways to commemorate pets. Both home and cemetery burial provide an opportunity to create a permanent memorial to one's pet, using a grave marker, statue, or perhaps a tree planted over the pet's grave to serve as a living memorial. Pet funeral products can include:

- Music.
- Floral arrangements.
- Urns.
- Caskets.
- Grave markers.
- Video tribute/slide show.
- Stationary/memorial notices.
- Keepsakes.
- Garden memorials.
- Cards.

Coexisting services

Given the novelty, in some areas, of pet funerals, some traditional funeral directors may feel uncomfortable about conducting or arranging pet services. Concurrently, there is a concern that it will jeopardize human services by alienating current clientele.

Some studies suggest that those who decide to attend to both human and nonhuman aftercare may find it beneficial to position these businesses as two separate entities in clearly distinct facilities. This makes practical sense, as each facility requires different size retort and caskets, as well as different keepsake items. In some cases, this is a legal requirement. The state of Florida, for example, does not allow a pet retort to be located within the same facility as a human retort.

There are cases, however, of human and pet services that co-exist successfully. Certainly, more people are requesting to be buried or cremated with a companion animal, and because so many senior citizens own pets and may have a need for pet cremation services, industry professionals have wondered if one should attempt to combine human and pet services in one facility, or keep them distinct. Since there are no clear statistics, it is best to follow community standards and practices regarding decisions about co-mingling services.

Current trends suggest there need be no stigma associated with pet services if the services and products are handled ethically and professionally, and clients' emotional needs are met.

Combined human and pet burial grounds

Some pet owners would like to be buried with their pets. In England, a small number of cemeteries are providing sections where people and pets can be buried together. It is just beginning in the U.S. but this type of burial arrangement is prohibited in many states. Policies are changing in response to the demand and some new laws facilitate placing humans and pet remains together. Florida residents who want to be buried with their dog, cat, parrot or other pet, for example, may do so under a law created in 2007 informally called "the Felix and Fido Amendment" that allows people to be buried with the ashes of their pet as long as the animal's cremains are in a separate container.

According to Elderlaw (2016):

> Most states either have laws specifically prohibiting pets and humans to be buried together or are silent on the issue. At least four states have laws allowing some form of combined burial, and the list will undoubtedly grow as demand increases. New York and New Jersey allow cremated human remains to be buried with a pet, but only in a pet cemetery. New York's pet cemeteries cannot charge a fee for the service and are barred from advertising that they offer it. Since about 2006, Pennsylvania allows cemeteries to have three sections, one for humans, one for pets, and an area for

both. While no zoning ordinances specifically restricted this, it was necessary to get an ordinance to formally set out each area, noting a line of demarcation among the three separate areas. Virginia passed a law in 2014 permitting cemeteries to have clearly marked sections where pets and humans may be buried alongside one another. However, the pet must have been a companion animal under Virginia law and must have its own casket.

Funeral directors may exercise discretion when they have a request to place personal objects, such as the cremated remains of a pet in the owner's coffin. "Not a day goes by when I do [not] put an urn of an animal into the casket of a human being secretly for a family," Coleen Ellis, co-chair of the Pet Loss Professionals Alliance (PLPA). "So, while it's been going on for a very long time, the trend is becoming more recognized where people are getting permission to do it (Elderlaw, 2016)."

Death notices for pets

Websites and publications such as newspapers or newsletters provide another opportunity to formally post or list a death notice to commemorate a pet or let people know when a memorial service will be held. More newspapers are including a pet obituary section near the pet section of the paper. Some publication and online sites allow individuals to post photos or articles about a beloved pet.

The demand for pet obituaries, like that for funeral or memorial ceremonies, is growing. Newspapers in Philadelphia, Pennsylvania, Tucson, Arizona, and Youngstown, Ohio, all have pet obituary sections. Many pet loss centers and pet tribute sites make it easy to post information. There are also websites associated with memorializing pets. Many have no association with other death industry or funeral services, but provide a location where pet owners can express grief openly for their pet. Web support groups also are associated with pet loss sites. Sites like http://www.critters.com is a place where pet owners and professionals can post a memorial, including text, photos, a slide show and music, kept forever on the archive. Custom memorials include layout and design services as well as scanning and placement of photos, with increasing fees for more services.

Trusts for long-term pet care

The Uniform Probate Code (UPC) adopted by the 1990 National Conference of Commissioners on Uniform State Laws changed probate law to include a provision allowing for the care of a pet after the owners' death. Section 2-907(b) allowed enforceable trusts for the care of a designated domestic animal and the animal's offspring. In 2000, the provision was updated and Section 408 of the Uniform Trust Code (UTC) addressed a trust for any animal. Authorizing persons with an interest in the welfare of the animal to petition for appointment or removal of an enforcer of the trust (AVMA, 2014).

Currently, 47 states have included UPC legal provisions or have adopted their own version of legislation for animal welfare trusts. A pet trust allows a person to set aside a sum of money to care for the pet and specifies the manner of distribution. Owners often include specific instructions regarding feeding, housing, and veterinary care. Mississippi adopted such a law in 2014, based on Section 408 of the UPC. Highlights of the law are included below (Trust for Care of Animal AMVA, 2014):

- A trust may be created to provide for the care of an animal that outlives the owner. The person who creates a trust designates a trustee to manage and administer all profits that would go to a beneficiary, in this case, the animal. The term settlors refers to the owner of the pet who set up the trust for the welfare of the pet. The trust normally ends upon the death of the animal or the trust may be written to provide for the care of more than one animal alive during the settlor's lifetime, upon the death of the last surviving animal.
- A trust may be enforced by a person appointed in the trust. If no one is named in the trust, a person may be appointed by the court. A person interested in the welfare of the animal may petition the court to appoint a person to enforce the trust or to remove the appointed person to protect the welfare of the animal.
- Property of a trust authorized by this section may be applied only to its intended use, except to the extent the court determines that the value of the trust property exceeds the amount required for the intended use. Unless otherwise provided in the trust, property not required for the intended use must be distributed to the settlor, if living, otherwise to the settlor's successors in interest.
- Some individuals donate any remaining property to a nonprofit animal welfare organization upon the pet's death.

Kentucky, Louisiana and Minnesota are the only states that do not have laws authorizing pet trusts. As this is a complex area of the law, pet owners considering a trust for their animal should consult an attorney familiar with a given state's pet trust law.

Conclusion

From home funerals, pet memorials, and resomation to apps, and poses on motorcycles, the funeral industry is changing. Industry professionals must adapt to the keep pace with demands of the public. Innovation and creativity are required to find a niche in this industry depending on the customs and mores of the community served.

To stay viable, the industry must remain on the cutting edge of technology to evaluate analyze emerging trends that will drive the products and services that must be offered to sustain business.

The funeral industry must be ready to change course and be prepared to meet the diverse needs of clients without judgment while maintaining community standards and ethical practices.

Since no single business can accommodate all of the trends covered in this course, it might be productive to build a network of businesses that can specialize in certain areas and collaborate to provide complimentary services. In this way, business can build on their expertise and work together to provide a variety of services in a geographic area, while meeting diverse needs and keeping business in the local community.

References

1. AARP (2015) Preneed Funeral and Burial Agreements. Retrieved from: http://www.aarp.org/money/estate-planning/info-1999/aresearch-import-195-FS76.html.
2. American Broadcasting Company (2014). Lifelike Embalming Positions: a New Funeral Trend. Retrieved March 24, 2016 from http://www.abc15.com/news/local-news/water-cooler/lifelike-e.
3. American Pet Products Association (2011). "New Survey Reveals Pet Ownership at its Highest Level in Two Decades and Pet Owners Are Willing to Pay When It Comes to Pet's Health". Retrieved from: http://media.americanpetproducts.org/press.php?include=142818.
4. ASPCA (2016). Pet Statistics. Retrieved from: http://www.aspca.org/animal-homelessness/shelter-intake-and.../pet-statistics.
5. American Veterinary Medicine Association (2014). Pet trusts: Caring for a Pet That Outlives its Owner. Retrieved from: https://www.avma.org/Advocacy/StateAndLocal/Pages/sr-pet-trusts.aspx.
6. Brooke, Z. (2016). Marketers Report Big Increases in Social Media. Retrieved from: https://www.ama.org/publications/eNewsletters/Marketing-News-Weekly/Pages/Social-Media-Spending-Worth-It.aspx.

7. Center for Medicare and Medicaid Services (CMS) United States Government (2015). Fact Sheet 2015. Retrieved from: https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets.html.
8. Cremation Association of North America (2005). Final 2005 Statistics and Projections to the Year 2025. Retrieved from: http://www.cremationassociation.org/Media/CremationStatistics/tabid/95/Default.aspx.
9. Cremation Association of North America (2016). Mercury and Cremation Issues Revisited. Retrieved from: http://www.cremationassociation.org/?MercuryAndCremation.
10. Elderlaw Answers (2016). Can You Be Buried with Your Pet. Retrieved from: http://www.elderlawanswers.com/can-you-be-buried-with-your-pet-14941?
11. Environmental Protection Agency (2009). Info sheet -Mercury. Retrieved from: http://www.epa.gov/mercury/about.htm.
12. Environmental Protection Agency (2016). How Mercury Enters the Environment. Retrieved from: http://www.finalpassages.org/html/infopacket.html.
13. Environmental Protections Agency (EPA) (2016). Burial at Sea. Retrieved from: https://www.epa.gov/ocean-dumping/burial-sea.
14. Eskin, S.B. (2015). Preneed Funeral and Burial Agreements: A Summary of States Statutes 2015. Retrieved from: http://assets.aarp.org/rgcenter/consume/d17093_preneed.pdf
15. Federal Trade Commission (2015). Funeral Rule: Undercover Inspections of Funeral Homes in Six States Prompt Compliance with Funeral Rule Disclosure Requirements. Retrieved from: https://www.ftc.gov/.../media-resources/truth-advertising/funeral-rule.
16. Florist Review. Going Green. (2014). Retrieved from: https://www.floristsreview.com/main/june/featurestory.html.
17. Funeral Site (2016). Disposition Options Promession. Retrieved from: http://www.thefuneralsite.com/ResourceCenters/Disposition/Promession.html.
18. Green Burial Council (2007). The Final Stop for Land. Retrieved from: http://www.greenburialcouncil.org/assets/News/ExchangeArticle.pdf.
19. Green Burial Council. (2013). FAQs and Fictions. Retrieved from: http://www.greenburialcouncil.org/faqs-fiction/.
20. Green Burial Council (2013). Plan for Your Green Burial. Retrieved from: http://greenburialcouncil.org/home/plan-for-your-green-burial/certified-products/.
21. Green Springs Natural Cemetery Preserve (2015). Why Choose Green Burial? Retrieved from: http://www.naturalburial.org/why-choose-green-burial/.
22. International Agency for Research on Cancer (2009). IARC Monographs. Retrieved from: http://www.iarc.fr/en/publications/pdfs-online/breport/breport0809/breport0809_IMO.pdf\.
23. Irving, S. (2016) Home Funeral Laws: An Overview. Retrieved from http://www.nolo.com/legal-encyclopedia/home-funeral-laws.html.
24. Lawyers.com (2013). Are "Green Burials" Legal? Retrieved from: http://blogs.lawyers.com/2013/09/are-green-burials-legal/.
25. Lynch, L. (2016). Desirability, Challenges, and Methods of Protecting Farmland. Retrieved from: http://www.choicesmagazine.org/magazine/article.php?article=51.
26. Mapes, D. (2008). Final Touch: A Cosmetic Lift for Your Funeral? Retrieved from: http://www.nbcnews.com/id/.../final-touch-cosmetic-lift-your-funeral/.
27. Marsden, S.J. (2015). Green Burial Sites in the United States. Retrieved from: http://www.us-funerals.com/funeral-articles/directory-of-green-burial.
28. MSDS (2015). Hyper Glossary: Carbon Dioxide. Retrieved from: www.ilpi.com/msds/ref/carbondioxide.html.
29. National Cancer Institute (2009). Formaldehyde and Cancer Risk. Retrieved from: http://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet.
30. National Funeral Directors Association (2010). Formaldehyde Vapor Reduction in the Funeral Home Preparation Room: Recommendations for Effective Preparation Room Ventilation. Retrieved from: http://nfda.org/additional-tools-embalming/2187-guide-to-the-2010-nfda-prep-room-ventilation-report.html3.
31. National Funeral Directors Association (2012a). Formaldehyde Best Management Practices. Retrieved from: http://nfda.org/additional-tools-embalming/1749-formaldehyde-best-management-practices.html.
32. National Funeral Directors Association (2012b). Sample Legal Forms. Retrieved from: http://nfda.org/tools-for-your-business/nfda-faxback-documents.html.
33. National Funeral Directors Association (2015). NFDA 2015 Cremation and Burial Report. Retrieved from http://nfda.org/about-funeral-service-/trends-and-statistics.html.
34. National Funeral Directors Association. (2016a). Green Funerals. Retrieved from http://nfda.org/green-funerals.html.
35. National Funeral Directors Association. (2016b). Trends in Funeral Service. Retrieved from: http://nfda.org/media-center/trends-in-funeral-service.html.
36. National Home Funeral Alliance (2015). Considering a Home Funeral? Retrieved from: http://www.homefuneralalliance.org.
37. Nolo (2016). Alkaline Hydrolysis Laws in Your State. Retrieved from http://www.nolo.com/legal-encyclopedia/alkaline-hydrolysis-laws-your-state.
38. Occupational Safety and Health Administration (2012). Local Emphasis Program for Reducing Formaldehyde-Funeral Service. Retrieved from http://nfda.org/additional-tools-embalming/1749-formaldehyde-best-management-practices.html.
39. Occupational Safety and Health Administration (2015). OSHA Update on the Formaldehyde and Haz Com Standards. Retrieved from: http://nashville2014.nfda.org/.../163-13-osha-update-on-the-formaldehyde-and-haz-com-standards-edward-ranier.html.
40. Pew Research Center (2015). Social Media Usage: 2005-2015. Retrieved from: http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/.
41. Resomation (2016). An Alternative to Cremation with Environmental Benefits. Retrieved from: http://www.resomation.com/index_files/Page1485.htm.
42. Slocam, J. (2014). FAQs, Funeral Consumer Alliance. Retrieved from: https://www.funerals.org/contact-us/12-contacts/1-joshua-slocum.
43. Water Utility Authority (2011) What is Xeriscape? Retrieved from: http://www.abcwua.org/Xeriscaping.aspx.
44. Webster, L. (2015) Should You Prepay for Your Funeral? Funeral Consumers Alliance. Retrieved from https://www.funerals.org/frequently-asked-questions/198-preneedpitfalls.
45. Webster, L. (2016). NHFA helps teach families to care for their own after death. Retrieved from: http://homefuneralalliance.org/.

CURRENT TRENDS IN THE FUNERAL INDUSTRY

Final Examination Questions

Select the best answer for each question and mark your answers on the Final Examination Answer Sheet found on page 65, or for faster service complete your test online at **Funeral.EliteCME.com.**

16. Preplanning and prepaying are not the same, and AARP and the FCA do not recommend prepayment, in general.

○ True ○ False

17. When dry ice evaporates, it releases carbon dioxide.

○ True ○ False

18. The mission of ecobalming is to develop environmentally safe embalming practices that preserve the body, as part of a "green" burial process.

○ True ○ False

19. The number of backyard burials has decreased dramatically in the past decade.

○ True ○ False

20. Because flowers must enter the U.S. pest-free, farmers often saturate the flowers with pesticides and other chemicals, many of which are banned or restricted in the U.S.

○ True ○ False

21. Natural grounds do not allow embalming chemicals, metal caskets, or reinforced cement with the body.

○ True ○ False

22. Employers should label all mixtures or solutions composed of greater than 0.1 percent formaldehyde, and materials capable of releasing formaldehyde into the air at concentrations reaching or exceeding 0.1 ppm.

○ True ○ False

23. As a general proposition, the minimum air change rate for the preparation room should be no less than 50 air changes per hour.

○ True ○ False

24. While no law requires that the body be cremated in a casket, some states do require an "alternative container," typically a cardboard box.

○ True ○ False

25. A Florida law created in 2007 informally called "the Felix and Fido Amendment" allows people to be buried with the ashes of their pet.

○ True ○ False

Chapter 4: Infectious Disease Control for Funeral Directors and Embalmers

4 CE Hours

By: Staff Writer

Learning objectives

- Describe five CDC universal precautions for infection prevention and control for airborne, droplet, and contact transmission of pathogens.
- List five steps for personal protective equipment (PPE) compliance from the CDC guidelines for infection prevention and control procedures in the funeral home setting.
- Explain how pathogenic organisms may be spread in funeral home settingsand identify factors that influence exposure and transmission.
- Identify five types of infectious disease that require the use of barriers, personal protective equipment, and control strategies to protect personnel from pathogens according to CDC and WHO guidelines.
- Define epidemiologically important organisms and discuss four types, including modes of transmission.
- List and discuss OSHA guidelines and strategies, including cleaning, sterilization, chemical disinfection, and barriers to protect personnel and the public from infectious disease.
- Describe CDC guidelines for barriers, protective equipment, and control procedures for personnel to prevent exposure to infectious material during the embalming process.
- Define CDC and OSHA guidelines for handling, cleaning, disinfection, sterilization and waste disposal procedures to during post mortem procedures to prevent disease transmission.
- Discuss the professional funeral director and embalmer's responsibility for maintaining a safe environment for personnel, the public, and the environment.
- Identify strategies and procedures for preventing transmission and controlling Ebola and HIV/AIDS virus during all post-mortem procedures.
- Select five myths concerning infectious disease contamination from embalming and burial and discuss facts from PAHO and WHO research studies that dispel them.

Introduction

Funeral directors in the 1980s faced new concerns related to containment of infectious disease pathogens due to the number of casualties from the HIV/AIDs virus.

Funeral directors and staff were asked to deliver post-mortem services for premature deaths of HIV/AIDS victims of all ages. In addition to assisting grieving families, funeral service professionals had to address serious health risks and fears surrounding embalming, funeral services, and burial of victims with the contagious disease. The demand for infection control for postmortem care of HIV/AIDS victims resulted in a detailed review and modernization of procedures for the first time in over a century. Misinformation, fear, and hysteria led to myths of environmental contamination, which spread throughout the funeral industry. Many directors and embalmers refused to offer services to HIV/AIDS victims during this time.

To address these concerns the Centers for Disease Control (CDC), the World Health Organization (WHO), and the Occupational Health and Safety Administration (OSHA) developed detailed, extensive, uniform procedures to contain infectious pathogens in the healthcare field. These precautions were extended and refined for the practice of mortuary science and all areas of funeral services. Guidelines created by the CDC, and adopted by OSHA in 1991, were called "universal precautions" which provided standardized procedures for postmortem services. Robert Mayer, author of embalming textbooks, explained that using universal precaution means an embalmer will ''treat all human remains as if they were infected with HIV, hepatitis B (HBV) or other pathogens. In other words, the embalmers should treat all bodies with the same caution that would be applied for extremely hazardous, potentially fatal infections (Mayer, 2012)."

Changes in handling the body were implemented and different postmortem technologies in all levels of thought and practices were developed and deployed by the American funeral industry (Kennedy and Nisbett, 2015). New procedures for health, safety, and training for funeral personnel helped ease fears and build confidence surrounding postmortem care of victims of infectious disease.

In 2014 mortuary science encountered the Ebola epidemic, leading to a complete transformation in postmortem care to protect personnel and the public from exposure to deadly pathogens. The CDC, OSHA, and the WHO revolutionized infection control and prevention procedures from transport to and from the hospital, to burial or cremation. Some myths have persisted concerning the potential environmental contamination related to the burial of victims of infectious, communicable diseases. Misinformation and anxiety grew due to public fear over media reports of the spread of other diseases such as bovine spongiform encephalopathy (BSE), more commonly known as mad cow disease; the human variant Creutzfeldt-Jakob Disease (CJD); and transmissible spongiform encephalopathy (TSE), also known as prion diseases. This course will address the facts and detail the CDC, WHO, and OSHA standards and guidelines to address procedures to contain these diseases during all phases of mortuary practice.

The National Funeral Directors Association (NFDA) is the guiding funeral service association, with 19,700 individual members and serving over 10,000 funeral homes in the United States and forty-three countries around the world. The NFDA provides information, education, and advocates for members to enhance quality funeral services, including high ethical standards and meaningful service to families (NFDA, 2015). The NFDA offers resources and materials to assist members to comply with federal, state, and county laws along with conducting and funding research on topics of health, safety, environmental, and consumer concerns.

John Erik Troyer is a leading author and researcher addressing the social and technological control of the dead body, including legal, scientific, and medical protocols and aesthetics. Troyer cautions

that people addressing the issues of infectious disease in mortuary services funeral directors, "Need a dose of humility and effective approaches at household, community, societal and global levels. At the household level, we need to promote family-centered interactions and interventions. Cultural practices such as embalming, burial, and caregiving are family-based as well as community-based activities."

Professionals in the funeral industry must have knowledge concerning different types of infectious disease, modes of transmission, and virulence that make them dangerous and difficult to contain. The global nature of travel today leads to the rapid spread of contagious disease throughout the world. Certain diseases are not endemic to the United States; however, they can easily cross borders before they are observed or diagnosed. Individuals can carry colonies of disease and be non-symptomatic for weeks or even months as they spread disease to those they contact at home, work, or throughout their community.

This course includes information on infectious diseases that rise to the level of serious public health concern. Major health organizations of the federal, state, and county epidemiology departments would be aware of the presence of individuals with serious infectious disease from the moment they were identified at the point of entry to the U.S. These agencies have jurisdiction in these cases, though in many states, if the person dies, the body would be released to the local funeral home. At this point, the director could refuse the case or the local health agency would assist them if they chose to proceed. As of 2015, fifty-five hospitals across the U.S. were equipped to handle these cases. Funeral home directors can visit the CDC website to determine the locations near them.

This course provides specific references for downloading guidelines and training resources from the CDC, OSHA, and the WHO for further information. Individual states may have additional regulations and guidelines that must be reviewed on the state government website. Information is included for the control of infectious disease encountered during mortuary services to ensure the safety of personnel, funeral attendees, the general public, and the environment.

Transmission of infectious agents in healthcare settings

The CDC, WHO, and OSHA organizations include mortuary, funeral homes, cemetery, and crematory settings under the classification of healthcare when issuing regulations and guidelines for universal precautions. Some documents contain specific information for practitioners dealing with postmortem procedures for preparation at the hospital, cleaning, sterilization, transport, embalming, waste disposal, viewing, burial, or cremation. Some highly contagious, drug-resistant diseases require specific regulations for postmortem care, and current regulations are included in this course.

Definitions

- **Alkaline hydrolysis** – an alternative to flame cremation that uses water and alkaline under high temperatures and pressure.
- **Colonization** – development of a bacterial infection, though the infected person may or may not have signs or symptoms of infection.
- **Diathesis** – predisposition or susceptibility to suffer from disease.
- **Enveloped virus** – the outermost shells made of proteins and surrounded by lipids and are less virulent.
- **Non-enveloped virus** – contain a capsid coat made of protein, are more virulent and can retain infectivity even after drying.
- **Fomites** – objects or materials, such as dishes, utensils, or clothing, that may carry infection and lead to transmission of disease.
- **Flora** – microorganisms such bacteria or fungi that live in or on the body.
- **Immunity** – the host's ability to resist the pathogens that cause disease.
  Factors related to immunity include the following:
  - The immune state at the time of exposure to an infectious agent.
  - Interaction between pathogens.
  - Virulence factors of the pathogen.
  - Host factors, such as age, and underlying disease, such as diabetes, HIV/AIDS, malignancy, transplants, or other chronic illness.
  - Medications that alter normal flora such as antimicrobial agents, gastric acid suppressors, corticosteroids, anti-rejection drugs, antineoplastic agents, and immunosuppressive drugs.
- **Infection** – invasion and multiplication of pathogenic microorganisms in the body. Pathogens invade the body and may lead to infection or disease that disrupts the functioning of the body. Pathogenic microorganisms are found, particularly in the respiratory and gastrointestinal tracts, but may live anywhere in or on the body.
- **Infectious agents** – four main classes including bacteria, viruses, fungi, and parasites transmitted primarily from human sources but also inanimate environmental sources as well.
- **Lumina** – the inner open space or cavity of a tubular organ or cell, such as in a blood vessel or an intestine.
- **Pathogens** – agents that cause infection or disease including microorganisms such as a bacterium, protozoan, prions, or virus. These agents cause communicable diseases that spread easily through contact with others.
- **Percutaneous exposure** – caused by an injury, such as a needle stick or cut with a sharp object that allows contact of mucous membrane or nonintact skin with blood, saliva, tissue, or other body fluids that are potentially infectious. Injury can also occur through exposed skin that is chapped, abraded, or broken due to dermatitis or other skin conditions.
- **Prions** – small infectious disease agents carrying protein that are the smallest infectious particles. They are not bacterial, fungal, or viral and have no genetic material. Prions cause degenerative brain diseases, including mad cow disease, Creutzfeldt-Jakob disease (CJD), and inherited forms of dementia such as Gertsmann-Straeussler-Scheinker (GSS) disease.
- **Susceptible host** – an individual without adequate immunity to withstand exposure or contact with a particular infectious agent.
- **Virulence** – the ability of an agent of infection to produce disease. The virulence of a microorganism is a measure of the severity of the disease it causes.

CDC guidelines: Types of infectious disease and transmission

Infection transmitted between an infectious agent and a host may cause disease to develop and progress causing illness or death. In some cases, the host may be temporarily or permanently colonized but show no symptoms of the infection or disease. It is possible for infection to develop from colonization and rapidly progress to disease after exposure or after an extended period of colonization.

Exposure to a variety of infectious disease agents may occur when handling any deceased body. The body may remain infectious, and

microbes may continue to colonize after death and be dispersed through contact. If infectious disease was present at the time of death, mortuary personnel, family, and the public may be at risk for infection, and burial practices involving touching and washing the body should be avoided, depending upon the type of infection present.

Sources of infection after death

The four main sources of infection that may be present in human remains include the following:

- Blood and body fluids, including saliva, lung, and gastrointestinal fluids.
- Waste products, such as feces and urine.
- Aerosols of infectious material might be released when moving or opening the body.
- Microbes may be present on the skin and spread through direct contact.

Transmission

Transmission of infectious agents within a healthcare setting requires three elements:

- A source or reservoir of infectious agents.
- A susceptible host with a portal of entry to receive the infectious agent.
- A mode of transmission for the infectious agent.

Individual microorganisms normally have a specific mode of transmission and route to enter the body, but some types of infection can spread in multiple ways, such as:

- Contaminated hands, fingers, or objects placed into the mouth, nose, or eyes.
- Instruments or equipment that are inadequately cleaned between patients before disinfection or sterilization or that have manufacturing defects that interfere with the effectiveness of reprocessing may transmit bacterial and viral pathogens.
- Clothing, uniforms, laboratory coats, or personal protective equipment (PPE), may become contaminated with potential pathogens after contact with colonized or infectious agents, including Methicillin-resistant Staphylococcus aureus (MRSA), Vancomycin-resistant enterococcus (VRE), and C. difficile. Soiled garments have the potential to transmit infectious agents.
- Inhalation of small droplets of microorganisms can occur without PPE.
- Blood and body fluids may splash into the eye, nose, or mouth for contact with other mucous membranes.
- Breaks in the skin may lead to direct contact with microorganism or contaminated objects.
- Pathogens may enter through any puncture or injury to the skin such as a contaminated needles or sharp objects.

According to OSHA guidelines in 2015, the routes of infectious disease transmission in mortuary settings include contact, droplet, and airborne.

- **Contact transmission** can be classified as direct or indirect contact. Direct contact transmission involves transfer of infectious agents to a susceptible individual through physical contact with an infected individual such as direct skin-to-skin contact. Indirect contact transmission occurs when infectious agents transfer to a susceptible individual when the individual makes physical contact with contaminated items and surfaces, such as doorknobs, instruments, equipment, or examination tables. Two examples of contact transmissible infectious agents include MRSA and VRE.
- **Droplets** containing infectious agents can spread during certain postmortem preparation, including transport and embalming procedures. Transmission occurs when droplets come into direct contact with the mucosal surfaces of the eyes, nose, or mouth of a susceptible individual. The distance droplets travel depends on the velocity and means by which respiratory droplets are propelled from the source, the density of respiratory secretions, environmental factors such as temperature and humidity, and the ability of the pathogen to remain infectious over that distance. A distance of three feet around the patient is an example of "a short distance from a patient" but should not be used as the sole criterion for deciding when a mask should be donned to protect from droplet exposure. Due to the variables that affect droplet transmission, staff should wear a mask when they are within six to ten feet of the body upon entry into the room, especially when exposure to emerging or highly virulent pathogens is possible. Observations of particle dynamics have shown that a range of droplet sizes, including those with diameters of thirty μm, micrometer or one millionth of a meter, or greater can remain suspended in the air.
- **Airborne transmission** occurs through very small particles or droplet nuclei that contain infectious agents and remain suspended in the air for extended periods of time. When the susceptible individual inhales the pathogen, it enters the respiratory tract and can cause infection. Airborne transmission only occurs with infectious agents that are capable of surviving and remaining infectious for relatively long periods of time in airborne particles or droplet nuclei. Airborne microorganisms may be dispersed over long distances by air currents and may be inhaled by susceptible individuals who have not had face-to-face contact with or been in the same room as the infectious individual. Preventing the spread of pathogens by airborne routes requires the use of special air handling and ventilation systems, such as an Airborne Infection Isolation Room (AIIR, to contain and safely remove the infectious agent.

OSHA standards and directives for protection against transmission of infectious agents must be included in training for all personnel. These include OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) which provides protection of workers from exposures to blood and body fluids that may contain bloodborne infectious agents. OSHA's Personal Protective Equipment standard (29 CFR 1910.132) and Respiratory Protection standard (29 CFR 1910.134) which provide protection for workers when exposed to contact, droplet, and airborne transmissible infectious agents; and OSHA's TB compliance directive, which protects workers against exposure to tuberculosis (TB)through enforcement of existing applicable OSHA standards and the General Duty Clause of the OSH Act. In some cases where a specific OSHA standard doesn't apply, the General Duty Clause (Sec. 5(a)(1) of the Occupational Safety and Health Act requires employers to furnish to each employee a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; each employer shall comply with occupational safety and health standards under this Act. In addition, each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act, which are applicable to his own actions and conduct.

Epidemiologically important organisms

Infectious agents of particular interest for healthcare settings are called epidemiologically important organisms and are targeted for advanced methods of infection control. An "epidemiologically important organism" is identified by the following characteristics:

- Increased potential for transmission within healthcare facilities based on published reports and the occurrence of temporal or geographic clusters of > two patients. A single case of healthcare-associated invasive disease caused by certain pathogens is generally considered a trigger for investigation and enhanced control measures because of the risk of additional cases and severity of illness associated with these infections.
- Antimicrobial resistance to first-line therapies.
- Common and uncommon microorganisms with unusual patterns of resistance.
- Difficulty to treat because of resistance to multiple classes of antimicrobial agents.
- Association with serious clinical disease, increased morbidity, and mortality.
- A newly discovered or reemerging pathogen.

These epidemiologically important organisms include C. difficile; bioterrorism agents like anthrax, prions, SARS-CoV, monkey pox, noroviruses; and hemorrhagic fever viruses which include Ebola, Marburg, Lassa, Crimean-Congo hemorrhagic fever viruses and other multi-drug resistant organisms. The CDC updated its research on modes of transmission and effective preventive measures in 2015, and these are included in this course.

Multidrug-resistant organisms (MDROs)

MDROs are microorganisms, mainly bacteria, that are resistant to one or more classes of antimicrobial agents. These pathogens are usually resistant to all but a few commercially available antimicrobial agents, so MDROs are considered to be epidemiologically important and deserve special attention in mortuary facilities. MDROs are transmitted by the same routes as other infectious agents. Preventing the emergence and transmission of these pathogens requires a comprehensive approach that includes administrative involvement, education and training of personnel, comprehensive surveillance for targeted MDROs, application of infection control precautions, and environmental measures such as cleaning and disinfection of the environment and equipment.

MDROs include:

- Clostridium Difficile (C. diff).
- Carbapenem-resistant Enterobacteriaceae (CRE).
- Neisseria gonorrhoeae.
- Multidrug-resistant Acinetobacter.
- Drug-resistant Campylobacter.
- Fluconazole-resistant Candida.
- Extended Spectrum beta-lactamases (ESBL).
- Vancomycin-resistant enterococci (VRE).
- Multidrug-resistant Pseudomonas aeruginosa.
- Drug-resistant non-typhoidal Salmonella.
- Drug-resistant Salmonella Serotype Typhi.
- Drug-resistant Shigella.
- Methicillin-resistant Staphylococcus aureus (MRSA).
- Drug-resistant Streptococcus pneumoniae.
- Drug-resistant Tuberculosis.
- Vancomycin-resistant Staphylococcus aureus.
- Erythromycin-resistant Group A Streptococcus.
- Clindamycin-resistant Group B Streptococcus.

Agents of bioterrorism

The CDC has designated agents that cause anthrax, smallpox, plague, tularemia, viral hemorrhagic fevers, and botulism as Category A, high priority, because these agents can be easily dispersed environmentally, through food, water, air, and/or transmitted from person to person; can cause high mortality and have the potential for major public health impact; might cause public panic and social disruption. These agents identified by the CDC include the following:

- Arenaviruses.
- Botulism (Clostridium botulinum toxin).
- Brucella species (brucellosis).
- Brucellosis (Brucella species).
- Burkholderia mallei (glanders).
- Burkholderia pseudomallei (melioidosis).
- Chlamydia psittaci (psittacosis).
- Cholera (Vibrio cholerae).
- Clostridium botulinum toxin (botulism).
- Clostridium perfringens (Epsilon toxin).
- Coxiella burnetii (Q fever).
- Ebola virus hemorrhagic fever.
- E. coli O157:H7 (Escherichia coli).
- Emerging infectious diseases such as Nipah virus and hantavirus.
- Epsilon toxin of Clostridium perfringens.
- Escherichia coli O157:H7 (E. coli).
- Food safety threats (e.g., Salmonella species, Escherichia coli O157:H7, Shigella).
- Francisella tularensis (tularemia).
- Glanders (Burkholderia mallei).
- Lassa fever.
- Marburg virus hemorrhagic fever.
- Melioidosis (Burkholderia pseudomallei).
- Psittacosis (Chlamydia psittaci).
- Q fever (Coxiella burnetii).
- Ricin toxin from Ricinus communis (castor beans).
- Rickettsia prowazekii (typhus fever).
- Salmonella species (salmonellosis).
- Salmonella Typhi (typhoid fever).
- Salmonellosis (Salmonella species).
- Shigella (shigellosis).
- Staphylococcal enterotoxin B.
- Typhoid fever (Salmonella Typhi).
- Typhus fever (Rickettsia prowazekii).
- Vibrio cholerae (cholera).
- Viral encephalitis (alphaviruses such as Venezuelan equine encephalitis, eastern equine encephalitis, western equine encephalitis).
- Viral hemorrhagic fevers (filoviruses including Ebola, Marburg, and arenaviruses such as Lassa, Machupo).
- Water safety threats including Vibrio cholerae, Cryptosporidium parvum.

Prions

The CDC defines transmissible spongiform encephalopathies (TSEs) as a family of rare, progressive neurodegenerative disorders that affect both humans and animals. They are distinguished by long incubation periods, characteristic spongiform changes associated with neuronal loss, and a failure to induce inflammatory response.

The causative agents of TSEs are believed to be prions. The term "prions" refers to abnormal pathogenic agents that are transmissible and are able to induce abnormal folding of specific normal cellular proteins called prion proteins that are found most abundantly in the brain. The functions of these normal prion proteins are still not completely understood, but the abnormal folding of the prion proteins leads to brain damage and the characteristic signs and symptoms of the disease. Prion diseases are usually rapidly progressive and always fatal.

Prion diseases in animals include scrapie in sheep and goats; bovine spongiform encephalopathy (BSE), or "mad cow disease" in cattle; and chronic wasting disease in deer and elk. BSE, first recognized in the United Kingdom (UK) in 1986, was associated with a major epidemic among cattle that had consumed contaminated meat and bone meal.

Identified prion diseases in humans

Creutzfeldt-Jakob disease (CJD) is a rapidly progressive, degenerative, neurologic disorder of humans caused by an infectious, highly transmittable prion. The incubation period between exposure and onset of symptoms varies from two years to many decades, though death occurs within one year of the onset of symptoms. CJD is not related to BSE, or mad cow disease.

Variant CJD (vCJD) is not the same disease as classic CJD. It has different clinical and pathologic characteristics from classic CJD. Each disease also has a particular genetic profile of the prion protein gene. Variant Creutzfeldt-Jakob disease (vCJD) is a prion disease that was first described in 1996 in the United Kingdom. There is now strong scientific evidence that the agent responsible for the outbreak of prion disease in cows, BSE, is the same agent responsible for the outbreak of vCJD in humans. Both CJD and vCJD disorders are fatal brain diseases with unusually long incubation periods measured in years, and are caused by a prion.

Although most cases of CJD have been reported from the UK, cases also have been reported from other parts of Europe, Japan, Canada, and the United States. Standard Precautions are used when caring for clients with suspected or confirmed CJD. This course includes special precautions from the CDC and WHO for tissue handling, contact with a body after autopsy, embalming, and reprocessing surgical instruments to prevent transmission of CJD.

Severe acute respiratory syndrome (SARS)
SARS is a respiratory disease that emerged in China late in 2002 and spread to several countries including Mainland China, Hong Kong, Hanoi, Singapore, and Toronto. There have been cases of laboratory evidence of SARS in the U.S. but no deaths have occurred. SARS outbreaks have occurred in healthcare settings and transmitted to large numbers of healthcare personnel and patients with evidence of droplet, contact transmission, and airborne transmission. The CDC recommends universal precautions, with emphasis on hand hygiene, and contact precautions with emphasis on environmental cleaning, because SARS CoV RNA has been identified on surfaces in the rooms of SARS patients. Airborne precautions, including use of fit-tested NIOSH-approved N95 or higher level respirators, and eye protection are also indicated.

Monkey pox
Monkey pox is a rare viral disease found mostly in rain forest countries of Central and West Africa. The disease is caused by an orthopoxvirus that is similar in appearance to smallpox but causes a milder disease. Transmission from infected animals and humans occurs primarily through direct contact with lesions and respiratory secretions, but airborne transmission from animals to humans cannot be excluded.

Norovirus
Norovirus, formerly referred to as Norwalk-like viruses, are members of the Caliciviridae family. Environmental contamination has been documented as a factor in transmission during outbreaks and of this highly contagious disease. Widespread, persistent, and undetected contamination of the environment and fomites can make outbreaks extremely difficult to control. Clinical observations and detection of norovirus DNA on surfaces five feet above levels normally touched suggest that aerosolized particles may travel distances beyond three feet. Individuals who are responsible for cleaning the environment may be at increased risk of infection. The virus is resistant to many cleaning and disinfection agents and may survive < ten parts per million (ppm or one milligram per liter) chlorine.

Hemorrhagic fever viruses (HFV)
The hemorrhagic fever viruses are a mixed group of viruses that cause serious disease with high fever, skin rash, bleeding diathesis, and high mortality; the disease caused by the virus is referred to as viral hemorrhagic fever (VHF). Commonly known HFVs are Ebola and Marburg viruses (Filoviridae), Lassa virus (Arenaviridae), Crimean-Congo hemorrhagic fever and Rift Valley Fever virus, or Bunyaviridae, and Dengue and Yellow fever viruses, or Flaviviridae.

Person-to-person transmission is mainly due to direct blood and body fluid contact. Percutaneous exposure to contaminated blood carries a high risk for transmission and increased mortality during the embalming process. Large numbers of Ebola viral particles can be found in the skin and the lumina of sweat glands, which indicates transmission could occur from direct contact with intact skin. Evidence to support direct transmission from intact skin is limited, but postmortem handling of infected bodies is an important risk for transmission. There have been situations where transmission occurred among individuals with no direct contact. In these rare cases, there is speculation that airborne transmission could have occurred. Airborne transmission of HFVs in humans has not been scientifically observed, though the possibility of airborne transmission exists and the CDC was not able to completely exclude droplet or indirect contact transmission. In 2015, the CDC updated infection control precautions for HVFs that are transmitted person to person, which are included in this course.

CONTAINING THE EBOLA AND HIV/AIDS VIRUS

World Health Organization 2015 Ebola precautions for funeral directors

The Ebola epidemic spread to American health workers overseas and prompted the CDC and the WHO to develop standards, preparedness regulations, and guidelines to address treatment and prevention in the U.S.

Cleaning should precede application of disinfectants. WHO recommends:

- Do not spray (i.e., fog) occupied or unoccupied clinical areas with disinfectant. This is a potentially dangerous practice that has no proven disease control benefit.

- Wear gloves, gown, and closed shoes when cleaning the environment and handling infectious waste. Cleaning heavily soiled surfaces increases the risk of splashes. On these occasions, staff should wear facial protection in addition to gloves, gown and closed, resistant shoes.
- Soiled linen should be placed in clearly labeled, leak-proof bags or buckets at the site of use, and the container surfaces should be disinfected (using an effective disinfectant) before removal from the site. Linen should be transported directly to the laundry area and laundered promptly with water and detergent. For low-temperature laundering, wash linens with detergent and water, rinse and then soak in 0.05 percent chlorine for approximately thirty minutes. Linen should then be dried according to routine standards and procedures. When handling soiled linen from HF patients, use gloves, gown, closed shoes, and facial protection.
- If safe cleaning and disinfection of heavily soiled linen is not possible or reliable, it may be prudent to burn the linens to avoid any unnecessary risks to individuals handling these items.

For postmortem examinations, HF patient remains should be limited to essential evaluations only, and trained personnel should perform those evaluations. Personnel examining remains should wear eye protection, mask, gloves, and gowns as recommended for patient care. In addition, WHO recommends that personnel performing autopsies of known or suspected HF patients should wear a particulate respirator and eye protection or face shield, or a powered air-purifying respirator.

WHO also recommends:

- When removing protective equipment, avoid any contact between soiled gloves or equipment and the face (i.e., eyes, nose, or mouth).
- Hand hygiene should be performed immediately following the removal of protective equipment used during postmortem examination and that may have come into contact with potentially contaminated surfaces.
- Place specimens in clearly labeled, non-glass, leak-proof containers and deliver directly to designated specimen handling areas.
- All external surfaces of specimen containers should be thoroughly disinfected prior to transport.
- Tissue or body fluids for disposal should be carefully placed in clearly marked, sealed containers for incineration.

2015 CDC guidance for personnel: Postmortem care in United States hospitals and mortuaries to protect against the spread of Ebola

Human-to-human transmission is the principal feature in Ebola virus outbreaks; the virus is transmitted from symptomatic persons or contaminated corpses or by contact with objects acting as fomites. Contact with corpses during mourning and funeral practices, which can include bathing the body and rinsing family members with the water, or during the removal and transportation of bodies by burial teams has resulted in numerous infections. Studies published by the CDC in 2015 on the Postmortem Viability of the Ebola Virus show it can persist for > seven days on surfaces of bodies, confirming that transmission from deceased persons is possible for an extended period after death. In addition, the study revealed that viral RNA was detectable for ten weeks.

The CDC published the following guidelines in 2015 to protect against the postmortem spread of Ebola infection at the site of death, prior to transport, during transport, at the mortuary, and during final disposition of remains.

The guide should be followed to train staff in the safe handling of human remains that may contain Ebola virus by properly using PPE and following decontamination measures at every step of the process. Revisions were made on January 20, 2015, to reflect the following:

- The term “hermetically sealed casket” was replaced with a recommendation to use a metal casket based on common practices in the industry.
- Additional details have been added about equipment needed for workers handling remains and step-by-step guidelines for postmortem preparation and transportation of remains.
- Additional resources have been added on PPE, decontamination, infection control, transportation of remains, and burial and cremation practices.

Background

Given the systems currently in place to identify people with Ebola virus disease (EVD), beginning with screening and interception at airports for passengers from countries with known outbreaks, Ebola-related deaths in the United States would likely occur within a hospital setting, and all Ebola cases are immediately reported and monitored by the CDC, and state and local health agencies. The EVD can be detected throughout the bodies of patients who die of the disease. Ebola can be transmitted in postmortem care by laceration and puncture with contaminated instruments, through direct handling of human remains without recommended PPE, through splashes of blood, urine, saliva, feces, or vomit to unprotected mucosa such as eyes, nose, or mouth during postmortem care.

In addition to federal laws and guidelines that apply to mortuary workers contained in this course, mortuary practices and workers may also be subject to a state, tribal, territorial, and local regulations. Staff should always consult local health department officials for additional guidance on laws that affect mortuary practices. The CDC recommends licensed funeral directors, who have agreed to accept the bagged remains, work in close collaboration with public health officials in their state or local jurisdiction to safely implement each step of the process.

Key points

- EVD can be transmitted in postmortem care settings through unsafe handling of remains.
- Only personnel trained in handling infected human remains and wearing recommended PPE should touch or move any remains that contain Ebola virus.
- Do not wash or clean the body.
- Do not embalm the body.
- Do not perform an autopsy. If an autopsy is necessary, consult the state health department and CDC regarding necessary precautions.
- Do not remove any inserted medical equipment from the body such as intravenous (IV) lines, endotracheal or other tubing, or implanted electronic medical devices.
- Cremate the body. If cremation cannot be done because of safety concerns, the body should be buried in a standard metal casket or other comparable burial method.

Definitions for terms in this guidance

- **Hot zone** – contaminated area that includes the patient treatment room. Only workers wearing PPE that conforms to CDC's Guidance on Personal Protective Equipment for Healthcare Workers are allowed to be in this area.
- **Cold zone** – non-contaminated area used for planning and staging. Only workers who have not entered the hot zone or who have properly doffed their PPE after being in the hot zone are permitted in the cold zone. Workers put on clean PPE in the cold zone under the direction of a trained observer.
- **Cremation** – the act of reducing human remains to ash by intense heat.
- **Leak-proof bag** – a body bag that is puncture-resistant and sealed in a manner to contain all contents and prevent leakage of fluids during handling, transport, or shipping.

Equipment list

The following equipment should be used in the hot zone:

A hospital gurney containing three pre-opened cremation-compatible body bags with the following specifications:

- First bag (top layer on gurney): Vinyl or other chlorine-free material, minimum of 6 ml thickness (152 micrometers). To prevent any leakage of fluids, all seams should be factory heat-sealed or welded, not sewn, and the zipper should be on top.
- Second bag (middle layer on gurney): Chlorine-free material impervious to fluids that can be heat-sealed around the body to form a leak-proof body bag. This bag should be specifically designed for the containment and transport of infectious bodies. The material should be precut to provide sufficient material to envelop the body and first bag.
- Third bag (bottom layer on gurney): Laminated vinyl or other chlorine-free material, minimum of 18 ml thickness (457 micrometers), with handles that are not sewn on, such as riveted handles reinforced with handle straps that run under the pouch. To prevent any leakage of fluids, all seams should be factory heat-sealed or welded, not sewn, and the zipper should be on top.
- Thermal sealer for sealing the second bag.
- PPE recommended for personnel entering the room of a patient with EVD as described in CDC's Guidance on Personal Protective Equipment for Healthcare Workers.
- Scissors for cutting excess material from heat-sealed bag.
- Camera or mobile phone capable of securely transferring photographs electronically via Wi-Fi, e-mail, or text message.
- U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant and wipes with a label-claim for use against a non-enveloped virus.
- Alcohol-based hand rub (ABHR).
- Red biohazard bag for medical waste.
- Zip tie for locking the third bag shut at the zipper.
- Enlarged copy of the Mortuary Guidance Job Aid: Postmortem Preparation in a Hospital Room PDF and tape for posting these step-by-step guidelines to a wall in the hot zone. The guide is included below.

The following equipment should be used in the cold zone:

- Hospital gurney or mortuary stretcher.
- Adhesive-backed pouch that is applied to the decontaminated body bag.
- Single-use (disposable) gloves with extended cuffs and a long-sleeved disposable gown.
- Biohazard spill kit, including: Recommended PPE, absorbent materials such as paper towels, kitty litter or a solidifier, an EPA-registered hospital disinfectant, and biohazard waste bags.
- Infectious substance labels that are applied to the decontaminated body bag, including the following:
  - Black and white "infectious substance" label.
  - United Nations (UN) 2814 label.
  - "Do not open" label.
  - Name and phone number of the hospital administrator.

Postmortem preparation in a hospital room

The following points are important considerations for postmortem preparation of human remains containing Ebola virus:

- Ensure that workers handling the body and the trained observer wear the recommended PPE and follow all of the procedures in the CDC's "Guidance on Personal Protective Equipment for Healthcare Workers."
- Follow the cleaning and disinfecting recommendations found in the CDC's "Guidance for Environmental Infection Control in Hospitals for Ebola Virus." According to this guidance, PPE surfaces, equipment, or patient care area surfaces that become visibly soiled should be decontaminated immediately using a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for use against a nonenveloped virus.
- Place all waste produced during postmortem preparation and decontamination into red biohazard bags in the hot zone, following the CDC Guidelines for Ebola-Associated Waste Management.

Highlights from these websites are included in this course.

CDC step-by-step Mortuary Guidance Job Aid for postmortem preparation

These step-by-step guidelines, listed as the Mortuary Guidance Job Aid, are intended to protect workers involved in the postmortem preparation of the body in a hospital setting. The size and weight of the body being prepared and the ability of the workers to lift the body and assist with managing the body bag will determine the number of workers needed for the process. For the death of an average size adult, for example, a minimum of three healthcare workers or other workers properly trained in handling infectious bodies should assist with the process: two to lift the body and one to hold the body bag open.

CDC recommends posting an enlarged copy of the following step-by-step guidelines in the hot zone. The workers should read the guidelines aloud as they perform each step of the procedure.

- Turn on the thermal sealer to allow it to warm up during the initial preparation of the body. This sealer will be used to seal the second body bag.
- Use the digital camera or mobile phone to take a photograph of the decedent's face for identification purposes. The photograph should be securely transferred via Wi-Fi, e-mail, or text message to the pre-identified site manager. The camera or mobile phone must be decontaminated before being removed from the hot zone or reused. If not decontaminated, the camera or mobile phone should be discarded along with other medical waste.
- Position the gurney with the three pre-opened body bags next to the hospital bed with the body.
- Pull the bed sheet(s) that are under the body up and around the front of the body. Do not wash or clean the body. Do not remove

any inserted medical equipment such as IV lines or endotracheal or other tubing from the body.
- Remove the first bag from the gurney. Gently roll the body wrapped in sheets while sliding the first bag under the body.
- Complete the transfer of the body wrapped in sheets to the first bag and zip up the bag. Minimize the amount of air trapped in the bag.
- Disinfect gloved hands using ABHR. If any areas of the PPE have visible contamination, disinfect with an EPA-registered disinfectant wipe.
- Disinfect the outside of the first bag with an EPA-registered hospital disinfectant applied according to the manufacturer's recommendations.
- Transfer the first bag with the body in it to the gurney, placing it on top of the second bag material.
- Disinfect gloved hands using ABHR.
- Fold the second bag material around the first bag, and heat-seal approximately 2 inches from the edges while removing as much air from the second bag as possible. Heat-seal the bag a second time approximately 1 inch below the initial seal and then heat-seal diagonally across the corners. Use scissors to trim off any excess material along the seam. Turn off or unplug the thermal sealer to allow it to cool. The thermal sealer must be decontaminated before being removed from the hot zone or reused.
- Disinfect the outside of the second bag with an EPA-registered hospital disinfectant applied according to the manufacturer's recommendations.
- Disinfect gloved hands using ABHR.
- Work the third bag around the second bag, and then zip up the third bag. If possible, zip tie the zipper shut.
- Disinfect gloved hands using ABHR.
- Wheel the gurney to the decontamination area.
- Decontaminate the surface of the body bag with an EPA-registered hospital disinfectant applied according to the manufacturer's recommendations. Begin by applying the hospital disinfectant to the top of the bag and any exposed areas of the gurney's cot. Roll the bag to one side to decontaminate half of the bottom of the bag and the newly exposed portion of the gurney's cot. Repeat with the other side of the bag and gurney. When performing decontamination, remove any visible soil on surfaces of the bag or gurney with the EPA-registered disinfectant wipe. After the visible soil has been removed, reapply the hospital disinfectant, and allow sufficient contact time as specified by the manufacturer of the disinfectant.
- Disinfect the surfaces of the gurney from the handles to the wheels with an EPA-registered hospital disinfectant applied according to the manufacturer's recommendations.
- Disinfect gloved hands using ABHR.
- Push the gurney gently so that only the gurney and the decontaminated body bag enter the cold zone. The workers in the hot zone should not enter the cold zone. Another set of workers should receive the body in the cold zone and transport the body for disposition (see "Transportation of Human Remains" below).
- Proceed to the PPE removal area and follow the procedures in CDC's Guidance on Personal Protective Equipment for Healthcare Workers. The trained observer should provide instructions on the decontamination and removal of PPE.

At this point, the body bag has been decontaminated, and the potential for further contamination has been eliminated as long as the body is handled carefully. Workers who handle the body bag from this point until the body is cremated or placed into a metal casket should wear single-use (disposable) gloves with extended cuffs and a long-sleeved disposable gown; other PPE is optional. If there is no evidence that the body bag has been compromised by a tear or puncture or liquid coming from the bag, surfaces that contact the body bag should not be considered contaminated, and gloves and disposable gowns used for transport can be disposed of as regular trash.

Transportation of human remains

The following points are important considerations for staff when transporting human remains:
- Ensure that anyone handling the body bag wears single-use (disposable) gloves with extended cuffs and a long-sleeved disposable gown.
- Minimize transportation of remains that contain Ebola virus to the extent possible.
- Coordinate all transportation, including local transport for mortuary care or burial, with relevant local and state authorities in advance.
- Coordinate interstate transport with CDC by calling the Emergency Operations Center at (770) 488-7100.
- Avoid transporting noncremated remains via aircraft.
- Human remains transported for interment, cremation, or medical research at a college, hospital, or laboratory are excepted from the U.S. Department of Transportation's Hazardous Materials Regulations (49 C.F.R., Parts 171-180). See §173.134(b)(14).

Step-by-step guidelines for transportation of remains

These step-by-step guidelines are intended to protect workers involved in the transportation of human remains from the cold zone in the hospital to the place of final disposition. A minimum of two healthcare or mortuary workers should perform this process. A plan should be in place to transport the body safely from the hospital to the hearse or vehicle used to transport the body. For example, the plan should include a pre-identified route through the hospital that is secure and either free of or with limited patient and personnel traffic. The route should take the body directly to a pre-identified hearse or vehicle to transport the body. A hospital or public health official should be designated in advance to accompany the body from the hospital to the place of final disposition to ensure the safety of all those involved in the process. There should be protocols in place so the designated official accompanying the body knows what to do if the body bag is compromised during transport and how to safely decontaminate it. For example, this official should have a biohazard spill kit with all of the equipment needed for any situation in which the body bag is compromised, including: recommended PPE, absorbent materials such as paper towels, kitty litter or a solidifier, an EPA- registered hospital disinfectant, additional body bags, and biohazard waste bags.
- A new set of workers in the cold zone will receive the decontaminated body bag.
- Place patient identification and any other documents that need to accompany the body, including a printout of the photograph taken before the body was bagged, in an adhesive-backed pouch that is attached to the body bag. This will serve the function of toe tags. This should be done after the bagged body enters the cold zone but before the bagged body is transported to the morgue or out of the hospital.
- Notify the mortuary if the body has any implanted electronic medical devices.
- Affix the following labels to the body bag before it is placed into the hearse or other vehicle used to transport the body:
  - Black and white "infectious substance" label.
  - United Nations (UN) 2814 label.
  - "Do not open" label.
  - Name and phone number of the hospital administrator.

Mortuary care and disposition of remains

The guidance below is primarily intended to protect workers involved with the disposition of human remains either by cremation (recommended) or burial.

- Ensure that anyone handling the body bag wears single-use (disposable) gloves with extended cuffs and a long-sleeved disposable gown.
- Do not open the body bags.
- Do not embalm the body.
- Do not remove any implanted medical devices.
- Cremate the remains. An oversized cremation container may be needed to contain the bagged body for cremation. Cremated remains are no longer infectious and can be handled and provided to the family using normal procedures.
- Consult your authorized state regulator and EPA regulations governing required cremation temperatures. Cremation and cremation temperatures may be subject to state, local, and EPA regulations.
- Bury the remains in instances where cremation cannot be safely performed. For example, some crematoriums may have concerns about cremating bodies containing implanted electronic medical devices. Some of these medical devices can explode, potentially damaging the crematory container or vessel known as a retort. Other medical devices can normally be cremated safely. Where damage to the retort is a concern, the body should be buried in a standard metal casket or other comparable burial method in accordance with state and local burial requirements. The casket containing the bagged remains can be handled without PPE.

CDC and OSHA fact sheet for safe handling, treatment, transport, and disposal of Ebola-contaminated waste

- Workers involved in handling, treatment, transport, and disposal of medical, laboratory, and other waste must be protected from exposure to Ebola virus and from physical and chemical hazards that may be associated with waste management tasks.
- Waste generated from caring for or cleaning up after an Ebola victim may pose a risk to workers if it is not handled safely or treated and disposed of properly.
- Safe handling, treatment, transport, and disposal of waste that is suspected or known to be contaminated with Ebola virus begins at the point of origin where the waste is generated and continues through final disposal. Waste may be generated at the point of origin during activities such as:
    - Using and discarding sharps, dressings, and other supplies while caring for a patient with suspected or confirmed Ebola.
    - Discarding supplies used for clinical laboratory testing of samples from a patient with suspected or confirmed Ebola.
    - Cleaning hospital rooms; ambulances, airplanes, and other vehicles; airport and other transportation facilities; residences; or other areas with suspected or confirmed Ebola-virus contamination.
    - Removing and discarding disposable personal protective equipment (PPE) after working in an environment with suspected or confirmed Ebola-virus contamination.

Waste management steps at point of origin

- Take steps to minimize solid and liquid wastes.
- Identify a complete chain for waste handling, collection, treatment, transport, and disposal before the waste is generated. Ensure that waste, including incinerator ash or other completely treated materials, has a final place for disposition.
- Sharps containers must be closable, puncture-resistant, leak proof, and labeled or color-coded.
- Create a waste management plan and secure necessary contracts and permits ahead of time in order to help avoid potential exposure hazards, security risks, and storage problems. Pre-identify waste management facilities prior to waste generation; waste management facilities may have their own requirements that may need to be considered.
- Place materials in double, leak-proof bags, and store in a rigid, leak-proof container to reduce the risk of worker exposure.
- If waste ultimately will be transported, follow U.S. Department of Transportation (DOT) guidance for packaging from the outset to minimize repackaging or additional handling: phmsa.dot.gov/hazmat/packaging-of-ebola-contaminated-waste.
- Employers should follow manufacturer instructions on product labels and Safety Data Sheets for Environmental Protection Agency (EPA)-registered disinfectants when selecting PPE for their workers. U.S. Dept. of Health and Human Services (HHS).
- Use a puncture-proof container for sharps. See www.cdc.gov/niosh/docs/97-111.
- Mark and label outer packaging according to the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens standard (29 CFR 1910.1030) and DOT.

General marking requirements for non-bulk packaging (49 CFR 172.301)

- Ensure that the outsides of waste containers are not contaminated. Use a combination of administrative controls and work practices to avoid contaminating a container when placing waste into it.
- Implement protocols for effectively decontaminating the outside of bags that go into containers, and the containers themselves if they come into contact with potentially infectious waste.
- If porous containers, such as corrugated cardboard boxes, become contaminated, they should be placed into another container.
- Disinfect the outsides of waste bags with an EPA-registered disinfectant that meets Centers for Disease Control and Prevention (CDC) criteria (see page 3: “Disinfectants for Ebola virus”) by wiping or spraying the bags with an appropriate disinfectant. Follow manufacturer instructions on product labels for concentration, application method, and contact time for the specific disinfectant.
- If practicable, consider autoclaving waste on-site using an appropriate autoclave before it is packaged and sent out of a facility for disposal. Porous materials may require multiple autoclave cycles to ensure sufficient penetration of heat and steam. This approach may be more effective than just using a longer cycle.

Follow CDC guidelines and DOT Hazardous Materials Regulations (HMR), at www.cdc.gov/vhf/ ebola/hcp/medical-waste-management.html and phmsa.dot.gov/hazmat/transporting-infectious-substances.

Use appropriate personal protective equipment

The Occupational Safety and Health Administration (OSHA) Personal Protective Equipment (PPE) standard (29 CFR 1910.132) requires employers to assess the workplace to determine what hazards are present and then choose the appropriate PPE to protect workers. Employers must select PPE that will protect workers against Ebola virus and other hazards to which they may be exposed. Workers with different job tasks, for instance, those who load waste containers onto trucks compared to those who empty containers onto processing lines, may have very different exposures and require different PPE. Workers must wear PPE to help minimize exposure to the virus via mucous membranes and broken skin, or through inhalation of bio-aerosols. Examples of PPE that may be needed during waste handling, treatment, transport, and disposal include:

- Nitrile gloves (consider using double-gloves and/or puncture-resistant gloves for extra protection).
- Goggles or face shields.
- Fluid-resistant or impermeable gowns or coveralls, and aprons.
- Facemasks that cover the nose and mouth.
- Dedicated washable shoes with protective shoe coverings.
- N95 respirators, Powered Air Purifying Respirators (PAPRs), or other respiratory protection devices.
- OSHA's PPE Selection Matrix is intended to help employers select appropriate PPE for protecting workers who may be exposed to Ebola virus on-the-job. The National Institute for Occupational Safety and Health (NIOSH) also provides recommendations for the selection and use of protective clothing and respirators for protection against biological agents: www.cdc.gov/niosh/docs/2009-132.
- Training, practice and observation of workers in correct donning and doffing of PPE are important infection control measures. Workers should put on PPE in a way that minimizes the risk of skin and mucous membrane contact with potentially infectious materials; and remove PPE in a way that avoids self-contamination. This includes decontaminating PPE before and between removal steps: www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html. The order of PPE removal may vary depending on the type of PPE a worker uses, the nature of the work tasks being performed, and which devices or garments are contaminated, among other factors.

Collecting and transporting waste

- Under the Bloodborne Pathogens standard, 29 CFR 1910.1030, and other OSHA requirements, employers already must protect workers who collect and transport waste from exposure to infectious agents, such as the hepatitis B virus and human immunodeficiency virus (HIV), in the waste they handle on a daily basis. Although exposure to these other agents may be more likely, employers are also required to protect workers from exposure to the all virus including Ebola.
- Follow stringent packaging protocols, including decontaminating waste containers at the point of origin, as a way to reduce the risk of exposure to Ebola virus and other infectious agents for workers involved in collecting packaged waste.
- Place containers of waste as low as possible on dollies, hand trucks, or carts and in trucks or other transport vehicles to prevent toppling and spillage. Secure containers, especially stacked ones, within vehicles using suitable straps or tie-downs.
- Employers must take steps to protect workers from exposure to contaminated waste containers and to protect workers when they must handle waste containers that are visibly soiled or otherwise known or suspected of having Ebola-virus contamination.
- Use proper protections, including additional or more protective PPE, if handling waste containers with visible contamination from blood, body fluids, or other potentially infectious or unknown material. Employers may consider additional or more protective PPE for waste collection and transport workers if they determine another more serious hazard(s) exists.
- Follow DOT HMR, at phmsa.dot.gov/hazmat/ transporting-infectious-substances.

Processing waste in a treatment/disposal facility

- Under the Bloodborne Pathogens standard, 29 CFR 1910.1030, and other OSHA requirements, employers already must protect workers who process waste in a treatment/disposal facility from exposure to all infectious agents as noted above. Workers who are exposed to waste before it is completely treated and decontaminated, including when opening containers to load waste onto processing lines or into autoclaves or incinerators, may be at higher risk for exposure to Ebola virus and other infectious agents than workers with job tasks such as handling waste products that have already been treated, such as incinerator ash or waste that already was appropriately autoclaved at its point of origin. Waste that has been properly treated and decontaminated is no longer infectious. Again, containers of waste must be placed as low as possible on dollies, hand trucks, or carts and when stacking to prevent toppling and spillage. Secure stacked containers using suitable shelves, straps, or other equipment.

Disinfectants for Ebola virus

- Use an EPA-registered disinfectant with label claims for use against non- enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus) to treat contamination/spills and to disinfect non-porous surfaces after bulk spill material has been removed.
- Non-enveloped viruses are typically more difficult to destroy than enveloped viruses, such as Ebola. Stronger disinfectants used to destroy non-enveloped viruses are also capable of inactivating enveloped viruses.
- EPA List L outlines selected registered antimicrobial products that meet the CDC criteria for use against the Ebola virus: www.epa.gov/oppad001/list-l- ebola-virus.html.
- Always follow the manufacturer's instructions (e.g., concentration, application method and contact time) for the specific disinfectant.
- Never mix chemical disinfectants and cleaners together. Certain combinations of chemicals can be deadly or can reduce the effectiveness of the disinfectant.
- Employers must consider increasing levels of PPE for waste processing and treatment/disposal workers if they determine that a more serious hazard exists.
- Follow applicable EPA, state, and local regulations for hospital/medical/infectious waste incinerators: www.epa.gov/ttnatw01/129/hmiwi/rihmiwi.html.
- Workers tasked with processing reusable collection and storage containers, conducting housekeeping within processing facilities, or cleaning transport vehicles may refer to OSHA's "Cleaning and Decontamination of Ebola on Surfaces" Fact Sheet for additional guidance: www.osha.gov/Publications/OSHA_ FS-3756.pdf.

Do not shred contaminated waste

- Do not use waste management processes that involve shredding incoming waste materials that have suspected or confirmed Ebola-virus contamination.
- Shredding, particularly with equipment that is not closed and ventilated out of the work area, may result in generation of bio-aerosols (aerosolized droplets containing infectious particles that can be inhaled).
- Shredders may become clogged or jammed by atypical, porous waste materials (e.g., linens, carpet, curtains, or other textiles) that must be discarded when decontamination is not possible.
- If at all possible, do not enter a clogged shredding machine to resolve a jam. If a worker must do so, they should always ensure that the machine is powered off and follow proper lockout/tagout procedures for controlling hazardous energy: www.osha.gov/SLTC/controlhazardousenergy.
- Ensure that the worker has proper PPE to protect against all health and safety hazards that are possible from the waste and the machinery, including bloodborne pathogens and other infectious diseases, and mechanical, electrical, and other physical hazards of the equipment.

Final disposal of treated waste

- Waste that has been properly treated and disinfected using thermal/heat treatment (e.g., microwaves), autoclaving, incineration, or a combination of these or other generally accepted methods is not considered to be infectious.
- Depending on state regulations, such waste can safely be disposed of following the protocols normally used by a facility under the jurisdiction of the state where it is located.
- As with any solid waste, other applicable disposal requirements should be considered (e.g., if non-infectious materials, such as toxic metals, are present in regulated amounts).

Use appropriate respiratory protection

- In instances where workers may be exposed to bio-aerosols (e.g., as a result of using high-pressure air or water for cleaning) suspected or known to contain Ebola virus, additional respiratory protection is needed. In these cases, medically qualified workers must use, at a minimum, a NIOSH-approved, fit-tested N95 respirator. See www.cdc.gov/niosh/npptl/ topics/respirators/disp_part/n95list1.html.

Safer waste processing techniques

- Select waste-processing techniques that minimize potential worker exposure to Ebola virus or other pathogens.
- Incinerate entire unopened waste containers in incinerators to eliminate exposures associated with handling and opening containers. Incinerator facilities should be operated in compliance with applicable federal, state, and local regulations.
- If using autoclave or rotoclave equipment, develop, validate, and regularly test protocols using biological and non-biological indicators to ensure that the autoclave temperature and pressure are maintained for long enough time periods to kill all organisms throughout the waste content and that heat/steam can penetrate packaging and any porous materials.
- Weekly (or more frequent) testing with biological or non-biological indicators ensures that autoclave equipment is functioning properly.
- Do not use open burning techniques, which could expose workers and other individuals to harmful air contaminants.
- Do not shred contaminated waste.
- Wearing a respirator for extended periods of time can be uncomfortable. Workers who need respirators for long time periods may find powered air-purifying respirators more tolerable.
- Respirators used for protecting workers against Ebola virus may not be effective for also protecting them from exposure to certain chemicals used for treating and decontaminating waste, or for cleaning and decontaminating equipment. To learn more about the requirements for selecting an appropriate respirator to protect against chemical exposure (elastomeric respirator with appropriate chemical or combination cartridges or a supplied-air respirator), consult OSHA's Respiratory Protection standard, 29 CFR 1910.134, and the manufacturer's Safety Data Sheet (SDS) for the specific chemical(s) that workers are using. See OSHA's Respiratory Protection web page: www.osha.gov/SLTC/respiratoryprotection.

Infection control for all waste workers

- Limit the number of workers who handle waste to essential staff. For example, instruct and train healthcare workers generating waste during care of an Ebola patient to properly package the waste instead of requiring an environmental services or waste collection worker to also handle the waste.
- Whenever gloves are removed or changed, wash hands with soap and water, or use alcohol-based hand rubs if soap and water are unavailable. Always wash with soap and water if hands are visibly soiled.
- Avoid touching the face or other exposed parts of the body while wearing gloves or before washing/sanitizing bare hands.
- Change clothing and shower as soon as possible if work clothing becomes soiled. Discard soiled work clothing with other Ebola-contaminated waste.
- Consider wearing dedicated, washable footwear while on the job.
- Notify a supervisor immediately if exposed to potentially infectious material or waste on the job, including on work clothing or exposed skin or through mucous membranes including eyes, nose, and mouth.

Follow applicable OSHA standards

- Employers must ensure that they comply with OSHA's Bloodborne Pathogens standard, 29 CFR 1910.1030, to protect workers who may come into contact with blood or other potentially infectious materials.
- OSHA's Personal Protective Equipment (PPE) standard, 29 CFR 1910.132, provides additional information about how to select and use appropriate PPE, training, and other requirements.
- Employers must comply with OSHA's Hazard Communication standard, 29 CFR 1910.1200, when their workers use certain chemicals for cleaning and decontamination.
- OSHA's Lockout/Tagout standard, 29 CFR 1910.147, contains requirements on controlling hazardous energy when working with machinery.

Worker training is essential

- Employers must train workers about sources of exposure to Ebola and appropriate precautions.
- Where workers may be exposed to blood or other potentially infectious materials, such as in the waste handling, treatment, transport, and disposal industry, employers must provide the training required by OSHA's Bloodborne Pathogens standard, 29 CFR 1910.1030. This includes information about how to recognize tasks that may involve exposure and the methods to reduce exposure, including engineering controls, work practices, and PPE.
- Employers must train workers required to use PPE on what equipment is necessary, how to put it on and take it off safely and effectively, when and how they must use it, and how to dispose of the equipment. Employers may also be required to follow state regulations that cover potentially infectious medical waste, sometimes referred to as regulated medical waste: www.epa.gov/osw/nonhaz/industrial/medical/programs.htm.

Assistance for employers

OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. On-site consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management systems. To locate the nearest OSHA On-site Consultation Program, call 1-800-321-6742 (OSHA) or visit www.osha.gov/consultation and www.cdc.gov/info, or visit the NIOSH website at www.cdc.gov/niosh.

CDC AND WHO 2015 GUIDELINES FOR CONTAINING CREUTZFELDT-JAKOB DISEASE (CJD)

Practitioners at funeral homes, cemeteries, and crematories encounter many potentially fatal and infectious diseases including Creutzfeldt-Jakob Disease (CJD). CJD is a rare brain disease that affects one person per million population each year, and occurs when a normal brain protein spontaneously changes into an infectious abnormal form called "prion" and accumulates in brain cells. Individuals with CJD experience a rapid onset of dementia, and a range of neurological symptoms including walking difficulties, sudden jerky movements, and sometimes, visual disturbances. CJD patients usually die within one year following the onset of symptoms. An autopsy is very important in the diagnosis of CJD because it is the best way to confirm presence of the disease.

CJD is not transmissible from person to person by normal contact or through environmental contamination. For example, it is not spread by airborne droplets, as are tuberculosis (TB) and influenza, or by blood or sexual contact as are hepatitis and human immunodeficiency virus (HIV). CJD transmission can occur during invasive medical procedures involving the central nervous system due to exposure to contaminated brain tissue. This accounts for less than 1 percent of all CJD cases. The majority of cases occur sporadically, but some individuals can also develop CJD because of an inherited mutation. Standard disinfection procedures and routine embalming solutions are ineffective against prions; however, studies show that chemical solutions and physical processes involving bleach, sodium hydroxide, or autoclaving can inactivate the prion. If the bodies of CJD patients have not been autopsied, then transportation, preparation, disinfection, and final disposition can be safely performed when standard precautions are strictly enforced.

Transporting

Funeral service workers can safely remove the body of a CJD patient from the place of death and transport it to the funeral home preparation room for mortuary procedures using appropriate standard infection control measures, which includes wearing personal protective gear. The WHO recommends placing the body in a leak proof pouch prior to moving. The bag should be lined with absorbent material to prevent leakage of body fluids. In instances where there is excess fluid, a double bag can be utilized. After transporting, all surfaces (i.e. stretchers, cots) should be disinfected with bleach.

Preparation and dressing

Family members of CJD patients should be advised to avoid superficial contact, such as touching or kissing the patient's face, with the body of a CJD patient who has been autopsied. However, if the patient has not been autopsied, staff need not discourage such contact.

Embalming bodies who have not been autopsied

Embalmers can embalm bodies of CJD patients who have not been autopsied using standard precautions. However, it may be prudent to place the body on a waterproof sheet to collect bodily fluids and use disposable instruments. They should collect bodily fluids in a suitable container. Incision sites should be closed with super glue, wiped down with bleach, and the body washed prior to dressing. Cosmetic restorative work may also be undertaken.

Embalming bodies who have been autopsied

Embalming bodies of CJD patients who have been autopsied can also be safely performed. Adherence to standard infection control measures is paramount when embalming an autopsied body of a suspected or clinically diagnosed CJD patient. Autopsies on these individuals are often restricted to removal of the brain; therefore, special precautions should be taken, including placing a plastic sheet with absorbent wadding and raised edges underneath the head to ensure containment of fluids and prevent any spillage. In instances where sutures do not completely control leaking, the cranial cavity should be packed with absorbent material that has been soaked with bleach and tightly sutured.

Precautions for embalming the bodies of patients with suspected or confirmed CJD

Bodies of autopsied CJD patients
Bodies of autopsied CJD patients should be placed on a waterproof sheet to collect all fluids. It is strongly recommended that disposable instruments, masks, gowns, and puncture-resistant gloves be used whenever possible. The entire body should be washed with bleach, rinsed, and sanitized before dressing. Special care should be taken to limit fluid leakage when performing restorative work on a CJD patient. All fluids should be collected in a suitable container.

Decontaminating heat-sensitive instruments or materials that come in contact with suspected or confirmed CJD patients
All disposable instruments, materials, and wastes that come in contact with high infectivity tissues (brain, spinal cord, and eyes) and low infectivity tissues (cerebrospinal fluid, kidneys, liver, lungs, lymph nodes, spleen, and placenta) of suspected or confirmed transmissible spongiform encephalopathy, or TSE, patients should be disposed of by incineration. Surfaces and heat-sensitive reusable instruments that come in contact with high infectivity and low infectivity tissues should be decontaminated by flooding with or soaking in 2N NaOH or undiluted sodium hypochlorite for one hour and rinsed with water. CDC NOTE: Sodium hypochlorite may be corrosive to some instruments.

Casketing and viewing
Staff should avoid unnecessary manipulation of the body that would force purging of body fluids and risk opening of incision sites. If warranted, the casket can be lined with a leak-proof sheet. An open casket for viewing should not be prohibited. Family members of CJD patients should be advised to avoid superficial contact, such as touching or kissing the patient's face, with the body of a CJD patient who has been autopsied. However, if the patient has not been autopsied, such contact need not be discouraged.

Terminal disinfection and waste removal
According to WHO infection-control guidelines, flooding with undiluted bleach can disinfect work surfaces. Although the use of disposable instruments is preferred, reusable instruments and tools can be cleaned and disinfected by using CJD sterilization protocols recommended by the Centers for Disease Control and Prevention listed above. All contaminated solid materials should be disposed of as hazardous waste. Disposing of body fluids, tissues, and hazardous chemicals should be handled in accordance with funeral home policy, local, state, and federal regulations.

Final disposition for cremation and burial
There are no special interment, entombment, inurnment, or cremation requirements for patients with CJD. Interment of bodies in closed caskets does not present a significant risk of environmental contamination and cremated remains can be considered sterile, as the infectious agent does not survive incineration-range temperatures.

WHO GUIDELINES FOR TSE

After death

Precautions for handling of the deceased patient
On the death of a patient with confirmed or suspected TSE, the removal of the body from the ward, community setting, or hospice, should be carried out using universal precaution measures. It is recommended that the deceased patient be placed in a sealed body bag prior to moving following universal precautions for bodies with a known infection risk. Where the skull is open or there is cerebrospinal fluid (CSF) leakage, and where sutures do not completely control this leaking, the bag should be lined with materials to absorb any fluid, and moved in a sealed body bag. WHO guidelines for TSE note drainage from any tissues may retain infectivity and should be handled accordingly.

National and international transport of bodies
If there is a need to transport the deceased patient nationally or internationally, it will be necessary to comply with the International Civil Aviation Organization (ICAO), International Air Transport Association (IATA) Restricted Articles Regulations, and any additional requirements of the individual carriers. It should be noted that the IATA regulations require the embalming of the body.

Undertakers and embalmers

General measures
Mortuary procedures using universal precautions may be performed on the bodies of patients who have died from TSE, to ensure the safety of personnel and avoid contamination of the workplace. Transportation of the unembalmed body to the mortuary should be in a sealable, impermeable plastic pouch. Contact or handling of an intact, unautopsied body does not pose a risk, and staff may undertake cosmetic work without any special precautions. If the body has undergone autopsy, care should be taken to limit contamination of the workplace by any leaking bodily fluids, especially from the cranium, when transferring the body from its transport bag to the mortuary table that has been covered with an impermeable sheet.

Embalming
An intact unautopsied body can be safely managed with only minor adjustments to the usual procedures. Embalming an autopsied or traumatized body is not encouraged, but may be safely performed when the following precautions are observed:

- Disposable masks, gowns, and gloves should be worn, just as pathologists do when performing an autopsy.
- The body should be placed on an impermeable sheet or body pouch so that suture site leakage can be contained, and perfusion drain sites should be similarly arranged to avoid surface contamination.
- All drainage fluids should be collected into a stainless steel container.
- Perfusion and autopsy incision sites should be closed with cyanoacrylates.
- The entire body should be wiped down with bleach, and special care taken to ensure contact of bleach with perfusion sites and closed autopsy incisions.
- At the conclusion of the perfusion procedure, the container of drainage fluids should be decontaminated by adding sodium hydroxide pellets at the rate of 40g per litre of fluid. The mixture should be stirred after a few minutes and care should be taken to avoid spillage, as the fluid will be hot. It should then be left undisturbed for at least one hour, after which it can be disposed of as for any other mortuary waste.
- Plastic sheets and other disposable items that have come into contact with bodily fluids should be incinerated.
- Mortuary working surfaces that have accidentally become contaminated should be flooded with sodium hydroxide or bleach, left undisturbed for at least one hour, then, using gloves, mopped up with absorbent disposable rags, and the surface swabbed with water sufficient to remove any residual disinfectant solution.

- Non-disposable instruments and tools should be decontaminated using one of the methods from the following Annex III recommendations in order of more to less severe treatments:
  1. Incineration.
  2. Autoclave/chemical methods for heat-resistant instruments.
  3. Chemical methods for surfaces and heat-sensitive instruments.
  4. Autoclave/chemical methods for dry goods.

At the conclusion of the decontamination procedure, the instruments should be washed with water to remove residual disinfectant fluid before drying and reuse. Sodium hydroxide or bleach can be disposed of as uninfectious but corrosive waste fluid. Visit the WHO website for guidelines of when and how to use the specific methods above at http://www.who.int/csr/resources/publications/bse/whocdscsraph2003.pdf

Funerals and cremations
Relatives of the deceased may wish to view or have some final contact with the body. Superficial contact, such as touching or kissing the face, need not be discouraged, even if an autopsy has been conducted. Interment in closed coffins does not present any significant risk of environmental contamination, and cremated remains can be considered to be sterile, as the infectious agents do not survive incineration-range temperatures of 1000°C. Transport and interment are subject to national, state, and local guidelines, and transport overseas is governed by international regulations.

Exhumations
Standard procedures are conducted according to local and national guidelines. The body should be considered as having the same infectivity as at the time of burial, and the precautions used for an autopsy should be followed.

Body donation for teaching purposes
Anatomy departments should not accept, for teaching or research purposes, any body or organs from persons confirmed, suspected, or at risk for TSE, unless they have specific training or research programs for TSEs, including access to specialized equipment, procedures, appropriate containment facilities, and training for managing TSE-contaminated tissues. Departments should make inquiries of those responsible for donating the body, and of the medical staff involved in the care of the donor, to ensure the rigorous adherence to this recommendation.

MYTHS SURROUNDING POSTMORTEM PROCEDURES AND INFECTIOUS DISEASE CONTAMINATION

The following information applies to infectious diseases that do not carry specific regulations for burial and cremation, as previously outlined above. Care should be taken to review the federal guidelines in this course as well as laws and regulations of the state and local jurisdictions.

In the past, many personnel in the funeral industry believed that embalming was necessary to protect the public from environmental contaminates and the spread of infectious disease. It was commonly believed that the body must be interred in a sealed casket or vault to protect against contamination of soil and groundwater. Scientific research provides significant evidence to refute these beliefs and the CDC, the WHO and the Pan American Health Organization (PAHO) have published these findings. Numerous research studies, using evidence based, scientific peer-review procedures, have shown no environmental contamination or spread of disease from unembalmed bodies in countries that do not use embalming or burial in sealed caskets or vaults.

There is also a myth that embalming is legally required; however, states do not routinely require embalming for viewing. New Hampshire and some others require embalming, or refrigeration, if the body has not been buried within twenty-four to forty-eight hours. Embalming is mandated when a body crosses state lines from Alabama and Alaska. Five other states, California, Idaho, Kansas, Minnesota, and New Jersey, require embalming when the body leaves those states by common carrier airplane or train (FCA, 2015).

There is the belief by some that a body contains dangerous bacteria that can spread infection. A journal article written by Oliver Morgan, and published by the PAHO, a division of WHO, addresses this topic as follows:

> "The microorganisms that are involved in decomposition are not the kind that cause disease, and most viruses and bacteria that do cause disease cannot survive more than a few hours in a dead body. An apparent exception is the human immunodeficiency virus, HIV, which has been shown to live up to 16 days in a corpse under refrigeration."

Morgan further explains that exposure to a body with HIV, as well as most diseases, is no more dangerous in terms of contamination than exposure to a live person with HIV. The same precautions to prevent contact with bodily fluids from a person with HIV/AIDS would apply to contact with the body post mortem.

Dr. Lakshmanan Sathyavagiswaran, M.D., Chief Medical Examiner of Los Angeles, provides the following clarification:

> "There is no reason that an unembalmed human body should be infectious to anyone attending visitation or public services. Persons transporting and handling bodies or cutting into them may be vulnerable in rare instances, with little or no risk if proper precautions are taken. To refuse to present a body unembalmed because of public health risk is unfounded. On rare occasions of certain deaths resulting from contagious disease, our office may encourage placing a facemask on the decedent before and during transportation and containment, and disposing without embalming or viewing. In the event, however, it becomes necessary to hold a body for an extended period of time before public services can be held, arterial embalming is recommended. Riding on an airplane or a bus may be a public health risk; the presence of an unembalmed body is not."

The United States and Canada are the only countries that normally practice embalming though some religious and ethnic groups, including Jewish, Muslims, Amish, Native Americans, Buddhists, Baha'i, Hindus, and others follow traditional customs for private care of the body by family or religious members. The CDC simply states, "We have not at any point prescribed embalming as a method of protecting public health (Burden, 2006)."

Another unfounded myth is that infectious disease epidemics can occur after national disasters, such as earthquakes or tsunamis, which uncover burial grounds. Both PAHO and the WHO have attempted since 1986 to dispel this myth and produced a video titled, "Myths and Realities of Natural Disasters." Jean-Luc Poncelet, chief of PAHO's Emergency Preparedness and Disaster Relief program states the following:

> "The notion that dead bodies pose an urgent health threat in the aftermath of a disaster is one of several enduring myths about disasters and relief efforts. Survivors are much more likely to be a source of disease outbreaks."

One long-held myth is that burial sites will lead to contamination of groundwater, so bodies need to be embalmed and placed in caskets and vaults to prevent this. Decomposition is a natural part of the life cycle of all living things and the human body becomes part of this cycle. When domestic and wild animals die, they are not embalmed or buried in leak-proof containers to protect the environment from contamination, though they may carry disease.

Further support can be found in the fact that states do not mandate embalming or internment in contamination-proof caskets or vaults. Studies conducted in 2006 by Monument Builders of North America (MBNA) showed that even sealed caskets in vaults were subject to failure, which allowed outside elements in and fluids to leak out over time. These results were published in the "Funeral Ethics Organization Newsletter" as follows:

> "MBNA found that the Catholic Cemetery Association was documenting an 86 percent failure rate or problems with wood and cloth-covered caskets, 62 percent for nonsealing metal, and 46 percent for 'protective' or 'sealer' caskets. Though sealed caskets yielded lower failure numbers the report states in bold print, 'It is highly unlikely that protective sealer metal caskets employ sufficient mechanisms to contain body fluids or gases.'"

Environmental health and safety

The National Funeral Directors Association, or NFDA, has enhanced its efforts to assist funeral directors to address the health and safety of personnel and to educate the public on environmental safety related to the embalming process, preparation, alkaline hydrolysis, crematory equipment, and wastes discharged by funeral homes and crematories. To that end, the NFDA will:

- Encourage the development of environmentally and personally safe embalming chemicals, funeral service products, and preparation room equipment.
- Undertake proactive communications initiatives.
- Assist funeral directors with environmental and safety compliance issues, establishing green funeral homes, and green end-of-life practices.
- Promote laws and practices consistent with these objectives.

OSHA reform: That NFDA continue to support legislation, regulations, and policies that reshape OSHA into an agency that listens to and works with business to craft industry-specific, performance-based, safety and health workplace practices that are based on commonsense and practical reality rather than academic or theoretical concepts or punitive regulations or enforcement (NFDA, 2015).

Conclusion

Funeral directors, embalmers, and personnel will face postmortem care for persons who have died with infectious, contagious diseases. They must receive training to provide services for these individuals and their families using universal precautions to ensure the health and safety of everyone in contact with the deceased as well as the public at large. The severity of many infectious diseases discussed in this course calls for strict adherence to the regulations and guidelines mandated by the CDC, OSHA, and WHO. Following these guidelines provides staff with training and preparation to meet the changing demands of the profession and promote the health, safety, and confidence of personnel, families, and the community.

In addition to the major health organizations, the NFDA websites provide frequent updates from the major health organizations and resources for current information specific to the funeral profession.

References

- Burden, B. (2006). Centers for Disease Control and Prevention Atlanta, Georgia, as quoted in Mortuary Management magazine, October 2006. Retrieved January 17,2016 from http://www.funeralethics.org/SpringSummer06.pdf.
- Centers for Disease Control and Prevention (2015). Ebola Hemorrhagic Fever [cited 2015 Jan 3]. Retrieved January 14, 2016 from http://www.cdc.gov.ezproxy.nihlibrary.nih.gov/vhf/ebola/.
- The Center for Disease Control and Prevention (2007). The Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Health Care Settings. Retrieved January 15,2016 from http://www.cdc.gov/hicpac/2007IP/2007ip_part1.html.
- Center for Disease Control and Prevention (2015). Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries. Retrieved January 12, 2016 from http:// www.cdc.gov/vhf/ebola/healthcare-us/hospitals/handling-human-remains.html.
- Centers for Disease Control and Prevention (2014). Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus. Retrieved January 16,2016 from www.cdc.gov/vhf/ebola/hcp/environmental-infection- control-in-hospitals.html.
- Center for Disease Control and Prevention (2015). Part I: Review of Scientific Data Regarding Transmission of Infectious Agents in Healthcare Settings. Retrieved January 15, 2016 from http://www.cdc.gov/hicpac/2007IP/2007ip_part1.html.
- Centers for Disease Control and Prevention (2016) Prion Diseases.National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) Division of High-Consequence Pathogens and Pathology (DHCPP). Retrieved January 16, 2016 from http://www.cdc.gov/ncezid/index.html.
- Funeral Consumers Alliance (2011).Dead Bodies and Disease: The "Danger" That Doesn't Exist. Retrieved January 16,2016 from https://www.funerals.org/frequently.../142-embalming-myths-facts
- Funeral Consumers Alliance (2015)Embalming: What You Should Know - Funeral Consumers Alliance. Retrieved January 17, 2016 from https://www.funerals.org/.../48-what-you-should-know-about-embalming
- Funeral Ethics Organization (2006) Funeral Ethics Organization Newsletter, Spring/Summer 2006. Retrieved January 13, 2016 from http://www.funeralethics.org/SpringSummer06.pdf.
- Kennedy, S.B., Nisbett, R.A. (2015). The Ebola epidemic: A Transformative Moment for Global Health. Bulletin, World Health Organization. 2015 Jan 1; 93(1): 2. doi: 10.2471/BLT.14.151068. Retrieved January 13, from 2016 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4271688/.
- Mayer, R. (2012). Embalming: History, Theory, and Practice, Fifth Edition, McGraw Hill NY.
- Morgan, O. (2004) Infectious Disease Risks from Dead Bodies Following Natural Disasters. Rev Panam Salud Publica. 2004; 15(5): 307–12.Perspectives in Health, a publication of the PAHO, a Division of the World Health Organization. Retrieved January 14, 2016 from www.paho.org/english/dd/pin/Number21_article01.htm
- National Funeral Home Directors Association (2015). 2015 NFDA Public Policy Positions. Retrieved January 16, 2016 from http://www.nfda.org.
- Occupational Safety and Health Administration (2014). OSHA Fact Sheet: Safe Handling, Treatment, Transport and Disposal of Ebola. U.S. Department of Labor. Retrieved January 13,2016 from https://www.osha.gov/Publications/OSHA_FS-3766.pdf.
- Occupational Safety and Health Administration. (2011).Safety and Health Topics | Healthcare - Infectious Diseases U.S. Dept of labor Retrieved January 14, 2016 from https://www.osha.gov/SLTC/healthcarefacilities/infectious_diseases.
- Poncelet, J.L. (2005). Perspectives in Health, Volume 10, no. 1, 2005, a publication of the PAHO, A Division of WHO. Retrieved January 2016 from http:// www.paho.org/english/dd/pin/Number21_article01.htm
- Prescott J, Bushmaker T, Fischer R, Miazgowicz K, Judson S, Munster VJ. (2015). Postmortem Stability of Ebola Virus. Emerging Infectious Disease. 2015 May. DOI: 10.3201/eid2105.150041. Retrieved January 14, 2016 from http://dx.doi.org/10.3201/eid2105.150041.
- Sathyavagiswaran, L. (2006). Mortuary Management Magazine, October, Journal of Forensic Sciences 53(1): 203-207. Retrieved January 17,2016 from dornsife.usc.edu/assets/sites/605/docs/MEDS-425_SYLLABUS.doc
- Troyer, J.E. (2010). Technologies of the HIV/AIDS Corpse. Med Anthropol.2010. Apr; 29(2): 129-49. doi: 10.1080/01459741003715417. www.ncbi.nlm.nih.gov/pubmed/20455141.
- World Health Organization (2003). Infection Control Manual for Transmissible Spongiform Encephalopathies. World Health Organization. Retrieved January 12, 2016 from http://www.who.int/csr/resources/publications/bse/whocdscsraph2003.pdf.
- World Health Organization (2014). Interim Infection Control Recommendations for Care of Patients with Suspected or Confirmed Filovirus (Ebola, Marburg) Hemorrhagic Fever. Retrieved January 14, 2016 from www.who.int/csr/bioriskreduction/interim_recommendations_filovirus.pdf

Final Examination Questions

Select the best answer for each question and mark your answers on the Final Examination Answer Sheet found on page 65, or for faster service complete your test online at **Funeral.EliteCME.com.**

26. Colonization is development of a bacterial infection, though the infected person may or may not have signs or symptoms of infection.

    ○ True ○ False

27. The four main classes of infectious agents are bacteria, viruses, fungi, and pathogens.

    ○ True ○ False

28. In some cases, the host may be temporarily or permanently colonized but show no symptoms of the infection or disease.

    ○ True ○ False

29. Transmission of infectious agents within a healthcare setting requires one element only and that is the direct exposure to mucous membranes.

    ○ True ○ False

30. Prion diseases are usually rapidly progressive and always fatal.

    ○ True ○ False

31. Human-to-human transmission is the principal feature in Ebola virus outbreaks; virus is transmitted from symptomatic persons but not from contaminated corpses or by contact with objects acting as fomites.

    ○ True ○ False

32. In addition to federal laws and guidelines that apply to mortuary workers contained in this course, mortuary practices and workers may also be subject to a state, tribal, territorial, and local regulations.

    ○ True ○ False

33. Respirators used for protecting workers against Ebola virus may not be effective for also protecting them from exposure to certain chemicals used for treating and decontaminating waste, or for cleaning and decontaminating equipment.

    ○ True ○ False

34. Family members of CJD patients should be advised to avoid superficial contact, such as touching or kissing the patient's face, with the body of a CJD patient who has been autopsied.

    ○ True ○ False

35. Mortuary working surfaces that have accidentally become contaminated should be flooded with sodium hydroxide or bleach, and then left undisturbed for at least one hour.

    ○ True ○ False

Chapter 5: Modern Restorative Arts and Embalming Techniques

3 CE Hours

By: Sueann Faith Schwille

Objectives

- Define the green funeral trend and explain how it impacts embalming and the restorative arts.
- List the OSHA guidelines for the use of formaldehyde in embalming.
- Identify the possible effects of formaldehyde on mortuary professionals and the environment.
- List four problem cases where embalming pre-injection is required.
- Select and describe three techniques to manage edema.
- Describe two alternative chemicals for embalming.
- Select and explain four techniques for bariatric embalming.
- Identify four components of pre-embalming analysis.
- Define the career of desairology and its function in mortuary practice.
- List the four areas of the desairology course of study for certification.
- Describe the importance of restorative art in the funeral process for families.
- Identify four examples of restorative art techniques for minor and major cases.
- Discuss the ethical principles and professional codes of conduct that apply to the practice of embalming and restorative arts.
- Describe three new trends that impact embalming and restorative arts today.
- Identify four objectives of ecobalming.

Course overview

New customs and practices surrounding embalming and the restorative arts are emerging in the United States. After remaining unchanged for more than 100 years, there are new trends in the funeral industry that meet consumers' demands for funeral practices that are environmentally safe and reflect the unique persona of the deceased individual.

Today, procedures of embalming and restorative art reflect these demands within the traditional goals of preservation and restoration. The funeral industry must be responsive to the family's requests or plans left by the deceased, while implementing procedures to insure the safety of staff and the general public. New embalming and restorative practices that allow the industry to meet both objectives to honor the wishes of the deceased while meeting all Occupational Safety and Health Administration (OSHA) standards will be explored in this course.

Funeral homes or mortuaries may vary in size, number of employees, services offered, organization of job duties, and community customs. In some cases, the funeral director may do embalming and restorative work. The embalmer may also be the restorative artist and provide all of the cosmetic, hair, and nail services. Other businesses may call in a cosmetologist certified in desairology to provide makeup, hair, and nail care. Today, many people plan all services in advance, including every detail related to their final appearance. Emerging trends and demands of the public concerning final instructions will be covered as they impact the embalmer and restorative artist.

The skills and responsibilities may also be impacted by county and state statutes that govern the industry as well as licensing and certification guidelines that vary by state.

Specific techniques to address challenges faced by professional embalmers, restorative artists, and desairologists will be explored as well as laws, regulations, ethics, and standards that govern these professions.

This course was written for professionals working in the field as a way to update and enhance proficiency. It is not meant to teach fundamental skills at the entry level.

Introduction

There are dissenting opinions concerning the use of embalming and restorative arts that center on religious or environmental objections. Though no federal or state law requires embalming and restoration, there are health standards that must be met to insure the general public is not exposed to infectious disease or toxic chemicals. Environmental concerns drive the growing trend of ecobalming for a "green burial." The goal is to return the deceased back to the earth in a natural state without any non-biodegradable materials or toxins found in traditional embalming fluids and metal caskets (Green Burial Council, 2011). In addition, there are minimal restorative measures taken because the physical state of the body is no longer the focus and is secondary to the celebration of the spirit.

Proponents of embalming and restorative art emphasize the positive effects of seeing their loved ones, for the last time, looking peaceful and as life-like as possible. Throughout the industry, the objective for the last experience with the deceased is referred to as providing a "positive memory picture." Embalming and restorative art are critical to achieving this objective in cases where disease or trauma have drastically altered the appearance of the deceased. A skilled embalmer, restorative artist, or funeral cosmetologist (i.e., desairologist), can restore the individual's appearance and provide a positive, final, experience for loved ones. This last visual memory experience can facilitate the grieving process for the family (Seiple, 2016).

Regardless of preference for or against embalming and restorative art, there are many new options available for individuals and families faced with decisions concerning funeral services. Some new techniques and practices may be controversial, but funeral decisions should be made according to the last wishes of the deceased with a secondary goal to assist family members through this difficult time.

Industry trends

The personalization of presentation
Today, individuals are seeking funeral services that reflect their values, interests, passions and hobbies. They are planning for unique embalming, restorative arts, and presentation services that are personalized, unlike traditional open-casket viewings. Viewings often have themes suggested by the family, if not preplanned, using creative ways to show the deceased person in a setting that expresses his or her personality. The service may be a celebration of the deceased and the activities he or she valued. For instance, the deceased may be displayed in a way that reflects a preferred activity enjoyed in life.

The National Funeral Directors Association (NFDA), "encourages all funeral service consumers to discuss their ideas with the funeral director to ensure an individualized ceremony fitting of the person who died (NFDA, 2016 b)."

Changes in profession demographics
Funeral service professionals are no longer predominately male. In the past, the profession was usually a family business that was passed down through generations. Today, many mortuary school graduates have chosen the profession independent of any family connections and often began embalming or the restorative arts as a second career after working as medical personnel, chemists, cosmetologists, nurses, or artists, for example. According to NFDA 2016 statistics, "57% of mortuary science students in the United States are women. Many of these women have discovered and are attracted to the skills and traits needed as a funeral director, including communication skills, compassion, a desire to comfort those coping with a death, as well as organizational and event-planning skills (Ibid)."

New environmentally safe chemicals
One of the major changes in embalming is the variety of chemicals available to meet any embalming or restorative challenges for the client. The hazards of formaldehyde and potential for damaging effects on staff in funeral service are well documented. Safer embalming chemicals are available, as well as a variety of chemicals to achieve specialized effects, but they have not replaced formaldehyde as the primary chemical. These chemicals also address environmental concerns for toxic contamination of the environment and support the commitment to "green funeral" procedures. These chemicals will be discussed in later sections.

Green funerals and ecobalming
This trend against embalming with toxic chemicals is gaining popularity in the United States. The NFDA has recognized this trend and provides training and resources for members to simplify the embalming and funeral process in a way that is free of all toxic chemicals, naturally occurring, less intrusive on the body, and cost effective. Details on these trends will be covered.

Licensing and certification changes

National, state, and law exams for embalmers and restorative artists
The International Conference of Funeral Service Examination Board (Conference) administers these three exams. The information below gives basic information on these exams as provided by the Conference. As of January 1, 2016, eligible candidates may sit for these exams up to three times in one calendar year. Candidates must wait 30 days between exam attempts.

National Board Examination
The purpose of the National Board Examination (NBE) is to provide official licensing agencies with a national competency evaluation of an applicant for licensure in all areas of funeral service. The International Conference of Funeral Service Examining Board develops, administers, and provides score reporting services to state licensure boards.

The NBE is used in all 50 states and the District of Columbia as an assessment of content knowledge needed to practice as a licensed funeral director or embalmer. The exam contains two separate sections, a 170-item Arts section and a 170-item Sciences section, which assess embalming and the restorative arts. These examination sections cover the following topics (Conference, 2016 b):

NBE science section
Embalming 60 Items, Restorative Art 38 Items, Preparation for Disposition 22 Items, Funeral Service Sciences 30 Items, Pretest Questions 20 Items.

Law, Rules, and Regulations exam
The purpose of the Law, Rules, and Regulations (LRR) exam is to provide official licensing boards with an evaluation of an applicant for licensure in areas of states laws, rules, and regulations governing and relating to the field of funeral service. Each LRR exam is carefully developed by the state licensing board and administered through the Conference. A Candidate Handbook is available for LRR examination details for each state. The LRR is a timed, multiple choice examination. The Conference website outlines the licensing requirements of each state (Conference, 2016 a).

State Board Examination
The purpose of the State Board Examination (SBE) is provided for various state official licensing agencies as an assessment of content knowledge needed to practice as a licensed funeral director or embalmer in a particular state. The International Conference of Funeral Service Examining Boards develops, administers, and provides score reporting services to the state licensing boards. Availability of exams may vary due to state-specific licensing requirements. Depending on the state, a State Board Arts Exam or a State Board Science Exam may be offered.

SBE sciences (embalmer)
Embalming 60 Items, Restorative Art 38 Items, Preparation for Disposition 22 Items, Funeral Service Sciences 30 Items (Conference, 2016 c).

The NFDA Code of Professional Conduct

Every professional organization has ethical standards and rules for professional conduct that set the goals and ideals that guide the profession. The NFDA Code of Professional Conduct includes five sections that address the professional obligations of funeral personnel. Each section begins with the ethical principle and is followed by information concerning professional conduct to meet the principle. The ethics sections should be reviewed in its entirety by visiting the NFDA 2016 website and downloading the code.

The NFDA Code of Professional Conduct for the funeral professional in five key areas (NFDA, 2008):

1. Obligations to the Family.
2. Obligations for the Care of the Decedent.
3. Obligations to the Public.
4. Obligations to the Government.
5. Obligations to NFDA.

Three of these areas, Sections 1, 2, and 4 apply directly to embalmers, restorative artists, and desairologists and they are important to review periodically.

1. Obligation to the family

Ethical principle: Members have an ethical obligation to serve each family in a professional and caring manner, being respectful of their wishes and confidences, being honest and fair in all dealings with them, and being considerate of those of lesser means.

Code of professional conduct

1. Members shall provide funeral services to families without regard to religion, race, color, national origin, sex, sexual orientation, or disability.
2. Members shall comply with all applicable federal or state laws or regulations relating to the prearrangement, prepayment, or pre-financing of funeral services or merchandise.
3. Members shall release deceased persons to the custody of the person or entity who has the legal right to affect a release without requiring payment prior to the release.
4. Members shall not use any funeral merchandise previously used and sold without prior permission of the person selecting or paying for the use of the merchandise.
5. Members shall comply with the Federal Trade Commission's Funeral Industry Practices Regulation.
6. Members shall protect confidential information pertaining to the deceased or the family of the deceased from disclosure.
7. Members shall carry out all aspects of the funeral service in a competent and respectful manner.
8. Members shall properly account for and remit any monies, documents, or personal property that belongs to others that comes into the member's possession.
9. Members shall not engage in any unprofessional conduct of a character likely to deceive, defraud, or harm the families they serve in the course of providing professional services.

2. Care of the decedent

Ethical principle: Members have an ethical obligation to care for each deceased person with the highest respect and dignity, and to transport, prepare, and shelter the remains in a professional, caring, and conscientious manner.

Code of professional conduct

1. All deceased persons shall be treated with proper care and dignity during transfer from the place of death and subsequent transportation of the remains.
2. Only authorized personnel of the funeral home or those persons authorized by the family shall be in attendance during the preparation of the remains.
3. Members shall only allow embalmers, apprentices, and interns, who are licensed to the extent required by state law, to embalm human remains.
4. All deceased persons in the preparation room shall be treated with proper care and dignity and shall be properly covered at all times.
5. Members shall not transport, hold, or carry out the disposition of human remains without all permits and authorizations required by law.
6. Members shall not violate any statute, ordinance, or regulation affecting the handling, custody, care, or transportation of human remains.
7. Members shall not knowingly dispose of parts of human remains that are received with the body by the funeral home in a manner different from that used for the final disposition of the body, unless the person authorizing the method of final disposition gives permission that the body part may be disposed of in a manner different from the disposition of the body.

4. Obligations to the government

Ethical principle: Members have an ethical obligation to maintain strict compliance with the letter and spirit of all governmental laws and regulations that impact the funeral consumer, the funeral profession, and the public health.

Code of professional conduct

1. Members engaging in the profession of funeral directing or embalming shall hold all necessary licenses to engage in such businesses.
2. Members shall require any person in their employ or under their control who serves as a funeral director or embalmer, or as an apprentice, or intern, to have all appropriate licenses.
3. Members shall not knowingly make a false statement on a death certificate.
4. Members shall not knowingly make or file false records or reports in the practice of funeral service.
5. Members shall comply with all federal, state, or local laws, rules, or regulations governing or impacting the practice of funeral service.
6. Members shall comply with all federal, state, or local laws, rules, or regulations that were enacted to protect consumers.
7. Members shall comply with all federal, state, or local laws, rules, or regulations that were enacted to protect the environment.

Desairologist certification

There is no licensing exam—only certification through a course of study. Desairologists must first be licensed cosmetolologists before they can enter a program to become certified in mortuary cosmetology, or desairology. In 1996, Noella C. Charest-Papagno wrote, The Handbook of Desairology for Cosmetologists Servicing Funeral Homes (Charest-Papagno, 1996). She created the term desairology by combining the words deceased and hair. Many restorative artists prefer the term because it requires a separate certification beyond cosmetology.

Desairologists must observe the laws governing their state cosmetology licenses, licensing regulations governing funeral home services in the county and state, as well as OSHA regulations including personal protective equipment (PPE) when required. A detailed review of the course of study for certification is included in this course.

Glossary of embalming and restorative arts terminology

1. **Amino acids**: First products of decomposition.
2. **Antemortem or postmortem**: Occurring after death.
3. **Aqueous humor**: A clear, thin, alkaline fluid, which fills the anterior chamber of the eyeball.
4. **Basket weave suture**: Cross-stitch, a network of stitches, which cross the borders of a cavity or excision to anchor fillers and to hold tissues in proper position.
5. **Biohazard**: Biological agents or condition that constitutes a hazard to humans.
6. **Bridge stitch**: Interrupted suture, a temporary suture consisting of individually cut and tied stitches to maintain the proper position of tissues.
7. **Buffers**: Embalming chemicals that work to help stabilize acid-base balance within embalming solutions and in tissues.

8. **Cancer**: Any malignant neoplasm, marked by uncontrolled growth of abnormal cells.
9. **Carcinogen**: Cancer-causing material or chemical.
10. **Cauterizing agent**: A chemical capable of drying tissues by searing.
11. **Cavity**: A hollow place or area.
12. **Coagulation**: The action of formaldehyde (HCHO) on protein.
13. **Decomposition**: Separation of body compounds into simpler substances.
14. **Deep filler**: A material used to fill cavities or excisions that serves as a foundation for the repair and restoration.
15. **Dehydration**: Loss of moisture from the body tissue that may occur after death.
16. **Distention**: State of stretching out or becoming inflated.
17. **Edema**: Abnormal accumulation of fluids in tissues or body cavities.
18. **Embalming**: Process of chemically treating the dead human body to reduce the presence and growth of microorganisms, for preservation and restoration.
19. **Excision**: Area from which tissue has been removed.
20. **Excise**: To remove as by cutting out.
21. **Eye cap**: Thin, dome-like cover made of hardened cloth, metal, or plastic placed beneath the eyelids to restore natural curvature and keep lids in place.
22. **Facial proportions**: Mathematical relationships of the facial features to one another or to the head and face.
23. **Filler**: Material used to fill a large cavity such as plaster of paris, cotton, liquid sealer, and other materials used in restoration.
24. **Firmness**: Degree of rigidity or stability: a condition of the tissues necessary for the fixation and surface repair of features or application of wax or cosmetics.
25. **Firm wax**: Wound filler, the most viscous type of wax: a putty-like material used to fill in large cavities or model features.
26. **Fixation**: Act of making tissue rigid, solidification of a compound.
27. **Gas gangrene**: Necrosis in a wound from Clostridium Perfringens.
28. **Gravity method**: 0.5 lb of pressure per ft of elevation.
29. **Hand pump, gravity percolator, or pressure machine**: Method of obtaining pressure for the injection of arterial fluid.
30. **Head tilt during embalming**: Approximately 15 degrees to the right.
31. **Hemolytic**: Swelling and bursting of red blood cells.
32. **HCHO**: Chemical name for formaldehyde.
33. **HCHO** danger level: 100 ppm.
34. **Hydrolysis**: Reaction between water and broken-down compounds.
35. **Hypodermic tissue-building**: Injection of creams, liquids, or other materials into the tissues through the use of a syringe and needle to restore natural contour or depth.
36. **Hypostasis**: Settling of blood or other fluids to dependant areas of the body.
37. **Humectant**: Chemical that increases ability to retain moisture.
38. **Incision**: Exact, surgical cut into tissue or skin.
39. **Index**: Strength of an embalming fluid, indicated by the number of grams of pure HCHO gas dissolved in 100 mL of water.
40. **Injection**: Forcing fluids into the vascular system or tissues.
41. **Inner canthus**: Starting at the inner corner of the closed eyelids.
42. **Integumentary lips**: Skin portion of the upper lip and the skin of the lower lip, mucous membrane.
43. **Intercellular fluid**: Outside or between body cells.
44. **Intradermal suture**: Hidden suture used to close incisions so that the ligature remains under the skin.
45. **Inversion**: Tissues turned in an opposite direction or folded inward.
46. **Jaundice fluid**: Low HCHO embalming fluid, contains special bleaching agents.
47. **Left common carotid**: Begins at the level of the second costal cartilage.
48. **Legate**: Tying or closing with cord, wire, or thread.
49. **Major restoration**: Requiring more time, extensive, requiring advanced technical skill, and written consent to perform.
50. **Massage cream**: Preparation used as a protective coating for external tissues, base for cream cosmetics, and an emollient and wax softener.
51. **Minor restoration**: Requiring minimum effort, skill, or time to finish.
52. **Necrosis**: Death of most or all of the cells in an organ or tissue due to disease, injury, or failure of the blood supply.
53. **Restorative art**: The care of the deceased to recreate natural form and color, to restore accurate appearance or resemblance in life.
54. **Sternoclavicular articulation**: Level at which the right common carotid artery begins.
55. **Sternocleidomastoideus muscle**: Muscle of the neck that is attached to the mastoid process of the temporal bone and to the sternum and clavicle.
56. **TWA**: Total weight average permissible 0.75ppm/8 hours.
57. **Vitreous humor**: Semi-fluid, transparent substance that lies between the retina and the lens of the eyeball (Quizlet,2016).

Modern embalming procedures

Embalmers today are professionals with expertise in mortuary science that includes anatomy, pathology, microbiology, chemistry, cosmetology, restorative art, psychology in grief management, and OSHA safety guidelines.

The Indiana Funeral Directors Association (IFDA) installed funeral director Wallace P. Hooker as its president for 2015-2016. The NFDA Conference in 2014 included a presentation by Hooker entitled, Common Sense Embalming Tips and Techniques (Hooker, 2014). Hooker lists a number of product recommendations in his presentations on embalming techniques and he includes the following disclaimer:

> "I have mentioned by name and company, many products. I am neither, compensated nor employed by those companies, nor am I endorsing their products. I am simply sharing information and discussing these products that work for me."

The course author does not endorse any products or receive any compensation from any product or company.

Hooker's tips and techniques are summarized below:

1. There are no short cuts to excellent quality embalming results. Begin with the following pre-embalming analysis.
   - Know what problems exist.
   - Anticipate problems based on the body condition.
   - Be prepared for all situations that may arise.
   - Keep a well-stocked prep room.
2. Humectant – Prepare equal parts Dodge Restorative and Dodge Rectifiant:
   - Spray or brush it on the face and hands, before, during, and following embalming.
3. Upgrade the embalming machine. High-pressure embalming machines will achieve better results.
4. Keep embalming room floors clean.
5. Limb manipulation aids circulation.
6. Use warm water for embalming.
7. NEVER inject water when dealing with edematous body. This term refers to excess water in cells, tissues, or body cavities.

8. Learn about chemical options:
    - Do not use the same fluid and mixture each time because chemicals today have been formulated and refined to address specific issues rather than the traditional "one size fits all" approach.
9. Do not mistake subcutaneous emphysema for tissue gas. Subcutaneous emphysema refers to gas or air under the skin layer.
10. Determine if there is tissue gas from Clostridium Perfringes bacteria that enters the bloodstream and spreads rapidly.
    - Common conditions leading to tissue gas include recent abdominal surgery, gangrene at the time of death, intestinal tears, skin punctures, or wounds from accidental deaths.
11. Extraordinary measures are required to treat tissue gas:
    - With your normal arterial solution, add 16 ounces of Dodge Dis-Spray per gallon of arterial solution. The solution will turn blue but note this is a chemical reaction not dye.
12. Keep scissors and other equipment sharp.
13. Tips for locating the jugular vein:
    - Locate the jugular by dissecting through the sternocleidomastoid muscle (SCM).
    - Locate a small vertical muscle called the omo hyoid muscle and the jugular vein is directly below it.
14. Blood removal and other difficult stains:
    - Use original formula Windex® or Dunn E-Z™ which attacks the proteins in blood quickly.
15. When using cotton to moderately build the features of the mouth and cheeks, treat the cotton with humectant—this keeps the cotton from dehydrating the delicate tissues and causing parting problems of the lips.
16. Prepare eye caps:
    - Coat both sides with a product that will produce surface tension to keep the eyelid in proper position. Examples: Stay Cream, Kalip, or massage cream.
17. Treat sunken eyes:
    - Use Webril® towel under eyelid coated with Kalip or similar product.
18. Additional measures to position eyelids:
    - Fold several layers of Webril® cotton into a triangular shape, saturate with humectant, and place over upper eyelid.
    - For lower lid, use the same technique to push it up to lower 1/3 position.
19. Dodge Restorative is a great product for emaciated cases. It is formulated to carry moisture and humectant conditioners into the emaciated cellular complex to restore cellular hydration and physically rebuild and plump tissues.
20. When you are beginning your embalming procedure, inject fluids in a closed circulatory system.
21. The closer to the heart, for injection and draining, the better the results especially when using chemicals with dyes for the cosmetic affect.
    - One exception is the jaundiced body, where using the femoral artery helps maintain control over color distribution when using dye combined with a chemical to reduce jaundice color.
22. Intermediate or restricted drainage is a good technique to aid in clearing problem areas and to force fluids deep into tissues.
23. For a more natural, life-like appearance, use dyes to inject color and do not hide freckles, moles, furrows, or other flaws with cosmetics.
24. Always use a pre-injection with problem cases.
    - Pre-injection helps flush contaminants from the body and prepares tissues for a thorough arterial embalming.
    - Problem cases include:
        a. Jaundice.
        b. Extended hospital stays with multiple drug lines.
        c. People with diabetes.
        d. Edema.
        e. Asphyxiation.
        f. Massive cardiac events with the usual purple facial discoloration.
        g. Delayed embalming.
        h. Overdoses.
25. Disinfecting instruments is critical.
26. Keep the trocar tip sharp to adequately penetrate hollow organs for thorough cavity treatment.
27. Delayed cavity aspiration allows embalming fluids to continue working long after embalming.
28. For a normal size adult, two bottles of cavity fluids should suffice.
29. Inadequate aspiration and cutting corners with cavity fluids can lead to undesirable results, such as purge, gas, odors, and possible tissue gas.
30. Do not comb hair straight back.
31. For a more even color appearance, use facial tints as a base before any cosmetic work and allow it to dry in place for several minutes.

Special embalming cases

Embalming bariatric cases

The United States leads the world in morbidly obese citizens per capita and that can present problems for the funeral director, embalmer, restorative artist, and desairologist in transport, preparation, funeral supplies, and services. National Institutes of Health (NIH) statistics state that 97 million Americans are obese, which contributes to 300,000 premature deaths. Obesity is the second leading cause of death in the United States (NIH, 2014).

Paul Sobczyk is a leader in bariatric embalming and has personally completed hundreds of these cases and presented seminars to teach techniques for providing funeral services for this population. Below is a summary of his tips and techniques for bariatric embalming (Sobczyk, 2014):

- If elbow-to-elbow or hip measurements of a deceased are 42 inches or greater, and the weight is over 500 pounds or more, problems occur that require special consideration.
- The flaccidity of the excess adipose tissue easily conforms to the contours of the table blocking drainage routes. Use head blocks and body positioners to re-establish drainage on the table or purchase a specially built table that measures at least 42 inches wide with a maximum capacity of one ton.
- Inject fluids using the carotid artery, which is the easiest and most efficient route to the circulatory system, though additional or alternative points of injection may be needed.
- Because of the added depth needed to gain access, raising the artery is accomplished by touch rather than sight because these arteries are often narrower in diameter and tauter.
- When working in the confined area of the incision, a tissue spreader is helpful. Use smaller, one-inch arterial tubes or cannulas because they are the most maneuverable inside the incision.
- These cases have high volumes of edema with circulation problems so anticoagulants and edema corrective solutions are often used. A fluid index of 35 and a more penetrating arterial fluid work the best. Secondary dilution is increased because of the excess fluid in the adipose tissue.
- Delay drainage until after the third or fourth gallon of fluid. By delaying drainage, the pressure of the fluid counteracts the external pressure of the body weight and helps open the arteries for equal distribution of embalming fluid. It is important to watch for swelling in the neck or face and correct if needed.
- Aspirate the thoracic, abdominal, and nasal cavity using 32 to 64 ounces of a 50 index cavity to ensure proper treatment of the visceral organs.

- One of the common problems is purging because of the external pressure and weight caused by the tissue on the abdominal and thoracic cavity. Cutting and plugging the trachea helps gain access through the carotid incision and bisect the esophagus and trachea.
- Make two plugs of 3 inch by 6 inch sheets of Webril®cotton and incision sealer. Place some incision sealer in the middle of the cotton and roll the cotton into a small tube or plug. Use the index finger to place one plug in the bottom portion of the trachea and one above. These same plugs can be made smaller and packed into the nasal cavity for added protection.
- Decubitus ulcers, or bedsores, must be treated.
- Lack of circulation, combined with the inability of embalming fluid to reach the outer layers of the adipose tissue, increases the chances of forming water blisters and skin slip on the lower extremities. Use embalming gel and wrap the legs in plastic wrap for preservation.
- Oversized caskets will be needed. Never casket the deceased alone, use a good lift with a high enough weight capacity and long straps to ensure the safety of personnel and respect for the deceased.
- Ensure the weight capacity of the casket bier is rated high enough to handle the weight of the deceased and casket.
- All routes of entry and exit must be wide enough for the casket to fit.
- When working on all cases it is the responsibility of funeral professionals to ensure needs are met in a dignified and respectful manner.

Embalming cases with edema

Cases with extreme edema present challenges for even the most experienced embalmer. Jeff Seiple (2014) provides the following suggestions to handle these cases that can predispose the body to early decomposition.

- These cases require a hypertonic or strong primary dilution with edema, eliminating chemicals added to the primary dilution. This primary dilution additive has the ability to crenate or leave, through osmosis, in tissues saturated with water. The dehydrating ability of these chemicals can be very effective in reducing swollen areas due to edema.

  Gravity and the correct elevation, along with proper primary dilution strength, are very effective to remove fluids.
- An embalmer should not assume that a general primary dilution injection from the right common carotid would correctly treat an edematous limb, so inject a stronger primary dilution in close proximity to the edematous extremity. Injecting edematous legs through the femoral arteries is one of the best techniques and involves not only injecting the edematous limb(s) but requires the embalmer to slightly elevate the legs.
- After the injection, place cotton wicks or thin rolls of cotton within the femoral incisions and allow to drain.
- Once drained, tie off the femoral arteries and properly close the incision(s).
- It is wise to place the lower limb(s) in plastics such as stockings or capri pants to prevent leakage from the legs. Plastics must be used as a final barrier before dressing and casketing the deceased.

Safety consideration for embalming

OSHA and formaldehyde safety

As previously mentioned, the current trend is to move away from the use of toxins in the embalming process. To date, formaldehyde is still the embalming fluid of choice because other nontoxic preservation fluids have not been developed that ensure the same result. OSHA and the NFDA continue to research and develop training and guidelines that warn of the hazards of formaldehyde and the precautions that must be taken to mitigate the harmful effects of the toxin on funeral personnel and the environment.

OSHA has produced a fact sheet, which is summarized below, to explain the effects of formaldehyde exposure as well as precautions that must be in place to protect funeral staff at high risk for exposure to the dangerous chemical. The OSHA information is as follows (OSHA, 2015):

> Formaldehyde is a colorless, strong-smelling gas often found in aqueous (water-based) solutions. It is commonly used as a preservative in medical laboratories and mortuaries.

What funeral service professionals should know

The OSHA formaldehyde standard (29 CFR 1910.1048) and equivalent regulations in states with OSHA-approved state plans protects workers exposed to formaldehyde and apply to all occupational exposures to formaldehyde from formaldehyde gas, its solutions, and materials that release formaldehyde.

- The permissible exposure limit (PEL) for formaldehyde in the workplace is 0.75 parts formaldehyde per million parts of air (0.75 ppm) measured as an 8-hour time-weighted average (TWA).
- The standard includes a second PEL in the form of a short-term exposure limit (STEL) of 2 ppm, which is the maximum exposure allowed during a 15-minute period.
- The action level, which is the standard's trigger for increased industrial hygiene monitoring and initiation of worker medical surveillance, is 0.5 ppm when calculated as an 8-hour TWA.

Harmful effects on workers

The OSHA fact sheet identifies formaldehyde as a sensitizing agent that can cause an immune system response upon initial exposure and is also a cancer hazard. Acute exposure is highly irritating to the eyes, nose, and throat and can make anyone exposed cough and wheeze. Subsequent exposure may cause severe allergic reactions of the skin, eyes, and respiratory tract. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels in the air or on the skin can cause asthma-like respiratory problems and skin irritation such as dermatitis and itching. Concentrations of 100 ppm are immediately dangerous to life and health (IDLH).

Note: The National Institute for Occupational Safety and Health (NIOSH) considers 20 ppm of formaldehyde to be IDLH.

Routes of exposure

OSHA clarifies that workers can inhale formaldehyde as a gas or vapor or absorb it through the skin as a liquid. Groups at potentially high risk include mortuary workers as well as instructors and students who handle biological specimens preserved with formaldehyde.

How employers can protect workers

Airborne concentrations of formaldehyde above 0.1 ppm can cause irritation of the respiratory tract. The severity of irritation intensifies as concentrations increase.

OSHA requires employers to do the following:

- Identify all workers who may be exposed to formaldehyde at or above the action level or STEL through initial monitoring and determine their exposure.
- Reassign workers who suffer significant adverse effects from formaldehyde exposure to jobs with significantly less or no exposure until their condition improves. Reassignment may continue for up to 6 months until the worker is determined to be able to return to the original job or to be unable to return to work, whichever comes first.
- Implement feasible engineering and work practice controls to reduce and maintain worker exposure to formaldehyde at or below the 8-hour TWA and the STEL. If these controls cannot reduce exposure to or below the PELs, employers must provide workers with respirators.
- Label all mixtures or solutions composed of greater than 0.1% formaldehyde and materials capable of releasing formaldehyde into the air at concentrations reaching or exceeding 0.1 ppm. For

all materials capable of releasing formaldehyde at levels above 0.5 ppm during normal use, the label must contain the words "potential cancer hazard."
- Train all workers exposed to formaldehyde concentrations of 0.1 ppm or greater at the time of initial job assignment and whenever a new exposure to formaldehyde is introduced into the work area. Repeat training annually.
- Select, provide, and maintain appropriate PPE. Ensure that workers use PPE, such as impervious clothing, gloves, aprons, and chemical splash goggles, to prevent skin and eye contact with formaldehyde.
- Provide showers and eyewash stations if splashing is likely.
- Provide medical surveillance for all workers exposed to formaldehyde at concentrations at or above the action level or exceeding the STEL, for those who develop signs and symptoms of overexposure, and for all workers exposed to formaldehyde in emergencies.

Recordkeeping requirements

Employers are required to do the following regarding worker exposure records:
- Retain exposure records for 30 years.
- Retain medical records for 30 years after employment ends.
- Allow access to medical and exposure records to current and former workers or their designated representatives upon request.

Additional information: For more information on this, and other health-related issues affecting workers, visit OSHA's website at www.osha.gov.

NFDA on formaldehyde safety

The NFDA provides the following information to members based on their research (NFDA, 2012 a):

NFDA urges its members, if they have not already done so, to complete the required sampling for formaldehyde to confirm that the formaldehyde levels in the preparation room are within the allowable OSHA limits of 0.75 parts per million for an 8-hour time-weighted average and 2 ppm for a short-term exposure limit. Relatively inexpensive test kits for formaldehyde sampling are available through preparation chemical suppliers. To further reduce exposure levels to formaldehyde in the preparation room, NFDA members are also urged to follow the NFDA Formaldehyde Best Management Practices and review the NFDA Prep Room Ventilation Study that follow.

Measures to reduce formaldehyde levels, in the preparation room atmosphere, include improvement in ventilation by measures such as lowering the preparation room's exhaust vent to below the breathing zone, insuring that all exhaust vents are unblocked, the use of formaldehyde-containing products strictly by the manufacturer's instructions, the substitution of formaldehyde-containing preparation products with reduced or formaldehyde-free products wherever possible, and simple measures such as keeping the lid on the embalming machine, immediately cleaning up any spills, the use of drain tubes, and covering the flush sinks.

NFDA Formaldehyde Best Management Practices 2012
The following information is from the NFDA report on Formaldehyde Best Management Practices (2012 a).

History
More than 15 years ago, the NFDA issued Environmental Best Practices, which were designed to assist members to meet the high standards of the funeral profession by providing guidelines for protecting the health and safety of the public, the environment in the community in which funeral directors live and work; themselves, their employees, and families.

NFDA issues these Formaldehyde Best Management Practices (BMPs) at a time when there are continuing appraisals about the health hazards associated with formaldehyde. In 2009, after reviewing additional scientific studies, the IARC found sufficient evidence to conclude that formaldehyde exposure may cause leukemia, a disease of the blood and bone marrow (IARC, 2009). In 2009, following a 20-year study of embalmers, the National Cancer Institute (NCI) published a report, which observed an association between embalming and death from myeloid leukemia, with the greatest risk among those who practiced embalming for more than 20 years and who experienced greater formaldehyde exposure in the preparation room (NCI, 2009).

The Formaldehyde Best Management Practices is a working document. It may be updated or modified as important new information about formaldehyde becomes available. The following information is a summary of the best practices guidelines and subsections. It is important to review this document in its entirety on the NFDA website (NFDA, 2012 a).

Preparation room ventilation is the single most important factor in reducing health risks associated with formaldehyde exposure. Make sure that the ventilation system in your funeral home's preparation room is properly designed and operating effectively. An effective ventilation system assures that as much formaldehyde as possible is drawn away from the embalmer's breathing zone. Consult a heating, ventilation and air conditioning (HVAC) professional to assess and maintain the ventilation system and the heating and cooling needs of the work area. NFDA provides the following guidelines:
1. Ensure adequate and effective ventilation in the preparation room.
2. Select and use the proper embalming product in considering the environmental, health and safety characteristics of the product, and the condition of the remains.
3. Take precautions in the preparation room to limit formaldehyde exposure and emissions during routine embalming.
4. Observe special precautions to limit formaldehyde exposure and emissions when embalming organ procurement cases and autopsied remains, as such embalming may increase the embalmer's formaldehyde exposure risk.
5. Be familiar with and follow federal, state, and local environmental, OSHA, and health requirements that apply when embalming is performed.

Various environmental, OSHA and health requirements apply when embalming is performed. Often product selection will govern the application of these requirements. Periodically review and re-evaluate the products used in the preparation of the remains. Know the constituents of the products and the requirements that these constituents make applicable. Determine whether your locality has mechanical code or other requirements that apply to ventilation systems.

Formaldehyde vapor reduction in the funeral home preparation room: NFDA recommendations for effective preparation room ventilation 2010
This study reached a number of conclusions of critical importance to funeral directors. Several of the key findings are summarized below (NFDA, 2010).

The report concludes that an effective ventilation system, designed, operated, and maintained to meet the criteria in the study, can be effective in removing formaldehyde vapors from the breathing zone of the embalmer in the preparation room and lowering overall levels of formaldehyde. The NFDA criteria follow:

Criterion 1. The ventilation system should be a dedicated, non-recirculating system.

Criterion 2. As a general proposition, the minimum air change rate for the preparation room should be no less than 15 air changes per hour.

Criterion 3. The ventilation system should exhaust more air from the space than it supplies to the space to create a slightly negative pressure within the preparation room relative to adjacent spaces in the funeral home.

Criterion 4. The number and location of supply diffusers and exhaust grilles should be adequate to direct a sufficient amount of air across the preparation table(s) so that formaldehyde vapors are transported away from and out of the embalmer's breathing zone.

Criterion 5. Installation of an LEV device, designed to serve the preparation table(s), will control formaldehyde at its source and enhance the effective operation of a general ventilation system.

The design, installation, maintenance, and alteration of the preparation room ventilation system should always be in consultation with an HVAC professional to ensure the system is functioning effectively to reduce formaldehyde exposure to the greatest extent possible.

NFDA 5-Step Guide for Effective Preparation Room Ventilation

An essential preliminary step for the funeral home is to assemble all information about the current preparation room ventilation system (NFDA, 2010).

STEP 1. Complete the formaldehyde ventilation assessment.
NFDA members may download the Funeral Home Preparation Room Formaldehyde Ventilation Assessment from the NFDA website.

STEP 2. Complete expert HVAC consultation.
NFDA strongly recommends the periodic re-evaluation of the preparation room ventilation system by an expert HVAC consultant.

STEP 3. Evaluate recommendations.
Evaluate the expert's recommendations to determine the actions to take that will provide the greatest short- and long-term benefits.

STEP 4. Make simple changes in ventilation system.
Simple changes in the ventilation system can often result in major improvements in ventilation, such as:
- Resizing the exhaust fan.
- Relocating and resizing the exhaust grille so that it is adjacent to the embalming table(s) near the floor.

STEP 5. Scheduling implementation and maintenance.

Establish a schedule to implement the expert's recommendations for improving ventilation system effectiveness and maintaining the funeral home's ventilation system. Additional studies concerning formaldehyde hazards and precaution guidelines are ongoing and will be published on the NFDA website.

Other chemicals for embalming and the restorative arts

Today there are chemicals for all stages of the embalming and restorative art used for disinfecting, pre-injection, arterial and cavity embalming, and tissue repair. The colors of the fluids can provide the ability to control skin tones and colors to achieve the most natural and life-like effects for all ethnicities.

Cavity embalming chemicals can preserve the contents of the body and counteract the effects of medical conditions on the body that occurred over a period of years or after death. For example, products are available to build tissue that had been lost during the wasting effects of cancer.

Some products aid in circulation needed to deliver embalming and restorative chemicals throughout the body to help disinfect, preserve, and restore. Chemicals have been developed to meet restorative arts challenges to fill, repair, rebuild, conceal, stabilize, and set features for the most natural and accurate resemblance.

Other new chemicals are designed for the ventilation system in the mortuary to purify the air and counteract the toxic effects of formaldehyde vapors. Examples of the use of these new chemicals can be found in the descriptions of specific techniques throughout the course but none of these products are endorsed by the authors.

Green funerals

According to the NFDA, "green funeral incorporates environmentally friendly options in order to meet the needs of a family requesting a green service." A green funeral may include any or all of the following: a small gathering in a natural setting, use of only recycled paper products, locally grown organic flowers, carpooling, organic food, no embalming or embalming with formaldehyde-free products, the use of sustainable biodegradable clothing, shroud or casket, and natural or green burial (NFDA, 2016 a).

Another trend is a natural burial, which includes no embalming at all. All parts of the funeral, including the clothing and casket must be made of materials that are nontoxic and biodegradable. Grave markers are also naturally occurring and environmentally conscious, so rocks, trees, or flowers may be used as markers rather than mining granite or quartz to make a traditional headstone.

Ecobalming

The mission of ecobalming is to develop environmentally safe embalming practices that preserve the body, as part of the green burial process. The objective is to have:
- No toxins in the embalming or burial process.
- No secret or undisclosed ingredients.
- Full disclosure of all chemicals and processes.
- Documented environmental impact of all chemical components.
- Little to no impact on the environment.
- Full disclosure and clean sheet material safety data sheets (MSDS).
- Only biodegradable items will be used in all aspects of the embalming burial process.

The process of ecobalming, which in the true form would complement a natural burial, exemplifies the new ways of thinking about death, funerals, and the celebration of the person and rejects traditional methods that have been used in the funeral industry for hundreds of years. The goal is to provide a funeral and burial that is more natural, affordable, practical, and personal to provide a more meaningful celebration as the end of life.

Alternative embalming chemicals for green funerals and ecobalming

New embalming chemicals have been developed that are safe, effective, nontoxic, and made from nonhazardous plant-based oils that can deliver temporary cosmetic/restorative, sanitation, and preservation results. The first of these chemicals, Aardbalm®, was produced in the United Kingdom. It was iodine-based and purported to be nontoxic and environmentally safe. It did not provide the firmness of traditional embalming fluids, so critics questioned if it really preserved the body or simply delayed decomposition for a short period of time.

The Dodge Company followed with a product called Freedom Art that was alcohol-based, though the exact formula was not open for review. The company claims it is effective for disinfecting, deodorizing, and preserving the body and admits that the product will not produce the tissue firmness of traditional embalming fluids.

Next, the Champion Company created Enigma, with the active ingredient propylene glycol. This chemical is water-soluble, synthetic, nontoxic, and petroleum-based. The company claims it slows decomposition for 3 to 5 days, up to a week, or longer (Champion, 2016). These products do not produce long-term embalming results, just temporary preservation. To date, Champion products are the only ones certified by the Green Burial Council (GBC), which works to "inspire and advocate for environmentally sustainable, natural death care through education and product certification (GBC, 2015)."

These products include:

- Enigma Arterial Ecobalming: Chemicals can sanitize and deodorize while reducing water retention and moisture problems. These chemicals can also deliver natural skin tone coloration.
- Enigma Cavity Ecobalming: Chemicals use a plant-based oil formula delivered with almost no water. It provides sanitation and deodorizing effects and can enhance the arterial action in compromised bodies.
- Other Enigma topical formulas are available for sanitizing and deodorizing the surface of the body and can be combined with plant-based Enigma compound materials to prevent leakage.

Another chemical, glutaraldehyde, may be a possible alternative to formaldehyde because it produces less irritating vapors and is very effective for preservation. However, it is still classified as a hazardous, toxic chemical regulated by OSHA and has similar harmful effects as formaldehyde. It has not replaced the use of formaldehyde because it does not produce the same level of firmness. Firmness is one measure embalmers use to determine the amount of penetration by chemicals for use in arterial and cavity embalming. The degree of tissue firmness relates to the degree of tissue preservation, so this is an important factor.

All of the major embalming fluid producers are working to develop a green product that can match the preservation properties of traditional fluids. They may be able to disinfect and preserve to some degree, but are not able to fix and produce tissue firmness. This is a major setback because it translates into difficulties in the area of restoration and setting of soft tissues that can result in drooping lips and cheeks. Facial features are the most important and viewable aspects of restorative art and critical to the positive memory experience for loved ones.

The new embalming fluids on the market today produce a shorter preservation window and cannot produce the effects that mainstream embalmers demand, but they may appeal to the green or natural funeral market if they meet the standards of ecobalming. They will also appeal to those who protest the toxic fluids that pollute the environment.

New legal form: Formaldehyde-free embalming authorization

In keeping with the trend of moving the funeral industry toward environmentally safe embalming for a green funeral, the NFDA developed a form in 2012 that authorizes formaldehyde-free embalming. According to the NFDA, this new form not only serves as an embalming authorization form, but also includes a clause indicating the family wants the funeral home to use a formaldehyde-free embalming solution and understands that results may differ from those of a solution containing formaldehyde. Members can download this and all sample legal forms and documents from the NFDA website at www.nfda.org/legalforms at no cost (NFDA, 2012 b).

RESTORATIVE ARTS

Many people suffer from diseases that have devastating effects on their physical appearance. Others are victims of physical trauma from car accidents, falls, violent encounters, drowning, dehydration, malnutrition, decomposition, or drug overdoses that leave them with an appearance in death far different than life. They are not able to make their wishes known, but one can imagine that they would not want their loved ones to see them in that state.

The restorative arts play a critical role in the grieving and healing process for loved ones left behind and dignity to the deceased. Research shows restorative arts can be traced back as far as 1200 BC (Gillies, 2011). The ancient Egyptians were practicing a range of restorative techniques on the emaciated features of the dead, from filling the inside of the mouths with sawdust to improve hollowed cheeks to stuffing linen under the eyelids or replacing eyes with stones. They would continue this procedure, tending to any disability, injury, or disfigurement until the face and body were contoured to approximate the original features and shape of the person they were preparing for their death ceremony.

The next milestone in restoration arts occurred in 1912, when embalmer Joel E. Crandall introduced demisurgery, a practice he described as "the art of building or creating parts of the body which have been destroyed by accident, disease, decomposition or discoloration, and making the body perfectly natural and lifelike"(Ibid). Demisurgery was added to the practice of embalming as a way to make the appearance of the deceased more presentable especially in trauma cases. Many people of that era felt that the practice of demisurgery in principle was unacceptable and should not be practiced after death.

Crandall continued to make a case for the practice of demisurgery as an important service for bodies that had suffered severe trauma or mutilation. He provided photographic evidence to document the dramatic results of his work using before and after pictures. His photographs changed the attitudes of many in the funeral industry at that time and demisurgery for the deceased became an accepted practice.

By the 1930s, demisurgery was referred to as restorative art and had become an important part of embalming in part because it was used to repair and cover the impact of injury or disease that resulted from World War I. Professionals in the field began to realize the positive healing effects that restorative art could have on loved ones because the body could be restored to resemble its original appearance.

The next major milestone occurred with the publications of the textbook, Restorative Art, in 1943 by Sheridan Mayer followed by the Workbook on Color and Mortuary Cosmetology, and the textbook Color and Cosmetics. Gillis (2011) explains Mayer's important work:

While trained as an artist and sculptor, and employed as a theatrical cosmetician and makeup expert, his greatest contribution to restorative

art was his encouragement of adopting a uniform curriculum and standards for instructional and testing purposes, in which he prepared sample syllabi and curricula, as well as examination questions that became standards in the field of study.

However, it wasn't until 1945 that restorative art became a formally adopted discipline when it was the subject of the NFDA Convention in Chicago, where it was addressed as being a value and necessity of the procedures of embalming.

Beyond restoring the physical appearance of the deceased to provide loved ones with the last positive memory experience, the restorative arts can do much more to facilitate comfort and healing for loved ones as they move through the healing process. When loved ones are notified of a sudden, tragic, and unexpected death, they are in a state of disbelief and shock. They often do not know immediately what really happened and they begin to imagine a number of scenarios and wonder what pain and fear their loved one suffered during their last moments of life. Many family members refuse to believe their loved one has died and insist it must be mistaken identity, hopeful that all will be resolved as soon as they can contact them. Slowly, as the evidence mounts, they realize they will never see them again and devastation and sadness take over. They still may not know the details surrounding the death and continue to suffer the pain of not knowing what their loved one experienced. Not knowing the truth can be very destructive mentally and emotionally and their imagination may lead them to very dark and sad conclusions.

Restorative arts can play a pivotal role in assisting love ones in healing, moving toward acceptance, and beginning the grieving process. At this point, the ability to see their loved one looking peaceful could help through the grieving process.

When funeral directors urge families to keep the casket closed, or when the family member in charge hastily decides to not allow viewing, it has the same effect as saying the situation is horrible and too shocking to view, which reinforces the cycle of fear, sadness, and haunting images of the unknown. A positive viewing experience may help family and friends acknowledge and accept the death.

Practice guidelines for restorative art

Edward J. Grey holds a master's degree in restorative art from the International College of Mortuary Science, Liege, Belgium. He provides the following information outlining the progression of restoration art techniques corresponding to the degree of restoration required, restorative guidelines, and practical advice to face challenging tasks:

In the best case scenario, a simple case of restorative art would involve the proper setting of facial features, which is one of the most important responsibilities of the artist. Setting facial features can never receive too much attention because it is the focal point of the viewing. The effect should be as natural as possible and resemble the person in life as compared to a recent photo. Make up application would be minimal at this level and should reflect the skin tone, coloring and style that the person preferred in life. A summary of Grey's guidelines follows (Grey, 2004):

Minor cases of restoration would include:

- Operations such as hypodermic tissue building because of a wasting disease or malnutrition prior to death, reduction of swelling usually caused by drugs administered prior to death, removal and restoration of small skin blemishes, subtissue surgery, bleaching and concealing discoloration, and rehydration of tissues.

More extensive restorations

These cases generally take a longer period of time and the embalmer/restorative artist should be consulted before deciding viewing times with relatives. These operations require extensive time, patience, and skill to complete and could include:

- Restoration or replacement of hair or major feature, reduction of large tumors or swelling, reconstruction of major fractures, removal and replacement of damaged areas, and deep wounds.
- Most restorative art or corrective procedures are carried out after arterial embalming; although some need to be attended to before arterial injection is started.
- Some procedures will involve surgical skill, others will require technical skill, but all require patience and time.
- Take short breaks to stop to look at the progress made. A little break away from the task at hand can shine a different light on the subject and make a big problem seem easier.
- Sometimes the sheer sight of the task to be undertaken can frighten even the most experienced restorative artist, but a little time, reflection, and careful planning can reveal that most things are possible.
- If the visually offensive area is removed and cleaned, the restorative artist can concentrate on the task at hand, and repair the damaged area.
- The restorative artist must adopt a positive attitude and not associate the condition with human pain.
- The restorative artist may not achieve perfect presentation and should consult with the family before procedures begin. In most cases at least one family member will have already viewed the deceased so they will understand the degree of restoration required.
- A professional, qualified embalmer/restorative artist will be able to evaluate the situation very quickly, explain the options available, and the time involved. Most families are willing to allow enough time if they are approached with professionalism and due respect. Consulting with families can be helpful for both parties and build rapport if approached correctly with the utmost respect shown towards the family.
- If reasonable lifelike appearance can be achieved, the family will be etern ally grateful and the viewing will ease the grieving process, which should be every funeral director's goal.

Restorative art and the Canon of Beauty

In the past, mortuary science students were taught to review and consider of the Canon of Beauty that was established in the 4th century by the Greek sculptor Polykleitos. The principles of the Canon of Beauty, or the aesthetic canon, were a set of mathematical calculations that represented the standard of human proportions that were considered the most pleasing to the eye. These were included in mortuary education as a way to teach human proportions and guide restoration. Some educational programs required the students to use these dimensions to totally design and create a face so these proportions served as the foundation for those exercises.

Today they only serve as a baseline comparison and not considered to be a standard or norm of beauty. With the increased emphasis on individuality, and belief that there is no one standard of beauty that encompasses all racial and ethnic characteristics, this is especially true. The following concepts should be considered when implementing any aesthetic standard as a basis for the restorative art (Quizlet, 2016):

- No standard or proportion should be used in every case to ensure accurate resemblance or clients would look the same.
- No standard should be used to alter, improve, or enhance the natural physical appearance.

- No standard should be used other than the actual anatomical analysis.
- Standards or measurements should be used only as a guideline for restoration practices.

Restorative arts tips and techniques

The following list includes a summary of the 2014 NFDA Conference presentation by Wallace P. Hooker (2014):

1. The first rule for a case involving any amount of restoration is find a known feature and work with it.
2. For drying and treating open sores and wounds use a cauterizing chemical before embalming such as Dodge Dryene, SynGel, or mix the two to a gel like consistency.
3. For facial suturing try dental floss with a hidden stitch.
    - Dodge has a great adhesive called Tech Bond that is faster and neater than suturing and will adhere to moist tissue.
4. For delicate areas of the face needing tissue building, subdural bleaching or if you are using a cauterant, try using diabetic syringes.
5. When using Inr Seel to recreate sunken checks, use the Inr Seel applicator and overfill the area between the jaw and cheek on each side.
6. For extremely emaciated bodies, remember to be careful not to overdo it. The families have watched the downward progression for maybe months or years so be careful not to turn back the clock too far.
7. To speed the softening of restorative waxes and make application simpler, use a hand held hair blow dryer.
8. For filling larger facial deficits, cover the missing area with mortuary putty, such as Dodge Inr Seal, and sculpt to shape.
9. For non-facial surface dicing, scrapes, cancers, skin slip, or other possible sources of leakage, first cauterize the area with a product such as Dryene.
    - Let it dry then cover with a product called DodgeSeal, which is a new product that works very well for sealing orifices, punctures, bullet holes, incisions, and deep wounds.
10. An electric tissue reducer or electric iron should be in every prep room. It works great in reducing swelling of the lips and eyelids.
11. Treating swollen eyes:
    - For severe cases, it may be necessary to remove the vitreous humor.
    - Channel the upper eyelid, following the curvature of the skull, to create channeling to relieve the swelling.
    - Coat with massage cream and manipulate the fluid from the deep tissue.
    - After physically manipulating as much fluid as possible from the tissue, use the electric tissue dryer and if time allows, insert Webril® toweling into channels to wick the moisture away.
12. For ease of suturing complete the following:
    - If you are right handed, suture from right to left, or if left handed suture from left to right.
13. If preparing for the final stages of substantial facial restoration, dress the remains and casket them to eliminate the chance of damaging extensive restorative efforts while handling the body.
14. Autopsy cases:
    - Use mortuary putty over the cranial separation before replacing the scalp, manipulate the putty through the scalp and fill or hide the deficit.
    - Use tissue gatherers to assist holding suture lines together while suturing.
15. Donor/harvested cases:
    - Embalm on the bottom of the body pouch.
    - Always open the harvest sites of the upper arm and leg bones and treat the tissue in these sites with a strong cauterizing material, cover with cotton and wrap with plastic while you embalm.
    - If skin was harvested, treat the area with cauterizing material and cover with plastic.
    - Try to ligate any severed arteries.
    - If time allows, let the body set for 12 hours, remove the cotton and plastic, retreat with more cauterizing material, then dry the tissue.
    - Use plastic garments before dressing the body. (See earlier product disclaimer.)

Desairology

Mortuary cosmetology, referred to as desairology, is a growing specialty in the funeral profession. Noella C. Charest-Papagno and other cosmetology and funeral professionals recognized that many people spend a great deal of time and effort devoted to their appearance in life. They argued that the same quality of services should be available to them after death.

Desairology law and legal definition

As defined by U.S. Legal:

> The art of desairology involves caring for the hair, skin, and nails of the deceased in a funeral home preparation room. The specialty is performed by a desairologist licensed in cosmetology under state law. State regulations typically require the funeral home preparation room be of approved size, properly equipped, and must provide a well ventilated work environment for the personnel (U.S. Legal, 2016).

These professionals are state-licensed cosmetologists and barber stylists, with additional certification that qualifies them to perform specialized techniques for hair, nail, skin care, and makeup services in a funeral setting. They provide services upon request by the family or by prior arrangement with the deceased. Desairologists may work as full-time staff for one director, though most maintain a private practice and work as independent contractors on call to assist funeral directors or embalmers throughout the community.

Desairologists must follow all OSHA, cosmetology, desairology, state, and local funeral laws and regulations, as well as adhere to the code of ethics for their licensing and certifying organizations.

The Desairology Code of Ethics

- I will practice cosmetology-desairology on the deceased under a licensed funeral director, funeral home, or mortuary.
- I will continue to explore the developmental education of desairology.
- I will uphold the confidentiality of the business of the funeral home and the working environments concerning preparation, embalming, and desairology services for the deceased.
- I will uphold the laws and the board of cosmetology in the state in which I am practicing cosmetology-desairology (Source: Developmental Desairology, 2016).

Usually the career of desairology begins with cosmetology school. Some programs teach only desairology though cosmetology schools are adding training and certification programs for licensed graduates. There are also home school and distance learning programs available for education and certification.

Desairology study includes the following areas:

- Shampooing of the deceased client's hair.
- Haircutting in ergonomically challenging conditions.
- Color restoration.
- Wig care and hair replacements.

- Identifying hairstyles and parting.
- Anatomy and physiology of the deceased.
- Chemical makeup of hair, skin, and nails after death and the embalming process.
- HIV/AIDS.
- Universal precautions.
- Bacteriology.
- Sanitation and disposal of biohazardous waste.
- Observation of electrical safety.
- OSHA standards for the funeral home industry including required PPE.

Assessing risk

Nellie Brown, western regional director of the Chemical Hazard Information Program at Cornell University, discussed the chemical and disease exposure risks involved in working as a desairologist and provides the following guidelines (Brown & Platner, 2008):

- Exposure to disease should not be a threat. Make sure immunizations are up to date, particularly tetanus. Disease and decay organisms are not uncommon, so besides being immunized for tetanus, having a hepatitis B series of vaccinations and a tuberculosis vaccination is a good preventative measure.
- Wearing gloves and an apron or lab coat while working in the prep room, the area of the mortuary where the body is prepared for the funeral service and interment, is recommended.
- Cover street clothes, preferably something that can be bleached, to prevent them from being contaminated. Place the clothes worn during the service separately in a plastic bag until they are washed in a separate load.
- Be as cautious working on a corpse as you would a living body.

The desairology student will complete supervised, hands-on practicum exams to test practical knowledge. Mannequin heads may be used as practice and licensed cosmetologists, certified desairologists, or licensed funeral home staff will develop hypothetical cases for study and practice.

Any student interested in the field should take classes in mortuary science to be familiar with the basics of embalming and to help them deal with the unique challenges of working with deceased clients. Coping strategies are needed to support a career in desairology to avoid stress and manage emotional issues related to this challenging and important work.

In the past, the funeral directors or embalmers would provide these services and their studies in mortuary science provided basic training in makeup application, hair styling, and nail grooming. In most cases where no trauma had occurred, basic makeup application was sufficient and families would provide a picture to assist in hair styling and makeup.

Today the emphasis on individuality and appearance may require a desairologist skilled in advanced makeup, hair, and nail styling. The individual may have left detailed plans or the family may request special services to continue the same appearance and unique style the deceased enjoyed in life.

Changing presentations and personalization for viewing

The recent interest and demand for cosmetic surgery to improve appearance does not end with death. An NBC news documentary, entitled, Final Touch: A Cosmetic Lift for Your Funeral, interviewed a number of embalmers and restorative artists. The report found that many people are consulting funeral professionals to plan restorative procedures to enhance their appearance at their funeral. Some of the requests include smoothing lines, plumping lips, and even lifting sagging areas for the funeral (NBC, 2008). “People used to say, just throw me in a pine box and bury me in the back yard,” says Mark Duffey, president and CEO of Everest Funeral, a national funeral planning and concierge service. “But that’s all changing. Now people want to be remembered. A funeral is their last major event and they want to look good for it. I’ve even had people say, ‘I want you to get rid of my wrinkles and make me look younger (Ibid).’”

Restorative artists and embalmers have always tried to restore a life-like appearance. The difference today is the number of people who are preplanning their final touches, which is a new phenomenon in the funeral industry. “I’ve had people mention that they want their breasts to look perky when they’re dead,” says David Temrowski, funeral director of Temrowski and Sons Funeral Home in Warren, Michigan. “Or they’ll say, ‘Can you get these wrinkles out?’ It’s all in humor, but I think people do think more about what they’re going to look like when they’re dead and lying in a casket (Ibid).”

A 2014 ABC News report, Lifelike Embalming Positions a New Funeral Trend, noted that funeral plans are becoming more extravagant (ABC, 2014). The trend calls for individuals to be embalmed and presented for viewing in ways that are personalized and accurately celebrate their life. Rather than the traditional casket-viewing and burial, some choose to have loved ones posed in ways that show their hobbies and personalities.

ABC News tells the story of an 83-year-old party girl who was embalmed to look as if she was sitting at a party with a glass of champagne. Her “set” included a bright feather boa, patterned outfit, decorative benches and décor (Ibid). Other stories included a man who was an avid boxer during life, posed standing like a boxer in the ring, complete with a hood and boxing gloves (Ibid). Other examples showed a jazz musician standing with instruments at his funeral and a young man dressed in leather and posed riding his motorcycle.

One embalmer told ABC that in doing these types of “extreme embalming,” as ABC put it, they would have to use different mixtures of fluid so the body would stay stiff in a more upright position (Ibid). This type of personalization in funeral presentation rejects the traditional way of displaying the body, peacefully resting in the casket, dressed in their Sunday best. Further investigation shows that these highly customized funeral presentations have been practiced for years in some sections of the country but they are becoming more popular throughout the United States.

Conclusion

Funeral directors, embalmers, restorative artists, and desairologists must share a common goal to continue their education and training to provide the highest level of quality to meet the challenging and dynamic demands of clients. They need to keep an open mind, free of judgment, to collaborate as professionals to provide client-centered services.

Safety in the work place and environment requires strict adherence to all federal, state, and local laws and guideline. Professionals need to continually assess their practice and collaborate on best practices that may require making changes in products and procedures to keep pace with safety changes and client demands.

All industry professionals are urged to consult their state licensing and certification boards, along with OSHA, NFDA, or their professional organizations, for the latest updates that regulate and protect their area of practice.

References

- American Broadcasting Company (2014). Lifelike Embalming Positions a New Funeral Trend. Retrieved March 13,2016 from http://www.abc15.com/news/local-news/water-cooler/lifelike-e.
- Brown, N.J., & Platner, J.W. (2008). Implementation of the OSHA Hazard Communication Standard for Small Business. Retrieved March 13,2016 from http://digitalcommons.ilr.cornell.edu/manuals/5/?utm_source=digitalcommons.ilr.cornell.edu%2Fmanuals%2F5&utm_medium=PDF&utm_campaign=PDFCoverPages
- Carnacchio.C.J. (2011). Oxford Man Restores Dead to Bring Peace to the Living. Retrieved March 13, 2016 from http://www.clarkstonnews.com/Articles-News-i-2011-11-09-244438.113121-sub-Oxford-man-restores-dead-to-bring-peace-to-living.html.
- Champion. (2009). Expanding Encyclopedia of Mortuary Practices. Retrieved March 13, 2016 from http://www.enigma-champion.com/encyclopedia/encyclo658.pdf.
- Charest-Papagno, N.C., (1996). Handbook of Desairology for Cosmetologists Servicing Funeral Homes. J.J. Publishing, Columbia, S. C. Retrieved March 13,2016 from http://career.iresearchnet.com/career-information/mortuary-cosmetologist-career/
- Developmental Desairology (2016). What Does a Desairologist Do? Retrieved March 13, 2016 fromhttp://developmentaldesairology.com/faqs/
- Elmira College (2016)The Embalming Process: The Natural Burial Movement. Retrieved March 12, 2016 from https://sites.google.com/a/elmira.edu/the-natural-burial-movement/
- Gillies, M. (2011). A Brief History of Restorative Art. Retrieved March 12, 2016 from https://mysendoff.com/2011/06/a-brief-history-of-restorative-arts/
- Green Burial Council. (2011).FAQs and Fictions. Retrieved March 13,2016 from
- http://www.greenburialcouncil.org/faqs-fiction/.
- Grey, E.J. (2004). Restorative Art. Retrieved March, 11,2016 from http://www.iol.ie/~ejgrey/restorativeart.html.
- Hooker, W.P. (2014).Common Sense Embalming Tips and Techniques. Retrieved March 13, 2016 from http://nashville2014.nfda.org/.../165-16-common-sense-embalming-tips-a- techniques-wallace-hooker.html'
- International Agency for Research on Cancer(2009) IARC Monographs. Retrieved March 16, 2016 form http://www.iarc.fr/en/publications/pdfs-online/breport/breport0809/breport0809_IMO.pdf
- International Conference of Funeral Service Examining. Board (2016 a) Law Exam https://theconferenceonline.org/examinations/laws-exam/.
- International Conference of Funeral Service Examining Board (2016 b) National Board Exam https://theconferenceonline.org/examinations/national-board-exam/.
- International Conference of Funeral Service Examining Board (2016 c) State Board Exam https://theconferenceonline.org/examinations/state-board-exam/.
- Loose, A. (April 24,2014). Lifelike Embalming Positions a New Funeral Trend. 2014 Scripps Media, Inc. Retrieved March 13, 2016 from www.abc15.com/news/local-news/water-cooler/lifelike-embalming-positions- a-new-funeral-trend'
- Mapes, D. (December 9, 2008). Final Touch: A Cosmetic Lift for Your Funeral? Retrieved March 13,2016 from http://www.nbcnews.com/id/.../final-touch-cosmetic-lift-your-funeral/'
- National Cancer Institute. (2009).Formaldehyde and Cancer Risk. Retrieved March 16,2016 from http://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet
- National Funeral Directors Association. (2008)NFDA Code of Professional Conduct. nfda.org/other/doc/659-nfda-code-of-professional-conduct.html'
- National Funeral Directors Association. (2010). Formaldehyde Vapor Reduction in the Funeral Home Preparation Room: Recommendations for Effective Preparation Room Ventilation. Retrieved March 12, 2016 from http://nfda.org/additional-tools-embalming/2187-guide-to-the-2010-nfda-prep-room-ventilation-report.html3.
- National Funeral Directors Association. (2011). NFDA Receives Grant from the Funeral Service Foundation to Study Formaldehyde-free Embalming Chemicals. Retrieved March 12, 2016 from http://nfda.org/news-a-events/all-press-releases/2702-nfda-receives-grant-from-the-funeral-service-foundation-to-study-formaldehyde-free-embalming-chemicals.
- National Funeral Directors Association. (2012 a). Formaldehyde Best Management Practices. Retrieved March 13, 2016 from http://nfda.org/additional-tools-embalming/1749-formaldehyde-best-management-practices.html.
- National Funeral Directors Association. (2012 b). Sample Legal Forms. Retrieved March 13, 2016 from nfda.org/tools-for-your-business/nfda-faxback-documents.html
- National Funeral Directors Association. (2016 a). Green Funerals. Retrieved March 13, from http://nfda.org/green-funerals.html
- National Funeral Directors Association. (2016 b). Trends in Funeral Service. Retrieved March 14, 2016 from http://nfda.org/media-center/trends-in-funeral-service.html.
- National Institute of Health (2014). Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. Retrieved March 14, 2016 from http://www.nhlbi.nih.gov/health-pro/guidelines/archive/clinical-guidelines-obesity-adults-evidence
- Occupational Safety and Health Administration. (2012) Local Emphasis Program For Reducing Formaldehyde-Funeral Service. Retrieved March 11, 2016 from http://nfda.org/additional-tools-embalming/1749-formaldehyde-best-management-practices.html.
- Occupational Safety and Health Administration (2015). OSHA Update on the Formaldehyde and Haz Com Standards. Retrieved march 13, 2016 from nashville2014.nfda.org/.../163-13-osha-update-on-the-formaldehyde-and- haz-com-standards-edward-ranier.html'
- Quizlet (2016) Embalming History, Theory, and Practice. Quizlet. Retrieved March 12, 2016 from http://quizlet.com/116620801/embalming-history-theory...
- Rubin, G. (2015). Examining Embalming Fluids. Retrieved March 11, 2016 form http://agoodgoodbye.com/tools-of-the-trade/video-examining-embalming-fluids/
- Seiple, J. (2014) Embalming Surprises: Tales of the Preparation Room. Retrieved March 14, 2016 from http://connectingdirectors.com/articles/44965-embalming-surprises-tales-of-the-preparation-room
- Seiple, J. (2016)Pros and Cons of Modern Embalming - How Embalming Works. Retrieved March 13, 2016 from http://science.howstuffworks.com/science-vs-myth/embalming5.htm'
- Sobczyk, P. J. (2014).Small Solutions to a Big Problem: Embalming of Bariatric Cases. Retrieved March 14, 2016 from http://funeralbusinessadvisor.com/small-solutions-to-a-big-problem-embalming-of- bariatric-cases/funeral-business-advisor'
- U.S. Legal (2016). Desairology Law and Legal Definition. Retrieved March 13, 2016 from http//:definitions.uslegal.com.

MODERN RESTORATIVE ARTS AND EMBALMING TECHNIQUES

Final Examination Questions

Select the best answer for each question and mark your answers on the Final Examination Answer Sheet found on page 65, or for faster service complete your test online at **Funeral.EliteCME.com.**

36. Today, individuals are seeking funeral services that reflect their values, interests, passions, and hobbies.

○ True ○ False

37. The NBE is used in all 50 states and the District of Columbia as an assessment of content knowledge needed to practice as a licensed funeral director or embalmer.

○ True ○ False

38. Only authorized personnel of the funeral home or those persons authorized by the family shall be in attendance during the preparation of the remains.

○ True ○ False

39. Desairologists must first be licensed cosmetolologists before they can become licensed in the mortuary science called desairology.

○ True ○ False

40. Pre-embalming analysis includes knowing what problems exist, anticipating problems based on the body condition, being prepared for all situations that may arise, and keeping a well-stocked prep room.

○ True ○ False

41. Problem cases including edema, asphyxiation, massive cardiac events, and delayed embalming do not need pre-injection.

○ True ○ False

42. Lack of circulation, combined with the inability of embalming fluid to reach the outer layers of the adipose tissue, increases the chances of forming water blisters and skin slip on the lower extremities.

○ True ○ False

43. The OSHA fact sheet identifies formaldehyde as a sensitizing agent that can cause an immune system response upon initial exposure but is not a cancer hazard.

○ True ○ False

44. OSHA requires workers to implement feasible engineering and work practice controls to reduce and maintain worker exposure to formaldehyde at or below the 8-hour TWA and STEL.

○ True ○ False

45. Many people are consulting funeral professionals to plan restorative procedures to enhance their appearances at their funerals.

○ True ○ False

FFL03RAE17

2017 Continuing Education for Florida Funeral Professionals

All 12 Hrs ONLY
$75

What if I Still Have Questions?

No problem, we have several options for you to choose from! Online at ***Funeral.EliteCME.com*** you will see our robust FAQ section that answers many of your questions, simply click FAQ in the upper right hand corner or Email us at office@elitecme.com or call us toll free at 1-888-857-6920, Monday - Friday 9:00 am - 6:00 pm, EST.

Elite Continuing Education

Customer Information

Three Easy Steps to Completing Your License Renewal

Step 1: Complete your Elite continuing education courses:

- ✓ Read the course materials and complete the tests.
- ✓ Complete the course evaluation.
- ✓ Submit your final examination answer sheet along with your payment to Elite online or by mail.

Step 2: Receive your certificate of completion.

- ✓ On-Line Submission: Go to **Funeral.EliteCME.com** and follow the prompts.You will be able to print your certificate immediately upon completion of the course.
- ✓ Fax or E-mail Submission: Fax to (386) 673-3563, be sure to include your credit card information. All completions will be processed within 2 business days of receipt and certificates e-mailed to the e-mail address provided.*
- ✓ Mail Submission: Use the envelope provided or mail to Elite, PO Box 37, Ormond Beach, FL 32175. All completions will be processed and certificates issued within 10 business days from the date it is mailed.*

*Please note - providing a valid e-mail address is the quickest and most efficient way to receive your certificates when submitting via fax, e-mail or mail.

Submissions without a valid e-mail address will be mailed to the address provided at registration.

Step 3: Once you have received your certificate of completion you can renew your license by mailing in your renewal. In order to avoid late fees, your CE and license renewal must be completed by August 31, 2017.

Board Contact Information:

Florida Department of Financial Services
Division of Funeral, Cemetary and Consumer Services
200 East Gaines Street, Larson Building
Tallahassee, FL 32399-0361

Phone: (850) 413-3039 | Toll Free (800) 323-2627
Website: http://www.myfloridacfo.com/Division/funeralcemetery/

Elite

Questions? Call us toll-free at 1-888-857-6920

12-Hour CE Course for Florida Funeral Professionals

Final Examination Answer Sheet

Using the spaces provided below, please PRINT the information below in CAPITAL LETTERS. All information below must be filled in completely. The cost of our test is $75.00. Upon completion, please place this sheet in the envelope provided and mail. If paying by check or money order, please make payable to Elite. For faster service, we offer this test online with instant grading and certificate issuance. Please visit ***Funeral.EliteCME.com*** to complete your test on the web.

Please PRINT NEATLY in the areas below using black or blue pen only:

First Name | M.I. | Last Name

Street Address

Suite / Floor / Apartment Number | City (do not abbreviate) | State

Zip Code | Telephone Number (Please include area code) | Florida Funeral License Number

E-mail address (include to receive processing confirmation and instant certificate access).

Payment Method

☐ Check / M.O.
☐ Visa / Mastercard / AMEX / Discover

☐ Entire Course only $75.00 or ☐ Ch. 1 - $15.00 ☐ Ch. 2 - $15.00 ☐ Ch. 3 - $20.00 ☐ Ch. 4 - $30.00 ☐ Ch. 5 - $20.00

Visa / Mastercard / AMEX / Discover Number | Credit Card Expiration Date

Cardholder Signature: _____

Shade circles like this: ●
Not like this: ⊠ ⊘

Final exam questions are located at the end of each chapter.

	True	False		True	False		True	False		True	False		True	False
1	○	○	10	○	○	19	○	○	28	○	○	37	○	○
2	○	○	11	○	○	20	○	○	29	○	○	38	○	○
3	○	○	12	○	○	21	○	○	30	○	○	39	○	○
4	○	○	13	○	○	22	○	○	31	○	○	40	○	○
5	○	○	14	○	○	23	○	○	32	○	○	41	○	○
6	○	○	15	○	○	24	○	○	33	○	○	42	○	○
7	○	○	16	○	○	25	○	○	34	○	○	43	○	○
8	○	○	17	○	○	26	○	○	35	○	○	44	○	○
9	○	○	18	○	○	27	○	○	36	○	○	45	○	○

For Internal Use Only - Do Not Mark In This Area

FFL12E17

7049112868

1 - FFL01HVE17 2 - FFL01ACE17 3 - FFL03CTE17 4 - FFL04ICE17 5 - FFL03RAE17

Course Evaluation

We value your opinion!

Please take a minute to complete the course evaluation so that we can better serve you in the future. Any comments would be greatly appreciated.

Fill in the circles below the numbers
0 being the worst, and 10 being the best

How likely is it that you would recommend Elite 0 1 2 3 4 5 6 7 8 9 10
○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

The course material was presented in a clear, concise and well-organized format 0 1 2 3 4 5 6 7 8 9 10
○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

I would rate this course.....0 1 2 3 4 5 6 7 8 9 10
○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

The content of this course met my expectations.....0 1 2 3 4 5 6 7 8 9 10
○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

The material presented met the course's stated objectives ..... Yes No

I found this course a good value for my money .....Yes No

Please list any recommendations that you may have for this course_____

_____

Please list any course subjects you would like to see in the future_____

_____

Comments_____

_____

❑ I agree to allow Elite Continuing Education to use my above comments.

Did you remember:

1) To clearly print your name and address on the answer sheet?
2) To fill out your license number on the answer sheet?
3) To include your payment or credit card information?
4) A $25.00 fee will be added for all checks that are returned for insufficient funds.

Thank you for choosing Elite for your continuing education!

Elite
Continuing Education

P.O. Box 37
Ormond Beach, FL 32175-0037
Fax: 1-386-673-3563