A11.1.F. A safe environment is critical; however, no environment can be entirely safe and free of risk. The majority of persons who attempt suicide suffer from a treatable mental disorder or a substance abuse disorder or both. Patients of inpatient psychia tric treatment facilities are considered at high risk for suicide; the environment should avoid physical hazards while a maintaining therapeutic environment. The built environment, no matter how well designed and constructed, cannot be relied upon as an absolute preventative measure. Staff awareness of their environment, latent risks of that environment, and the behavior risks and needs of the patients served in the environment are absolute necessities. Different organizations and different patient populations will require greater or lesser tolerance for risk.

The facility should provide a therapeutic environment appropriate for the planned treatment programs. The environment should be characterized by a feeling of openness with emphasis on natural light. In every aspect of building design and maintenance it is essential to make determinations based on the potential risk to the specific patient population served.

Consideration should be given to visual control (including electronic surveillance) on nursing units of corridors, dining areas, and social areas such as dayrooms and activities areas. Hidden alcoves or blind corners or areas should be avoided.

The openness of the nurse station will be dependant on the planned treatment program. Consideration should be given to patient privacy and also to staff safety.

A11.1.F5. The use of drapery is discouraged.

A11.2E. Outdoor areas are not required; however, if patient care programs require them to be provided, they should be arranged in a manner that prohibits confused residents from wandering outside of designated resident areas.

A11.3C. Outdoor areas should be protected to allow children to have easy access to secure outdoor areas for play and therapy in facilities where length of stay is two weeks or greater.

A11.9.D5. Exposure to some art materials, such as solvents and ceramic glazes, is associated with adverse health effects. Such risks should be controlled by adopting methods recommended in appropriate instructional manuals.

A11.9.D8. Display areas for patients' work such as shelves or wall surfaces should be provided.

~~**A11.30.C2.d.** When incinerators are used, consideration should be given to the recovery of waste heat from on-site incinerators used to dispose of large amounts of waste materials.~~

~~**A11.30.C2.e.** Incinerators should be designed in a manner fully consistent with protection of public and environmental health, both on-site and off-site, and in compliance with federal, state, and local statutes and regulations. Toward this end, permit applications for incinerators and modifications thereof should be supported by Environmental Assessments and/or Environmental Impact Statements (EISs) and/or Health Risk Assessments (HRAs) as may be required by regulatory agencies. Except as noted below, such assessments should utilize standard U.S. EPA methods, specifically those set forth in U.S. EPA guidelines, and should be fully consistent with U.S. EPA guidelines for health risk assessment (U.S. EPA). Under some circumstances, however, regulatory agencies having jurisdiction over a particular project may require use of alternative methods.~~

A11.30.C1. The underlying frameworks of waste management are waste minimization and segregation. Different components of the waste stream must be kept separate from each other; facilities should seek to minimize all components of each waste stream. At a minimum, the functional program includes consideration of regular trash, medical/ infectious waste, hazardous waste, and low-level radioactive waste. The program should address the development of effective collection, transport, pest control, and storage systems; waste management and contingency planning; protecting the health and safety of workers; and proper siting of all on-site waste treatment technologies.

Optimizing waste management has programmatic and space impacts throughout the facility, at points where waste is generated, collected, and staged for disposal. For facilities or municipalities with recycling programs in place, particular consideration should be given to sorting and staging areas. The following elements are examples that may be considered:

a. Building should include adequate space to accommodate bins/carts for appropriate waste segregation such as recyclables, infectious waste, sharps, etc. Corridors and materials handling systems should be designed to achieve an efficient movement of waste from points of generation to storage or treatment while minimizing the risk to personnel.

b. Dedicated storage and flow space and cleaning/sanitation facilities should facilitate reuse of items such as medical products, food service items, and the like to eliminate disposables and reduce waste.

c. Space should be included for autoclaves, shredders, and other technologies for processing medical waste prior to removals to landfill. Secure storage should be provided for staging fluorescent lamps for recycling.

A11.30.C2.a. The EPA has identified medical waste incineration as a significant contributor to air pollution worldwide. Health care facilities should seek to minimize incineration of medical waste, consistent with local and state regulations and public health goals.

A11.30.C2.b. When incinerators are used, consideration should be given to the recovery of waste heat from on-site incinerators used to dispose of large amounts of waste materials. Incinerators should be designed in a manner fully consistent with protection of public and environmental health, both on-site and off-site, and in compliance with federal, state, and local statutes and regulations. Toward this end, permit applications for incinerators and modifications thereof should be supported by Environmental Assessments and/or Environmental Impact Statements (EISs) and/or Health Risk Assessments (HRAs) as may be required by regulatory agencies. Except as noted below, such assessments should utilize standard U.S. EPA methods, specifically those set forth in U.S. EPA guidelines, and should be fully consistent with U.S. EPA guidelines for health risk assessment. Under some circumstances, however, regulatory agencies having jurisdiction over a particular project may require use of alternative methods.

A11.31.A1. A well-designed system can generally achieve energy efficiency at minimal additional cost and simultaneously provide improved patient comfort. Different geographic areas may have climatic and use conditions that favor one system over another in terms of overall cost and efficiency.

A11.31.D5. See *Industrial Ventilation: A Manual of Recommended Practice*, published by the American Conference of Governmental Industrial Hygienists (www.acgih.org), for additional information.

A11.31.E3(c). There are several ways to treat domestic water systems to kill *Legionella* and opportunistic waterborne pathogens. Complete removal of these organisms is not feasible, but methods to reduce the

amount include hyperchlorination (free chlorine, chlorine dioxide, monochloramine), elevated hot water temperature, ozone injection, silver/copper ions, and ultraviolet light. Each of these options has advantages and disadvantages. While increasing the hot water supply temperature to 140°F (60°C) is typically considered the easiest option, the risk of scalding, especially to youth and the elderly, is significant. Additional consideration should be given to domestic water used in bone marrow transplant units. See CDC, ASHRAE, and ASPE documentation for additional information.