

HEALTH SCIENCE FOUNDATIONS INSTRUCTOR'S GUIDE

~2008-2009 EDITION~



FREE DEMO



Applied Technologies™

A Division of Learning Labs, Inc.

2008-2009

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COURSE INTRODUCTION

The Applied Technologies Health Science Foundations Course is a 120-150 hour curriculum package organized into 11 units. Each unit addresses one of the National Health Care Cluster's Health Science Foundations Standards. The individual units may be used as stand alone curriculum units or they may be used together as an entire course.

Each unit is divided into lessons. The lessons are designed to be highly flexible, allowing you to define how long the students spend on a particular activity. Each lesson begins with a certain amount of online content. Throughout the unit, quizzes will evaluate each student's understanding of the content. After the students complete the online section, you may assign the students a project-based learning activity related to that day's lesson. Multiple lesson application activities are included in the Instructor's Guide for each lesson. The activities vary in difficulty and length of time to complete, allowing you to determine how long to study each lesson. Because projects cannot be evaluated using computer-based testing, evaluation rubrics are provided to help you evaluate student work.

For suggested step-by-step instructions on how to navigate the course and its features, go to the next section, titled Instructions for Using Health Science Foundations.

Notes Concerning Online Content:

The "Internet Resources" page of each online lesson and the "Related Websites" subsections included for some learning application activities provide links to websites not maintained by Applied Technologies. Please check these links before the students begin the lesson. We make every effort to keep these links current, but cannot be responsible for changed content or domain names. Please let the students know whether or not they have time to explore the Internet Resources. Some of the sites provided have additional online activities the students can complete for a more in-depth exploration of the lesson's topic and some are simply sites related to a topic discussed in the lesson.

The browser-based content contains hyperlinks to external websites and internal pages such as the glossary, which will open in a new browser window, leaving the Foundations browser window open behind it. Links to enlargements of thumbnail graphics will launch in the student's active browser window. Students will need to use the Back button to return to the content.

Notes Concerning the Learning Application Activities:

Many of the learning application activities in this Instructor's Guide will take more than one day to complete. It is left to your discretion how to best move the students through the course. Some suggestions follow:

- Have the students complete all of a unit's online content first and then select several of the exploration activities to complete.
- Have the students complete the online content at the beginning of each class, but have them work on a single exploration activity over the course of several days.

- Have the students complete a single online lesson and one exploration activity during class or as homework. *You will need to read through the suggested activities and select those which are less in-depth.*

If you choose to use the rubrics in Appendix A to evaluate student work, remember to consider the length of time allotted for each activity when evaluating their work.

Suggestions for Overall Course Structure:

Since this curriculum has been developed with a focus on flexibility, there is no overall framework that ties the individual units to one another except for the Standards. This means you may cover them in any order you please, and leave out units as it suits you. However, it also means if you are attempting to teach the whole of the curriculum as a single course, you may find it unfocused and piecemeal. One unit does not flow naturally into another.

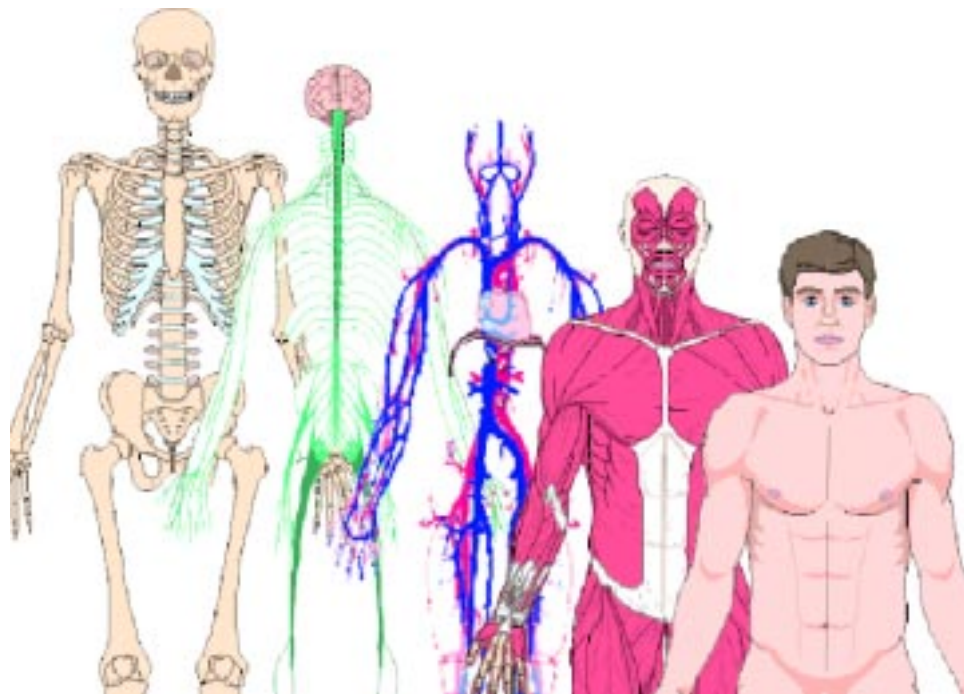
The following are some suggestions for establishing a definite structure between units.

- *Create a hospital.* Have students make up an imaginary hospital, adding detail to it as the course progresses. For instance, in the Systems Unit, the class could work out a visual representation of the hospital's departments based on systems theory, and determine how the hospital works within the larger system. In the Legal Responsibilities Unit, they could determine which federal and state laws apply to the hospital, and write imaginary policies for compliance. In the Information Technology Unit, they could research and write HIPAA compliance plans. Role playing activities, essays, and in-class debates may fit nicely into this context. If you choose to use this teaching strategy, it would probably be best to start with the Systems Unit, and move on from that point.
- *Focus on critical thinking.* Start with Lesson 3 of the Employability Unit, and structure every lesson around critical thinking activities like debates, in-class discussions, and essays. Continually encourage students to test statements made by their classmates and by the online content. Research is critical. More resources for this teaching strategy may be found at <http://www.criticalthinking.org/>.
- *Cover the course in groups.* Cover the Teamwork Unit first, and then have students form groups to cover the rest of the curriculum. Each lesson has group work activities among the learning application activities. Use the Team Survey in Appendix A on a regular basis.
- *Focus on research.* Start with the Communications Unit, and have students complete research projects for each subsequent unit. The critical thinking lesson is also very important for this teaching strategy.

Conclusion:

There is a great deal of material to be covered in this course, but it may easily be expanded. By the same token, it may also be condensed. Make sure to look over the whole course and organize your lesson plans carefully. Be conservative in your estimates of what can and cannot be covered. After all, you can always cover more.

STANDARD 1: ACADEMIC FOUNDATIONS



UNIT INTRODUCTION

"Health care workers will know the academic subject matter required for proficiency within their area. They will use this knowledge as needed in their role."

The human body is the most complex structure known to man. Understanding of the structures and functions of the body is an essential component of all healthcare education.

This unit provides a general overview of the basic body systems. Each classroom instructor has his/her preferred methods of presenting this information to the student. The information in this unit is not designed to replace that valuable classroom instruction. Rather, it is designed to review the basic material that has previously been presented and to further develop the student's understanding of the interdependence of all body systems to maintain homeostasis.

Before completing this unit the student will need information concerning the:

- a. structures and functions of the human body
- b. diseases and disorders related to the body systems and the impact of the disease on the functions of the body

Learning activities may be used as each body system is presented in the classroom or may be used as an anatomy and physiology review after all body systems have been presented in theory lessons. Students will also be referred to these learning activities as they relate to other National Health Care Skills Standards throughout this curriculum.

LESSON 3: SKELETAL SYSTEM

Objective:

Student will identify the structures and functions of the skeletal system and will relate the effect of diseases and disorders of the skeletal system on the human body.

Accountability Criteria:

- 1.11 Classify basic structural and functional organization of the human body (chemical, cellular, tissue, organ, and system)
- 1.13 Analyze basic structure and function of the human body
- 1.21 Describe common diseases and disorders of each body system (prevention, pathology, diagnosis, and treatment)

Summary:

The online content reviewed in this unit consists of the structures and functions of the skeletal system and identified basic terminology related to this system, as well as some common diseases and disorders that impact the skeletal system and the body as a whole unit. The learning application activities below are designed to encourage the student to view the body as a complex unit, requiring interaction among all the body systems to maintain homeostasis.

Suggested Assessments:

Project Rubric

Learning Application Activities:

1. Students may work individually or with a partner for this activity. Give each student/group one of the following scenarios to research. The student(s) will then complete an Assessment/Recovery Map for the disease/disorder which has been identified.

Scenarios can be varied by changing the age, availability of medical care, etc. of the client.

- a. Timmy is a nine year old boy who missed a jump with his skateboard and landed on his left side. He is complaining of intense pain in his left thigh and tingling sensations down his leg.

Alternate situation: James is a 74 year old man who was walking his dog when he failed to see the uneven pavement. He tripped on the driveway, falling to the ground, and complained of intense pain in his left thigh and tingling sensations down his leg.

Suggested Assessments:

Assessment/Recovery Map

- b. Martha has been a secretary for an auto insurance company for 26 years. Recently she has developed pain in her left wrist and numbness in the fingers of her left hand.

Suggested Assessments:

Assessment/Recovery Map

- c. George Walters is a 66 years old retired bus driver. On a recent doctor visit he complained of extreme discomfort in his left hip and lower back. The pain is more intense when he gets up in the morning. When possible, George walks one mile each morning, and this seems to relieve some of his discomfort. The patient has no history of back injury.

Suggested Assessments:

Assessment/Recovery Map

STANDARD 3: SYSTEMS



UNIT INTRODUCTION

“Healthcare professionals will understand how their role fits into their department, their organization and the overall healthcare environment. They will identify how key systems affect services they perform and quality of care.”

The Systems unit seeks to provide students with the tools for understanding and analyzing the American health care system. Understanding the system will assist students not only in exploring possible careers in health care, but also in developing a sense of what an individual health care worker’s role is in light of the larger system. If students do decide on health care careers, such a sense would enhance efficiency.

Lesson 1 of the online content introduces students to systems theory, a tool for thinking critically about systems and system change. Lessons 2 through 4 discuss the components of the current health care system in America—namely, facilities, personnel, and methods of payment. Lessons 5 through 8 deal with system change. Lesson 5 addresses one of the major sources of health care system change in the contemporary America—the aging population. Lesson 6 deals with technology as a source of system change. Lesson 7 addresses current challenges faced by the health care system—namely, the various ways Americans tend to die—in the context of system change. Lesson 8 deals with numerous forces of system change. Lesson 9 introduces students to the process of system analysis in health care. Lesson 10 compares the American health care system as a whole to other health care systems around the world.

In the learning application activities, students are encouraged to deepen their comprehension of the online content for each lesson. This should hopefully also work towards the unit goal of using critical thinking skills to build a whole systems model either as a formal activity within the classroom, or as a general concept underlying classroom activities.

This unit would benefit from being linked with the Teamwork Unit.

LESSON 1: SYSTEMS THEORY

INTRODUCTION

Objective:

Students will understand and apply systems theory.

Accountability Criteria:

3.1 Healthcare Delivery Systems

Summary:

This lesson is the first of several that explore systems theory and its application within a health care environment. Students examine systems theory and define input, output, throughput, feedback, control, environment, and goals. Students explore the components of systems theory via a unsatisfactory t-shirt design scenario, then see systems theory applied to a school.

Learning Application Activities:

1. Lead a group discussion to create a systems model of a system with which the students are familiar. Students may suggest systems or you may use systems such as a fast food restaurant, the recording industry, or communication. If time allows after the group discussion, ask students to create a model of the system of their choice. *The focus of this activity is for students to recognize that systems theory applies to all systems. Other activities deal with analyzing the health care system itself, and this activity may be useful for laying a foundation for those activities.*

Suggested Assessments:

Project Rubric
Class Participation Rubric
Composition Rubric

Materials:

Presentation and research materials

2. Establish the idea of a familiar environment such as a restaurant to the entire class. Then divide the class into groups and assign each group a specific job within that environment. Ask the students to create a systems theory model of their job. When each group has created a model, ask the students to work as a class to develop a systems model for the environment as a whole. For example, group job titles might be hostess, cook, server, and busboy. The cook group would identify orders as the input, cooking the food as the throughput, and finished meals as the output. *This exercise will demonstrate that systems theory is scalable, a concept that will be important when students begin to analyze the health care delivery system. Students should understand from this exercise that small systems are nested within larger systems and that clear system definitions at lower levels allow the overall system to succeed.*

Suggested Assessments:

Project Rubric

Class Participation Rubric

Materials:

Presentation and research materials

3. As a class, create a systems model of the classroom. Have students discuss and agree on the goal of the classroom, and analyze the throughput. What processes might be used to improve the final product? What external factors affect the success or failure of the classroom's goals? What smaller systems (if any) exist within the classroom system?

Suggested Assessments:

Class Participation Rubric

4. Have each student write a systems analysis. The essays should identify each component of the topic systems, and analyze how well the components fit together and function.

Suggested Assessments:

Project Rubric

Systems Quiz 1 Answer Key (worth 6 pts.)

1. (D) **All of the above.** A restaurant, a school, and a computer are all examples of systems, **3.1.**
2. (B) **False.** Systems theory can be applied to any system, **3.1.**
3. (D) **All of the above.** Input, throughput, and output, are components of systems theory, **3.1.**
4. (A) The **input** is the energy or raw materials put into a system, **3.1.**
5. (C) A **feedback loop** is how the system analyzes the output to determine whether or not the system is performing correctly, **3.1.**
6. (B) **Increase preventative care services to uninsured families by 10% per month over the next 6 months** is the best goal for a clinic with the mission statement, "To reduce the strain on overtaxed emergency services by providing early, preventative care.", **3.1.**

LESSON 5: AGING POPULATION

Objective:

Examine how the environment impacts the health care system by examining the aging population.

Accountability Criteria:

- 3.12 Explain factors influencing healthcare delivery systems

Summary:

Students examine life expectancy and the aging population during the 20th century by examining the effects of vaccination programs and the baby boom. They view population pyramids to determine how the overall population is changing.

Learning Application Activities:

1. Examine how the environment and the health care system interact by analyzing different events and their effect on health. Divide the class into groups and assign each group an event from the 20th century to research and determine the effect it had on the health of the population and the health care system as a whole.
 - A. The online content for this activity includes a chart showing life expectancy in the US from 1900 to 2003. The chart shows a steady upward trend except for a sharp decrease for 1918. Ask the students to determine what caused the decrease and whether or not a similar decrease occurred in other countries.
 - B. The online content contains a timeline depicting the development of vaccines during the 20th century. Vaccine development is clustered in the years from 1923 to 1935 and 1955 and 1967. Ask the students to determine the lack of new vaccine development in the years from 1935 to 1955. Ask the students to conduct research to determine what major medical advances did occur during these years. How, if at all, were these advances related to other world events?
 - C. Research the beginning of the Medicare program in 1965. Ask the students to analyze whether or not the program met its goals. Identify long-term and short-term effects of the program on the health care system.
 - D. Research the smallpox eradication program and the ongoing polio eradication program. Ask the students to identify factors that slowed the polio eradication program and how the eradication program has adapted to meet those needs. What benefit does the United States gain from the eradication of either smallpox or polio? Identify a disease that might be the next targeted for eradication (consider that the vaccine or treatment must be easily produced and cheaply supplied to be feasible).

Suggested Assessments:

Project Rubric

Related Websites:

<http://www.pbs.org/wgbh/amex/influenza/>

<http://chnm.gmu.edu/features/voices/ww1flu/listeningtowwith.html#>

<http://www.who.int/immunization/en/>

<http://www.cms.hhs.gov/History/>

<http://www.who.int/mediacentre/factsheets/smallpox/en/> - *Smallpox information*

<http://www.polioeradication.org/>

Materials:

Internet access

Research materials

2. One of the impediments encountered by the polio eradication program is the belief that vaccination is unsafe. In the United States there is a small but vocal minority opposed to vaccination programs. Organize a debate on vaccination programs. Divide the students into two groups, one pro and one con. The students must argue their side of the issue whether or not they agree with it. *Following the debate you may wish to lead a group discussion about 1) science as the basis of health care and scientific versus anecdotal evidence and 2) how to tactfully deal with patients with beliefs different from your own.*

Suggested Assessments:

Project Rubric

Debate Rubric

Materials:

Research materials

3. Divide the class into groups of four or five and have each group conduct a review of recent news stories concerning vaccines. The review should be written up in report form complete with citations, and turned in.

Suggested Assessments:

Project Rubric

STANDARD 5: LEGAL RESPONSIBILITIES



UNIT INTRODUCTION

“Healthcare professionals will understand the legal responsibilities, limitations, and implications of their actions within the healthcare delivery setting. They will perform their duties according to regulations, policies, laws and legislated rights of clients.”

This unit seeks to give students a brief overview of American health care legislation. Lessons 1 and 9 seek to give general information on the judicial system itself, where the lessons in between seek to outline the various laws in force at present.

The hope is that students will get a feel for how laws are enforced in the United States, and how they limit the actions of individual health care workers.

The Legal Responsibilities Unit is closely tied to the Ethics Unit and the Systems Unit.

LESSON 1: HEALTH CARE AND THE LAW

Objective:

Students will understand and interpret the American legal system for a health care setting.

Accountability Criteria:

- 5.11 Analyze legal responsibilities and limitations
- 5.12 Explain practices that could result in malpractice, liability, and/or negligence
- 5.14 Interpret healthcare facility policies and procedures

Summary:

Students are introduced to the structure of the American system of jurisprudence, and different categories of law which impact the health care industry.

Learning Application Activities:

1. Present the following scenarios to the class and facilitate a discussion of the types of laws and courts involved.
 - a. Dr. Jackson is an obstetrician in Louisiana. He recently took out a loan to buy some expensive equipment, but since then, he has been losing money and is unable to pay.
 - b. John Singh is a nurse practitioner at a family practitioner's office in Hawaii. One day, while picking up after a child in an examination room, his hand is scratched by a syringe that had been dropped on the floor. Examining it, John finds there is dried blood on the needle.
 - c. Dimitri, a clinical laboratory tech, cannot bear to see the suffering his elderly mother has to endure as she slowly dies of cancer. One day at the lab, he decides he will steal a fatal dosage of morphine for her.
 - d. A little girl arrives in the emergency room with a dangerously high fever. Moments later, the child's parents rush in and shout for the emergency personnel to stop attempts to treat her. The child has been brought in by her grandmother against the parents' wishes. They demand the child be released to them.

Suggested Assessments:

Discussion Rubric

LESSON 2: MALPRACTICE LAW

Objective:

Students will learn the basics of malpractice law, and will compare and contrast behaviors and practices that could result in malpractice, liability, or negligence.

Accountability Criteria:

- 1.32 Analyze diagrams, charts, graphs, and tables to interpret healthcare data
- 5.11 Analyze legal responsibilities and limitations
- 5.12 Explain practices that could result in malpractice, liability, and/or negligence

Summary:

Students are introduced to the basics of malpractice law. The learning application activities included here are meant to provide occasions for application.

Suggested Reading

Complications: A Surgeon's Notes on an Imperfect Science by Atul Gawande

Learning Application Activities:

1. Have each student write a scenario in which malpractice has occurred or might occur. Each should then present their scenario to the class and conduct a short discussion about what makes or might make the scenario malpractice and what ought to be done differently in such a situation to avoid malpractice. It may be useful to assign each student general limits for their scenario. For instance, "Write a scenario in which a hospital is vicariously liable for an instance of malpractice." These assignments should only be known by the students who are working on them.

Suggested Assessments:

Composition Rubric

2. Split the class into two groups. Half the class will be the Panel of Judges, and the other half will be the Victims of Malpractice. Give each Victim a slip of paper with a role to play written on it. For instance, “You’ve been beaten by an orderly,” or, “Your doctor ran into you and bruised your shin.” Have the Victims make up scenarios that expand upon these roles. Then have them pretend, one-by-one, they are explaining the alleged malpractice they have suffered to the Panel of Judges. After each Victim makes a presentation, the Panel of Judges should spend a few moments discussing the case, then issue a judgment: malpractice or not. After all the presentations have been made, it may be useful to conduct a class discussion.

Suggested Assessments

Team Evaluation Rubric

Presentation Rubric

3. Read any or all of the following scenarios to the class, and have the class discuss them. Is this malpractice? If so, why? Is it negligence? What could have been done differently to guard against malpractice? Is comparative negligence involved? Vicarious liability? If it is not malpractice, why not? What would have to happen to make it malpractice?

a. Dr. Joyce Burberry, a resident at a community hospital, has worked too long and is heavily fatigued. While entering a patient’s room, she does not look where she is going and trips over a potted plant sitting on the floor. The patient cries out as Dr. Burberry falls on his broken leg. It later becomes clear that the fall resulted in some bruising for both Dr. Burberry and the patient, but nothing too serious.

b. Abraham Denver, an experienced registered nurse, has recently taken to drinking too much after his wife’s death. Yesterday was the first day he ever came to work drunk. His co-workers noticed something was wrong, but did not interfere until he started beating an uncooperative patient.

c. In order to prevent complications associated with extended bedrest, patients are often made to get up and walk when recovering from surgery. In one instance, a patient recovering from a hysterectomy complained of dizziness when being helped out of bed. The next day, when nurses came to help her walk, they did not see the record of the complaint on the patient record, and, still dizzy, the patient fell and broke her leg.

d. An elderly male patient admitted to the geriatric ward at a large hospital is uncooperative and often verbally abusive towards the hospital staff. Shortly before he is scheduled to be released, he is found in his room screaming profanities and scattering his feces on the bedclothes. After obtaining permission from the attending physician, the nurse on duty has the patient placed in restraints. He is left in the restraints until the room can be cleaned.

Suggested Assessments

Discussion Rubric

Related Websites

<http://www.nursefriendly.com/nursing/clinical.cases/nursing.malpractice.cases.by.date.htm>

STANDARD 6: ETHICS



UNIT INTRODUCTION

“Healthcare professionals will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment. They will perform quality healthcare delivery.”

Ethics is a very broad and complex subject. Medical ethics are especially complex. Even a very shallow overview of the subject would take up a full course. This unit does not try to give an overview of medical ethics. Rather, it seeks to provide students with some touchpoints to begin thinking about ethics and health care.

Basic principles derived from the Hippocratic oath are presented in Lesson 1 to provide a framework for ethical considerations. Lesson 2 discusses different types of ethics within health care. Lesson 3 focuses on ethical codes specific to certain professions. Lesson 4 focuses on the principle of patient confidentiality. Lesson 5 discusses bioethics, and the new challenges to medical ethics posed by biotechnology. Lesson 6 focuses on more basic bioethical concerns. Lesson 7 looks at ethics in the context of the healthcare team. Lesson 8 discusses the error-reporting and -correcting processes within healthcare facilities. Lesson 9 focuses on the concept of patient rights. Lesson 10 focuses on the principle of equity.

In addition to the learning application activities contained in this section of the Instructor’s Manual, it may be useful to conduct an on-going classroom discussion throughout the unit concerning the responsibilities that come along with being a health care professional.

This unit is closely tied to the Legal Responsibilities Unit, and would benefit from being viewed in the light of the Communications Unit.

LESSON 1: ETHICS INTRODUCTION

Objective:

Examine the four major principles of medical ethics.

Accountability Criteria:

- 6.11 Differentiate between ethical and legal issues impacting healthcare
- 6.12 Compare personal, professional, and organizational ethics
- 6.13 Recognize ethical issues and their implications related to healthcare
- 6.2 Ethical Practice
 - 6.21 Apply ethical behaviors in healthcare
 - 6.22 Apply procedures for reporting activities and behaviors that affect health, safety, and welfare of others
- 6.31 Understand religious and cultural values as they impact healthcare
- 6.32 Demonstrate respectful and empathetic interactions with diverse age, cultural, economic, ethnic, and religious groups

Summary:

The students define ethics and, through examples, determine the differences between legal, ethical, and moral behavior. Clear definitions in the law determine whether or not behavior is legal. Ethical guidelines or standards are established for groups of people and apply to the entire group. Moral behavior is founded on an individual's belief system.

The students examine the four principles of medical ethics: autonomy, do no harm, do good, and justice and equality. They also examine situations which pose ethical questions.

Learning Application Activities:

1. Lead a class discussion in which the students give examples of moral, ethical, or legal dilemmas they have faced. Organize the examples into one of the three categories and examine what distinguishes the categories from each other. When the students are comfortable with the three different categories, ask them to propose some health care related examples for each category.

Suggested Assessments:

Discussion Rubric

Materials:

Chalkboard, whiteboard, or overhead projector

2. Two of the ethical dilemmas presented in the online content are based on the case of Ladan and Laleh Bijani, 29-year old Iranian craniopagus twins who died following a failed separation surgery. The Internet Resources screen contains a link to an article on the ethical questions surrounding this case. Ask the students to read the article and then lead a class discussion on what ethical considerations the case presented, how the case should have been handled, and how the students' opinions are influenced by the ultimate outcome. Does the ultimate outcome effect whether or not the initial decision was ethical?

Suggested Assessments:

Discussion Rubric

Materials:

Internet access

Chalkboard, whiteboard, or overhead projector

3. The online content does not address how health care professionals should proceed in the case of children. Generally, parents are free to choose their children's medical care. Ask the students to perform research to determine how the following situations would be handled in your state. You may wish to divide the students into groups and assign each group one of the following scenarios to investigate and present to the class. Alternatively, you may ask all of the students to research all of the following scenarios and write a brief response:

- A 15 year-old girl is suffering from a terminal illness. She is brought to the emergency department by her mother, who insists that everything possible be done to keep her alive. The girl tells the doctor that she does not want to be resuscitated. While in the ED, her heart stops. Should the doctor attempt to resuscitate her (the wish expressed by her mother), or let her die (the wish expressed by the girl)?
- An eight year-old child is brought to the emergency room after he collapsed at school. The child has diabetes and will require insulin injections to regulate his blood sugar. However, his parents belong to a religion which relies on prayer to heal illness. What should the emergency department do?
- A 16 year-old girl still sees her childhood pediatrician. The girl arrives at the office alone one morning and asks to see the doctor. She insists that if the office attempts to contact her parents she will leave. The girl is obviously experiencing apparently severe abdominal pain. She is a regular patient, but her mother has always brought her in and remained in the exam room. What should the medical office assistant do? What should the doctor do?
- A little girl, about 7 years old, comes into the emergency department alone. Her bus stop is only a block from the hospital. She was walking home from the bus stop when she fell and cut her hand. Staff members cannot reach her mother at home. The girl's hand will require stitches but is not bleeding enough to be life-threatening.

Suggested Assessments:

Presentation Rubric

Materials:

Internet access

Research materials (optional)

Presentation materials (optional)

4. For this activity students will need to be aware of the laws regarding emergency treatment in your state. Either ask the students to conduct research to determine if there are any alternatives when a parent declines lifesaving treatments, provide the students with this information before they begin the exercise, or conveniently place yourself in the skit as a hospital administrator who can answer questions as they arise. The students should role-play the following scenario as a skit. Assign each participating student a role and ask them to play that role as accurately as possible. Any students who do not participate in the role-play should observe and take notes on what ethical dilemmas arose during the role-play, how they were handled, and whether or not the actors made any mistakes. If all students participate in the skit, these questions can be raised in a class discussion afterward.

Scene:

A school bus is involved in an accident. Though most of the children suffer only minor injuries, several are badly injured. One third-grade child has an open fracture that is bleeding profusely. The child's blood pressure is dropping rapidly. The child needs blood immediately and will likely need more blood during the surgery for the fracture. The child is given blood while the surgeon preps for emergency operation to stop the bleeding. The child's parents arrive. Their religion does not permit blood transfusions. They are irate when they learn he has already been given blood and refuse to allow any additional blood to be administered. The child is still bleeding badly and will bleed to death if he is not given a transfusion.

Actors:

Timothy, third grader with an open fracture

Deb, Timothy's mother

Thomas, Timothy's father

Dr. Jones, the treating physician

Nurse Smith

Hospital Administrator - (optional)

Suggested Assessments:

Project Rubric

5. Print hard copies of an online survey on bioethical issues and ask the students to complete the survey. Do not define terms or elaborate on issues at this time. *Keep the surveys completed by the students. At the end of the Ethics unit have them complete the survey again and compare their answers.*

Related Websites:

http://www.accessexcellence.org/LC/ST/stfiorella_survey.html - *Bioethics survey*

Materials:

Internet access

Printable surveys from website

LESSON 8: REPORTING ERRORS

Objective:

Examine health care worker's responsibilities to report medical errors.

Accountability Criteria:

- 4.11 Classify personal traits or attitudes desirable in a member of the healthcare team
- 5.11 Analyze legal responsibilities and limitations
- 5.14 Interpret healthcare facility policies and procedures
- 5.26 Explain the laws governing harassment, labor, and employment
- 6.11 Differentiate between ethical and legal issues impacting healthcare
- 6.12 Compare personal, professional, and organizational ethics
- 6.13 Recognize ethical issues and their implications related to healthcare
- 6.21 Apply ethical behaviors in healthcare
- 6.22 Apply procedures for reporting activities and behaviors that affect health, safety, and welfare of others
- 8.11 Understand roles and responsibilities of team members
- 8.23 Recognize factors and situations that may lead to conflict

Summary:

Students explore the impact of medical errors and how they should be handled by health care professionals. They examine the sentinel events as defined by the JCAHO, how sentinel events are considered in the accreditation process, and what facilities must do to satisfy the JCAHO if a sentinel event occurs. Students examine why JCAHO requires a root cause analysis. They discuss the advantages of analyzing the system instead of blaming the individual. Though system change is the most effective method for dealing with most medical errors, some errors are the result of incompetent, unethical, or impaired workers. Students examine a health care worker's responsibility to report themselves or others when someone else's health or safety is threatened.

Learning Application Activities:

1. In the online content students are asked to briefly consider a scenario in which they discover they have been improperly sterilizing surgical equipment, even though the manufacturer's instructions specify how to sterilize the instrument. This is very similar to an incident that occurred in Canada in 2003. An internal audit of infection control procedures at the hospital uncovered the problem. After the problem was reported, other institutions found the same problem. Lead a class discussion to explore how this incident reveals the value of examining errors as system failures rather than individual failures. How would the outcome have been different if the hospital that first found the problem had regarded the problem as one of employee incompetence and just fired the employee?

Suggested Assessments:

Discussion Rubric

Related Websites:

<http://www.cbc.ca/news/story/2003/11/04/unsterilized031104.html>

Materials:

Internet Access

2. Organize the students into small groups and ask them to role-play the following situations.
 - A. A nurse observes a coworker and close friend performing sterilization procedures improperly when in a hurry.
 - B. A nurse administers the wrong medication to the patient, but the patient appears to be experiencing no ill results.
 - C. A physician in a small practice becomes aware that another physician in the practice is an alcoholic.
 - D. A health care worker goes to a supervisor with complaints that understaffing and overwork is endangering patients. The worker has documented specific incidents, but the supervisor is not supportive. The supervisor attributes the problems to the nationwide shortage of health care workers and informs the patient that nothing can be done.

Suggested Assessments:

Class Participation Rubric

3. In 2004, Charles Cullen became the deadliest serial killer in New Jersey history. The nurse plead guilty to killing 16 patients by deliberately administering lethal doses of medication. The actual number of victims is likely much higher. The investigation that lead to Cullen's arrest was started when coworkers reported suspicious activities. However, Cullen was able to move from hospital to hospital for years. Ask the students to research the case and prepare a paper or report addressing the following issues:
 - A. What role did coworkers reporting suspicious activities play in this case?
 - B. How did the system fail and how did the system succeed in this case?
 - C. What lessons can be learned from this case?
 - D. What system changes could be made that would improve patient safety, and do these changes present in concerns?

Suggested Assessments:

Composition Rubric

Related Websites:

<http://www.mcall.com/all-cullenstories,0,6668.storygallery?coll=all-homepage-utl> *Links to archived stories related to the Charles Cullen case*

STANDARD 7: SAFETY PRACTICES



UNIT INTRODUCTION

“Healthcare professionals will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.”

Health care can be dangerous business. Working with the sick exposes health care workers to disease and the current worker shortage places many professionals under heavy workloads. Constant vigilance is required to protect against burnout and serious illness. This unit aims to prepare students for a career in health care by introducing them to basic standards for protecting against occupational hazards.

Lesson 1 deals with the being conscious of the human body’s limitations. Lessons 2 through 5 deal with infection control. Lesson 6 deals with lab safety. Lesson 7 deals with chemical safety. Lesson 8 deals with fire safety.

This unit is closely tied with the Technical Skills Unit. The latter calls on students to use the former. There is also a natural link with the Legal Responsibilities Unit through OSHA, and with the Health Maintenance Unit. It would be very useful to view the Safety Practices Unit in light of the Teamwork Unit.

LESSON 1: PERSONAL SAFETY

Objective:

Students will be introduced to the principles of ergonomics, body mechanics, and general workplace safety.

Accountability Criteria:

- 5.14 Interpret healthcare facility policies and procedures
- 7.21 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions)
- 7.22 Apply principles of body mechanics and ergonomics
- 7.32 Apply safety techniques to prevent accidents and to maintain a safe work environment
- 9.13 Apply practices that promote prevention of disease and injury
- 9.15 Discuss complementary and alternative health practices

Summary:

Students are introduced to the science of ergonomics and some risk factors of body mechanics in the context of developing good personal safety attitudes. Some general workplace safety habits such as sleep health, communication, orderliness, and fall prevention are also considered.

Learning Application Activities:

1. Have the class stand up at their seats and try out various body postures. They should note which muscles are tensed and which are relaxed, which postures are comfortable and which are awkward. Using this information, conduct a class discussion on the role of body mechanics in musculoskeletal health. Some suggested postures are: bending sideways, crouching, standing on tip-toe, standing up straight, slouching, arching the back, and touching the toes. It may also be informative to have students pick up objects.

Suggested Assessments:

Class Participation Rubric

Related Websites:

<http://www.spineuniverse.com/displayarticle.php/article895.html>

www.ergonomics.org

Materials:

Research materials

2. Have five students volunteer to perform an improvisational skit set in an emergency room. Assign each a role: paramedic, triage nurse, physician, nurse, or patient. Present an emergency scenario and have the five players act it out. Stop them periodically to have the class discuss what is going on. What role is communication playing in the emergency? Organization? What might happen if the paramedic is sleep deprived?

Suggested Assessments:

Class Participation Rubric

3. Have students keep a sleep journal over a period of a week. Students should write an entry per night, including the time they lay down, the time they went to sleep, the time they woke up, and if they slept through the night. Then, have each students research an aspect of sleep health such as apnea or sleep clinics and write a report.

Suggested Assessments:

Project Rubric

Related Websites:

www.sleepfoundation.org

www.sleepnet.com

Materials:

Research materials

Safety Practices Quiz 1 Answer Key (worth 6 pts.)

1. (C) **A carpenter keeping her back straight and muscles relaxed while sawing a board in half** represents an application of sound body mechanics, **7.22**.
2. (C) **Lift with your legs, not with your back** is not one of the policies recommended by OSHA to reduce trips and falls in a health care setting, **7.21, 7.22**.
3. (B) **Sleep deprivation** slows reaction time to such an extent that its effects are sometimes compared to drunkenness, **9.11, 9.13**.
4. (A) **True**. Communication is important for safety in a health care setting because it allows health care professionals to coordinate their efforts to prevent accidents, **7.32**.
5. (D) **All are true. Cleaning only one side of a passageway at a time, making sure hallways and stairwells are well-lit, and keeping aisles and passageways clear** are housekeeping procedures that prevent accidents, **7.32**.
6. (D) The principles of body mechanics are especially important for the **Long-term Care** sector, **7.22**.

LESSON 4: INFECTION CONTROL EQUIPMENT AND PRACTICES

Objective:

Understand and apply aseptic techniques.

Accountability Criteria:

- 7.1 Infection Control
 - 7.11 Explain principles of infection control
 - 7.12 Describe methods of controlling growth of microorganisms
- 7.3 Environmental Safety
 - 7.31 Evaluate environment to recognize safe and unsafe working conditions
 - 7.32 Apply safety techniques to prevent accidents and to maintain a safe work environment

Summary:

Students learn about contact transmission, the difference between medical and surgical asepsis, and infection control techniques. The focus is on decontamination and sterilization as students read about hand washing, latex gloves, scrubs, disinfectants, steam autoclaves, and dry heat ovens.

Learning Application Activities:

1. Have students perform a surgical scrub and put on latex gloves. Students should make sure to use plenty of soap and rub hands together constantly under hot water. Hands should be dry before putting on gloves. GloGerm may also be used to demonstrate the effectiveness of different intensities of hand washing.

Related Websites:

http://www.nlm.nih.gov/changingthefaceofmedicine/resources/pdf/health_career/teacher_reference_1.pdf
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5116a1.htm>

Materials:

Soap and water
latex gloves
Fingernail scrub brush (optional)
GloGerm and black light (optional)

2. Have students keep a hand washing journal to keep track of how often they wash their hands. Use this information in a class discussion. About how often, on average, does the class wash their hands? What times of the day are students most likely to wash their hands?

Suggested Assessments:

Discussion Rubric

Materials:

Chalkboard, whiteboard, or overhead projector

3. Have students practice removing latex gloves. The procedures for safely removing contaminated gloves are as follows.

- 1) Hold gloved hands over a trash can.
- 2) Without touching any bare skin, grasp the outside area of the glove cuff on the dominant hand.
- 3) Pull the glove off without snapping it. *Snapping a contaminated glove may cause pathogens to become airborne.*
- 4) Discard the glove into the trash can.
- 5) Place bare fingertips of the dominant hand inside the other glove, and grasp it near the top of the glove's palm area, making sure bare skin does not touch the outside of the glove.
- 6) Pull the second glove off and discard.
- 7) Wash hands.

Suggested Assessments:

Class Participation Rubric

Materials:

Latex gloves

Safety Practices Quiz 4 Answer Key (worth 6 pts.)

1. (B) Intermediate disinfectants are also called **tuberculocidal** disinfectants by the CDC, **7.12**.
2. (B) **Washing hands in antimicrobial soap and water for ten minutes** is not an example of medical asepsis, **7.12**.
3. (A) **True**. Some surgeons wash their hands for up to ten minutes before surgery, **7.12**.
4. (D) A steam autoclave works **by saturating materials with pressurized steam**, **7.12**.
5. (C) After health care professionals finish sterilizing instruments, they should **store them in a sterile place or use them immediately**, **7.12**.
6. (A) **True**. The percentage of health care professionals allergic to latex is higher than that of the general public.

APPENDIX A: ASSESSMENTS



PRESENTATION RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale
Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale	Comments
Content		
Central idea is well defined	5 4 3 2 1	_____
Supporting statements are clearly related	5 4 3 2 1	_____
Topic is well researched	5 4 3 2 1	_____
Facts and opinions are identified correctly	5 4 3 2 1	_____
Presenter seems familiar with topic	5 4 3 2 1	_____
Organization		
Includes opening, body, and closing elements	5 4 3 2 1	_____
Cohesive throughout	5 4 3 2 1	_____
Presentation remains on topic	5 4 3 2 1	_____
Smooth transitions	5 4 3 2 1	_____
Needed materials prepared (notes, visual aides, etc.)	5 4 3 2 1	_____
Multimedia		
Multimedia present	5 4 3 2 1	_____
Presentation uses a variety of multimedia: graphics, handouts, or visual aids	5 4 3 2 1	_____
Multimedia aids understanding	5 4 3 2 1	_____
Presenter refers to multimedia elements	5 4 3 2 1	_____
Multimedia flows naturally	5 4 3 2 1	_____
Mechanics		
Volume and Projection	5 4 3 2 1	_____
Grammar in speech	5 4 3 2 1	_____
Speech patterns	5 4 3 2 1	_____
Eye contact	5 4 3 2 1	_____
Composure	5 4 3 2 1	_____

Notes: _____

Total: _____

DEBATE RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale

Excellent=5 **Good=4** **Average=3** **Fair=2** **Poor=1**

Criteria	Scale	Comments
Content		
Arguments are informed by research	5 4 3 2 1	_____
Avoids obvious fallacies	5 4 3 2 1	_____
Avoids ad hominem attacks	5 4 3 2 1	_____
Poses thoughtful questions to opponent(s)	5 4 3 2 1	_____
Avoids self-contradiction	5 4 3 2 1	_____
Addresses counter-arguments	5 4 3 2 1	_____
Defines terms when necessary	5 4 3 2 1	_____
Organization		
Arguments are presented concisely	5 4 3 2 1	_____
Time limits are respected	5 4 3 2 1	_____
Repetition is avoided	5 4 3 2 1	_____
Avoids vague and confusing language	5 4 3 2 1	_____
Procedure		
Presents arguments courteously	5 4 3 2 1	_____
Seeks to represent opposing viewpoints accurately	5 4 3 2 1	_____
Takes turns speaking	5 4 3 2 1	_____
Allows opponents equal time to speak	5 4 3 2 1	_____
Speaks clearly and audibly	5 4 3 2 1	_____

Notes: _____

Total: _____

DISCUSSION RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale
Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale					Comments
Content						
Regularly provides important insights	5	4	3	2	1	_____
Demonstrates understanding of relevant information	5	4	3	2	1	_____
Work reflects insights gained in discussions	5	4	3	2	1	_____
Participation						
Participates in classroom discussions often	5	4	3	2	1	_____
Allows others time to speak	5	4	3	2	1	_____
Speaks courteously to other students	5	4	3	2	1	_____
Speaks courteously to teacher	5	4	3	2	1	_____
Avoids interrupting others	5	4	3	2	1	_____

Notes: _____

Total: _____

COMPOSITION RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale
Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale	Comments
Content		
Central idea is well defined	5 4 3 2 1	_____
Supporting statements are clearly related	5 4 3 2 1	_____
Writer is familiar with topic	5 4 3 2 1	_____
Facts and opinions are presented in the proper contexts	5 4 3 2 1	_____
Sources are appropriate and cited properly	5 4 3 2 1	_____
Clarity	5 4 3 2 1	_____
Information presented concisely	5 4 3 2 1	_____
Organization		
Includes opening, body, and closing elements	5 4 3 2 1	_____
Cohesive throughout	5 4 3 2 1	_____
Remains on topic	5 4 3 2 1	_____
Smooth transitions	5 4 3 2 1	_____
Needed materials included	5 4 3 2 1	_____
Mechanics		
Syntax	5 4 3 2 1	_____
Punctuation	5 4 3 2 1	_____
Spelling	5 4 3 2 1	_____

Notes: _____

Total: _____

PROJECT RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale

Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale	Comments
Problem		
Problem or task is clearly identified	5 4 3 2 1	_____
Problem or task is creative or challenging	5 4 3 2 1	_____
Proposed solution is justifiable	5 4 3 2 1	_____
Needed materials identified and attainable	5 4 3 2 1	_____
Goal achievable within time frame	5 4 3 2 1	_____
Analysis		
Necessary background information attained	5 4 3 2 1	_____
A variety of sources and media were used	5 4 3 2 1	_____
Sources are documented	5 4 3 2 1	_____
Problem or task re-evaluated as necessary	5 4 3 2 1	_____
Accurate analysis	5 4 3 2 1	_____
Process		
Repeatable process can be explained by the student	5 4 3 2 1	_____
Used time effectively	5 4 3 2 1	_____
Used resources effectively	5 4 3 2 1	_____
Adapted to unexpected changes	5 4 3 2 1	_____
Developed a process to test product/result throughout development	5 4 3 2 1	_____
Product/Result		
Product/result is complete	5 4 3 2 1	_____
Product/result completed within time frame	5 4 3 2 1	_____
ID possible improvements	5 4 3 2 1	_____
Develop method to test effectiveness of final product	5 4 3 2 1	_____
Product/result meets expected outcomes	5 4 3 2 1	_____

Notes: _____

Total: _____

CLASS PARTICIPATION RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale

Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale					Comments
Planning						
Voices suggestions	5	4	3	2	1	_____
Establishes time frame/schedule	5	4	3	2	1	_____
Engages others	5	4	3	2	1	_____
Follows instruction	5	4	3	2	1	_____
Attempts to integrate others' suggestions	5	4	3	2	1	_____
Organization						
Work flows logically	5	4	3	2	1	_____
Allocates time effectively	5	4	3	2	1	_____
Allocates resources effectively	5	4	3	2	1	_____
Selects appropriate tools for task	5	4	3	2	1	_____
Suggests improvements to project/task	5	4	3	2	1	_____
Teamwork						
Gives other students appropriate credit	5	4	3	2	1	_____
Takes responsibility for own work	5	4	3	2	1	_____
Respects the work of other students	5	4	3	2	1	_____
Shows courtesy/politeness to other students	5	4	3	2	1	_____
Encourages participation from all students	5	4	3	2	1	_____
Completion						
Work is complete	5	4	3	2	1	_____
Work is on time	5	4	3	2	1	_____
Work is on topic	5	4	3	2	1	_____
Reflective of the work of all students	5	4	3	2	1	_____
Work shows creativity/innovation beyond that of a single student	5	4	3	2	1	_____

Notes: _____

Total: _____

TEAM EVALUATION RUBRIC

Student: _____ Topic: _____ Date: _____

Grading Scale
Excellent=5 Good=4 Average=3 Fair=2 Poor=1

Criteria	Scale	Comments
Collaboration		
Team members participated equally	5 4 3 2 1	_____
Tasks were allocated fairly	5 4 3 2 1	_____
Input considered from all members	5 4 3 2 1	_____
Product reflected strengths of more than one member	5 4 3 2 1	_____
Members worked together to meet goals	5 4 3 2 1	_____
Process		
Members were responsible for their own tasks	5 4 3 2 1	_____
Strengths and experience were considered when distributing tasks	5 4 3 2 1	_____
Leader guided and directed - did not dictate	5 4 3 2 1	_____
Members advanced ideas	5 4 3 2 1	_____
Members sought/offered help to all members equally	5 4 3 2 1	_____
Product		
All members can explain/demo finished product/task	5 4 3 2 1	_____
Members can identify problems with product/task	5 4 3 2 1	_____
Members can suggest means/methods for improvement	5 4 3 2 1	_____
Courtesy/politeness to other members	5 4 3 2 1	_____
Participation from all members	5 4 3 2 1	_____
Team Dynamics/Relationships		
Members can state each other's strengths	5 4 3 2 1	_____
Members can state each other's weaknesses	5 4 3 2 1	_____
Work includes work of all team members	5 4 3 2 1	_____
Members can realistically assess team dynamics	5 4 3 2 1	_____

Notes: _____

Total: _____

TEAM SURVEY

Team: _____

Date: _____

Rate the overall performance of your group according to the criteria given below. Include any specific comments in the space provided.

Criteria	Scale				
Team worked together	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Comments:	_____ _____				
Members participated equally	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Comments:	_____ _____				
All members produced quality work	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Comments:	_____ _____				
Input was accepted from all members	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Comments:	_____ _____				
The team benefited from one member who did more than required.	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Student's Name:	_____ _____				
The team suffered due to one member who did less than required	• Strongly Agree	• Agree	• Neutral	• Disagree	• Strongly Disagree
Student's Name:	_____ _____				
Additional Comments:	_____ _____ _____				

ASSESSMENT/RECOVERY MAP

Student: _____ Topic: _____ Date: _____

- 1. Identify the disease/disorder: What is the problem?**
- 2. What body system is involved? What organs are affected?**
- 3. What is the cause of the problem (etiology)?**
- 4. What diagnostic tests are indicated?**
- 5. What should be included in the treatment plan?**
- 6. How has the illness impacted the client's daily activities?**
- 7. What special circumstances might affect the course of this condition?**
- 8. What rehabilitation will be needed for the client to return to normal activity?**
- 9. What is the prognosis?**

