

Second Opinion

INTEGRATED
CURRICULUM UNIT
ON COMPLEMENTARY
AND ALTERNATIVE
MEDICINE

UNIT
OVERVIEW

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UNIT OVERVIEW

Essential Question for This Unit

How can we ensure the safety and effectiveness of complementary and alternative medicine (CAM)?

Unit Summary

In this unit, students will explore the variety of medical practices that exist outside of conventional Western medicine. Complementary and alternative medicine, known as CAM, is becoming more widely accepted in the United States as our population becomes more diverse. At the same time, scrutiny of these practices, some of which are not subject to any regulatory oversight, is an issue that becomes increasingly pressing for the healthcare industry, healthcare workers, and the general public.

In Subunit 1, students are introduced to the various types of practices that fall within the description of CAM. Students discuss their own experiences with family-administered medical care and classify their practices into the five categories of CAM. They study the origins of CAM practices, both general and specific, in Geography, English Language Arts, and Spanish. Also, in Geography, students trace the means by which local medical knowledge and practices are dispersed to other regions of the world. As cultures mix, fundamental beliefs about healthcare can come into conflict. Students examine the importance of cultural sensitivity when providing healthcare for immigrant populations.

In Subunit 2, students examine how CAM is being integrated into the conventional Western medicine typically practiced in the United States. In Chemistry, students study a variety of herbal supplements, many of which share active ingredients with modern pharmaceuticals. An experiment with willow bark tea illustrates the variability of effectiveness of naturally occurring products. In Geometry, students examine how pill size and shape can affect the absorption of drugs. Despite CAM's popularity, it is not always clear whether they have any beneficial health effects. Students research five controversial CAM practices, examine the claims made about them, evaluate the

evidence of their effectiveness, and discuss current and proposed efforts by the Food and Drug Administration (FDA) to regulate this burgeoning industry. Students conclude the unit by debating the level of regulation that the government should impose upon CAM.

Culminating Event

The debate on CAM regulation can be extended into a culminating event. Pairs of students can select a specific type of CAM and debate increasing or relaxing regulation of its manufacture, practice, and marketing. Another possible culminating effort for this unit would be for students to develop educational materials and/or presentations to inform healthcare workers about culturally sensitive care for individuals from various ethnicities. Groups of students would select an ethnic group, research its beliefs and attitudes about medical care, and explore its common folk healing practices that might come into conflict with conventional medicine. Students could deliver these presentations and materials to local healthcare agencies.

Key Questions/Issues

- What is CAM, and how does it differ from conventional medicine? (Health Science)
- Where do CAM practices come from? How have they become popular in the United States? (World Geography)
- What medical diagnoses and treatments are addressed by practitioners of traditional Hispanic folk healing? How do those diagnoses and treatments compare to conventional medicine? (Spanish)
- How are traditional, local medical practices spread to other regions of the world? How do they gain popularity in a new culture? (World Geography, English Language Arts)
- What medical beliefs are held by people from different cultures? Why is it important for healthcare workers to be aware of these beliefs? (English Language Arts, World Geography)

- What conventional medical treatments used by doctors today have their origins in folk medicine? (Chemistry)
- What regulations are currently in existence for CAM? Are they adequate? How could they be improved? (Social Studies, English Language Arts)

Learning Scenario to Kick Off the Unit

When you get sick, a nice nap and some hot soup isn't a bad way to spend the day, but if you were really sick, your parents would take you to see a doctor. Not everyone agrees. When your friend, Jorge, is sick, sometimes his parents take him to see a *curandera*, or folk healer, instead. And he's not the only one. Natural remedies for every conceivable illness are just one Google search away. There are 656,000 hits for "natural remedy, muscle strain" and 2,180,000 hits for "natural remedy, cancer." If you don't want to see a medical doctor, you have other options. Will they really help you to get better? Is it possible they might actually make your health worse?

Biomedical/Healthcare and Education Partner Roles

- School librarians/media specialists can assist the Health Sciences and/or English Language Arts instructors with teaching research skills, particularly in the use of print and other media resources.

- Career counselors from the school or local post-secondary institutions can be invited to discuss the educational opportunities available and relevant to practitioners of CAM.
- Employees from various local biomedical research facilities or health services providers can be invited to speak to students about integrating CAM into conventional care.
- Additional individuals can be invited to participate as speakers or to help evaluate the culminating event. These include:
 - MD/OD
 - Dietician
 - Chiropractor
 - Acupuncturist
 - Massage Therapist
 - Herbalist
 - Exercise Physiologist
 - Pharmacist
 - Geneticist
 - Ethicist

SUBUNITS AND MAJOR TOPICS (ACROSS ACADEMIC AND TECHNICAL SUBJECT AREAS)

Subunit 1

Old Medicine, New Places

HEALTH SCIENCE · WORLD GEOGRAPHY · SPANISH I · ENGLISH LANGUAGE ARTS

- Five divisions of CAM
- Geographic differences in medical knowledge and practice
- Transfer of knowledge between cultures as a result of human migration
- Hispanic folk healing beliefs and practices
- Using print and multimedia sources for research
- Writing research reports

Subunit 2

Merging Two Traditions

CHEMISTRY · GEOMETRY · ALGEBRA I · SOCIAL STUDIES · ENGLISH LANGUAGE ARTS

- Molecular structure diagrams
- Acids and bases
- Origin and chemical composition of aspirin
- Volume and surface area for cylinders and prisms
- Hypothesis testing including Type I and Type II errors
- FDA regulations regarding the health care industry
- Formal debate