



uBEATS Teacher's Guide:

Pharmacology Ethics

(Grades 11-12)

This teacher guide is a supplementary text to support the use of the uBEATS "Pharmacology Ethics" pharmacology module for grades 11-12.

To help students develop the knowledge necessary for an incredible future in health care, we created UNMC Building Excellence in Academics Through STEM (uBEATS), an online health science resource for Nebraska students.

UNMC uBEATS modules are short (15 minutes or less), interactive online health science modules to supplement curriculum taught in grades 6 – 12. These do not replace curriculum but are a supplement for teachers and students incorporating evidence-based information and UNMC expert guided material. Each module is chunked into sections with formative and summative assessments with immediate feedback provided.

Tips on how to utilize uBEATS modules:

- Internet access is required to view uBEATS modules.
- For those who have access to one-to-one technology, modules can be used in or outside of the classroom as a topic introduction, extension, or review.
- For classrooms without individual student devices modules can be used in whole group instruction. Formative assessment questions can use the teacher's preferred call and response method and summative assessment questions can be displayed on the board and answered individually by students or printed and distributed to students after viewing the module.

Objectives

- Determine the difference between laws, practices and ethics.
 - Identify the main principles of Pharmacy Ethics.
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Introduction

Everyone knows that it is always important to do the right thing. However, sometimes people may not agree on what is right and what is wrong. In the professional world, it is very important to be able to distinguish the difference between what is right and what is wrong. To help professionals of all types to understand how they should conduct themselves in the workplace, laws, rules, and regulations are created to help guide pharmacists and other professionals in their day-to-day interactions with their clients, peers and their community.

Prior Knowledge

Before beginning this module, the student should understand the Next Generation Science Standards (NGSS) featuring [Three-Dimensional Learning](#).

Core Idea PS1.B: Chemical Reactions [A Framework for K-12 Science Education](#)

- Chemical processes, their rates, and whether energy is stored or released can be understood in terms of the collisions of molecules and the rearrangements of atoms into new molecules, with consequent changes in total binding energy (i.e., the sum of all bond energies in the set of molecules) that are matched by changes in kinetic energy. In many situations, a dynamic and condition-dependent balance between a reaction and the reverse reaction determines the numbers of all types of molecules present. The fact that atoms are conserved, together with knowledge of the chemical properties of the elements involved, can be used to describe and predict chemical reactions. Chemical processes and properties of materials underlie many important biological and geophysical phenomena.

Science and Engineering Practices [NGSS](#)

- Constructing explanations and designing solution

Crosscutting Concepts [NGSS](#)

- Patterns
- Stability and change

Key Terms/Vocabulary

Laws, rules, regulations, practices, best practices, ethics, code of ethics, autonomy, conflict of interest, principles, respect for persons, beneficence, justice, covenantal relationships, professional competence, empathy.



Science Standards

Nebraska Science Standards

SC.HSP.6 Structure and Function: Anatomy & Physiology

- Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the human body systems.

SC.HSP.3 Chemistry: Structure and Properties of Matter

- Evaluate a solution to a complex, real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

Extensions of the lesson

- To help students become more familiar with the Key Terms of this module, the teacher can use the vocabulary list for a classroom Word Wall or integrate the vocabulary into classroom word games during review sessions.
- To help the students see personal relevance, suggest they have a **private** conversation at home regarding possible circumstances in which a person might wish to decline a pharmacist's medical recommendations.
- As student misconceptions become apparent, the teacher may need to reinforce these important concepts:
 - Laws and ethics are not the same. Laws are written by governing bodies to specifically define what a person is prohibited from doing, and what a person is required to do. These laws are sometimes regarded as minimum standards of behavior. Ethics, on the other hand, are the broader considerations about what is right or wrong behavior in situations not defined by law.
 - Laws and ethics are sometimes in conflict. For example, when a historical law requires behavior that violates accepted moral principles, ethical decision-making involves the difficult choice between breaking the law and doing the right thing.
 - Laws and ethics are also at odds when a person or company searches for "legal loopholes" that do not break the law yet do intentionally violate the intent of the law.
 - When a pharmaceutical company attempts to influence which drugs a pharmacist recommends to a patient, the pharmacist is obligated to know whether any laws are broken by the influence. But ethical principles also require the pharmacist to check for conflicts of interest in which the patient's health might be secondary to the interests of the drug company or even the interests of the pharmacist.



Enrichment

- For information about career opportunities, see UNMC's [Careers in Healthcare](#).
- Search the Internet for videos presenting information about the difference between "Laws and Ethics."
- Search the Internet for videos presenting information about "Pharmacy Ethics."
- The USDA offers ethical perspectives in [Ethics Illustrated: How to Avoid Conflicts of Interest](#).
- Students should be watchful in current events for recent stories about resistance to vaccination recommendations.
- To make connections in your community, contact local universities, medical centers, clinics, drug manufacturers, and pharmacists.