



# **uBEATS Teacher's Guide:**

## **Medical Terminology Module #8**

### **Case Reports**

This teacher guide is a supplementary text to support the use of the uBEATS Medical Terminology Module #8 – Medical Case Reports for grades 6-12.

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 students.

UNMC uBEATS modules are short (15 minutes or less), interactive online health science modules to support curriculum taught in grades 6 – 12. These do not replace curriculum but provide support 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

- Decipher medical terminology as written in cardiology case reports.
- Decipher medical terminology as written in oncology case reports.
- Decipher medical terminology as written in gastroenterology case reports.

## Introduction

Each medical specialty has its own education, certification, and licensing requirements. It makes sense that each specialty also has its own vocabulary. The unique terms used to describe a patient's condition are specific so that caregivers can communicate clearly.

In this module you will encounter specialized medical terminology in case reports for three different specialties.

## Prior Knowledge

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

**Disciplinary Core Ideas—Links Among Engineering, Technology, Science, and Society.** [A Framework for K-12 Science Education](#)

New insights from science often catalyze the emergence of new technologies and their applications, which are developed using engineering design. In turn, new technologies open opportunities for new scientific investigations. Together, advances in science, engineering, and technology can have—and indeed have had—profound effects on human society, in such areas as agriculture, transportation, health care, and communication, and on the natural environment. Each system can change significantly when new technologies are introduced, with both desired effects and unexpected outcomes.

National Academies of Sciences, Engineering, and Medicine. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13165>.

**Science and Engineering Practices** [NGSS](#)

4. Analyzing and interpreting data
8. Obtaining, evaluating, and communicating information

## Crosscutting Concepts [NGSS](#)

2. Cause and effect
4. Systems and system models

## Key Terms/Vocabulary

Cardiology, angina, hypertension, coronary angiogram, spasm, acute myocardial ischemia, electrocardiogram (ECG), ventricular arrhythmia, nitroglycerin, myocardial infarction, antiarrhythmic, diuretic, anticoagulant, stent, oncology, fatigue, MRI, mediastinal, needle biopsy, diagnosis, Hodgkin lymphoma, lymphadenopathy, hepatic, chemotherapy, radiotherapy, prognosis, gastroenterology, dyspepsia, acid reflux, abdominal, hematemesis, gastroscopy, upper GI series, barium, gastric acid, antibiotics, bacterium, ulcer, gastrectomy.

## Standards

Nebraska's College and Career Ready Standards for Science 2024 [Nebraska Science Standards](#)

- SC.HS.6.1 Structure and function
  - Gather, analyze, and communicate evidence of the relationship between structure and function in living things.

National Consortium for Health Science Education [NCHSE](#)

- Foundation Standard 1. Academic Foundation
  - 1.1. Human Anatomy and Physiology
  - 1.2. Diseases and Disorders
- Foundation Standard 2. Communications
  - 2.1. Concepts of Effective Communication
  - 2.2. Medical Terminology
- Foundation Standard 3. Systems
  - 3.1. Healthcare Delivery Systems
- Foundation Standard 8. Teamwork
  - 8.1. Healthcare Teams
  - 8.2. Team Member Participation
- Foundation Standard 10. Technical Skills
  - 10.1. Technical Skills
- Foundation Standard 11. Information Technology in Healthcare
  - 11.1. Key Principles, Components, and Practices of Health Information Systems (HIS)

## 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 review sessions.

As student misconceptions become apparent, the teacher may need to reinforce these concepts:

- Physicians who have demonstrated certified competency in specialized areas are not necessarily competent in other special areas. As they encounter unique situations while treating their patients, they refer their own patients to specialists who have more training regarding specific problems.
- This module discussed terminology specific to cardiology, oncology, and gastroenterology. Other medical specialties and examples of terminology appearing in associated case reports are as follows.
  - Gynecology: dysmenorrhea, menorrhagia, fibroids, hysterectomy, sonogram.
  - Urology: dysuria, hematuria, lithotripsy, renal calculus, ureter.
  - Radiology: CT scan, lateral view, mediastinal structures, posteroanterior view.
  - Endocrinology: insulin pump, polydipsia, polyuria, type 1 diabetes mellitus.
  - Orthopedics: callus formation, fracture, hip dysplasia, internal fixation, scoliosis.
  - Nephrology: arteriovenous fistula, renal failure, hemodialysis, hypotensive.
  - Neurology: aura, cephalgia, migraine, scotoma, vasoconstrictor.

## Enrichment

- Wikipedia provides an overview of Case Reports.
- Take some time to explore UNMC's Careers in Healthcare to find out which medical career possibilities catch your attention.
- Med School Insiders.com offers a video of Every Medical Specialty Explained in 12 Minutes.
- Study the webpage of ExploreHealthCareers.org to investigate options of medical specialties.