

## Lesson Plan Overview

**Instructor:** Emily Matthys

**Discipline:** Clinical Laboratory Science; Diagnostic/Clinical Microbiology

**Unit Title/Topic:** Diseases of the Urogenital Tract

**Essential Question(s):**

- What pathogenic microorganisms are frequently encountered in the urogenital tract?
  - What are the virulence factors, mode of transmission, and clinical symptoms of Syphilis?
    - *What was the Untreated Syphilis Study at Tuskegee (USST) and who did it impact?*
    - *How did the USST impact policy in the U.S regarding human research subjects and informed consent?*

**Context (What have students learned before and will learn after lesson?):**

Students should come into the lesson with an understanding of the basic anatomy of the Urogenital Tract. They will also be required to read an article about the USST, and watch four short video clips before the lecture. During the lecture, we will briefly review the main points of the article. They will reflect on the USST in writing individually, discuss with a partner, and then join a full class discussion of the topic focusing on policy, human research subjects, informed consent, and the impacts of this study on the wider community.

**Objectives (using Bloom's or Webb's Verbs):**

1. For the disease Syphilis the student will:
  - a. Identify the causative agent of disease and the factors that contribute to the organism's virulence.
  - b. Discuss the mode of transmission.
  - c. Describe the clinical symptoms and correlate these to disease severity.
  - d. *Reflect on and discuss the impacts of the USST on policy, human research subjects, informed consent, the research subjects, and the wider community.*

**Anchor Standards/Strategies:** The following standards/strategies should be considered throughout the unit.

- [Council for the Advancement of Standards in Higher Education \(CAS\)](#)
- [International Standards for Technology in Education Standards \(ISTE\)](#)
- [Social Justice Standards \(SJS\)](#)
- NMU's Strategic Plan: NMU acknowledges that historical patterns of oppression in US society—beginning with colonization, and continuing with racial and ethnic discrimination, and mistreatment of LGBTQIA+ people and people with disabilities and other marginalized populations—also exist on college campuses. NMU commits to understanding those patterns and will work to create a more just university and society.

We must recognize that diversity, equity, inclusion and belonging (DEIB) do not simply exist with a statement but rather must be sewn into the fabric of our university culture and values. NMU will ensure the sustainability of the comprehensive, transformative work of diversity, equity, inclusion and

belonging, and understands the long journey that will create a community where everyone feels safe, supported, and included.

1. Establish DEIB leadership and increase institutional capacity to better support and improve diversity, equity, inclusion and belonging efforts.
2. Assess internal information and data in order to develop a shared understanding of the current state of DEIB at NMU.
3. Ensure DEIB learning opportunities and training are available to all students, faculty, and staff members to increase individual and collective knowledge around diversity, equity, inclusion and belonging.
4. Improve services and supports for students, faculty, and staff (at all levels of employment) from diverse backgrounds in ways that improve recruitment.
5. Improve services and supports for students, faculty, and staff (at all levels of employment) from diverse backgrounds in ways that increase retention.
6. Improve efforts to integrate diversity, equity, accessibility and inclusion into academics.
7. Promote efforts that enhance cross-departmental collaborations and integration of DEIB-related perspectives into curriculum in order to increase faculty engagement with diversity.

#### **Active Learning Instructional Practices:**

- Write-Pair-Share
- Whole Class Discussion

#### **Gradual Release of Responsibility Framework (list activities as they are related to phase(s) of framework:**

- **Independent Learning:**

Students complete the reading assignments, and watch the video clips prior to attending lecture.

Some students may not have had exposure to peer-reviewed literature, so it will be important to define what peer-reviewed literature is, and to spend some class time modeling how to dig into it, if you haven't elsewhere in your course. Carey et al. (2020) provides a very succinct road map for reading a scientific paper, describes the traditional sections, and provides six questions for students to ask themselves when reading. You could also have students write out questions that they have about the article after reading to enhance or guide the whole class discussion.

The video clips will be posted in H5P format in EduCat, so there will be interactive questions throughout the video with a point value attached. Hopefully this will improve pre-class engagement and the students will come prepared for the in-class activities. (~45 minutes)

- **Collaborative Learning:** Student reflects on to a in-class writing prompt with a Write-Pair-Share activity (~7-10 minutes)
  - Example prompt:
    - How could leaving syphilis untreated in the research subjects have impacted the wider community that were not part of the study?

- **Guided Instruction:** Student participates in a whole class discussion guided by the instructor
  - I will guide a flexible and socratic style open discussion on any of the topics that students want to discuss. Having just responded to a prompt, and discussed their ideas with a peer, students will have had a chance to organize their thoughts on this topic. Many students will feel more confident about sharing with the wider group after going through a write-pair-share activity. (~10-15 minutes)
- **Focused Instruction:** Student reflects on the Whole Class Discussion in writing outside of class or during a written exam given a prompt.
  - Example prompt:
    - Reflect on the connections between the USST and the concept of “Informed Consent” in research studies.

### **Academic/Discipline-Specific Vocabulary:**

#### ***Syphilis***

Syphilis is a sexually transmitted infection that is caused by a spirochete bacteria called *Treponema pallidum*. Left untreated syphilis can present in four stages, primary, secondary, latent and tertiary. It can cause a wide range of health issues ranging from skin ulcers to serious nervous system complications. This disease can also be transmitted vertically from infected mothers causing congenital syphilis in neonates. Syphilis is curable when treated with appropriate antibiotics, although damage created by the disease may remain

#### ***Informed Consent***

In the context of medical research, informed consent is a process which involves collecting written permission from the research subject for participation only after the research subject has been fully informed of the potential risks and benefits of participating in the research study. Research subjects must be participating voluntarily, and the capacity to understand the information that is provided. Prior to conducting research on human subjects the proposed study must pass review/scrutiny from an institutional (IRB) or independent ethics committee (IEC) to ensure to ensure that participants will be properly informed of the risks and benefits of the research study

### **Texts:**

**Textbook:** Mahon, C.R. and Lehman, D.C., 2023 Textbook of Diagnostic Microbiology, 7th Edition, Saunders Elsevier, St. Louis. ISBN: 9780323829977

**Peer-reviewed article:** Baker, S., Brawley, O., & Marks, S. 2004. Effects of Untreated Syphilis in the Negro Male, 1932 to 1972: A Closure Comes to the Tuskegee Study. *Urology*, 65, pp. 1259-1262.

**Additional Resources :** Carey, A., Steiner, K., Petri, W. 2020. Ten simple rules for reading scientific papers. *PLoS Computational Biology*, 16(7), e1008032. <https://doi.org/10.1371/journal.pcbi.1008032>

**Resources/Technology:**

- Internet Access
- NMU issued laptop computer, or personal computer
- ***EduCat-H5P***: Video (YouTube): Apology to Survivors of the Tuskegee Syphilis Experiment: <https://www.youtube.com/watch?v=F8Kr-0ZE1XY>
  - 3:06 - 6:03 Vice President Al Gore Remarks
  - 8:13 - 10:02 Dr. David Satcher, CDC Remarks
  - 12:04 - 13:32 Herman Shaw, USST Survivor Remarks
  - 20:18 - 26:01 President Bill Clinton Remarks

Date: May 16, 1997

Location: East Room.

White House ARC Identifier: 5956342 <http://www.archives.gov/research/search/>

Courtesy; William J. Clinton Presidential Library

**Formative and Summative Assessment:**

Whole Class Discussion (Formative)

Writing Reflection (Summative)

**Special Considerations (Have I examined my course for bias? How am I integrating socially just and culturally sustaining instructional practices (tenets of Diversity, Inclusion, Justice, Equity, Belonging—DIJEB)? Have I considered accessibility issues? Critical literacy levels (reading comprehension/writing skills/whose story is being told, omitted, manipulated and why), etc.)?:**

I am interested in learning about DIJEB instructional practices and including them in my courses. In 2022, I participated in the CTL Learning Circle that read and discussed the book *What Inclusive Instructors Do*. After participating in that Learning Circle, I examined my courses for bias and reconfigured the language my course syllabi to be more accessible to first generation college students. At the beginning of my courses I give the students an opportunity to share with me how they want to be called, including if their name doesn't match the registered name, and their preferred pronouns. When I talk about human anatomy I try to use inclusive language that acknowledges the nuances between anatomical sex and gender identity. I try to include medical case studies, and diagrams and imagery of non-white people in my course materials.

**Lesson Sequence/Description:**

- Introduce students to the USST before lecture via the article and video clips (points will be attached to H5P video clips to encourage pre-class participation)
- Lecture briefly (~5 minutes) on the main points of the article
- Students respond individually to a writing prompt for ~ 5 minutes. Share writing with a partner ~ 5 minutes.
- Whole in-class discussion ~ 10 minutes
- After class assignment - writing reflection given a prompt

**Discipline Adaptation Resources:**

- This lesson is applicable to any discipline that involves human research subjects