

Curriculum Units by Fellows of the Yale-New Haven Teachers Institute 2014 Volume IV: Engineering in Biology, Health and Medicine

Emerging and Reemerging Infectious Diseases

Guide for Curriculum Unit 14.04.11 by Andrea Zullo

The following unit was developed with the goal of outlining emerging infectious diseases and several reemerging infectious diseases. This unit in its entirety encompasses five sub-units, which can be used independently of each other in various high-school science courses. The first sub-unit focuses on bacterial and viral morphologies. Students will learn about the anatomy and morphology of common bacteria. The second sub-unit introduces students to three outbreaks of the bubonic plague caused by *Yersinia pestis*, including the most recent outbreak in Mandritsara, Madagascar. The third sub-unit allows students to survey the wide variety of emerging and reemerging infectious diseases, including Ebola, MERS, and SARS. In the fourth sub-unit, students will explore the various tools used to diagnose and treat outbreaks, including advances in vaccine delivery units. The fifth and final sub-unit explores the media's impact on informing and, in some cases, hindering the treatment of diseases.

(Recommended for Science, grades 10-12)

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