

References

“About Antibiotic Resistance.” (2020, Mar. 13). *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 13 Mar. 2020, www.cdc.gov/drugresistance/about.html.

Question: What does the CDC say about the threat of antibiotic resistance?

Quote: “Antibiotic resistance happens when germs like bacteria and fungi develop the ability to defeat the drugs designed to kill them... Antibiotic resistance does not mean the body is becoming resistant to antibiotics; it is that bacteria have become resistant to the antibiotics designed to kill them” (“About Antibiotic Resistance”, 2020)

Board, T. (2014, May 10). The Rise of Antibiotic Resistance. Retrieved July 06, 2020, from <https://www.nytimes.com/2014/05/11/opinion/sunday/the-rise-of-antibiotic-resistance.html>

Question: How does popular media discuss scientifically technical concepts like antibiotic resistance?

Quote: “Antibiotics have transformed medicine and saved countless lives over the past seven decades. Now, rampant overuse and the lack of new drugs in the pipeline threatens to undermine their effectiveness” (Board, 2014).

Laxminarayan, Ramanan, et al. (2013, Nov. 17) “Antibiotic Resistance--the Need for Global Solutions.” *The Lancet Infectious Diseases*, vol. 13, no. 12, pp. 1057-1098., doi: 10.1016/s1473-3099(13)70318-9. Retrieved from <https://www-sciencedirect-com.libproxy.lib.unc.edu/science/article/pii/S1473309913703189?via%3Dihub>

Question: What information does this peer-reviewed journal article give about how antibiotic came to be, from both pharmacologic and societal perspectives, and what consequences and solutions does it offer?

Quote:“The causes of antibiotic resistance are complex and include human behaviour at many levels of society; the consequences affect everybody in the world... Many efforts have been made to describe the many different facets of antibiotic resistance and the interventions needed to meet the challenge... Within just a few years, we might be faced with dire setbacks, medically, socially, and economically, unless real and unprecedented global coordinated actions are immediately taken” (Laxminarayan et al., 2013).

Nathan, C., & Otto, C. (2014). Antibiotic resistance — problems, progress, and prospects. *The New England Journal of Medicine*, 371(19), 1761-1763.
doi:<http://dx.doi.org.libproxy.lib.unc.edu/10.1056/NEJMp1408040>

Question: What remaining steps does the article give to mitigate the problem of antibiotic resistance?

Quote: Two major ways that modern medicine saves lives are through antibiotic treatment of severe infections and the performance of medical and surgical procedures under the protection of antibiotics. Yet we have not kept pace with the ability of many pathogens to develop resistance to antibiotics... As people in wealthier regions run out of effective antibiotics, they come to share the lot of people in poorer regions who can't afford them to begin with" (Nathan and Otto, 2014).

Ventola, C. (2015, April). The antibiotic resistance crisis: Part2: Management Strategies and New Agents. Retrieved July 06, 2020, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4422635/>

Question: What management strategies does the author suggest?

Quote: "Implementation of recommended steps, such as the adoption of antibiotic stewardship programs; improving diagnosis, tracking and prescribing practices; optimizing therapeutic regimens; and preventing infection transmission, are expected to be effective in managing this crisis" (Ventola, 2015).

MEDIA

1. TED-Ed. (2014, Aug. 7). *What causes antibiotic resistance?-Kevin Wu* [video]. Youtube. Retrieved from <https://www.youtube.com/watch?v=znnp-Ivj2ek>
 - a. Timestamp: 1:40-2:20
 - b. Question: How is Darwin's theory of evolution related to antibiotic resistance?

2. TED-Ed. (2020, Mar. 16). *How can we solve the antibiotic resistance crisis?*-Gerry

Wright [video]. Youtube. Retrieved from

<https://www.youtube.com/watch?v=ZvhFeGEDFC8>

- a. Timestamp: 4:36-5:10
 - b. Question: How does funding and profit impact the development of antibiotics and, indirectly, resistance?
3. Kurzgesagt - In a Nutshell. (2016, Mar. 16). *The Antibiotic Apocalypse Explained*

[video]. Youtube. Retrieved from

<https://www.youtube.com/watch?v=xZbcwi7SfZE>

- a. Timestamp: 1:07-1:40
- b. Question: How do antibiotics work?