**Understanding the Antibiotic Resistance in Data Analyses**

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**In hospitals or any health care center, a common fear that continues to grow is the hazard of bacteria and/or other microbes forming resistance against antibiotic treatment. Though sanitary precautions can be taken, some bacteria have the ability to resist the threat that antibiotics pose. This can leave certain individuals who contract it with little hope of a positive prognosis depending on the severity. Many findings and data analysis in literary articles revolving around the issue of antibiotic resistance are taken at face value, and can often skew the results of what is statistically true of this topic. New research has suggested that prior findings of mortality rates due to antibiotic resistance have used numbers that exist outside the actual category. Though this resistance still results in many casualties, examining the new research of antibiotic resistance increasing morality rates is essential, as well as considering resources implemented to conclude the complications of this issue.**

**Introduction**

A current topic in the field of microbiology is the threat of antibiotic resistance of bacteria and microbes. This resistance has been related to tens of thousands of deaths all across the globe just within this past year. Specifically, France experienced 12,500 deaths, Europe had a collective 25,000, and here in the USA there have been 22,000 lives lost annually due to this cause [2]. The researchers involved in the article “Why new antibiotics are not obviously useful now,” conducted their own personal research to compare the legitimacy of the data above, and found it rather surprising. The researchers did not notice an elevation in mortality rates in France due strictly to antibiotic resistance itself. Many outside data that they obtained from prior research did not coincide with their current findings, so faulty research had been conducted somewhere along the way. These mortality rates, however, are not to get confused with deaths of this subject that did lose the fight of antibiotic resistance. The data that raised these numbers were incorrectly categorized beyond their relatedness to actual antibiotic resistance. The process of researching the reliability of these sources began, comparing them to their own data, as well as considering the ever-present issue of finding resources to face the actual growing resistance.

**Recent Progress**

In recent research conducted, there are many different bacteria that are related to known deaths, as well as those that have decreased over the years. It was discovered that vancomycin-resistant enterococci and Methicillin-resistant *Staphylococcus aureus* have significantly decreased with no clear explanation of why. In France, the total number of fatalities due to this bacteria with its resistance has actually decreased, as opposed to contrary data analysis. Also in France, another dominant bacteria known for being resistant to antibiotics is *Escherichia coli*, otherwise known as *E. coli*. This bacteria, along with *Klebsiella pneumoniae*, have been decreasing since 2012 in the presence of hospitals, where these bacteria seem to commonly be contracted. *Pseudomonas aeruginosa*, another bacterial fear, has a resistance level that has not particularly evolved within the time span of the past 15 years. A growing rate of extensive drug-resistant strains with a lower number of multidrug-resistant (MDR) strains has been reported. Carbapenem-resistant *Acinetobacter baumannii* is still under the radar due to its astonishing ability to mutate itself to obtain resistance. Though it is not known to implement great mortality rates, it continues to become more resistant to antibiotics. All of these examples have been that of Gram-positive bacteria. In Gram-positive bacteria, it has been seen to have a reversal of resistance compared to previous years. Some reports, including some from the World Health Organization (WHO), generated ineffective data in relation to antibiotic resistance [3]. All factors have to be taken into consideration when discussing this issue because external factors can have a significant toll on the results. In many of these cases, it was actually a failure to properly administer the correct prescription of antibiotics for certain patients that was not taken under consideration when calculating these results. The article gives the example of the [1] 3GC antibiotic prescribed to patients by their doctors with a bacteria that is resistant to this particular antibiotic, the patient is more likely to die under these circumstances rather than if the contracted bacteria were to be more susceptible. Cases like these were incorrectly categorized when filed into the same data analysis as the authentic cases of antibiotic resistant bacteria. Unlike the decrease mentioned before in Gram-positive bacteria, Gram-negative bacteria has shown to increase its resistance level to antibiotics, which still remains to be the pressing issue. With this evidence, the article predicated within the next twenty years that Europe will see more stable conditions with resistance levels of bacteria, contrary to current conditions of these data.

**Discussion**

As time progresses and as the world and environment around us progressively change, so will the antibiotic resistance of bacteria and microbes. Though some remain steadfast and are able to be controlled, some are not. This information is crucial for this day and time because it seems as if all around us, we only hear of bad things occurring and people getting sick with no treatment or medicine to cure it. Antibiotic resistance commonly seems to fall within this category, but that is only because people tend to exaggerate the coverage on this issue. Acquired news of an antibiotic resistant bacteria in a hospital resulting in all patients being under quarantine, for example, makes people focus on the negatives rather than to consider all the advancements that have taken place and all the other of countless bacteria that humans can be resistant to. Along with this, there is the issue of doctors over-prescribing antibiotics that the human body is able to fight off by itself, like strep throat. These current issues are part of the underlying foundation of the antibiotic resistance problems that people face. With this being said, incorrect data being taken out of its correct context to show more fatalities than what actually occurred is an issue. Putting this issue back into perspective with correct research is essential for societal knowledge. Reports published such as the ones presented by the World Health Organization present inaccurate results to the public to suggest that more people lose their lives to antibiotic resistance than who actually do. The reason behind this study was that prior research took a wider pool of patients who might have contracted a resistant bacteria but were not treated with the correct antibiotics. These results should not have contributed toward the data of those who were infected with the fatal antibiotic resistant bacteria. The authors of this journal conducted their own personal research to assure the actual number of people who were victims of antibiotic resistant bacteria. This is not to say that the antibiotic resistant bacteria do not still exist. Unlike the decrease mentioned before in Gram-positive bacteria, Gram-negative bacteria has shown to increase its resistance level to antibiotics, which still remains to be the pressing issue. Being able to completely wipe out all infectious bacteria from our world is an unrealistic perspective. This article was written to guide the mindset of people and to encourage them to question the source of the data received when it comes to lower-level impact factors, such as the World Health Organization report. This article was not written to harp on faulty sources, but to correct the previously obtained data by giving proof of how their results contradicted other data collected. Some people are intimidated by science and feel as if they are incapable of understanding it for themselves, so they turn to the pre-determined perceptions of people who incorrectly present information of serious issues like antibiotic resistant bacteria and microbes. The main goal of this journal was to address the misleading data of antibiotic resistant bacteria, and present the data that they had discovered of this contemporary health issue.

**References**

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