iGEM IIT Roorkee

Antibiotic Awareness Survey

iGEM IIT ROORKEE

iGEM 2020

Survey 1

Antibiotic Awareness

The primary challenge we face as a society during a pandemic is that we depend on government agencies and expert opinions to guide our behavior and related actions. Unfortunately, the lack of awareness about basic healthcare information among the general public plays a larger role in defining the severity of the pandemic in the region.

We found out that Antimicrobial Resistance is another major challenge, especially due to unregulated antibiotic consumption by the patients and the doctors' simultaneous prescription. However, a simple but important way to regulate antibiotic consumption is to raise awareness among the mass about the mechanism of antibiotic action and how the misuse of antibiotics can potentially lead to the development of resistant bacteria.

So to get a broader perspective about Antimicrobial Resistance awareness in society, we conducted exhaustive surveys having school students, underprivileged people, and the general public as the target audience. We selected students to increase their knowledge of AMR's problem as they reflect what they learn in school, and it's the best way to spread awareness and inspire youth. We conducted surveys for the general public to understand India's more significant population better. We anticipated a likely outcome of the study based on our expert interviews, where we expected the students to not have a lot of exposure in terms of antimicrobial awareness.

We conducted surveys alongside the webinars. The team framed the students' surveys in a way that would impart knowledge to the younger generation. The team went on with floating two survey forms, the Pre-webinar survey, and the Post-webinar survey. The strategy was to make them aware of AMR and applications of synthetic biology during the webinar talk.

Pre – Webinar Survey

The pre-webinar survey focused on assessing the clarity of the basic concepts related to antimicrobial resistance. It included the questions framed on the types of microbes, antibiotics, their misuse, the situation problems, and the definition of antimicrobial resistance. The multiple-choice questions (with one or more correct answers) gave students an edge since the survey was impromptu. Also, the situation-based questions checked for a child's thinking ability as an ulterior motive to get them thinking in a direction that would help them in life as well.

Our Hypothesis

We drew a hypothesis by reading and analyzing various surveys (conducted by CDC and WHO) and talking to the doctors and the people around us. According to our theory, the people (in India) still consume antibiotics without a doctor's prescription for viral fever, cold, and cough without knowing its consequences. They would also lack the basic knowledge of treating a wound that might result from inadequate healthcare training imparted via the government and society since they do not include such an essential part of education in the early academic curriculum of schooling.

Post – Webinar Survey

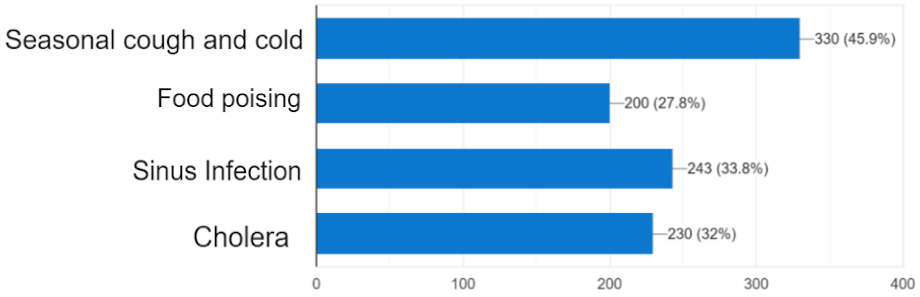
The post-webinar survey constituted a series of questions that would imply the student's learning level of the webinar, keeping a similar pattern to the pre-webinar survey. The questions were slightly advanced than that of the pre-webinar poll, consisting of the same concepts.

After the talk, the team clarified all of the doubts students had and explained 'do's & don't' to become an Antibiotic Guardian. Further, the results of the post-webinar survey can be seen in the subsequent graphs.

Pre-Webinar Survey

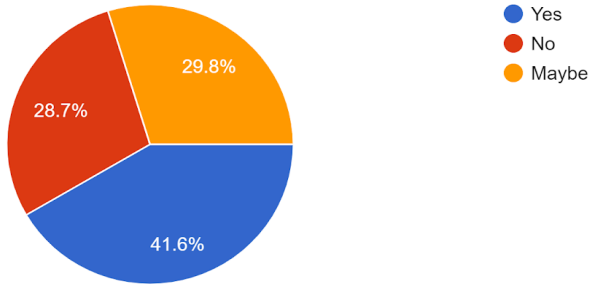
You always need antibiotics for:

719 responses



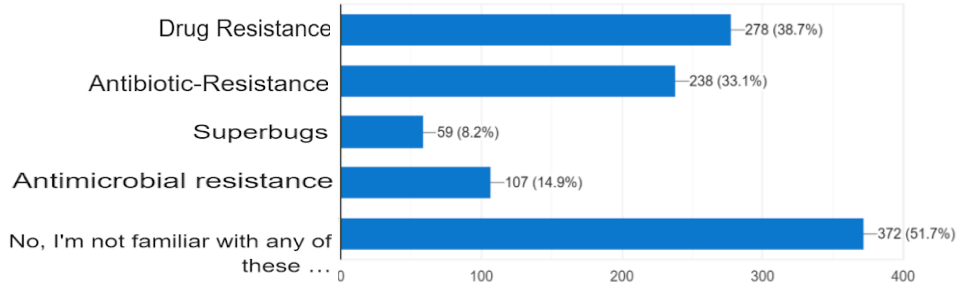
Antibiotics can distinguish between beneficial and harmful bacteria.

719 responses



Are you familiar with any of the following terms?

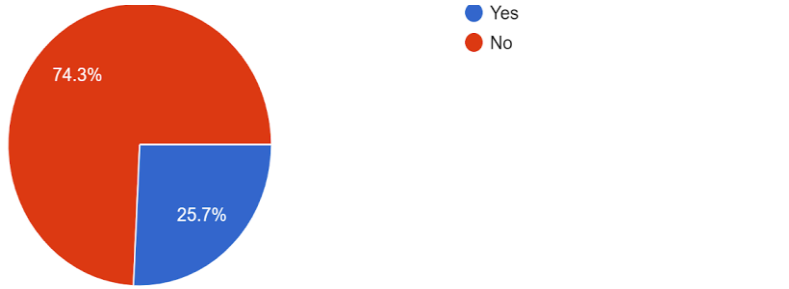
719 responses



Post-Webinar Survey

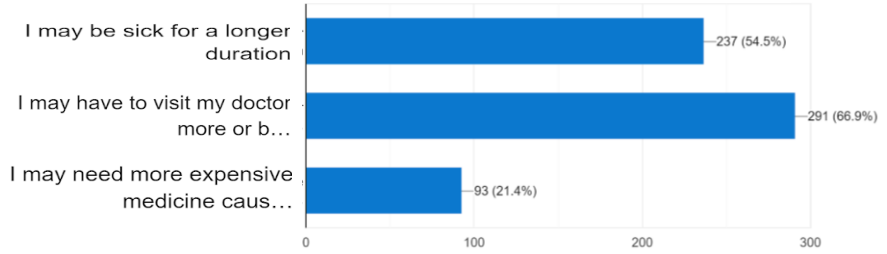
Will you take antibiotics when you suffer from the common cold or flu?

435 responses



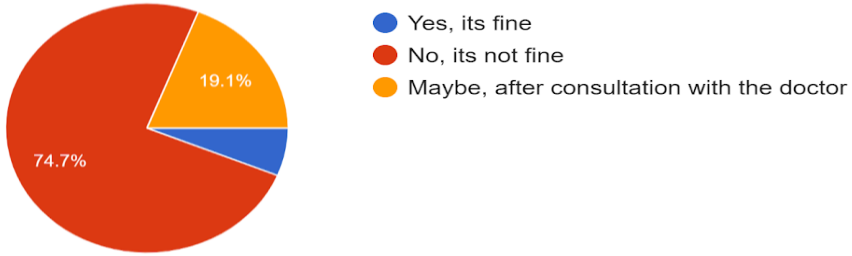
What can happen if I get an antibiotic-resistant infection?

435 responses



The doctor has prescribed you a five-day antibiotic course, and you started feeling better on day 3. Is it fine to stop the course midway?

435 responses



Results

(inferred from the above few graphs of the survey)

Clearly, the **pre-webinar survey** graphs show that –

- More than half of the students weren't aware of any terms like Antimicrobial Resistance, superbugs, and drug resistance;
- Less than 30% of the students knew the properties of antibiotics, and
- More than 60% students didn't know the usage of the drugs in the right context.

As a part of society and soon to be the leading generation, we feel that it is our responsibility to reach out to youth and other populations and educate them about healthy living necessities. These results were a precise indication for us to do better.

We got quite impressive results from **post-webinar survey** –

- More than 70% of students being able to answer the basics of correct antibiotic consumption;
- More than 65% of students correctly chose the consequences of AMR issue, and
- More than 65% of students being able to sort the advanced situation based questions.

As seen in the graphical representation of the questions, the majority of students were able to answer the questions correctly.

So, we took our cue and conducted informative webinars with an expectation that we would teach the students and learn a thing or two ourselves in the process. Further, the results implied that the team successfully imparted the necessary information regarding health concerns, raising the awareness rate by approximately 35-40% among students and the general public.