# Antimicrobial Susceptibility Testing - Why Monitoring and Trend Analysis Are Key

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**Julie McDowell:**

Laboratories must report cumulative antimicrobial sensitivity information to the medical staff at least annually under accreditation requirements from both the CAP and the Joint Commission. Despite requirements to do this at the institutional level, there is no national reporting or convenient way for the institution to monitor trends or compare rates recorded by other laboratories, explains Dr. Ron Schifman in this CAPcast interview.

The CAP is introducing a new quality management tools program to help participating laboratories enhance the value of their cumulative antimicrobial susceptibility report. Dr. Schifman is currently Emeritus Professor of Pathology at the University of Arizona and a member of the CAP Quality Practices Committee. He is one of the architects of this new quality management program involving antimicrobial susceptibility. Dr. Schifman, antimicrobial resistance to antibiotics seems like a major cause for concern. Is there a national or international effort to track developments in this area?

**Dr. Ron Schifman:**

Well, Julie, that is correct. Antibiotic resistance is a significant problem. For example, the Centers for Disease Control and Prevention, the CDC, estimated that last year in 2019, over 2.8 million infections in hospitalized patients involved resistance strains, which caused an estimated 35,000 deaths. While some progress has been made in reducing the incidence of infections by resistant microorganisms in the US, due I think in part to antibiotic stewardship programs, this fight still requires continuous effort and attention to prescribing practices and especially reliable data that informs optimal use of antibiotics. Now, the CDC does have primary responsibility for tracking resistance trends in the US in collaboration with the World Health Organization for international issues related to antibiotic resistance.

**Julie McDowell:**

Why is the CAP undertaking this program now?

**Dr. Ron Schifman:**

Well, the CDC recently issued guidance for antibiotic stewardship programs, which included seven core elements to address risks associated with resistance caused by inappropriate selection and use of antibiotics, especially in the inpatient setting. One of these seven core elements emphasized the importance of laboratory communication and especially adding microbial susceptibility reporting practices as key parts of having a successful stewardship program.

So to that end, the objective of this new CAP program is basically to assist laboratories with antibiotic stewardship by boosting collaboration with stakeholders in interpreting and using antibiotic susceptibility information provided by the laboratory. This core element also includes guidance from the CDC about the laboratory's responsibility to provide information to guide discussions on interpretive criteria used to identify resistance. For example, changes in antibiotic breakpoints that could impact antibiotic use. So this is another objective of this new CAP program.

**Julie McDowell:**

What are the elements covered in this program? That is, what will participants be required to report?

**Dr. Ron Schifman:**

Sure. As you mentioned in the introduction, accredited laboratories that provide microbiology testing for healthcare facilities are required to report to them cumulative susceptibility data, otherwise known as an antibiogram, at least annually to inform prescribing practices, especially for empiric antibiotic therapy and more generally for antibiotic stewardship. Results from these antibiograms, along with the antibiotic breakpoints used in interpreting test results, are the primary data that participants will submit once a year. So really, participation in the program should require little extra effort by laboratories. Since one of the goals of the program is to help laboratories track institutional trends and susceptibility rates over time, participants will also be instructed to submit antibiogram data from two prior years when they first enroll in the program.

**Julie McDowell:**

What additional information will be provided to participating laboratories?

**Dr. Ron Schifman:**

Okay. So the program will add two valuable components to the laboratory's normal antibiogram report. First, data which participants submit will undergo a robust statistical analysis to identify significant changes in institutional resistance over time. Second, the report will show comparisons between the institution susceptibility rates to that of other participants. These reports will add a lot of extra additional information beyond the laboratory's regular antibiogram summary, and it should be quite helpful to the institution and further aid its stewardship program.

In addition, the program will assist laboratories with antibiogram reporting practices that might involve, for example, decisions about what antibiotic break points to use, which could impact treatment decisions, as well as evaluate how laboratories use their current procedures for creating antibiograms and how well they align with current reporting guidelines, primarily from the CLSI or the Clinical Laboratory Standard Institute's recommendations.

**Julie McDowell:**

Finally, Dr. Schifman, what benefits does the laboratory gain by participating in this program?

**Dr. Ron Schifman:**

Sure, Julie. As one example, the CDC has identified as serious health threats certain resistant bacterial strains, such as methicillin resistant, staphylococcus aureus, vancomycin resistant enterococcus and multiresistant pseudomonas aeruginosa to name a few. So this new CAP program will help laboratories better track antibiotic susceptibility of these specific organisms along with others, both internally over time and by comparison to an external dataset to gauge trends and relative resistance associated with potentially serious bacterial strains at their institution.

I think the added information provided by this CAP program will positively enhance the value of a laboratory's current antibiogram report. I also believe that the need to interpret and use the results of these additional reports will help boost discussion and collaboration with other members of the institution's antibiotic stewardship program, who will be very interested in the added information provided by the laboratory. I believe those stakeholders most interested will likely be prescribing clinicians, pharmacists and infection prevention practitioners.

**Julie McDowell:**

Thank you, Dr. Schifman, for this information.

**Dr. Ron Schifman:**

You're welcome, Julie.

**Julie McDowell:**

For more information on the QP211 program, antimicrobial susceptibility testing, monitoring and trend analysis, and other PT and quality improvement programs being introduced by the CAP for 2021, listeners can go to CAP.org and search for new surveys.

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