

“STRATEGIES TO ADDRESS ANTIMICROBIAL RESISTANCE (STAAR) ACT”

FREQUENTLY ASKED QUESTIONS

Q1. What is surveillance, and how is surveillance important to controlling antimicrobial resistance?

The STAAR Act will improve and strengthen existing U.S. surveillance systems related to antimicrobial resistance. Surveillance is a critical public health function. Surveillance systems monitor health problems among the public, identifying and describing ongoing and emerging patterns relevant to health and disease. Surveillance involves careful data collection and analysis, followed by rapid dissemination of findings. These findings help direct scientists and experts to conduct further research and improve prevention. In the case of infectious diseases, the findings also direct outbreak investigation and control. Without good surveillance, experts are in the dark about what problems we face. Having surveillance systems that can detect antimicrobial resistance is particularly important. New forms of resistance frequently emerge and tools are needed to better understand, manage and limit the problems as they emerge. Reliable and rapid detection of resistance patterns would help experts better predict and control its spread, develop educational programs, and determine optimal treatment.

Q2. What kinds of surveillance are necessary?

Current U.S. surveillance of antimicrobial resistance is inadequate. Multiple kinds of surveillance are necessary, and the nation’s efforts must be improved and strengthened.

(a) The STAAR Act directs the new Antimicrobial Resistance Public Health Advisory Board to recommend ways to improve national monitoring of the resistance problem in hospitals and healthcare institutions. This may best be done by expanding existing Centers for Disease Control and Prevention (CDC) systems which already cull other forms of hospital data (the National Healthcare Safety Network (NHSN) and BioSense are examples). CDC acknowledges this gap and has some plans in place to add a resistance component to the NHSN. Broader input and possibly funding are needed, however. For instance, such systems rely on hospital submission of data, but because reporting data to CDC is an extra, ‘onerous’ activity for hospitals, a plan to provide incentives for example may be needed to maximize the number of hospitals reporting their resistance data. Also, establishing a uniform data set would help to ensure that hospitals submit consistent data points that are comparable.

(b) Often one hears about the upward or downward trends of a health problem over time. Certain kinds of surveillance systems produce these insights. These systems conduct blood tests or other tests on people within a defined population, at specified time intervals, and—in the case of antimicrobial resistance—for only a specific pathogen at a time. Such systems are labor-intensive and can be costly. Limited trend information is available for certain pathogens. Some of this comes from CDC’s Active Bacterial Core surveillance initiative, which tracks community-acquired MRSA and other selected pathogens. Surveillance to collect trend data requires further strengthening, expansion and assured funding.

(c) The nation critically needs another kind of surveillance system, one which can be prompted into action whenever a pathogen is suspected of harboring new forms of drug-resistance. Such a system would collect and analyze existing specimen from areas with initial reports of resistance and from high-risk populations or institutions. The “snapshot” that emerges can be used initially to determine whether a problem exists and whether interventions are necessary; later it can be used to test whether interventions have been successful. Public health experts view this to be a distinct, necessary form of surveillance. The STAAR Act establishes the Antimicrobial Resistance Surveillance and Research Network (ARSRN) which would include significantly improve U.S. surveillance capacity by establishing 10 or more dedicated sites

across the nation. (For a complete explanation of the proposed ARSRN, see Question # 4 below).

Q3. What is isolate collection?

At times, CDC receives unusual isolates (specimens) that are sent in for the agency's analysis by concerned physicians. Sometimes isolates of resistant microbes are sent in. However, this process is extremely fragmented. Submission of isolates is sporadic at best and depends upon physicians' priorities and time. A national plan to foster routine submission of resistant isolates to CDC would increase CDC scientists' chances of identifying a problem at its earliest point allowing experts to intervene earlier than they do now, to slow transmission and better control the problem. The Antimicrobial Resistance Surveillance and Research Network will help to address this issue.

Q4. What is the Antimicrobial Resistance Surveillance and Research Network, and what would it do?

The STAAR Act would establish a network of sites, known as the Antimicrobial Resistance Surveillance and Research Network (ARSRN) to hasten progress on the understanding and control of resistance. Sites will be geographically distributed across the nation and may be housed in a variety of existing locations. At least 10 sites would be formed or enhanced, and will work closely with CDC, the National Institutes of Health (NIH) and other federal agencies. Multiple sites are needed to capture geographic variation and allow broad testing of ideas. Each site would bring together expertise on surveillance, prevention, and research. Because many experts in antimicrobial resistance already possess expertise in all three endeavors, co-locating these activities in the ARSRN sites will create efficiencies and hasten translation of surveillance findings into research, for example. These sites will act as an important "extension" of the federal agencies and substantially will take direction from them.

- In the case of surveillance, if CDC suspects a new resistance pattern could be emerging, it will instruct the ARSRN sites to describe and confirm whether a regional problem exists. The sites will report back to CDC. The sites also can pursue their own concerns and then alert CDC. *This type of surveillance is more fully described in Question #2c above.*
- CDC will direct ARSRN sites to test the agency's ideas for improved prevention and control.
- ARSRN sites will pursue basic and clinical research, with a strong focus on identifying the optimal duration of antimicrobial therapy as well as established natural histories of infectious disease. In this regard the network will function as a 'clinical research network.' This is a mechanism successfully used by NIH to study HIV/AIDS, vaccines, and other matters requiring rapid, multi-pronged study of complex and urgent issues. Antimicrobial resistance falls in this category.

Q5. What is the value of creating an antimicrobial resistance strategic research plan?

Current NIH and CDC antimicrobial resistance-related research, including research related to transmission, prevention and control, clinical therapy, and product development are a patchwork. In the absence of a federal strategic antimicrobial resistance research plan, key research areas remain unaddressed. A robust and strategic research blueprint will advance our understanding of resistance, lead to successful inventions to limit the spread of resistant organisms, help to avoid duplication of efforts, and create new tools to detect, prevent and treat drug-resistant organisms. An open and transparent planning process also will help to clarify where federal research dollars are being spent and allow for greater stakeholder input as to where high-priority research needs and scientific challenges exist. Such a plan should clarify goals, focus

resources by using or building upon existing research capacity, and set benchmarks for evaluating progress.

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Additional information also is available on IDSA's website at www.idsociety.org/STAARAct.htm*