American Academy of Microbiology releases report on antibiotic resistance
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Antibiotic resistance is here to stay. This disheartening reminder comes from the American Academy of Microbiology in its recent report, “Antibiotic Resistance: An Ecological Perspective on an Old Problem.” The report is the result of a colloquium convened October 12-14, 2008 on antibiotic resistance and the factors that influence its spread. But while antibiotic-resistant bacteria will never be completely eliminated, the report outlines ways that resistance can be more effectively contained in both the developing and developed worlds. It also calls for increased communication between scientists examining trends of resistance and the public.

Antibiotic resistance, the report says, is a result of both the appropriate and inappropriate uses of antibiotics. Even when antibiotics are used appropriately, increased selective pressure means more opportunities for bacteria to acquire resistance. This potential is magnified when antibiotics are used unnecessarily, such as to “treat” the flu or a cold. This is especially problematic in developing countries, where antibiotics may be widely available without a prescription and education on the proper use of these drugs is lacking.

Once antibiotic-resistant bacteria strains develop, they can spread rapidly across a population – whether that population is a village or a hospital – through poor hygiene and unsanitary conditions. These drug-resistant pathogens can be passed directly between individuals, leak into the environment through contaminated waste, and exchange genetic resistance elements with other bacteria.

Given the emergence and high cost of antibiotic resistance, the Academy outlines a number of suggestions for preventing the spread of resistant bacteria. Paramount to this effort is improving hygiene through education, training, and implementation of regulations in clinical settings. The report calls for more rapid diagnosis of patients who may have a resistant infection, increased antimicrobial susceptibility testing, and improved surveillance to track the evolution and spread of various strains of resistant bacteria. Government regulation of antibiotic prescription and use in all countries should be strengthened to prevent unnecessary use and limit the development of new resistant bacteria.

Finally, the report states the importance of increased dialogue between the bench scientists working in the field of antibiotic resistance, and members of the public and policy makers who will ultimately be responsible for putting into action efforts that will harness its spread.