

Europe clamps down on antibiotic misuse

In a bold plan to contain the deleterious effects of antimicrobial resistance (AMR), the European Commission is calling on all European Union countries to prohibit antibiotic use in animals and humans without veterinary or medical prescription.

The requirement is among a number of measures urged in a 12-point, five-year *Action plan against the rising threats from Antimicrobial Resistance* aimed at requiring more prudent use of antibiotics in hospitals and health care settings, as well as on farms (http://ec.europa.eu/dgs/health_consumer/docs/communication_amr_2011_748_en.pdf).

With around 25 000 patients dying per year in the European Union from infections caused by the most important drug resistant bacteria, it is clear that serious action must be taken," says Frederic Vincent, the European Commission's spokesman for health and consumer policy.

The plan calls for bolstered infection prevention and control measures in health care settings such as hospitals, as well as strengthened "surveillance systems on AMR and antimicrobial consumption in human medicine." Several of the measures are consistent with 2009 recommendations from the European Council which were designed to improve patient safety through the development of guidance on infection prevention and control, reinforcement of surveillance of health care infections and investment in education and training for health care professionals (<http://register.consilium.europa.eu/pdf/en/09/st10/st10120.en09.pdf>).

The new plan also proposes a host of measures aimed at antibiotic use on farms, including a strengthened "regulatory framework on veterinary medicines and on medicated feed"; the introduction of guidelines for "prudent use" of antibiotics in veterinary medicine; and the introduction of a "legal tool to enhance prevention and control of infections in animals in the new Animal Health Law."

As well, the plan urges new research



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A European action plan is proposing more "prudent use" of antibiotics to reduce the high incidence of infections caused by drug resistant bacteria.

measures including the funding of a surveillance project aimed at ascertaining antibiotic use and AMR among children, as well as the development of new human and veterinary diagnostic tools, vaccines and antimicrobials,

while ensuring that the latter are fast-tracked into the market.

In a technical report on the AMR problem in Europe, *The bacterial challenge: time to react*, the European Centre for Disease Prevention and Control

estimates that about 25 000 deaths occur each year in the European Union due to infection by drug multidrug-resistant bacteria, at a cost to the continent of about €1.5 billion (www.ema.europa.eu/docs/en_GB/document_library/Report/2009/11/WC500008770.pdf).

There are considerable AMR variations across Europe, depending on the pathogen type, antimicrobial substance and geographical area, according to the latest report of the European Antimicrobial Resistance Surveillance Network (www.ecdc.europa.eu/en/publications/Publications/1111_SUR_AMR_data.pdf).

Carbapenem resistance is among the most worrisome trends identified in the report, Dr. Marc Sprenger, director of the Stockholm, Sweden-based European Centre for Disease Prevention and Control, writes in an email. “Resistance to last line antibiotics such as the carbapenems is the result of misuse of antibiotics in hospitals combined with varying hospital infection control practices. Studies show that 50% of all antibiotic use in hospitals can be inappropriate. An example of carbapenemase-producing Enterobacteriaceae is the New Delhi metallo-

beta-lactamase producing Enterobacteriaceae. These epidemic bacteria are resistant to last-line antibiotics. Resistance to these antibiotics limits available options for treatment of infected patients to only a few antibiotics, which are often old antibiotics that were developed several decades ago and have limitations and side effects.”

Regional variations also appear to be significant, with countries in the northern part of Europe having the upper hand. “Surveillance data on both antimicrobial resistance and consumption of antimicrobial agents have repeatedly revealed that northern countries (e.g. Denmark, Sweden, Finland) were performing effectively in mitigating the risks related to AMR and promoting the prudent use of antimicrobial agents,” Dr. Paolo Guglielmetti, an administrator in the health threats unit of the European Commission’s Health and Consumer Directorate General writes in an email.

Others say there’s an acute need for information about antibiotic prescribing at the primary care level. “Even though about 90% of antibiotic prescribing in Europe takes place in primary care,

some say we still don’t fully understand what is happening in the community setting. The currently available data on antimicrobial resistance is not representative for primary care, where most antibiotic prescribing takes place,” Samuel Coenen, professor of general practice at the University of Antwerp in Belgium, writes in an email. “We need such data at a local level to be able to provide proper feedback to primary care prescribers. The effect of such feedback on resistance in urinary pathogens has been shown to be effective in improving antibiotic use, for instance, in urinary tract infections.”

Coenen says European nations would also benefit from adopting the best practices of nations with lower AMR levels. “The Nordic countries also have annual reports on antibiotic use and antimicrobial resistance in both human and veterinary medicine, which show their awareness of the problem. Producing such reports on and in other countries might create the awareness required to make a change.”—Tiago Villanueva MD, Lisbon, Portugal

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