



# Tackling Antibiotic Resistance

## The Dutch One Health approach

Bacteria may cause infections in humans en animals. Sometimes antibiotic therapy is needed to treat an infection. At the same time increasing numbers of bacteria are developing resistance to antibiotics. The threats to human health are considerable. It means that some infections are difficult, sometimes even impossible, to treat. Thus, treatments and operations that are now common may entail a significant additional health risk in the future.

### International and innovation

Tackling antibiotic resistance requires particular attention for innovation and international activities. Antibiotic-resistant bacteria do not respect international borders. Therefore, international collaboration is a priority in the Dutch approach to antibiotic resistance. We also stress the importance of innovation. New antibiotics, alternative treatments and improvements in infection prevention are essential preconditions for effective control of antibiotic resistance.

### Where are the threats coming from?



## One Health

The Dutch approach to antibiotic resistance addresses all domains where human health is threatened by antibiotic-resistant bacteria; healthcare, animals, food and environment. We refer to this integrated approach as the One Health approach. Specific measures will be taken in each domain. But the main focus in the Netherlands itself lies in healthcare and animal farming. The Dutch approach is characterized by clear goals and specific actions.

This fact sheet contains information about the seven elements of the Dutch approach to antibiotic resistance; international cooperation, healthcare, animals, food, environment, innovation and communication.

## International cooperation

Antibiotic resistance is a problem at global level. The Netherlands continues to strive to put a One Health approach on the international agenda. We remind health ministers of their coordinating responsibility; they must press for measures in all sectors in the interest of public health. Whenever possible, we enter into further cooperative agreements with various countries. The Netherlands wants to reduce the import of resistance and to increase the effectiveness of measures and (research) investments by means of international cooperation.

In May 2015 the Global Action Plan on antimicrobial resistance was adopted by the World Health Organization (WHO). The Netherlands supports good implementation of the WHO Global Action Plan. This includes specific financial contribution from the Ministry of Health, Welfare and Sport to the WHO, and strategic secondments to the WHO. Additionally, the National Institute for Public Health and the Environment (RIVM) provides technical support to WHO member states in creating and strengthening surveillance of resistant bacteria based on the Dutch model.

From September 2014 The Netherlands is actively involved in the action package antibiotic resistance, part of the Global Health Security Agenda. Together with our fellow 'leading countries', we strive to strengthen and improve coordination of technical assistance provided to countries who request it. In doing so, we also contribute to the implementation of the WHO antimicrobial resistance Global Action Plan. We motivate our partners to reduce antibiotic resistance in animal farming within their countries, and introduce them to our practice.

During the first half of 2016, the Netherlands has the presidency of the European Union (EU). Antibiotic resistance is one of the Cabinet's priorities during this presidency. We organize a Ministerial conference, for which the Dutch Ministries of Health, Welfare and Sport and Economic Affairs will invite EU ministers of both Agriculture and Health. Such a joint conference is unique, and of major importance with regard to the One Health approach. It is also important to make new agreements because the current EU action plan comes to an end in 2016.

## Healthcare

Actors in the healthcare sector in the Netherlands recognize and confirm the problems and urgency surrounding antibiotic resistance. Together they work on finding solutions that encompass the entire scope of the healthcare system. They aim to prevent avoidable harm and mortality among patients due to infections caused by resistant bacteria wherever possible. To this end, the further development and spread of (multi)resistance must be managed as much as possible, in order to ensure that effective treatment of infections with antibiotics remains possible in future. Their cooperation has resulted in six goals, to be attained within five years:

- The number of avoidable healthcare-associated infections will be reduced by 50%. A healthcare-associated infection is an infection that develops during a hospital stay or treatment in a care institution.
- The use of incorrectly prescribed antibiotics across the entire healthcare chain will be reduced by at least 50%.
- A significant further reduction in the emergence and spread of multiresistant bacteria in healthcare becomes visible.
- The number of infections and deaths due to antibiotic resistance in the Netherlands will remain at the current level or decrease.
- The possibilities for effective treatment of patients with infections with resistant bacteria will not reduce any further.
- International cooperation with other EU countries regarding antibiotic resistance will be promoted.

## Animals

Use of antibiotics in animals, like all use of these medicines, entails a risk of resistance developing in bacteria. Additionally, animals are a potential reservoir from which resistant bacteria can multiply and spread. Therefore, the goal in the Netherlands is reduction and prudent use of antibiotics in animal farming. Over the past years, the animal farming sector and veterinarians have made major efforts towards this goal. The total reduction compared with 2009 is 58.1%. Further reductions are required. Our current goal focuses on a 70% reduction compared with 2009.

Meanwhile the Dutch Ministries of Health, Welfare and Sport and Economic Affairs work on a new policy to be implemented from 2016 onward. This policy will focus on the further reduction of the risks of the development and spread of resistance. Our goal is an animal farming sector where the health of the animals is the norm, and disease and antibiotic therapy the exception.

## Food

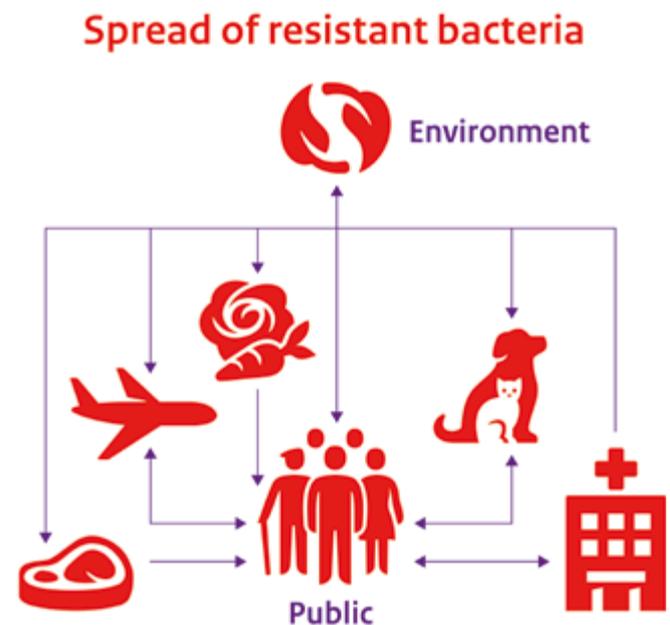
An effective approach to antibiotic resistance and the food chain requires greater knowledge about the transmission route, and the specific attribution of food to antibiotic resistance. Therefore, we focus strongly on continued monitoring and research. From 2002 onwards, the Netherlands has monitored the occurrence of antibiotic resistance in animals and food. From 2014, all European member states are monitoring for resistant bacteria in animals and food thanks to mandatory European regulations. The Netherlands will urge further development of standards and monitoring on a European but also global scale.

Additionally we focus on raising public awareness. Consumers can also prevent exposure to resistant bacteria by preparing food in a hygienic manner. The Netherlands Nutrition Centre informs consumers about general hygiene guidelines. A follow-up campaign is launched in 2015.

## Environment

Very large numbers of bacteria enter the environment each day via humans and animals. Additionally, (traces of) antibiotics also end up in the environment. How these (traces of) antibiotics and resistant bacteria behave in the environment, how dissemination occurs, and what the consequences are for public health remains unknown.

The Netherlands initiates further research. The RIVM will draft an action plan for gaining better insight into the situation in the Netherlands. Measurements in waste water from health facilities and residential areas, in waste water treatment plants and in manure, form part of this action plan.



## Innovation

Innovation is an essential precondition for effective control of antibiotic resistance. Improvements in infection prevention, prevention of spread of resistant bacteria, faster diagnoses, and alternative treatments will reduce the use of antibiotics. In curative and long-term care, we see countless examples of innovation. Examples include urinary catheters with antimicrobial coatings, infection prevention apps, and innovative methods for cleaning hospital waste water of trace antibiotics and (resistant) bacteria. The opportunities and obstacles facing broad implementation of such innovations in healthcare are as yet unclear. A new national research programme on antibiotic resistance will contribute to a solution.

Innovation also focuses on the development of new antibiotics. We support and cooperate in international initiatives designed to develop new business models. We will strengthen cooperation between research institutions and companies. Additionally, we identify the main bottlenecks in the development and marketing authorisation process.



## Communication

Coherent communication initiatives support the approach to antibiotic resistance in the Netherlands. A multi-annual communication strategy will be developed targeting all: the public, professionals and administrators. The strategy includes increasing public awareness of the problem and increasing knowledge about how antibiotics work and should be used. It also focuses also on concrete tips for prevention, food safety, hygiene and the prevention of transmission of resistant bacteria from companion animals to humans.

## More information

For a detailed description of the approach to antibiotic resistance in the Netherlands, please consult the letter to parliament dated June 24, 2015, on the website [www.government.nl/documents/parliamentary-documents/2015/06/24/letter-to-parliament-about-the-approach-to-antibiotic-resistance](http://www.government.nl/documents/parliamentary-documents/2015/06/24/letter-to-parliament-about-the-approach-to-antibiotic-resistance).

Or read the topic Antibiotic resistance on the website [www.government.nl/topics/antibiotic-resistance](http://www.government.nl/topics/antibiotic-resistance).

For questions, please contact us at [AMR-NL@minvws.nl](mailto:AMR-NL@minvws.nl).