



Procedure file

Basic information		
INI - Own-initiative procedure	2012/2041(INI)	Procedure completed
Microbial challenge - rising threats from antimicrobial resistance		
Subject		
3.10.08 Animal health requirements, veterinary legislation and pharmacy		
4.20 Public health		
4.20.01 Medicine, diseases		
4.20.02 Medical research		

Key players			
European Parliament	Committee responsible	Rapporteur	Appointed
	ENVI Environment, Public Health and Food Safety		23/03/2012
		ECR ROSBACH Anna	
		Shadow rapporteur	
		PPE MAZEJ KUKOVIĆ Zofija	
		S&D KADENBACH Karin	
	ALDE SKYLAKAKIS Theodoros		
	Verts/ALE STAES Bart		
	Committee for opinion	Rapporteur for opinion	Appointed
	ITRE Industry, Research and Energy	The committee decided not to give an opinion.	
	AGRI Agriculture and Rural Development		29/02/2012
		Verts/ALE HÄUSLING Martin	
Council of the European Union	Council configuration	Meeting	Date
	Employment, Social Policy, Health and Consumer Affairs3177		21/06/2012
European Commission	Commission DG	Commissioner	
	Health and Food Safety	BORG Tonio	

Key events			
15/11/2011	Non-legislative basic document published	COM(2011)0748	Summary
15/03/2012	Committee referral announced in Parliament		
21/06/2012	Resolution/conclusions adopted by Council		Summary
06/11/2012	Vote in committee		
15/11/2012	Committee report tabled for plenary	A7-0373/2012	Summary
10/12/2012	Debate in Parliament		
11/12/2012	Results of vote in Parliament		
11/12/2012	Decision by Parliament	T7-0483/2012	Summary

11/12/2012	End of procedure in Parliament		
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Technical information

Procedure reference	2012/2041(INI)
Procedure type	INI - Own-initiative procedure
Procedure subtype	Initiative
Legal basis	Rules of Procedure EP 54
Other legal basis	Rules of Procedure EP 159
Stage reached in procedure	Procedure completed
Committee dossier	ENVI/7/08364

Documentation gateway

Non-legislative basic document		COM(2011)0748	15/11/2011	EC	Summary
Committee draft report		PE486.077	12/07/2012	EP	
Amendments tabled in committee		PE496.371	19/09/2012	EP	
Committee opinion	AGRI	PE494.678	15/10/2012	EP	
Amendments tabled in committee		PE496.577	16/10/2012	EP	
Committee report tabled for plenary, single reading		A7-0373/2012	15/11/2012	EP	Summary
Text adopted by Parliament, single reading		T7-0483/2012	11/12/2012	EP	Summary
Commission response to text adopted in plenary		SP(2013)175	13/05/2013	EC	
Follow-up document		SWD(2015)0059	11/03/2015	EC	Summary
Follow-up document		SWD(2016)0347	24/10/2016	EC	
Follow-up document		SWD(2016)0348	24/10/2016	EC	

Microbial challenge - rising threats from antimicrobial resistance

PURPOSE: to establish an action plan against the rising threats from Antimicrobial Resistance (AMR).

BACKGROUND: since the introduction of penicillin in the 1940s antimicrobial medicines, such as antibiotics, have become essential for the treatment of many microbial infections in humans and animals. In addition to the treatment of infectious diseases (e.g. pneumonia, tuberculosis, malaria, HIV/AIDS) and hospital-acquired infections (e.g. methicilin resistant *Staphylococcus aureus* (MRSA)), antimicrobials are vital for reducing the risk of complications in relation to complex medical interventions, such as hip replacements, organ transplants, cancer chemotherapy and the care of premature babies. In addition, antimicrobials are used in veterinary medicine and for non-therapeutic purposes (e.g. disinfectants, preservatives, and food and feed additives).

Seventy years later, these applications are now seriously jeopardized by the emergence and spread of microbes that are resistant to affordable and effective first-choice, or "first-line" medicines, rendering the drugs concerned ineffective for the treatment of the infection. This resistance is a natural biological phenomenon but is amplified by a variety of factors. The inappropriate use of therapeutic antimicrobials in human and veterinary medicine, the use of antimicrobials for non-therapeutic purposes as well as the pollution of the environment by antimicrobials is accelerating the emergence and spread of resistant microorganisms. The consequences are severe.

The Commission recall that a subset of drug-resistant bacteria is responsible for about 25 000 human deaths annually. In addition to avoidable death, this also translates into extra healthcare costs and productivity losses of at least EUR 1.5 billion.

For their part, the Council and the European Parliament have already examined this issue and on 12 May 2011 the European Parliament adopted a [non-legislative resolution](#) on antibiotic resistance in which it stresses that AMR has become a huge issue in recent years. To cope with this growing problem and the consequent treatment failures, the EP calls on the Commission to establish an EU-wide plan to combat AMR.

This Communication responds to this request.

CONTENT: in this regard, the Commission has taken a number of important actions:

- in the field of human medicine, the 2001 Community Strategy against AMR called for EU actions against AMR in the fields of surveillance, research, prevention and international cooperation. This led to the adoption of EU wide recommendations and guidelines against AMR;
- in animal husbandry, the ban on the use of antimicrobials for growth promotion was introduced in 2006. The Commission has developed legislation on the control of Salmonella at all relevant stages of production, processing and distribution in order to reduce the exposure of humans to potentially resistant Salmonella;
- in the field of veterinary medicine, the emphasis has been in monitoring zoonotic AMR (i.e. resistance transmissible between animals and humans) and on the use of antimicrobials in animals;
- the authorisation requirements of human and veterinary medicines and other products, such as food enzymes, probiotics and decontamination agents, with possible effects on development of AMR have also been the focus areas;
- AMR is the subject of research funded under the Seventh Framework Programme (FP7) and the Innovative Medicines Initiative (IMI). AMR is also the subject of a proposed Joint Programming Initiative (JPI), which aim to coordinate research activities among EU Member States;
- scientific opinions on AMR by EU Risk Assessment bodies i.e. the European Centre for Disease Prevention and Control (ECDC), the European Food Safety Authority (EFSA), the European Medicines Agency (EMA), the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) have formed the basis for policy planning, for example, development of new antimicrobials and monitoring AMR and antimicrobial usage.

Based on such holistic approach, the new actions put forward in this Action Plan aim at:

1. mitigating the risk of developing AMR in humans from the use of antimicrobials both in humans and animals by effectively ensuring across the EU their appropriate use, and promoting microbiological diagnosis as the means to determine, to the extent possible, the need for antimicrobials;
2. putting in place effective ways to prevent microbial infections and their spread;
3. developing effective antimicrobials or alternatives for treatment of human and animal infections;
4. joining forces with international partners to contain the risks of spreading AMR from international trade and travel and via the environment;
5. reinforcing research to develop the scientific basis and innovative means to combat AMR.

The Commission proposes to put in place a 5-year Action Plan to fight against AMR based on 12 key actions:

- Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States.
- Action n° 2: Strengthen the regulatory framework on veterinary medicines and on medicated feed.
- Action n° 3: Introduce recommendations for prudent use in veterinary medicine, including follow-up reports.
- Action n° 4: Strengthen infection prevention and control in healthcare settings.
- Action n° 5: Introduce of a legal tool to enhance prevention and control of infections in animals in the new Animal Health Law.
- Action n° 6: Promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antimicrobials to patients.
- Action n° 7: Promote efforts to analyse the need for new antibiotics into veterinary medicine.
- Action n° 8: Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of AMR in all sectors.
- Action n° 9: Strengthen surveillance systems on AMR and antimicrobial consumption in human medicine.
- Action n° 10: Strengthen surveillance systems on AMR and antimicrobial consumption in animal medicine.
- Action n° 11: Reinforce and co-ordinate research efforts.
- Action n° 12: Survey and comparative effectiveness research.

Several Member States have been pro-active in carrying out actions related to those considered at EU level. These actions at national level and the experience gained from it should be the basis of the practical development and implementation of this Action Plan.

Microbial challenge - rising threats from antimicrobial resistance

The Council adopted conclusions on the impact of antimicrobial resistance (AMR) in the human health sector and in the veterinary sector, calling upon member states to develop and implement national strategies or action plans for countering AMR.

These national strategies or action plans should, amongst others, include the following elements:

- national guidelines on the treatment of humans and animals with antimicrobial agents;
- communication guidelines and programmes for education and training of professionals;
- enforcement of national legislation preventing all illegal sales of antimicrobials including illegal sales over the internet;
- limitation of the use of critically important antibiotics to cases where microbiological diagnosis and susceptibility testing has determined that no other type of antimicrobials will be effective;
- limitation of prophylactic use of antimicrobials to cases with defined clinical needs;
- limitation of prescription and use of antimicrobials for herd treatment of animals to cases with a clear clinical or epidemiological justification.

The conclusions also call upon the member states and the Commission to examine the conditions of prescription and sale of antimicrobials in order to ascertain whether practices in human and animals healthcare may lead to over-prescription, overuse or misuse of antimicrobials.

The Commission is invited to expedite the review of legislative acts in order to take antimicrobial resistance better into account. This applies notably to directive 90/167 laying down the conditions governing the preparation, placing on the market and use of medicated feedingstuffs in the EU and directive 2001/82 on the EU code relating to veterinary medicinal products.

The Commission informed that preparatory work for some of the actions to which it is invited has already been started.

According to the World Health Organisation (WHO) about 440 000 new cases of multidrug-resistant tuberculosis (MDR-TB) emerge annually, causing at least 150 000 deaths. A high percentage of hospital-acquired infections are caused by highly resistant bacteria such as methicillin-resistant *Staphylococcus aureus* (MRSA).

Microbial challenge - rising threats from antimicrobial resistance

The Committee on the Environment, Public Health and Food Safety unanimously adopted the initiative report by Anna ROSBACH (ECR, DK) on the Microbial Challenge Rising threats from Antimicrobial Resistance.

Members recall that resistance to antibiotics for certain bacteria is as high as 25 % or more in several Member States and that much of the antimicrobial resistance (AMR) problem stems from the misuse in particular excessive use of antibiotics. They also highlight the fact that many Member States do not have a solid legal and regulatory framework to mandate and support the rational use of medicines. As a result, Members call for the complete and rapid implementation of measures in this area.

Although they welcome the Commission's five-year strategic Action Plan on tackling AMR and view it as generally going in the right direction, Members note that many of the action points reiterate measures prescribed over a decade ago, it is not sufficient for tackling the growing risk presented by AMR at international level.

In this context, Members call for an integrated roadmap outlining relevant policy responses, including possible legislative action.

Members call in particular for the Action Plan to:

- cover all animals under the EU animal welfare strategy, including, for instance, companion animals and animals used for sports, and
- emphasise the logical connection between animal health and the use of antimicrobials, as well as the link between animal health and human health.

Prudent use of antimicrobials in human and veterinary medicine: Members call for the prudent use of antimicrobials. The key objective of any AMR strategy is to maintain the efficiency of existing antimicrobials by using them responsibly at the correct therapeutic level only when strictly necessary and prescribed over a specific time at the appropriate dosage (and not for treating viral infections). Similar prudence needs to be exercised in veterinary medicine. Members call on the Member States to use electronic recording systems to ensure that usage patterns on individual farms are appropriate, thus ensuring responsible and minimal use. They also suggest to the Commission that current provisions on maximum animal density in livestock farming be re-evaluated as herd sizes today often present obstacles to the treatment of individual or smaller groups of animals, providing incentives for the prophylactic use of antimicrobials. They also call for a legislative proposal to be presented for the veterinary sector to limit its use of third- and fourth-generation Critically Important Antimicrobials (CIAs) for humans.

The Commission and the Member States are also invited to encourage efforts to study hospital outbreaks, to improve diagnostics but also to assess and monitor the Member States' implementation of relevant EU legislation on antimicrobials, in particular with regard to the prescription-only use of antibiotics in the human health and veterinary sectors.

Prevention: Members call for more effective measures to be introduced to prevent both the appearance and the spread of antimicrobial resistance. These measures include better monitoring and better notification of micro-organisms resistant to antimicrobials, as well as a more effective combating of infections, in particular by means of vaccinations. Among other measures they call for limits on uncontrolled access to antimicrobial agents, in particular via the growing number of illegal sales on the internet, and their inappropriate use. They call on the Member States to improve infection control, and to raise and promote good standards of hygiene especially hand hygiene, in order to prevent the spread of infections and reduce the need for antibiotics.

Development of new antimicrobials or alternatives for treatment: Members consider it vital to limit the emergence of bacteria that are resistant to antimicrobials. In this context, it is necessary to develop new antimicrobial agents. In parallel, Members stress the advantages of public-private partnerships because these can contribute to reaching this objective by dissociating sales transactions from investment in research and development. In this area, Members call on the Commission and the Member States to accelerate R&D activities in order to provide new tools to fight tuberculosis and drug-resistant tuberculosis.

Members also underline the need to examine new regulatory approaches that would result in stimulating industrial research and the development of new antimicrobials while safeguarding patient safety. They also call on the Commission to ensure the development and availability of more on-farm tools for early, rapid diagnosis and control of diseases, as well as for a broad and effective diagnostic system at Member State level.

Monitoring and reporting: in this field, Members call on the Commission and the Member States to seek greater cooperation and coordination on early detection, alert and coordinated response procedures regarding pathogenic antimicrobial resistant bacteria in humans, animals, fish and foodstuffs. They call on Member States to compile clear, comparable, transparent and timely reference data on antimicrobial drug usage so that effective action can be undertaken. They consider, however, that data gathered on the use of antibiotics should be made accessible only to the experts, authorities and decision-makers concerned. They call on the Member States to ensure separate monitoring and control of resistance among livestock, domestic animals and racing animals.

Communication, education and training: Members note that one of the most common uses for antibiotics is as treatment against the common cold, and that much would be gained if the public could be made aware of the fact that the common cold is a viral infection whereas antibiotics only provide protection against bacterial infections. They call on the Commission to compile a best practice list with regard to the implementation of effective communication campaigns and professional training courses aimed at raising AMR awareness. They believe that effective information and awareness campaigns must be developed with a view to heightening awareness of the dangers of the unintentional spread of antimicrobial pathogens in hospitals and in the home, and awareness of the means of avoiding this. Campaigns along the lines of "Please take this antibiotic medicine only if it is prescribed by a doctor to you and take it as prescribed should be promoted and included in the package leaflet.

International cooperation: lastly, Members believe that concerted and timely international action that avoids overlap and builds critical mass is the only way forward in minimising the threat to public health that AMR poses globally. They consider that the work undertaken by the

Transatlantic Task Force on Antimicrobial Resistance (TATFAR) should be used as a model for international cooperation on antimicrobial resistance. Other similar multilateral and bilateral commitments for the prevention and control of AMR should also be encouraged, in accordance with the guidelines laid down by the WHO (in particular in regard to the control of counterfeit antimicrobials).

Microbial challenge - rising threats from antimicrobial resistance

The European Parliament adopted by 588 votes to 16, with 23 abstentions, a resolution on the Microbial Challenge Rising threats from Antimicrobial Resistance.

Parliament recalls that resistance to antibiotics for certain bacteria is as high as 25 % or more in several Member States and that much of the antimicrobial resistance (AMR) problem stems from the misuse in particular the excessive use of antibiotics. It recalls that in the EU, Iceland and Norway alone, antimicrobial resistant bacteria cause some 400 000 infections and 25 000 deaths annually, with at least EUR 1.5 billion spent on extra healthcare costs and productivity losses. It also highlights the fact that many Member States do not have a solid legal and regulatory framework to mandate and support the rational use of medicines. As a result, Parliament calls for the complete and rapid implementation of measures in this area.

Although welcoming the Commissions five-year strategic Action Plan on tackling AMR and viewing it as generally going in the right direction, Parliament notes that many of the action points reiterate measures prescribed over a decade ago, and that it is not sufficient for tackling the growing risk presented by AMR at international level.

In this context, Members call for an integrated roadmap outlining relevant policy responses, including possible legislative action.

Parliament calls in particular for the Action Plan to:

- cover all animals under the EU animal welfare strategy, including, for instance, companion animals and animals used for sports, and
- emphasise the logical connection between animal health and the use of antimicrobials, as well as the link between animal health and human health.

Prudent use of antimicrobials in human and veterinary medicine: Parliament calls for the prudent use of antimicrobials. The key objective of any AMR strategy is to maintain the efficiency of existing antimicrobials by using them responsibly at the correct therapeutic level only when strictly necessary and prescribed over a specific time at the appropriate dosage (and not for treating viral infections). Similar prudence needs to be exercised in veterinary medicine. Parliament calls on the Member States to use electronic recording systems to ensure that usage patterns on individual farms are appropriate, thus ensuring responsible and minimal use. It also suggests to the Commission that current provisions on maximum animal density in livestock farming be re-evaluated as herd sizes today often present obstacles to the treatment of individual or smaller groups of animals, providing incentives for the prophylactic use of antimicrobials. It calls for a legislative proposal to be presented for the veterinary sector to limit its use of third- and fourth-generation Critically Important Antimicrobials (CIAs) for humans.

Parliament considers that the pending revision of Directive 2001/82/EC offers an important opportunity to take effective measures to reduce AMR through strengthening the provisions for veterinary medicines, such as:

- limiting the right to prescribe antimicrobials to professionally qualified veterinarians only;
- separating the right to prescribe from the right to sell antimicrobials, thereby eradicating economic incentives to prescribe.

Measures are called for to encourage efforts to study hospital outbreaks, to improve diagnostics but also to assess and monitor the Member States' implementation of relevant EU legislation on antimicrobials, in particular with regard to the prescription-only use of antibiotics in the human health and veterinary sectors.

Prevention: Parliament calls for more effective measures to be introduced to prevent both the appearance and the spread of antimicrobial resistance. These measures include better monitoring and better notification of micro-organisms resistant to antimicrobials, as well as a more effective combating of infections, in particular by means of vaccinations. Among other measures that it calls for are limits on uncontrolled access to antimicrobial agents, in particular via the growing number of illegal sales on the internet, and their inappropriate use. It calls on the Member States to improve infection control, and to raise and promote good standards of hygiene especially hand hygiene, in order to prevent the spread of infections and reduce the need for antibiotics.

Parliament also invites the Commission to classify, in the forthcoming review of the European veterinary pharmaceuticals legislation, medicated feeding stuffs as pharmaceuticals and not as feeding stuffs, in order to ensure that, in future, the sensitive area of medicated foodstuffs is monitored under pharmaceuticals legislation and that official inspections are carried out accordingly, while ensuring that medicated foodstuffs fall into the prescription only category.

Development of new antimicrobials or alternatives for treatment: Parliament considers it vital to limit the emergence of bacteria that are resistant to antimicrobials. In this context, it is necessary to develop new antimicrobial agents. In parallel, it stresses the advantages of public-private partnerships because these can contribute to reaching this objective by dissociating sales transactions from investment in research and development. In this area, Parliament calls on the Commission and the Member States to accelerate R&D activities in order to provide new tools to fight tuberculosis and drug-resistant tuberculosis.

Parliament also underlines the need to examine new regulatory approaches that would result in stimulating industrial research and the development of new antimicrobials while safeguarding patient safety. It also calls on the Commission to ensure the development and availability of more on-farm tools for early, rapid diagnosis and control of diseases, as well as for a broad and effective diagnostic system at Member State level.

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common cold, and that much would be gained if the public could be made aware of the fact that the common cold is a viral infection whereas antibiotics only provide protection against bacterial infections. It calls on the Commission to compile a best practice list with regard to the implementation of effective communication campaigns and professional training courses aimed at raising AMR awareness. It believes that effective information and awareness campaigns must be developed with a view to heightening awareness of the dangers of the unintentional spread of antimicrobial pathogens in hospitals and in the home, and awareness of the means of avoiding this. Campaigns along the lines of "Please take this antibiotic medicine only if it is prescribed by a doctor to you and take it as prescribed should be promoted and included in the package leaflet.

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Microbial challenge - rising threats from antimicrobial resistance

This Commission staff working document concerns the progress made so far against the rising threats from Antimicrobial Resistance.

To recall, in 2011, the Commission launched a 5-year Action Plan against Antimicrobial Resistance. The progress made under the specific actions may be summarised as follows:

Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States: the European Parliament has allocated funds for a preparatory action to promote the appropriate use of antimicrobials in human medicine. The Antibiotic Resistance and Prescribing in European children (ARPEC) project funded under the Health Programme (2010-2013), aims at improving the quality of antibiotic prescribing for children in Europe and to reduce the prevalence of antimicrobial resistance in bacterial infections in children. The Commission services will publish later in 2015 data and information provided by the Member States in order to further strengthen the prudent use of antimicrobials in human medicines in the EU.

Action n° 2: Strengthen the regulatory framework on veterinary medicines and on medicated feed: the current veterinary medicines legislation does not provide sufficient tools to ensure that risks to human health arising from the use of antimicrobials in animals are adequately managed. In 2014, the Commission adopted proposals for [veterinary medicinal products](#) and [medicated feed](#). They are currently undergoing the ordinary legislative procedure in the European Parliament and the Council.

Action n° 3: Introduce recommendations for prudent use in veterinary medicine, including follow-up reports: regardless of the efforts carried out to improve the prudent use of veterinary antimicrobials it is also necessary to update marketing authorisations to take into account of the latest scientific developments. The Commission services are finalising the drafting of Guidelines for prudent use of antimicrobials in veterinary medicine.

Action n° 4: Strengthen infection prevention and control in healthcare settings: the report showed that in the area of prevention and control of healthcare associated infections (HAI), 26 out of 28 responding countries implemented a combination of actions to prevent and control such infections. More efforts are needed to ensure adequate numbers of specialised infection control staff, receiving regular training, and with dedicated time for this task in hospitals and other healthcare settings. Tailored basic infection prevention and control structures and practices in nursing homes and other long term care facilities should be reinforced. Information on HAI to patients should be improved.

Action n° 5: Introduce of a legal tool to enhance prevention and control of infections in animals in the new Animal Health Law: the Commission [proposal for a Regulation on animal health](#) was adopted in May 2013. It is currently undergoing the ordinary legislative procedure in the European Parliament and in the Council. Its objective is to create an EU animal health legal framework for the control of major transmissible animal diseases.

Action n° 6: Promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antimicrobials to patients: as rapid response, the New Drugs for Bad Bugs (ND4BB) programme was launched in May 2012. A new model for open innovation in the pharmaceutical research area has been created to spur the development of new antibiotics. This model means that research sectors and individual companies now provide unprecedented access to each others data and collaborate on solving problems of public health concern.

The Commission and the European Investment Bank are jointly developing a pilot financial facility which aims to target Infectious Diseases (ID). It is expected to be launched in 2015.

Action n° 7: Promote efforts to analyse the need for new antibiotics into veterinary medicine: the report acknowledged that there are certain gaps between the approved indications for veterinary antimicrobials and the needs of veterinarians. This area needs to be improved.

Action n° 8: Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of AMR in all sectors: the Commission services are supporting and actively cooperating with the WHO in this field. Cooperation with China has started and possible cooperation with Russian is imminent. The Commission services are also contributing to the work against antimicrobial resistance in developing countries. They have also begun to develop a strategic approach to the pollution of water by pharmaceuticals. Proposals are awaited in 2017.

Action n° 9: Strengthen surveillance systems on AMR and antimicrobial consumption in human medicine: transfer of the European system for surveillance of antimicrobial consumption in human medicine to ECDC was completed in 2012. The system is now integrated as part of ECDC surveillance as the European Surveillance of Antimicrobial Consumption Network (ESAC-Net).

Action n° 10: Strengthen surveillance systems on AMR and antimicrobial consumption in animal medicine: the information collected by the three agencies: the European Food Safety Authority (EFSA), the European Medicines Agency (EMA) and the European Centre for Disease Prevention and Control (ECDC) on antimicrobial resistance and antimicrobial consumption needs to be combined and jointly analysed in order to assess the relationship between use of antimicrobials and antimicrobial resistance in animals and in humans at the European level.

Action n° 11: Reinforce and co-ordinate research efforts: after the launch of the Action Plan, research on AMR has been further supported by the Commission services with a total budget of approx. 130 million under the EUs Seventh Framework Programme for Research and

Technological Development. The new EU framework programme Horizon 2020 continues to give research on infectious diseases including AMR a high priority. In 2014, the European Commission devoted 28 million to the development of new vaccines candidates against tuberculosis, and has earmarked 25 million for HIV vaccine research in 2015.

Action n° 12: Survey and comparative effectiveness research: each year, the European Antibiotic Awareness Day (EAAD) attracts strong media interest across Europe. In July 2013, ECDC provided training on the development, implementation and evaluation of prudent antibiotic use campaigns to 29 participants from 20 Member States and Norway.