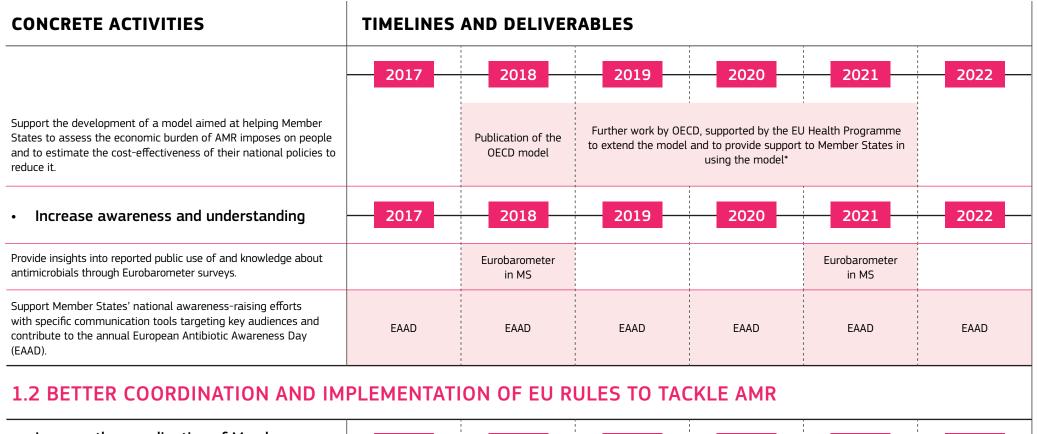
1. MAKING THE EU A BEST PRACTICE REGION

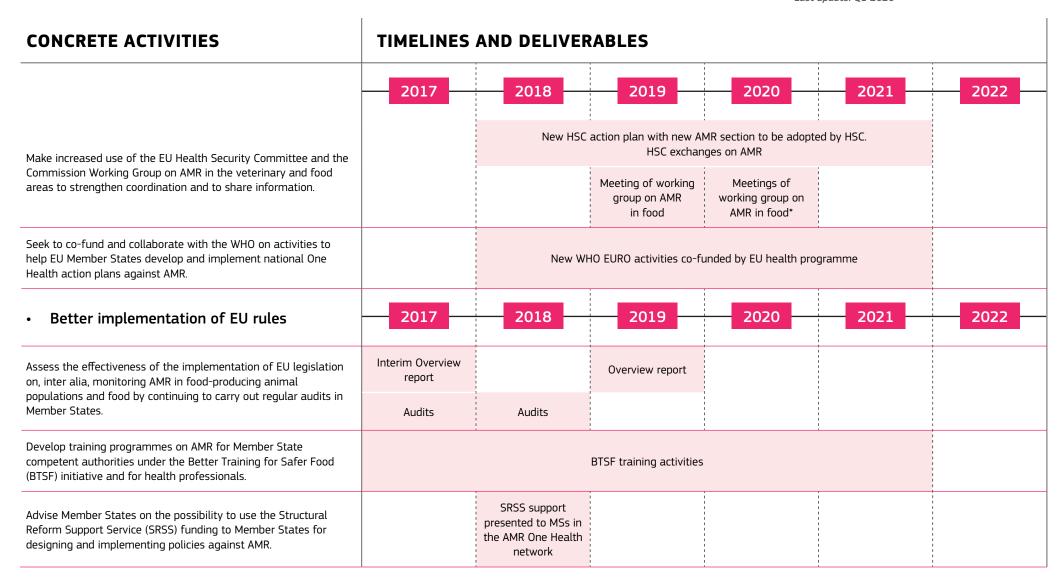
1.1 BETTER EVIDENCE AND AWARENESS OF THE CHALLENGES OF AMR

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ABLES			
 Strengthen One Health surveillance and reporting of AMR and antimicrobial use 	2017	2018	2019	2020	2021	2022
Review EU implementing legislation on monitoring AMR in zoonotic and commensal bacteria in farm animals and food.	Mandate to EFSA for technical advice		EFSA opinion	Adoption of the new legislation		
Review EU implementing legislation on reporting communicable diseases in humans.		New implementing act with updated AMR case definitions				
Identify and assess under the Animal Health Law, resistant bacteria that cause transmissible animal diseases and, if necessary, develop harmonised rules for their surveillance.			Mandate to EFSA for technical advice once list of transmissible disease is adopted under Animal Health Law			
Improve AMR detection in the human health sector by providing EU support for networking collaboration and reference laboratory activities.			collabo	nme funding to suppor ration and reference lat ctivities in human heal	ooratory	
Consider options for the harmonised monitoring of AMR in the environment.		Linked to the EU strate	egic approach to pharm	aceuticals in the enviro	nment (see action 1.4)	
 Benefit from the best evidence-based analysis and data 	2017	2018	2019	2020	2021	2022
Provide evidence-based data on possible links between the consumption of antimicrobial agents and the occurrence of antimicrobial resistance in humans and food-producing animals.	Second JIACRA report	Mandate to EFSA/ ECDC/EMA for a 3rd JIACRA report		3rd JIACRA report*		
Define a limited number of key outcome indicators for AMR and antimicrobial consumption.	EFSA/ECDC/EMA report on indicators					



Improve the coordination of Member 2017 2018 2019 2020 2021 2022 States' One Health responses to AMR Make available regular information on AMR in the context of the 2nd meeting 4th meeting 6th meeting* AMR One Health network, which gives an overview of the AMR 3rd meeting 5th meeting 7th meeting* epidemiological situation at Member State and EU level. Support the implementation of national One Health action plans Inint One Health Joint One Health Joint One Health Inint One Health

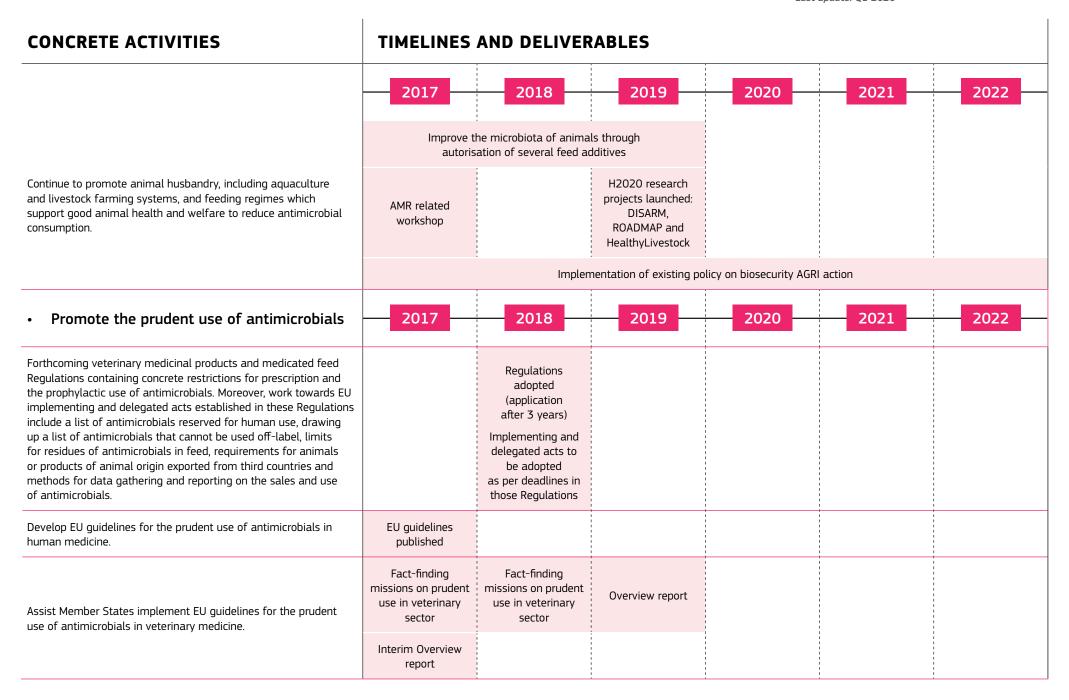
Launch a joint action to tackle AMR and healthcare-associated infections to support collaborative activities and policy Launch Interim reports* Final conference and report*	through joint Commission and the ECDC visits to Member States upon request.	visits with ECDC	visits with ECDC	visits with ECDC	visits with ECDC*	1 1 1 1
development by Member States.	,	Launch	Interim ı	reports*		



1.3 BETTER PREVENTION AND CONTROL OF AMR

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES	
 Strengthen infection prevention and control measures 	2017 2018 2019	2020 2021 2022
Support good practices in infection prevention and control in hospital environments.	Work by OECD supported by EU health programme to report on cost effectiveness of AMR/infection prevention measures including hand hygiene and hospital cleaning Infection control training to be carried out by ECDO	I and WHO*
Support activities for infection prevention and control in vulnerable groups, in particular to tackle resistant tuberculosis strains.	HA-REACT joint action from EU Health programme on HIV and co- infection prevention and harm reduction which includes activities to address tuberculosis INTE activiteal healtle healt	eport from EGRATE joint on from EU h programme integrating ention, testing link to care egies across viral hepatitis, and STIs in Europe*
Promote the uptake of vaccination in humans to prevent infections and subsequent use of antimicrobials.	Part of Joint Action Vaccination* Part of policy initiative on vaccination (Council Recom strengthened cooperation against vaccine preventab	

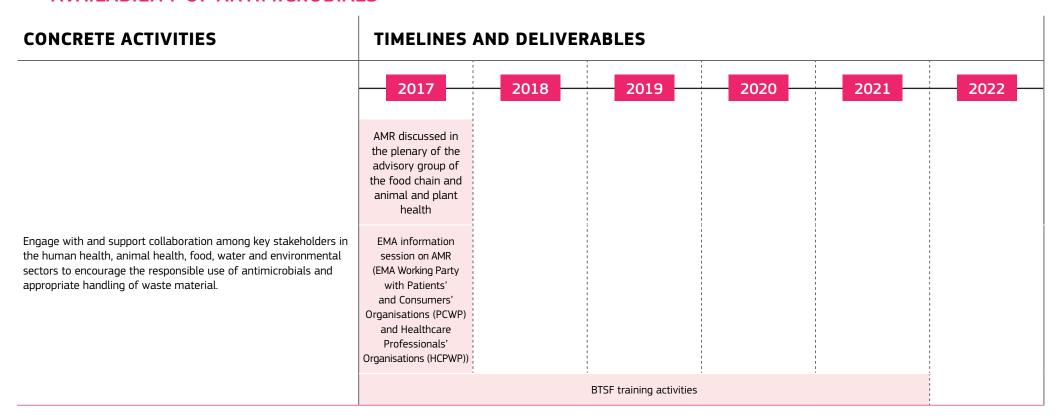


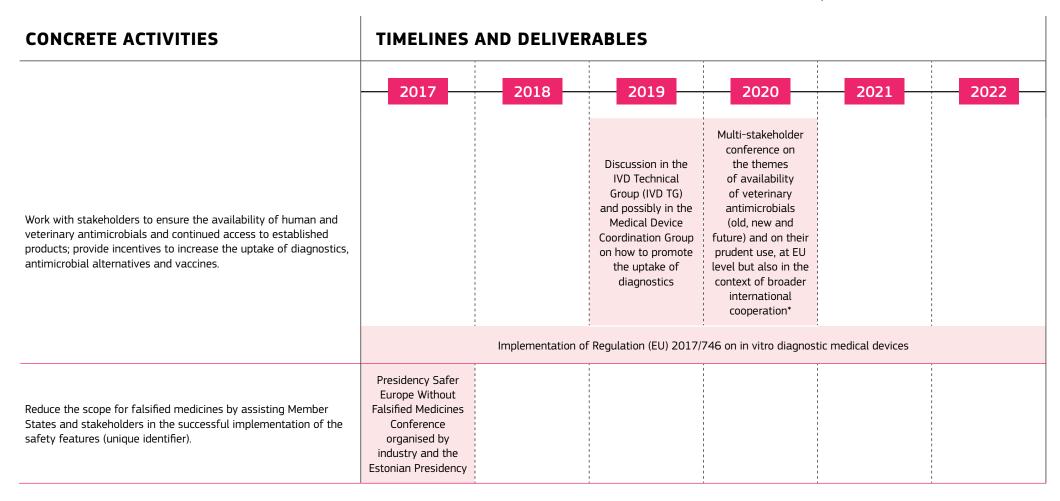


1.4 BETTER ADDRESSING THE ROLE OF THE ENVIRONMENT

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ABLES		
	2017	2018	2019	2020	2021 2022
	EMA finalised	Exploratory meeting with EMA on the		EMA review of medicines containing fosfomycin*	
Encourage the EMA to review all available information on the benefits and risks of older antimicrobial agent	a review of the vancomycin- containing medicines	topic of availability of veterinary antimicrobials and their prudent use		Regular update meetings with EMA on the topic of availability of veterinary antimicrobials and their prudent use*	
Adopt an EU strategic approach to pharmaceuticals in the environment.			EU strategic approach to pharmaceuticals in the environment (PIE) adopted		EU strategic approach to pharmaceuticals in the environment (PIE)
Maximise the use of data from existing monitoring to improve knowledge, including by using the Information Platform for Chemical Monitoring (IPCheM).				Project to promote IPCHeM in regulatory processes*	
Reinforce the role of the Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) in providing scientific advice to the European Commission on environment-related AMR issues.		Video material describing the role of SCHEER circulated to relevant sectors in the Commission			

1.5 A STRONGER PARTNERSHIP AGAINST AMR AND BETTER AVAILABILITY OF ANTIMICROBIALS





CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022	
Reduce the scope for falsified medicines by assisting Member States and stakeholders in the successful implementation of the safety features (unique identifier).		Conference organised by DIA (Drug information Association) with pharmaceutical industry		n expert group on the the safety features*			
		Update of the Q&	A interpretative docum	nent on the safety			
Discuss the availability of veterinary antimicrobials to tackle AMR in the Veterinary Pharmaceutical Committee.			Exploratory meeting* (see above mentioned multistakeholders conference)				

2. BOOSTING RESEARCH, DEVELOPMENT AND INNOVATION ON AMR

2.1 IMPROVE KNOWLEDGE ON DETECTION, EFFECTIVE INFECTION CONTROL AND SURVEILLANCE

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ABLES			
	2017	2018	2019	2020	2021	2022
	Funding of research projects under the ERA- NET SusAn on animal production	Launch of One Health EJP which includes research on new intervention tools on AMR	Launch of Call topic on clinical management of AMR			
Support research into the development and assessment of interventions that prevent the development and spread of AMR.		Funding of projects coming out of Call topic SFS-46-2017 on alternative production systems to address anti- microbial drug usage, animal welfare and the impact on health				
	Funding decision on projects from the JPIAMR 5th call on prevention and intervention strategies to control AMR infections					
Support research into understanding the epidemiology of AMR, in particular the pathways of transmission between animals and humans, and their impact.	Funding decision on project addressing the clinical burden of Clostridium difficile infection under under IMI2, Call 9				Report of projects selected under 3rd JPIAMR ERA- NET Co-fund call to bridge the knowledge gap on AMR transmission mechanisms	

CONCRETE ACTIVITIES	TIMELINES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022		
		Launch of One Health EJP which includes research on early signalling and assessing zoonotic threats		Reporting COMPARE, on the rapid identification, containment and mitigation of emerging infectious diseases and foodborne outbreaks*				
Support research into the development of new tools for early (real-time) detection of resistant pathogens in humans and animals.		Launch of Call topic SC1-BHC-13-2019, on mining of big data for early detection of infectious disease threats	Reporting DIAGORAS, on bedside diagnosis of oral and respiratory tract infections, and identification of antibiotic resistances for personalised monitoring and treatment					
Support research into new eHealth solutions to improve prescription practices, self-management of health, care solutions, and improve awareness of AMR.		Launch of Call topic SC1-DTH-10-2019- 2020, on digital solutions for health and care services						

2.2 DEVELOP NEW THERAPEUTICS AND ALTERNATIVES

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES					
	2017	2018	2019	2020	2021	2022
	Funding decision on EDCTP2 projects on treatments for cryptococcal meningitis, malaria, HIV, tuberculosis and reproductive tract infections	Reporting of project PneumoNP on nanotherapeutics to treat antibiotic resistant Gram- Negative pneumonia	Launch of IMI2 call topics on development of new antimicrobials and alternative products for humans*	Loans awarded under IDFF to development of new antimicrobials and alternative products*	Reporting of project anTBiotic progressing TB drug candidates to clinical proof of concept	
		Reporting of project NAREB on nanotherapeutics for antibiotic resistant emerging bacterial pathogens	! Reports of projects from 1st and 2nd join transnational calls of JPIAMR			
Support research into the development of new antimicrobials and alternative products for humans and animals as well as the repurposing of old antimicrobials or the development of new combination therapies.		Launch of Call topics SC1-BHC-14-2019 on stratified host-directed approaches to improve prevention, treatment and/or cure of infectious diseases and SC2- SFS-11-2019- 2019 on antimicrobials and animal production		Reporting of IMI ND4BB projects on development of new antimicrobials and alternative products for humans*		
		Reporting of project FormAMP on innovative nanoformulation design of antimicrobial peptides				

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ABLES			
	2017	2018	2019	2020	2021	2022
Support SMEs in their R&D efforts towards innovative and/ or alternative therapeutic approaches for the treatment or prevention of bacterial infections.				Reporting of projects from SME Instrument, on development of new antimicrobials and alternative products*		
Facilitate sharing of antimicrobial research data among relevant stakeholders.		Launch of IMI2 call topics on development of new antimicrobials including facilitating data sharing Reporting of IMI ND4BB project TRANSLOCATION on antibacterial drug discovery				
Support the establishment of a European-wide sustainable clinical research network.	Launch of Call topic SC1-HCO-08-2018 on the creation of a European wide sustainable clinical research network for infectious diseases				Reporting of IMI ND4BB project COMBACTE on the development of new antibacterial treatments	
Support research and innovation to promote the use of digital technologies supporting the development of new therapeutics and alternatives.				Reporting of Biotechnology (LEIT) project DD-DeCaF on optimisation of -omics data*		

2.3 DEVELOP NEW PREVENTIVE VACCINES

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ABLES			
	2017	2018	2019	2020	2021	2022
				Reporting of projects from Call topic SC1- PM-16-2017 on in-silico trials for developing and assessing biomedical products*		
	Launch of Call Topic SC1-BHC-15-2018, on new anti- infective agents	Launch of Call Topics SC1- BHC-14-2019, on stratified		Reporting of the European AIDS Vaccine Initiative (EAVI) 2020*	Reporting of the European HIV Vaccine Alliance (EHVA)	Reporting of projects OptiMalVax and MultiViVax on Malaria vaccine development
Continue to support research into the development of new effective preventive vaccines for humans and animals.	(including vaccines) for prevention and/ or treatment of neglected infectious diseases	host-directed approaches to improve prevention, treatment and/or cure of infectious diseases, SC2- SFS-31-2019 (ERA-		Reporting of projects TBVAC2020 and EMI- TB on advancing tuberculosis vaccine candidates*		
		NET) on veterinary vaccinology and SC2-SFS-12-2019 on swine fever vaccines	Reporting of project SAPHIR on novel vaccine strategies for animal production	Loans awarded under IDFF to development of new vaccines*		
				Reporting MycoSynVac, on development of a Mycoplasma vaccine for animal use*		

2.4 DEVELOP NOVEL DIAGNOSTICS

CONCRETE ACTIVITIES	TIMELINES	TIMELINES AND DELIVERABLES					
	2017	2018	2019	2020	2021	2022	
Support increasing the knowledge base concerning the barriers that influence the wider use of vaccination in medical and veterinary practice.		Launch of Call Topic SFS-11-2018-2019, on antimicrobials and livestock production					
Support research into the development of new diagnostic tools in particular on-site tests in humans and animals.	Launch of IMI2 call, on diagnostics development and validation	Reporting of project VIROGENESIS on virus discovery and epidemic tracing	Reporting of poject Poc-ID on Point-of- Care diagnostics for Infectious Diseases*	Reporting of project FAPIC on developping a fast assay for pathogen identification and characterisation*			
		Launch of One Health EJP, incl. research on new diagnostic tools on AMR		Loans awarded under IDFF to development of new diagnostic tools*			
				Reporting of EDCTP2 projects, on diagnostic tools for poverty-related diseases*			
				Reporting PREPARE, on outbreak preparedness*			
Support the use of IT solutions in developing tools for diagnosing human and animal infections.				Reporting of projects from SME Instrument, on IT solutions and tools to support diagnosing human and animal infections*			

2.5 DEVELOP NEW ECONOMIC MODELS AND INCENTIVES

CONCRETE ACTIVITIES	TIMELINES	AND DELIVER	ID DELIVERABLES					
	2017	2018	2019	2020	2021	2022		
Encourage the uptake of diagnostics in medical and veterinary practice.	Launch of Call Topic SC1-HCO-12-2018, on Innovation Procurement							
Increase the evidence base for understanding the societal costs and benefits of different strategies for fighting AMR.		Reporting of IMI DRIVE-AB project						
Support research into the development of new economic models, exploring and analysing incentives to boost the development of new therapeutics, alternatives, vaccines and diagnostics.		Reporting of IMI DRIVE-AB project						
		TATFAR discussion on incentives						
Analyse EU regulatory tools and incentives – in particular orphan and paediatric legislation – to use them for novel antimicrobials and innovative alternative medicinal products that currently do not generate sufficient returns on investment.	Report from the European Commission to the European Parliament and the Council on the 10 years of the paediatric Regulation	Study on the economic impact of the supplementary protection certificate, pharmaceutical incentives and rewards in Europe	Study on orphan medicinal products legislation	Evaluation of the orphan and paediatric medicines legislation*				
Encourage Member States to explore results and recommendations of EU research projects on new economic business models.			Discussion with Member States in the Pharmacuetical Committee					
Develop new or improved methodological HTA approaches and foster methodological consensus-building.	Launch of Call Topic SC1-BHC-26-2018, on HTA research to support evidence- based healthcare							

2.6 CLOSE KNOWLEDGE GAPS ON AMR IN THE ENVIRONMENT AND ON HOW TO PREVENT TRANSMISSION

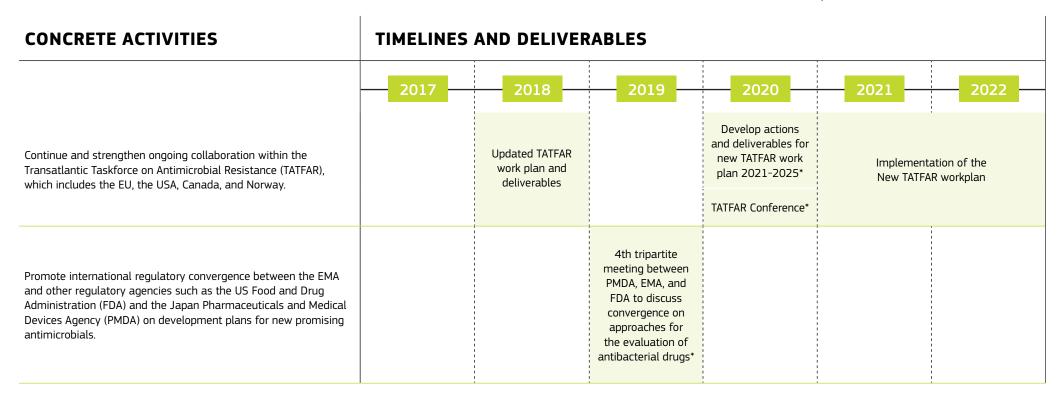
CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022	
Support research into knowledge gaps on the release of resistant microorganisms and antimicrobials into the environment and their spread.		Launch of One Health EJP, incl. research on resistance spread	Reporting of project EFFORT on microbial drug resistance and transmission		Reports of projects from JPIAMR 3rd ERA- NET Co-fund call on transmission dynamics		
Explore risk assessment methodologies to evaluate the risks to human and animal health from the presence of antimicrobials in the environment.		Launch of One Health EJP, incl. research on resistance spread		Implementation of Commission strategic approach to pharmaceuticals in the environment (PIE)*			
Support research into and the development of new tools for monitoring antimicrobials and microorganisms resistant against antimicrobials in the environment.				Implementation of Commission strategic approach to pharmaceuticals in the environment (PIE)*			
Support the development of technologies that enable efficient and rapid degradation of antimicrobials in wastewater and the environment and reduce the spread of AMR.			ERA-NET for JPI Water and JPIAMR				

3. SHAPING THE GLOBAL AGENDA

3.1 A STRONGER EU GLOBAL PRESENCE

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES							
Continue to actively contribute to the normative work of the WHO, the OIE, the FAO, and the Codex Alimentarius on the development of ambitious international frameworks and standards/norms/guidelines/methodologies related to AMR.	2017	2018	2019	2020	2021	2022		
	Signature of a letter of intent for reinforced cooperation between FAO and EC between FAO DG and V. Andriukaitis Commission	Involvement of FAO in new BTSF activities for non-EU countries			New CODEX guidelines on integrated monitoring and surveillance of foodborne AMR			
		Review upcoming normative work (e.g. as outlined in resolution of the World Health Assembly) and assess EC involvement			Revised CODEX code of practice to minimize AMR			
Reinforce technical cooperation with the WHO and its members in key areas of the WHO Global Action Plan on AMR.								

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022	
Boost support for the International Conference on the Harmonisation of Technical Requirements for the Registration of Pharmaceuticals for Human Use (ICH) and the Veterinary International Conference on the Harmonisation (VICH) on relevant international guidelines/standards/norms related to AMR.	Promotion of the new EU Action Plan against AMR during the IPRF meeting in the margins of the ICH meeting in Geneva in November 2017		Text on AMR in the UN political declaration on Universal Health Coverage	Explore the needs to update existing VICH guidelines and other possibilities supporting harmonisation*			
Work towards continued high-level political attention and commitment to AMR action, including in the United Nations forums, the G7 and the G20.	AMR featuring in the G7 Health Minister Communique and G20 Health Ministers' Declaration	AMR on G7 and G20 Agenda	AMR on G7 and G20 Agenda	AMR on G20 Agenda*			
	Approval by G7 CVOs of a common approach on the definitions of therapeutic, responsible and prudent use of antimicrobials in animals						
Look for synergies with the UN Strategic Approach to International Chemicals Management's work on the emerging policy issue of pharmaceuticals in the environment.				EU strategy on chemicals*			
Analyse the feasibility of setting up a global AMR clinical studies network in collaboration with G7 members.							





3.2 STRONGER BILATERAL PARTNERSHIPS FOR STRONGER COOPERATION

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022	
			Discussions with Mercosur on SPS issues	AMR cooperation article agreed between EU and Indonesia*			
Advocate EU standards and measures for tackling AMR in trade agreements and incorporate them into cooperative arrangements in trade agreements.				AMR cooperation article agreed between EU and Malaysia*			
				AMR cooperation article agreed between EU and India*			
				Trade discussions with ASEAN countries*			
				FTA negotiations with Australia and New Zealand*			

IMPROVE KNOWLEDGE ON DETECTION, EFFECTIVE INFECTION CONTROL AND SURVEILLANCE

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES							
	2017	2018	2019	2020	2021	2022		
Engage with major global players and strategic countries (e.g. Brazil, China, India), contributing towards achieving objectives of the WHO global action plan on AMR.	Seminars on AMR with Argentina, Brazil, Chile & Colombia	Seminars on AMR with Paraguay, Peru & Uruguay	AMR activities with China and India*					
	Seminar with India on the use of veterinary medicines and AMR	Overview report regarding national policies and measures against AMR in third countries	Follow-up seminars in South East Asia including Australia and New Zealand*	AMR activities in Sou	AMR activities in South East Asia			
	Identification mission on AMR cooperation with South-American partner countries		AMR activities in Latin American countries under FPI project					
Support EU candidate countries, potential candidate countries and neighbouring countries to which the ENP applies in the alignment with, and capacity building for the implementation of EU legislation related to AMR and EU standards.			ECDC/EFSA and EU- Enlargement multi- country workshop / ECDC/EFSA and EU- ENP multi-country workshop					
Invite the European Parliament, Member States and stakeholders to share views on actions to be taken to ensure that efforts to combat AMR made by EU producers, including farmers, do not place them at a competitive disadvantage.								

3.3 COOPERATING WITH DEVELOPING COUNTRIES

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017 2018 2019 2020 2021 2022						
Continue to contribute to reducing AMR in least developed countries through infectious disease programmes such as the Global Alliance for Vaccines and Immunisations (GAVI)	Implementation through Commission pledges						
Assist in the development of AMR strategies in the areas of food safety and animal health through regional training workshops on AMR	New BTSF activities for non-EU countries						
Support partner countries' policy initiatives on AMR, where appropriate, through international cooperation and development instruments (e.g. Global Public Goods & Challenges, the European Development Fund).	Through a pilot project on mapping the global threat of AMR, DEVCO supports WHO to develop a point prevalence protocol for undertaking surveys on prescribing and use of antimicrobial medicines in hospital setting, build capacity to implement antimicrobial stewardship programmes in hospitals in SSA, address the prevention, detection and response to substandard and falsified products						
Support the development of resilient health systems in partner countries	Supporting WHO for strengthened health systems through development funding instruments at country and region levels						

3.4 DEVELOPING A GLOBAL RESEARCH AGENDA

CONCRETE ACTIVITIES	TIMELINES AND DELIVERABLES						
	2017	2018	2019	2020	2021	2022	
Improve global coordination of research activities.		Launch of G20 Research hub					
Support the establishment of a virtual research institute under JPIAMR.				Reporting of project EXEDRA on the expansion of the JPIAMR			
Continue collaborative research with Sub-Saharan Africa in the context of the European and Developing Countries Clinical Trial Partnership (EDCTP) in particular in relation to tuberculosis, HIV/AIDS, malaria and neglected infectious diseases.			Reporting of EDCTP2 projects on research capacity development in support of the EVD response				
			Reporting of EDCTP2 projects on maximising the impact of EDCTP research and translation of research results into policy and practice				
Foster international research collaboration on AMR in the animal health sector in the STAR-IDAZ International Research Consortium.							