

Action plan to support the UK 2013 – 2018 Antimicrobial Resistance Strategy

The following indicates the range of activities being undertaken or planned throughout the UK and highlights some new initiatives to deliver the UK 5 year strategy (2013-2018). The focus is on activities affecting all the UK and does not provide details of local initiatives. Public Health England will take responsibility for HPA's core functions from April 2013 and thus, will take forward actions assigned to HPA below.

UK strategic aim 1: Promote responsible prescribing to preserve existing therapies and optimise prescribing practice for both bacterial and viral infections.				Priority 1, 2 or 3
EU ACTION PLAN - Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States. Action n° 3: Introduce recommendations for prudent use in veterinary medicine, including follow-up reports.				
	Actions	Existing	New/Ongoing	
Embedding antimicrobial stewardship into healthcare practice	<ul style="list-style-type: none"> The development of practical guidance for all prescribers. 	Range of guidance such as <i>Start Smart and then Focus</i> for secondary care already exist but implementation to be improved.	New UK GP toolkit Treat Antibiotics Responsibly; Guidance, Education, Tools (TARGET) to be launched November 2012.	1
	<ul style="list-style-type: none"> Improving recording of the reason for antibiotic use in patient notes is a simple indicator of good practice. 	Already a Scottish target and point prevalence surveys show is scope for improving practice.	Other parts of UK will investigate options for improving performance on this measure.	1
	<ul style="list-style-type: none"> Heterogenous prescribing can reduce selection pressure for resistance. 		National surveillance experts will be asked to develop guidance.	1
	<ul style="list-style-type: none"> Incentives both national and local may have a role in improving practice. 		National surveillance experts and commissioning colleagues will be asked to identify the options.	1
Optimise prescribing practice.	<ul style="list-style-type: none"> Improve local use of antibiotics through promotion of (EMIS) web-based audit. 	Tools available but unpublicised.	Promote through new UK TARGET tool.	1
	<ul style="list-style-type: none"> Enforcement of compliance with antibiotics' Prescription Only Status by internet suppliers of medicine and promotion of accredited veterinary suppliers. 	Ongoing inspection of UK internet retailers of veterinary medicines	Promote use of the VMD's voluntary Accredited Internet Retailer Scheme to provide assurance that purchasers are buying appropriate authorised products.	1

Key:

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UK strategic aim 1 (cont): Promote responsible prescribing to preserve existing therapies and optimise prescribing practice for both bacterial and viral infections.				Priority
EU ACTION PLAN - Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States.				1, 2 or 3
Action n° 3: Introduce recommendations for prudent use in veterinary medicine, including follow-up reports.				
	Actions	Existing	New/Ongoing	
Optimise prescribing practice (cont).	<ul style="list-style-type: none"> Promotion of responsible use of antibiotics in veterinary medicine to create a culture whereby those with animals in their care are aware of the risks of antimicrobial resistance when administering antibiotics. 	Industry sponsored guidance including the Responsible Use of Medicines in Agriculture (RUMA) Alliance. Guidance developed by the professional bodies: the British Veterinary Association responsible use poster and the British Small Animal Veterinary Association Protect policy poster. The British Poultry Council's initiative on antibiotics and Dairy UK's antibiotic usage group.	In England (i) outreach seminars with the different industry sectors to raise the awareness of the risks of Antimicrobial Resistance are being planned. (ii) Promote how best practice principles should be employed to reduce reliance in antibiotics. (iii) Revise the Government's Code of Practice on the Responsible use of Medicines on the Farm.	
	<ul style="list-style-type: none"> Develop a method of feeding back and reviewing data from antibiotic prescribing regimens into the British National Formulary (BNF). To be informed by data linkage of Hospital Episode Statistics (HES) and Labbase2 to identify risk factors that can be used in complex modelling to improve empiric prescribing at a national and regional level. 	No formal procedures in place.	Work with BNF and the Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infections (ARHAI) to establish a feedback and review mechanism.	2
	<ul style="list-style-type: none"> Develop ways of centrally analysing data on antibiotic use for key indicators and clinical syndromes, surgical prophylaxis and Critically Important Antibiotics (CIA) in both the human and veterinary health sectors. 		National surveillance experts will be asked to consider options to progress this.	3

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UK Strategic aim 2: Improve infection prevention controls in human and animal systems				Priority
EU ACTION PLAN Action n° 4: Strengthen infection prevention and control in healthcare settings. <i>Changing the Culture 2010</i> is the strategic regional action plan for the prevention and control of healthcare-associated infections in Northern Ireland. It was published in January 2010 and is based on two core principles that underpinned the earlier 2006 action plan, namely: i) Infection prevention and control is an integral part of safe healthcare. ii) Infection prevention and control is everyone's business.				
	Actions	Existing	New/Ongoing	
Provision of advice	<ul style="list-style-type: none"> Provision of UK evidence based guidelines for preventing healthcare associated infections (EPIC guidelines). 	EPIC 2.	EPIC to be updated during 2012/13.	1
	<ul style="list-style-type: none"> The design of the built environment impacts on infection control and in England, one mechanism for advice on new technologies to assist with this is the Rapid Review Panel (RRP) which provides an assessment of new and novel technologies and devices. 	RRP advice on products such as air decontamination systems.	RRP reviews will be available.	1
	<ul style="list-style-type: none"> Promotion of good husbandry and management of livestock to help prevent disease. 	Government guidance has been produced on biosecurity on farms and farm health planning for each of the major farming sectors (as per the annex information). Many farms are already part of the Farm assurance schemes.	Future European law relating to farmed animal health is expected to require livestock farmers to take steps to prevent disease.	2

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UK Strategic aim 2 (cont): Improve infection prevention controls in human and animal systems				Priority
EU ACTION PLAN Action n° 4: Strengthen infection prevention and control in healthcare settings.				
	Actions	Existing	New/Ongoing	
Provision of advice (cont).	<ul style="list-style-type: none"> Development of clinical best practice guidance on specific pathogens, resistance types or settings. The focus should be on clinical syndromes where AMR may be a key issue and there is significant risk of treatment failure due to AMR. Consider setting up an Evidence Based Antimicrobial Guideline Development Group to provide a more targeted approach to antimicrobial prescribing, help clinicians use current antibiotics more prudently and conserve the CIA's. 	<p>Recent guidance includes advice on norovirus, C. difficile infection, carbapenemase producing bacteria and Group A Streptococcus.</p> <p>Guidance development process to be improved by better pre-engagement consultation.</p>	<p>To link in with UK-wide groups to agree overall purpose/direction of future guidelines in all UK nations.</p> <p>A generic control measure 'trigger tool' for outbreaks with any organism.</p>	2
Provision of improved systems	<ul style="list-style-type: none"> The small Business Research Initiative (SBRI) supported soundly based interventions to bring about behaviour change. 		Six projects supported including one on an intelligent handwashing monitor.	2

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UK strategic aim 3: Raise awareness of the problem posed by antimicrobial resistance, improve public and professional knowledge and promote change in behaviour in order to slow development of resistance.				Priority
EU ACTION PLAN - Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States) 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.				
	Actions	Existing	New/Ongoing	
Professional Initiatives.	<ul style="list-style-type: none"> Ensure that professionals are aware of the increased risk from Gram negative multi-resistant bacteria and the need to implement relevant guidance. 	<p>Annual report of Antimicrobial resistance and usage published by Public Health Wales.</p> <p>UK resistance alerts about carbapenem-resistant Gram negatives widely disseminated.</p> <p>Guidance for management of Carbapenem-resistant Enterobacteriaceae promoted to Health Boards.</p>	TARGET antibiotic website will raise awareness. ARHAI to develop advice on how to increase awareness and change behaviour so that action is taken on these bacteria and antimicrobial stewardship.	1
	<ul style="list-style-type: none"> Create a culture where Infection Prevention and Control is everybody's business and performance is regularly audited. The links between antimicrobial stewardship and infection control need to be clear. 		A number of measures are underway or planned. The Code of Practice on the prevention and control of infections and related guidance is used by the Care Quality Commission for assessing compliance will cover GP practices from 2013. Ongoing collaboration on IC and AS to integrate datasets and increase wider clinical engagement.	1

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UK strategic aim 3 (cont): Raise awareness of the problem posed by antimicrobial resistance, improve public and professional knowledge and promote change in behaviour in order to slow development of resistance.				Priority
EU ACTION PLAN - Action n° 1: Strengthen the promotion of the appropriate use of antimicrobials in all Member States) 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.				
	Actions	Existing	New/Ongoing	
Professional initiatives (cont).	<ul style="list-style-type: none"> Improving clinical education about appropriate prescribing includes work to ensure AMR is included in curricula by developing tools to facilitate this. 	<p>Development of generic competences for prescribers by ARHAI.</p> <p>Contribution to veterinary undergraduate teaching on veterinary medicines, including antimicrobial resistance, at all seven of the UK veterinary colleges by VMD/Defra.</p>	Work with RCGP as AMR now a clinical priority. Also will work with partners to strengthen curricula.	1
Public Initiatives	<ul style="list-style-type: none"> Improve public awareness and change public behaviour with respect to antibiotic prescribing by provision of information throughout the year with additional activity around European Antibiotic Awareness Day (EAAD) on 18 November. 	<p>Public partner on SAPG involved in EAAD plans.</p> <p>Local AMTs have links with public partners.</p> <p>In England, provision of EAAD materials for local campaigns plus editorials to raise awareness.</p>	<p>Evaluate EAAD materials.</p> <p>Increase public engagement to promote key messages about antimicrobial use.</p>	1
	<ul style="list-style-type: none"> Develop a culture where civil society positively supports the need to tackle antimicrobial resistance 	Continue with general public awareness raising activities	Hold a high level summit to secure support for action to tackle HCAI by civil society.	2

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	Actions	Existing	New/Ongoing	
Professional Initiatives	<ul style="list-style-type: none"> Support clinicians managing multidrug resistant and extensively drug resistant TB cases. 	British Thoracic Society (BTS) clinical advice on complex cases.	National surveillance experts to consider lessons from managing drug resistant TB to other infections.	2
	<ul style="list-style-type: none"> Improve awareness and partnership working with a wide range of stakeholders including Antibiotic Action. 	HPA and NHS collaboration eg enhanced surveillance of carbapenemase producing bacteria.	This will involve alerting Patient Safety Groups, Local Authorities and Clinical Commissioning Groups to guidance and need for action.	2
	<ul style="list-style-type: none"> Explore ways to improve the uptake of best practice antimicrobial infection control guidelines. 	UK evidence from STAR and Francis Studies BMJ 20122.	Social research to determine farmers views of best practice guideline for AMR.	3

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UK strategic aim 4: Improve the evidence base through research to inform understanding of microbial pathogenesis resistance and alternatives to new drugs and new or improved diagnostic tests for humans and animals.				Priority
EU ACTION PLAN - Action n° 6: Promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antimicrobials to patients. Action n° 11: Reinforce and co-ordinate research efforts				
	Actions	Existing	New/Ongoing	
Co-ordination of research activities	<ul style="list-style-type: none"> Co-ordination of research programmes in the UK and internationally - Technology Strategy Board' (TSB), in collaboration with the NIHR, DEFRA, and other research funders launched call for proposal in 2008, This focused on 'detection and identification of infectious diseases (DIIA)'. And a number of projects in the AMR area were funded. 	Project in AMR/HCAIs area underway from TSB call.	Projects continuing.	1
	<ul style="list-style-type: none"> The Medical Research Council in collaboration with the Canadian Institutes of Health Research established the UK-Canada Joint Partnership on Antibiotic Resistance to provide research funding for consortiums tackling the problem of AMR. 	Two joint UK-Canada consortia funded in 2011	Projects continuing	1
	<ul style="list-style-type: none"> Seven UK funders (MRC, BBSRC, Wellcome Trust and the 4 UK health departments) have established the UKCRC Translational Infection Research Initiative which funds four consortia with projects linked to AMR 	Four consortia funded	Projects continuing	1

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UK strategic aim 4 (cont): Improve the evidence base through research to inform understanding of microbial pathogenesis resistance and alternatives to new drugs and new or improved diagnostic tests for humans and animals.				Priority
EU ACTION PLAN - Action n° 6: Promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antimicrobials to patients. Action n° 11: Reinforce and co-ordinate research efforts				
	Actions	Existing	New/Ongoing	
Commissioned research	<ul style="list-style-type: none"> Develop evidence base by commissioning research relevant to policy needs. 	<p>In England, projects on assessment of patient experience of MRSA screening.</p> <p>In Scotland, assessment of MRSA screening.</p>	Project on ESBL surveillance being commissioned.	1
	<ul style="list-style-type: none"> Develop the veterinary evidence base to underpin policy. 	The research programme is reviewed annually. Currently, projects investigating ESBLs on farms are underway.	Further work on ESBLs in the different farming sectors is indicated. In addition, research to underpin best practice principles may be needed.	2
Coordination of research activities.	<ul style="list-style-type: none"> Coordination of research programmes in the UK and internationally. Initiatives underway include the EU Framework 7 and a European Joint Programming initiative to develop a strategy for co-ordinating national research on AMR. 	MRC lead UK participation in EU Research Joint Programming initiative The Microbial Challenge: an emerging threat to human health.	Continued collaboration on EU Joint Programme. Researchers will be encouraged to participate in Horizon 2020.	2

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UK strategic aim 5: Facilitate and encourage the development of new drugs, vaccines and other immunotherapeutics.				Priority
EU ACTION PLAN - Action n°6 Promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antimicrobials to patients. Action n° 11: Reinforce and co-ordinate research efforts.				
	Actions	Existing	New/Ongoing	
Vaccines and Therapeutics	<ul style="list-style-type: none"> Identify human vaccines in development. 	DH and JCVI to conduct annual review.	UK review to continue.	1
	<ul style="list-style-type: none"> Research into new vaccines and therapeutics for diseases, which currently require antibiotics to treat successfully. 	<p>In England, translational research investigating new therapeutic/vaccine targets for the treatment of Gram negative HCAIs (<i>E. coli</i> bacteraemia).</p> <p>MRC/TSB Biomedical Catalyst is available to UK SMEs and academic to develop innovative solutions to healthcare challenges in any scientific area including AMR.</p>	<p>Advice from veterinarians will be used to focus research efforts in England.</p> <p>UK researchers will be encouraged to participate in Horizon 2020.</p> <p>Advice from the vaccine manufacturers will also be sought.</p> <p>Biomedical Catalyst fund going.</p>	2
	<ul style="list-style-type: none"> Assess and identify options for improving surveillance ,enabling rapid implementation of novel rapid diagnostics and Point Of Care Tests.and supporting clinical trials in very high risk AMR patients and/or extreme MDR AMR, 		Identifying options to facilitate advances in research, improved surveillance, diagnostics and clinical trials will require a collaboration with a number of partners at both UK and sub-national levels.	2
Regulation	<ul style="list-style-type: none"> Explore the use of the regulatory framework to 'fast track' development of new antibiotics, including work with EU colleagues and other stakeholders. 	MHRA participation in developing Committee for Medicinal Products for Human Use's guideline on antibacterials.	Addendum to EU guideline being developed.	2

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UK strategic aim 6: Improving the evidence base by strengthening surveillance, epidemiological data and data linkage arrangements.				Priority
EU ACTION PLAN - 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.				
	Actions	Existing	New/Ongoing	
Improved use of existing data systems.	<ul style="list-style-type: none"> Strengthening surveillance of AMR by improving use of routine susceptibility data 	Data from systems such as AMSURV and Vitek 2 are used to inform local decisions.	Expand use of existing systems and work with the NHS to improve the quality of the data submitted.	1
	<ul style="list-style-type: none"> UK database to monitor HIV resistance at a molecular and clinical level developed by HPA and NHS clinicians. 	Database providing valuable information.	UK HIV database to continue	1
	<ul style="list-style-type: none"> Feedback to clinicians of data on surveillance of gonorrhoea resistance has resulted in changes in prescribing practice and should be maintained. 	National data collection.	Ensure continued effective use of data.	1
	<ul style="list-style-type: none"> Provide AMR surveillance data to the European Food Safety Authority (EFSA) surveillance project. 	The project is currently managed by AHVLA and UK AMR data are provided in the published report.	Provide AMR surveillance data to the EFSA project according to the new Directive.	1
	<ul style="list-style-type: none"> Participate in the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project. 	UK data describing the sales of veterinary antibiotics were published in the 1st ESVAC report and are due to be published in the 2nd report scheduled for autumn 2012.	Continue to participate in the development of the ESVAC project and contribute antibiotic consumption data from the UK according to the projects deadlines.	1

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UK strategic aim 6 (cont): Improving the evidence base by strengthening surveillance, epidemiological data and data linkage arrangements.				Priority
EU ACTION PLAN - 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.				
	Actions	Existing	New/Ongoing	
Improved use of existing data systems (cont).	<ul style="list-style-type: none"> Combine electronic health records with other forms of research and data to unlock better healthcare, both for individuals and the wider population. 		The E-Health Research Initiative consisting of 10 UK government and charity funders, led by the Medical Research Council, has funded 4 new Centres of Excellence. The Centre for Health service and Academic Partnership in Translational E-Health Research (CHAPTER), led by UCL will open in late 2012 with a focus on infections.	1
Development of new data services and horizon scanning.	<ul style="list-style-type: none"> Monitor success in controlling the development of resistance by an outcome measure to establish the baseline and subsequent trends in a group of key "drug/bug" combinations. Regular review of the measure will be undertaken. 		National surveillance experts to monitor specified "drug bug" combinations. ¹	1
	<ul style="list-style-type: none"> Antibiotic consumption data is limited but new research is providing information to inform and improve practice. 	EU ARPEC project on paediatric prescribing.	ARPEC report produced. National surveillance experts to work with stakeholders to analyse results of first UK human national Point Prevalence Survey data on antibiotic use.	1
	<ul style="list-style-type: none"> Improved ascertainment of susceptibility of gonorrhoea isolates. 	Currently mixture of methods used.	Promote use of E test as this will provide more reliable data on changes in susceptibility.	1

¹ Refer to Annex 1: Key drug bug combinations for the outcome measure. These will be reviewed by experts on a regular basis to ensure that emerging issues are not missed.

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	Actions	Existing	New/Ongoing	
Development of new data services and horizon scanning (cont).	<ul style="list-style-type: none"> Horizon scanning and trend analysis on resistance and resistant pathogens, this includes detection and reference investigation of emerging resistance types, epidemiological analysis of the data by national surveillance experts ie HPA, HPS, PHW and assessment by expert committees. 	<p>HPA "Bug alerts" to English microbiology laboratories, issued for exceptional resistance.</p> <p>Presentation at national/international fora and publications in relevant journals.</p>	National experts will consider ways to alert wider range of professionals. There will also include regular review of the drug bug combinations in the outcome measure.	1
	<ul style="list-style-type: none"> Support EU calls for broadening the statutory requirements for veterinary AMR surveillance to include <i>E. coli</i>. 	The UK has supported calls in preliminary meetings for the revision of the European Animal Health Law.	Continue to support the inclusion of <i>E. coli</i> in statutory surveillance as the new Directive is developed.	1
Improved use of existing data systems	<ul style="list-style-type: none"> Provide advice and support to improve the monitoring of AMR zoonotic bacteria. 	AHVLA contribute to the EFSA project.	AHVLA will continue to contribute to the review of surveillance as it develops.	2
	<ul style="list-style-type: none"> Use surveillance data to indicate whether different approaches are needed to promote responsible use messages. 		Changes in the prevalence of AMR in farmed animals will indicate the success of engagement.	2
Development of new data services and horizon scanning.	<ul style="list-style-type: none"> Liaise with manufacturers of vaccines and other biological products to facilitate new research initiatives and to encourage take up of research findings. 		Initial approaches will be made when the current investigations are concluded.	2

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	Actions	Existing	New/Ongoing	
Development of new data services and horizon scanning (cont).	<ul style="list-style-type: none"> Research into the efficacy of best practice principles in farming to reduce the use of antibiotics. 	Research on the occurrence of ESBLs on farms.	New research to underpin best practice.	2
Improved use of existing data systems.	<ul style="list-style-type: none"> Develop capacity for surveillance of hepatitis C antiviral resistance at a molecular and clinical level developed by HPA and NHS clinicians. 	HPA research funded by NIHR Centre for Health Protection Research.	HPA to consider how to develop and embed capacity for surveillance of Hepatitis C antiviral resistance.	2 or 3
	<ul style="list-style-type: none"> Amalgamation of veterinary antibiotic consumption data and AMR surveillance data into a single project. Work towards harmonisation with human data. The ultimate aim would be integration of human veterinary and environmental surveillance data to improve our understanding of the epidemiology. 	<p>AMR data in the UK are reported according to clinical cut-off values according to human methods.</p> <p>Consumption data for antibiotics and AMR surveillance data for both human and veterinary use have been reported in overview reports.</p>	<p>Work towards providing a single report for veterinary data in the UK and consider revising the periodic reports showing both human and veterinary data.</p> <p>Contribute to the European project to combine veterinary use and surveillance data as it develops and ensure it success.</p>	3

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UK strategic aim 7: Strengthening UK and international collaboration, data and technology sharing across animal and human health fields to tackle this issue at a global level.				Priority
EU ACTION PLAN - Action n° 2: Strengthen the regulatory framework on veterinary medicines and on medicated feed via the review package foreseen for 2013. Action n° 5: Introduce a legal tool to enhance prevention and control of infections in animals in the new Animal Health Law. 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.				
	Actions	Existing	New/Ongoing	
Regulatory initiatives.	<ul style="list-style-type: none"> To ensure appropriate warnings and guidance on the labels of veterinary antibiotics. 	Veterinary fluoroquinolone products have warnings concerning antimicrobial resistance on labels, package leaflets and summary of product characteristic information.	A Commission Implementing Decision has placed warnings and guidance on veterinary 3 rd and 4 th generation cephalosporin products. The UK contributed to developing the changes and will be implementing variation for the products available in the UK. This will include specific warning against the cascade prescribing of 3 rd and 4 th generation cephalosporins for poultry. Continue to seek to influence the debate for other critically important antibiotics.	1
	<ul style="list-style-type: none"> The European Animal Health Law is being revised with a view to prevent disease and thus reduce the need to use veterinary antibiotics. 	The current law requires statutory diseases to be reported. The UK currently reports some E. coli resistances in addition to the statutory requirements.	The UK is negotiating in Europe during the development of the new animal health law. Continued reporting with the future European statutory requirement to report resistance in E. coli.	1
	<ul style="list-style-type: none"> Participate in the work of the Committee for Medicinal Products for Veterinary Use (CVMP) and the Committee for Medicinal Products for Human Use (CHMP). 	Ongoing.	Ongoing.	1

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Action n° 8: Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of AMR in all sectors.				
Actions	Existing	New/Ongoing		
Improved and effective collaboration and information exchange.	<ul style="list-style-type: none"> EU and EFPIA Innovative Medicines Initiative Combatting Antimicrobial Resistance – NewDrugs4BadBugs. 	Call for proposals and establishment of clinical trials network announced May 2012.	Further Calls expected 2012/13.	1
Regulatory initiatives.	<ul style="list-style-type: none"> Review and strengthen controls in animal and veterinary sector. 		All veterinary medicines in Europe are regulated by Directive 2001/82/EC on the Community code relating to veterinary medicinal products (as amended by Directive 2004/28/EC). The Directive is due for revision during 2013 and the UK will be active during the negotiations. The Commission is considering proposing the following changes specifically relating to antimicrobial resistance.	2
			To consider restrictions on the regular or cascade (off-label) prescribing of certain new or critically important antibiotics for humans in the veterinary sector.	2
			To consider amending the rules for the advertising of veterinary antibiotics. [Review of advertising of veterinary antibiotics.]	2

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Action n° 8: Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of AMR in all sectors.				
	Actions	Existing	New/Ongoing	
Regulatory initiatives (cont).	<ul style="list-style-type: none"> To revisit the authorisation requirements for veterinary antibiotics to order to sufficiently address the risks and benefits of antibiotics which are not currently authorised for veterinary medicines. 	The risks of antimicrobial resistance are assessed during the assessment of any new application for a veterinary antibiotic.	During the revision of the Directive the authorisation process will be reviewed.	2
Improved and effective collaboration and information exchange.	<ul style="list-style-type: none"> Horizon scanning and information exchange. The UK is an active contributor to EU surveillance systems and this will continue facilitated by HPA Health Protection Scotland (HPS) Public Health Wales and Public Health Agency. National Reference Laboratories and expert advisory committees such as ARHAI also have an important role to play in identifying new threats. 	ECDC surveillance eg EARS-net and ESAC and Early Warning Response System (EWRS).	Additional EU information exchange system EPIS to be established. Continued collaboration via ECDC.	2
	<ul style="list-style-type: none"> International collaboration – HPA involved in WHO action plan on multi-drug-resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB). 	HPA leading the European network on quality of diagnosis.	HPA to continue to work with WHO and others on action plan.	2
	<ul style="list-style-type: none"> National collaboration on projects and approaches to controlling AMR. 	Informal links between Government Departments in UK. Research links between HPA and AHVLA on e.g. ESBLs in human and veterinary sectors, and on molecular diagnostics.	Cross Government AMR Strategy Working Group to be established.	2

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Priority 1:- Short term is ongoing or action within 1 year, Priority 2:- Medium term is within 3 years, and Priority 3:- Long term within 5 years.

UK strategic aim 7 (cont): Strengthening UK and international collaboration, data and technology sharing across animal and human health fields to tackle this issue at a global level.				Priority
EU ACTION PLAN - Action n° 2: Strengthen the regulatory framework on veterinary medicines and on medicated feed via the review package foreseen for 2013. Action n° 5: Introduce a legal tool to enhance prevention and control of infections in animals in the new Animal Health Law. 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.				
	Actions	Existing	New/Ongoing	
Regulatory initiatives	<ul style="list-style-type: none"> The manufacture and supply of medicated feed is regulated by Council Directive 90/167. The Directive is also due for revision in 2013. The concern is that residual amounts of antibiotics may be carried over between batches of feed, resulting in unintended exposure of animals. 	Currently medicated feed manufacturers have processes to keep carry-over to a minimum.	New EU law to set levels of permitted carry over are proposed.	3
Improved and effective collaboration and information exchange.	<ul style="list-style-type: none"> Development of international standards to facilitate trade in safe food products and thus protect public health. 	Codex guidelines to minimise the risk of AMR in the food chain were adopted in 2011.	Provide Guidelines.	3

Key:

Priority 1:- Short term is ongoing or action within 1 year, Priority 2:- Medium term is within 3 years, and Priority 3:- Long term within 5 years.

Annex 1: Key “drug bug” combinations for the outcome measure.

The following drug/bug combinations will be monitored in the first instance:

- Klebsiella - carbapenem (% non-susceptible to imipenem &/or meropenem)
- *E. coli* - cephalosporin (% non-susceptible to cefotaxime &/or ceftazidime)
- *E. coli* - fluoroquinolone (% non-susceptible to ciprofloxacin)*
- Pseudomonas - carbapenem (% non-susceptible to imipenem &/or meropenem)
- *N. gonorrhoeae* - ceftriaxone (% non-susceptible)
- *Enterococcus faecium* - linezolid.
- Klebsiella – cephalosporin- (% non-susceptible to cefotaxime &/or ceftazidime)
- Pseudomonas - cephalosporin (% non-susceptible to ceftazidime)
- *E. coli* - gentamicin (% non-susceptible)
- *S.pneumoniae* - penicillin (% non-susceptible)

Key:

Priority 1:- Short term is ongoing or action within 1 year, Priority 2:- Medium term is within 3 years, and Priority 3:- Long term within 5 years.

Annex 2: EU Action Plan: List of 12 Strategic 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 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

Annex 3: Activity in England, Wales, Scotland and Northern Ireland detailed:

There is an extensive programme of work underway throughout the UK. Further information is available at:

Changing the Culture 2010 Strategy for tackling Antimicrobial Resistance (STAR) 2012-17. Department of Health, Social services and Public Safety (DHSSPS). <http://www.dhsspsni.gov.uk/star-doc.pdf>

The Scottish Management of Antimicrobial Resistance Action Plan 2008 (ScotMARAP) Antimicrobial stewardship in Scotland: impact of a national programme.

<http://www.scotland.gov.uk/Publications/2008/03/12153030/0>

The Welsh Antimicrobial Resistance Programme.

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=28418>

Key:

Priority 1:- Short term is ongoing or action within 1 year, Priority 2:- Medium term is within 3 years, and Priority 3:- Long term within 5 years.