Appendix 2- Risk of bias assessment

Assessment of risk of bias within studies - observational studies- cross-sectional studies, case-control studies and retrospective cohort studies etc. EXCEPT prospective cohort studies - Newcastle & Ottawa Scale (NOS) tool. Tool available at:
http://www.evidencebasedpublichealth.de/download/Newcastle_Ottawa_Scale_tool.pdf

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS Score	Reviewer's remarks
			Q1	Q2	Q3	Q4	Q1	Q1	Q2		
LM013	LM	Cross-sectional	b	b	n/a	n/a	n/a	n/a	n/a	1	Data collected was derived from campylobacter surveillance programs in the UK
LM020	LM	Cross-sectional	a)*	a)*	n/a	n/a	n/a	n/a	n/a	2	Probabilistic sampling was used to investigate prevalence of AMR in campylobacter in poultry at retail level
DE006	DE	Cross-sectional	a)*	a)*	N/A	N/A	N/A	N/A	N/A	2	EFSA surveillance for AMR in animals, food of animal origin and humans. There was a harmonized testing of AMR and definitions between Member States. In the case of sampling at retail, products from domestic and imported raw material should be differentiated. A stratified sampling plan was proposed to Member States.
MC013	MC	Cross-	a)*	b	n/a	n/a	n/a	e	n/a	1	Sample size

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
		sectional									calculation and sampling strategy not provided.
MC057	MC	Cross-sectional	a)*	a)*	n/a	n/a	n/a	n/a	n/a	2	Sampling protocol provided
MC068	MC	Cross-sectional	b	b	n/a	n/a	n/a	n/a	n/a	0	The study included 1120 *Salmonella* spp. isolates but criteria used to select the isolates is not clear.
MC072	MC	Cross-sectional	a)*	b	n/a	n/a	a) *	n/a	n/a	2	SVARM surveillance system (Sweden)
MC080	MC	Cross-sectional	a)*	b	n/a	n/a	n/a	n/a	n/a	1	National Chinese surveillance for foodborne pathogens at retail level. Sampling strategy not clear.
MC130	MC	Cross-sectional	a)*	a)*	a)*	n/a	n/a	b)	n/a	3	EFSA annual surveillance report EU MSs
DE006	DE	Cross-sectional	a) Yes 1) There was a harmonized testing of AMR and definitions between member states. 2) (The recommendations regarding the common test panel of antimicrobials (EFSA, 2007, 2008a) have been mostly implemented by the MSs. Regular review, future developments and refinement of technical specifications were expected, particularly regarding the harmonised	a) Representative: In the case of sampling at retail, products from domestic and imported raw material should be differentiated. A stratified sampling plan is proposed.	N/A	N/A	N/A	N/A	N/A	2	

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			antimicrobial panels, ranges of concentration and ECOFFs). 3) For the purpose of harmonisation, the following definitions of phenotypes are proposed for use in the monitoring programme, as it is important that the monitoring outputs are comparable between MSs. In the definitions below, the term —resistant isolatesll refers to microbiologically resistant isolates, also called non-wild-type isolates10 (which exhibit MIC above the ECOFF). To facilitate EFSA's requirement to collate and report the final results, not all MSs may proceed to genotype isolates. A standardised nomenclature is therefore required to describe equivalent outputs which are comparable between MSs. The following descriptive terms are proposed: ESBL phenotype: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin.								

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			Presumptive ESBL: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin; synergy shown in clavulanate synergy tests. AmpC phenotype: resistant to ceftazidime, cefotaxime and cefoxitin. ESBL and AmpC phenotype: resistant to ceftazidime, cefotaxime, cefoxitin and cefepime. Carbapenemase phenotype: resistant to meropenem.								
DE007	DE	Cross-sectional	b) Yes 1) There was a harmonized testing of AMR and definitions between member states. 2) (The recommendations regarding the common test panel of antimicrobials (EFSA, 2007, 2008a) have been mostly implemented by the MSs. Regular review, future developments and refinement of technical specifications were expected, particularly	a) Representative In the case of sampling at retail, products from domestic and imported raw material should be differentiated. A stratified sampling plan is proposed.	N/A	N/A	N/A	N/A	N/A	2	

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			regarding the harmonised antimicrobial panels, ranges of concentration and ECOFFs). 3) For the purpose of harmonisation, the following definitions of phenotypes are proposed for use in the monitoring programme, as it is important that the monitoring outputs are comparable between MSs. In the definitions below, the term —resistant isolatesll refers to microbiologically resistant isolates, also called non-wild-type isolates10 (which exhibit MIC above the ECOFF). To facilitate EFSA's requirement to collate and report the final results, not all MSs may proceed to genotype isolates. A standardised nomenclature is therefore required to describe equivalent outputs which are comparable between MSs. The following descriptive terms are proposed: ESBL phenotype: resistant to ceftazidime and/or cefotaxime; resistant to cefepime;								

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			susceptible to cefoxitin. Presumptive ESBL: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin; synergy shown in clavulanate synergy tests. AmpC phenotype: resistant to ceftazidime, cefotaxime and cefoxitin. ESBL and AmpC phenotype: resistant to ceftazidime, cefotaxime, cefoxitin and cefepime. Carbapenemase phenotype: resistant to meropenem.								
DE008	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B Although reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE009	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
								origin was not provided			be retrieved.
DE010	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		b reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE011	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		b reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE012	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B Although reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE013	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
DE014	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B Although reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE015	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE016	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B Although reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE017	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE018	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B	N/A	0	It is likely that DANMAP used the

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
								Although reference was made to imported foods, country of origin was not provided			European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE020	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE021	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B Although reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE022	DE	Cross-sectional	Not clear	Not clear	N/A	N/A		B reference was made to imported foods, country of origin was not provided	N/A	0	It is likely that DANMAP used the European guidelines. Editors were contacted but details of sampling strategy could not be retrieved.
DE025	DE	Cross-sectional	c) Yes 1) There was a harmonized testing of	b) Representative	N/A	N/A		B	N/A	2	NORM-VET used the European guidelines

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			AMR and definitions between member states. 2) (The recommendations regarding the common test panel of antimicrobials (EFSA, 2007, 2008a) have been mostly implemented by the MSs. Regular review, future developments and refinement of technical specifications were expected, particularly regarding the harmonised antimicrobial panels, ranges of concentration and ECOFFs). 3) For the purpose of harmonisation, the following definitions of phenotypes are proposed for use in the monitoring programme, as it is important that the monitoring outputs are comparable between MSs. In the definitions below, the term —resistant isolatesll refers to microbiologically resistant isolates, also called non-wild-type isolates10 (which exhibit MIC above the ECOFF). To facilitate EFSA's requirement to collate and report	In the case of sampling at retail, products from domestic and imported raw material should be differentiated. A stratified sampling plan is proposed.							

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			the final results, not all MSs may proceed to genotype isolates. A standardised nomenclature is therefore required to describe equivalent outputs which are comparable between MSs. The following descriptive terms are proposed: ESBL phenotype: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin. Presumptive ESBL: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin; synergy shown in clavulanate synergy tests. AmpC phenotype: resistant to ceftazidime, cefotaxime and cefoxitin. ESBL and AmpC phenotype: resistant to ceftazidime, cefotaxime, cefoxitin and cefepime. Carbapenemase phenotype: resistant to meropenem.								
DE026	DE		d) Yes	c) Representative	N/A	N/A	b	N/A	N/A	2	NORM-VET used

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			1) There was a harmonized testing of AMR and definitions between member states. 2) (The recommendations regarding the common test panel of antimicrobials (EFSA, 2007, 2008a) have been mostly implemented by the MSs. Regular review, future developments and refinement of technical specifications were expected, particularly regarding the harmonised antimicrobial panels, ranges of concentration and ECOFFs). 3) For the purpose of harmonisation, the following definitions of phenotypes are proposed for use in the monitoring programme, as it is important that the monitoring outputs are comparable between MSs. In the definitions below, the term —resistant isolatesll refers to microbiologically resistant isolates, also called non-wild-type isolates10 (which exhibit MIC above the ECOFF). To facilitate	In the case of sampling at retail, products from domestic and imported raw material should be differentiated. A stratified sampling plan is proposed.							the European guidelines

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
			EFSA's requirement to collate and report the final results, not all MSs may proceed to genotype isolates. A standardised nomenclature is therefore required to describe equivalent outputs which are comparable between MSs. The following descriptive terms are proposed: ESBL phenotype: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin. Presumptive ESBL: resistant to ceftazidime and/or cefotaxime; resistant to cefepime; susceptible to cefoxitin; synergy shown in clavulanate synergy tests. AmpC phenotype: resistant to ceftazidime, cefotaxime and cefoxitin. ESBL and AmpC phenotype: resistant to ceftazidime, cefotaxime, cefoxitin and cefepime. Carbapenemase phenotype: resistant to meropenem.								

Study ID	Reviewer	Study type	Case-Control studies								
			Selection				Comparability	Exposure		NOS	Reviewer's
AM076	AM	Cross-sectional study	a) *	a) *	n/a	n/a	n/a	n/a	n/a	2	Investigation of prevalence of campylobacter in poultry at retail level.
AM100	AM	Cross-sectional study	a) *	a) *	n/a	n/a	b)	b)	b)	2	
AM101	AM	Cross-sectional study	a) *	a) *	n/a	n/a	b)	a) *	b)	3	
AM102	AM	Cross-sectional study	a) *	a) *	n/a	n/a	b)	b)	b)	2	
AM103	AM	Cross-sectional study	a) *	a) *	n/a	n/a	b)	a) *	b)	3	
AM104	AM	Cross-sectional study	a) *	a) *	n/a	n/a	b)	a) *	b)	3	

Reviewer's instructions: PLEASE DO NOT LEAVE ANY CELL BLANK, ENTER N/A IF NOT APPLICABLE OR NO DATA AVAILABLE

Study ID- Insert unique study code

Reviewer- reviewer's initials

Study type- Case controls, **case series, cross-sectional studies, case-control studies and retrospective cohort studies**

Note- Reviewer to select response based on evidence. Set of possible answers is presented below for each question. Answers with a (*) should be recorded in the respective field. Studies will be evaluated according to the total of stars (*) scored. Please see scoring scheme and code sheet for NOS.

Selection section:

Q1 Is the case definition adequate (i.e. well defined inclusion and exclusion criteria presented by authors in terms of study period, place and food items sampled)? a) Yes (*); b) Yes, e.g. but precise sampling period may have not be indicated by authors; c) no description provided (i.e. no indication of number of retail establishments and/or number of food items sampled for the purpose of the study.

Q2 Representativeness of the cases (e.g. food items sampled are representative of the overall produce available at retail level)? a) Consecutive or obviously representative series of cases (*); b) Potential for selection biases or not stated.

Q3 Selection of controls (e.g. organic vs conventionally produced food items or locally/nationally produced vs imported food items)? a) Organic or locally/nationally produced, country of origin provided (*); b) comparison against foods produced in the same country; c) No description.

Q4 Definition of controls? a) produced in antibiotic-free systems (e.g. organic or in other countries and this information is provided accordingly) (endpoint) (*); b) No description of source/ origin of food items.

Comparability section:

Q1 Comparability of production systems and/or domestic versus imported foods on the basis of the design or analysis? a) Yes (*); b) No

Exposure section:

Q1 Ascertainment of exposure (e.g. food from conventional vs free-range or organic production)? a) secure record (e.g. food product label) (*); b) random selection of food items independently of country of origin or production system; c) no description provided.

Q2 Same method of ascertainment for domestically produced and imported products? A) Yes (*); b) No

NOS Score- Please report number of stars (*) conferred for each study.

Note- Although this evaluation system was initially designed for retrospective cohort studies, it can be adapted for use in case series, cross-sectional studies etc. Please state "n/a" when not applicable questions are considered (i.e. Non exposed cohorts in case series studies).