***Supplementary Section S1: Guidance document for RISKSUR partners collecting and collating data***

1. **Prologue – Introduction and guidance for RISKSUR partners in charge of data collection**

The overall aim of the RISKSUR project is to develop **decision support tools for the design of cost-effective risk-based surveillance systems**.

The collection of information about the **existing surveillance systems** throughout Europe will allow us to describe these systems and consider how they could be improved. Each RISKSUR partner will collect the information in his/her country and enter the data into the web-based database provided by RVC. This document **provides guidance for the data collection process**, but it is NOT a questionnaire that is to be handed over to other people who will then complete it. This document is for you to help you gather the relevant information.

To gather information on surveillance systems, we suggest that you **first consult websites, reports, manuals, legislation, etc to collate as much information as possible**. Only if needed, people responsible for planning, implementing, managing or evaluating surveillance programmes may be contacted to complement the existing information and/or fill data gaps.

IMPORTANT:

* PLEASE do NOT use abbreviations, but always spell out the full name.
* All prices and cost figures should be expressed in EUR.
* Whenever the information requested is not available or confidential, please enter the following: “information not available” or “information available, but cannot be disclosed”.
* Whenever a field is “not applicable”, please state so and do not leave blank.
* Because there is large variability among partner countries, you may interpret things slightly differently than we would to fit local conditions. During the data cleaning process we may therefore get back to you to seek clarification. To facilitate this process, please use the comment boxes provided throughout to explain local characteristics that may not be intuitively understandable.

The surveillance definitions and characteristics used here are based on the document “Animal Health Surveillance Terminology Final Report from Pre-ICAHS Workshop”. It can be downloaded here: <http://www.fp7-risksur.eu/sites/default/files/partner_logos/icahs-workshop-2011_surveillance_tewrminology_report_V1.2.pdf>. Please consult it if there are doubts about the definitions used in this guidance document.

For those not familiar with the NUTS classification system, you can find relevant information here: <http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction>.

**Thank you for your contribution!**

**SECTION 1 – IDENTIFICATION OF ENUMERATOR AND COUNTRY**

Name of RISKSUR partner collating data:

Email address of RISKSUR partner collating data:

Name of country for which data are provided:

**SECTION 2 – DESCRIPTION OF EXISTING SURVEILLANCE SYSTEM**

Complete the following table for each component of all surveillance systems in place in the country in the **year 2011**. We include all species, public and private surveillance, disease specific surveillance as well as surveillance related to health-events (e.g. syndromic surveillance).

**Surveillance** is defined as “The systematic, continuous or repeated, measurement, collection, collation, analysis, interpretation and timely dissemination of animal health and welfare related data from defined populations, essential for describing health hazard occurrence and to contribute to the planning, implementation, and evaluation of risk mitigation measures”[[1]](#footnote-1). Single surveys or analytical studies do not fall under this definition for data collection[[2]](#footnote-2).

A **surveillance system** is defined as “A method of surveillance that may involve one or more component activities that generates information on the health, disease or zoonosis status of animal populations”.

A **surveillance component** is a single surveillance activity used to investigate the occurrence of one or more hazards or health events in a specified population, which has a self-contained surveillance protocol that focuses on a particular data source (e.g. serological bulk milk surveillance and surveillance of pathological lesions in a pig abattoir). Surveillance for one disease can therefore have different components depending on the data source used. For example surveillance for bovine spongiform encephalopathy (BSE) can use data collected on farms, at abattoirs or at fallen stock collection centres. There may also be different components focussed on different sub-populations. For example, Classical Swine Fever surveillance has components in domestic pigs and wild boars. These may be further differentiated according to the status of the region (free/not free) with different protocols or sampling strategies used in different areas. In such cases, to avoid the time-consuming collection of detailed information in multiple administrative units that have differing protocols, please just provide information about one example that is as representative as possible and give an indication of the extent of regional variation in the comments box.

**Point-by-point guidance**

* Ad 2.1: Describe the threat or disease or the health event (e.g. neurological syndrome in cattle); if applicable provide the name of the pathogen.
* Ad 2.2: List each surveillance component used for the defined threat, disease or health event in a separate column. All active and passive surveillance components that fall under the definition listed above are to be included (in a nutshell: data collection, analysis and use of the information to contribute to disease control). Surveillance for endemic diseases (including those for which there are no regulatory controls) should be included but not single farm/holding surveillance efforts which are not part of a coordinated bigger scheme (e.g. monitoring of feed and/or water use on a single farm only). Include the name of the surveillance component if there is one.
* Ad 2.3: List all animal species monitored (including livestock, fish, pets and wild animals). Please specify if only a particular subset of the population is targeted, e.g. dairy or beef cattle. Only list human surveillance systems if they comprise activities in the animal (health) sector.
* Ad 2.4: Describe whether the component has a local (defined area within a country, e.g. county or Bundesland), national or regional (multiple countries in one area) focus. Individual farm level should not be included, only list the component if there is some higher level organisation (e.g. some form of farm assurance schemes).
* Ad 2.5: Provide the NUTS code(s) of the areas included in the surveillance programme.
* Ad 2.6: Describe whether the component is part of an overarching programme (e.g. Campylobacter surveillance in slaughterhouses could be part of a foodborne disease programme).
* Ad 2.7: Describe the primary purpose(s) of the surveillance component (e.g. early detection; substantiate freedom; describe baseline disease level, distribution and impact; describe health changes; describe changes that threaten health; detect cases to allow specific action to be taken on this or related holdings which will facilitate control or eradication).
* Ad 2.8: State if the component is regulated by EU legislation, national legislation, and/or private initiative regulations (e.g. non-statutory quality scheme).
* Ad 2.9: State if the component is managed privately, publicly or both.
* Ad 2.10: Name the organisation that has the global governance of the component.
* Ad 2.11: Give a single figure in EUR for total expenditures for the surveillance component in 2011[[3]](#footnote-3).
* Ad 2.12: Give the percentage contribution of the total expenditures for the surveillance component in 2011 covered by public sector.
* Ad 2.13: Describe which ministry/government body funds the public share of the surveillance component.
* Ad 2.14: Give the percentage contribution of the total expenditures for the surveillance component in 2011 covered by private sector.
* Ad 2.15: Describe who funds the private share of the surveillance component.
* Ad 2.16: Provide a very brief (one sentence) description of the surveillance component to give an overview.
* Ad 2.17: Indicate the means of data acquisition: Active (investigator initiated), passive (observer initiated) or enhanced passive surveillance.
* Ad 2.18: Indicate study design (e.g. case reporting, sentinel, repeated survey, participatory, continuous data collection, event-based[[4]](#footnote-4)).
* Ad 2.19: Indicate on what the case definition is based on (e.g. clinical signs or syndromes, laboratory test results).
* Ad 2.20: Indicate whether sampling is risk-based (yes) or not (no).
* Ad 2.21: State the year in which the surveillance component was introduced, describe changes in the surveillance component over the last 10 years (if applicable), such as downgrading or upgrading, and indicate whether changes are planned.
* Ad 2.22: If the component is part of multi-objective surveillance, please give a brief explanation of the nature of the multi-objective surveillance (*e.g. the samples collected for BVDV are also analysed for IBR, EBL, BT, brucellosis and Schmallenberg virus following individual protocols for these diseases; the sampling cost are born in full by the BVDV programme*). If the component is not part of multi-objective surveillance, please say “not-multi objective”. Multi-objective surveillance is defined as “surveillance activities where samples collected for one disease agent are analysed for more than one purpose or for other disease agents, either in parallel or at a later stage”. One example is where the initial objective is prevalence estimation or case detection for a particular disease agent, but if no positives are found, the objective changes to estimation of probability of freedom. Other examples are the use of existing data sources for signal detection for early detection of introduction of particular disease agent, and for prevalence estimation of another; or the collection of samples for one primary disease/purpose and using them for other diseases as well, but with a different protocol.
* Ad 2.23: List the reference(s) or source(s) of the information, which may be the name of the person providing the information. There is no need to collate the contact details of all informants, but you are required to keep a contact list of the people who provided information.
* Ad 2.24: If needed, add comments or explanations related to the data provided for this surveillance component.

***Supplementary Table S1. Data collection instrument used to record private and public surveillance components in 2011. The text in italic provides examples of how the table should be completed.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **2.1 Threat or disease focus or health event** | *Salmonella* | *Salmonella* | *Change in water or feed intake* | *Increased disease levels among purebred dogs and cats compared with crossbreds* |
| **2. 2 Surveillance component** | *Testing of hens and environment for Salmonella spp.* | *Active on-farm testing for Salmonella spp. in commercial layer flocks* |  | *Active data collection of secondary veterinary electronic patient records* |
| **2.3 Target population(s)-species and sector (if applicable)** | *Chickens: breeding flocks, hatcheries, pullet rearing, layers, eggs (handling and distribution)* | *Laying hens* | *Breeding, broiler and laying chickens and turkeys* | *Small animals attending companion animal practices and clinics in the UK* |
| **2.4 Local, national or regional focus (tick one)** | * *Local*   🗹 *National*   * *Regional* * *Unknown* * *Other, please describe.......* | * *Local*   🗹 *National*   * *Regional* * *Unknown* * *Other, please describe.......* | 🗹 *Local*   * *National* * *Regional* * *Unknown* * *Other, please describe.......* | * *Local*   🗹 *National*   * *Regional* * *Unknown* * *Other, please describe.......* |
| **2.5 NUTS code(s) of the geographic areas covered** | *UK* | *UK* | *UKC, UKD,UKH, UKG, UKJ, UKK* | *UK* |
| **2.6 Overarching programme or organisation** | *British Lion Quality Code of Practice* | *National Control Programme for UK poultry, which is part of the Food and Environment Safety Programme* | *Poultry farm assurance scheme* | *VetCompass Animal Surveillance Project* |
| **2.7 Purpose of the surveillance component (tick one)** | * *Early detection/ warning* * *Substantiate freedom from disease or infection* * *Describe baseline disease level, distribution and/or impact of disease* * *Describe changes in the health of the population* * *Describe changes that may threaten the health of the population*   🗹 *Detect cases to*  *allow specific action to be taken in animals or holdings which will* *facilitate control or eradication*   * *Unknown* * *Other, please describe..........* | * *Early detection/ warning* * *Substantiate freedom from disease or infection* * *Describe baseline disease level, distribution and/or impact of disease* * *Describe changes in the health of the population* * *Describe changes that may threaten the health of the population*   🗹 *Detect cases to*  *allow specific action to be taken in animals or holdings which will* *facilitate control or eradication*   * *Unknown* * *Other, please describe..........* | 🗹 *Early detection/ warning*   * *Substantiate freedom from disease or infection* * *Describe baseline disease level, distribution and/or impact of disease* * *Describe changes in the health of the population* * *Describe changes that may threaten the health of the population* * *Detect cases to*  *allow specific action to be taken in animals or holdings which will* *facilitate control or eradication* * *Unknown* * *Other, please describe..........* | * *Early detection/ warning* * *Substantiate freedom from disease or infection* * *Describe baseline disease level, distribution and/or impact of disease* * *Describe changes in the health of the population* * *Describe changes that may threaten the health of the population*   🗹 *Detect cases to*  *allow specific action to be taken in animals or holdings which will* *facilitate control or eradication*   * *Unknown* * *Other, please describe..........* |
| **2.8 EU legal obligation, national legal obligation, private initiative regulations (tick one or more)** | * *EU legal obligation* * *National legal obligation*   🗹 *Private initiative regulation*   * *Unknown* * *None* * *Other, please describe..........* | 🗹 *EU legal obligation*   * *National legal obligation* * *Private initiative regulation* * *Unknown* * *None* * *Other, please describe..........* | * *EU legal obligation* * *National legal obligation* * *Private initiative regulation*   🗹 *Unknown*   * *None* * *Other, please describe..........* | * *EU legal obligation* * *National legal obligation* * *Private initiative regulation* * *Unknown*   🗹 *None*   * *Other, please describe..........* |
| **2.9 Component managed privately, publicly or both (tick one)** | 🗹 *Privately*   * *Publicly* * *Both* * *Unknown* | * *Privately*   🗹 *Publicly*   * *Both* * *Unknown* | 🗹 *Privately*   * *Publicly* * *Both* * *Unknown* | 🗹 *Privately*   * *Publicly* * *Both* * *Unknown* |
| **2.10 Coordinating organisation** | *The British Egg Industry Council* | *Department for Environment Food and Rural Affairs* | *Association of British poultry keepers* | *Royal Veterinary College* |
| **2.11 Total expenditures for component [in EUR]** | *800,000* | *600,000* | *500,000* | *1,000,000* |
| **2.12**  **Percentage of total expenditures covered by public funding [%]** | *0* | *100* | *0* | *0* |
| **2.13 Which ministry/government body funds the public share of the surveillance component?** | *Not applicable* | *Department for Environment Food and Rural Affairs* | *Not applicable* | *Not applicable* |
| **2.14 Percentage of total expenditures covered by private funding [%]** | *100* | *0* | *100* | *100* |
| **2.15 Who funds the private share of the surveillance component?** | *Egg producers* | *Not applicable* | *Poultry producers* | *Royal Veterinary College, Pfizer, RSPCA, BBSRC, Petplan Charitable trust, Kennel Club Charitable trust* |
| **2.16 Short description** | *Voluntary scheme involving sampling of hens and environment for Salmonella spp* | *Active on-farm testing for salmonella in chicks, pullets and laying hens according to sampling plan defined in EU legislation, which stipulates type and number of samples and frequency of sampling* | *Monitoring of feed and water intake* | *Sharing of de-identified electronic patient records from private primary vet practices in the UK for epidemiological analyses* |
| **2.17 Means of data acquisition (tick one)** | 🗹 *Active*   * *Passive* * *Enhanced passive* * *Unknown* | 🗹 *Active*   * *Passive* * *Enhanced passive* * *Unknown* | * *Active*   🗹 *Passive*   * *Enhanced passive* * *Unknown* | * *Active* * *Passive*   🗹 *Enhanced passive*   * *Unknown* |
| **2.18 Study design (tick one or more)** | * *Voluntary case reporting* * *Mandatory case reporting* * *Survey*   🗹 *Continuous data collection*   * *Participatory* * *Sentinel* * *Event-based (media-based)* * *Unknown* * *Other, please describe.......* | * *Voluntary case reporting* * *Mandatory case reporting* * *Survey*   🗹 *Continuous data collection*   * *Participatory* * *Sentinel* * *Event-based (media-based)* * *Unknown* * *Other, please describe.......* | * *Voluntary case reporting* * *Mandatory case reporting* * *Survey*   🗹 *Continuous data collection*   * *Participatory* * *Sentinel* * *Event-based(media-based)* * *Unknown* * *Other, please describe.......* | * *Voluntary case reporting* * *Mandatory case reporting* * *Survey*   🗹 *Continuous data collection*   * *Participatory* * *Sentinel* * *Event-based (media-based)* * *Unknown* * *Other, please describe.......* |
| **2.19 Case definition (tick one of more)** | * *Clinical signs or syndrome* * *Indirect indicators[[5]](#footnote-5)* * *Gross pathology*   🗹 *Laboratory test for pathogens or toxins*   * *Laboratory test for host response* * *Specified diagnostic criteria* * *Risk factor(s)* * *Unknown* * *Other, please describe ........* | * *Clinical signs or syndrome* * *Indirect indicators5* * *Gross pathology*   🗹 *Laboratory test for pathogens or toxins*   * *Laboratory test for host response* * *Specified diagnostic criteria* * *Risk factor(s)* * *Unknown* * *Other, please describe ........* | * *Clinical signs or syndrome* * *Indirect indicators5* * *Gross pathology*   🗹 *Laboratory test for pathogens or toxins*   * *Laboratory test for host response* * *Specified diagnostic criteria* * *Risk factor(s)* * *Unknown* * *Other, please describe ........* | 🗹 *Clinical signs or syndrome*   * *Indirect indicators5* * *Gross pathology*   🗹 *Laboratory test for pathogens or toxins*   * *Laboratory test for host response* * *Specified diagnostic criteria* * *Risk factor(s)* * *Unknown* * *Other, please describe ........* |
| **2.20 Risk-based sampling (tick one)** | 🗹 *No*   * *Yes* * *Unknown* | 🗹 *No*   * *Yes* * *Unknown* | 🗹 *No*   * *Yes* * *Unknown* | 🗹 *No*   * *Yes* * *Unknown* |
| **2.21 Year started, past trends and future plans** | *In place from 1980-2012 without undergoing major changes, no major revision planned* | *In place from 2008-2012, planned to continue for some more years* | *In place since 2008, revision planned in 2014.* | *Piloted 2008-2009. Full implementation since Jan 2010.* |
| **2.22 Description of multi-objective nature (tick one)** | 🗹 *Not multi-objective*   * *Multi-objective, please give details .................* | 🗹 *Not multi-objective*   * *Multi-objective, please give details .................* | 🗹 *Not multi-objective*   * *Multi-objective, please give details .................* | 🗹 *Not multi-objective*   * *Multi-objective, please give details .................* |
| **2.23 Reference(s)/source(s)** | [*http://www.lioneggs.co.uk/*](http://www.lioneggs.co.uk/) | [*http://www.salmonella.org.uk/layer/ncp.aspx*](http://www.salmonella.org.uk/layer/ncp.aspx) | *Information provided by John Smith, private farmer* | *Information provided by Dan O’Neill, RVC PhD student.*  [*http://www.rvc.ac.uk/vetcompass/*](http://www.rvc.ac.uk/vetcompass/) |
| **2.24 Comment(s)** | *None* | *None* | *None* | *This is an enhanced passive surveillance system that can be adapted to focus on specific disorders, syndromes, breed problems, pharmacovigilance, etc* |

***Supplementary Figure S1. Number of active surveillance components in 12 study countries in 2011 (n = 687) stratified by the sector managing the component (public, private, both, unknown. For countries 8 ‑ 12, data collection was performed by staff based outside the country in question (non-partner countries).***

***Supplementary Table S2: Overview of obligatory EU components identified by 10 study countries when collecting information on active surveillance components based on consolidated versions concerning year 2011. If an amendment was implemented during 2011, the version valid as of 1 January 2011 was used as reference.***

| No. | Hazard | Surveillance component | | Legal basis | No of countries reporting this component | Sector | Sampling point a | Objective b | Risk-based c |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Antimicrobial resistance | Active surveillance in multiple species | 2003/99/EC | | 6 | All | Optional | CHANGE | No |
| 2 | Aujesky’s disease | Active surveillance in pigs | 90/429/EEC | | 8 | Breeders | AIC | FFD | TargRB |
| 3 | Aujesky’s disease | Active surveillance in pigs | SANCO/3023/2008 | | 8 | All | Optional | FFD/CD | No |
| 4 | Avian influenza | Active surveillance in poultry for LPAI | 2007/268/EC | | 10 | All | Optional | CD | Yes |
| 5 | Bluetongue | Active surveillance in cattle | 1266/2007 | | 8 | All | Farm | FFD | Yes |
| 6 | Bluetongue | Active surveillance in small ruminants | 1266/2007 | | 3 | All | Farm | FFD | Yes |
| 7 | Bluetongue | Active surveillance in wild ruminants | 1266/2007 | | 3 | na | Wild | FFD | Yes |
| 8 | Border disease | Active surveillance in small ruminants | 92/65/EEC | | 4 | Breeders | AIC | FFD | TargRB |
| 9 | Bovine tuberculosis | Active surveillance in cattle | 88/407/EEC | | 6 | Breeders | AIC | FFD | TargRB |
| 10 | Bovine tuberculosis | Meat inspection in cattle | 64/432/EWG | | 10 | All | Abattoir | CD | No |
| 11 | *Brucella* spp. | Active surveillance in pigs | 90/429/EEC | | 8 | Breeders | AIC | FFD | TargRB |
| 12 | *Brucella spp,* | Active surveillance in cattle | 88/407/EEC | | 7 | Breeders | AIC | FFD | TargRB |
| 13 | *Brucella spp.* | Active surveillance in cattle | 64/432/EEC | | 8 | All | Optional | FFD | No |
| 14 | *Brucella spp.* | Active surveillance in small ruminants | 91/68/EWG | | 9 | All | Optional | FFD | No |
| 15 | *Brucella melitensis* | Active surveillance in small ruminants | 92/65/EEC | | 4 | Breeders | AIC | FFD | TargRB |
| 16 | *Brucella ovis* | Active surveillance in ruminants | 92/65/EEC | | 1 | Breeders | AIC | FFD | TargRB |
| 17 | BSE | Active surveillance in cattle | 999/2001 | | 9 | All | Rendering | CHANGE | TargRB |
| 18 | BSE | Active surveillance in cattle | 999/2001 | | 10 | Slaughter | Abattoir | CHANGE | TargRB |
| 19 | BVD | Active surveillance in cattle | 88/407/EEC | | 5 | Breeders | AIC | FFD | TargTB |
| 20 | *Campylobacter* spp. | Active surveillance in multiple species | 2003/99/EC | | 6 |  |  |  |  |
| 21 | *Campylobacter* spp. | Active surveillance in cattle | 88/407/EEC | | 6 | Breeders | AIC | FFD | TargRB |
| 22 | Classical swine fever | Active surveillance in pigs | 90/429/EEC | | 8 | Breeders | AIC | FFD | TargRB |
| 23 | Contagious Equine Metritis | Active surveillance in horses | 92/65/EEC | | 5 | Breeders | AIC | FFD | TargRB |
| 24 | Echinococcus multilocularis | Active surveillance wildlife | 2003/99/EC | | 2 | All | Wild | CHANGE | No |
| 25 | Enzootic bovine leucosis | Active surveillance in cattle | 88/407/EEC | | 5 | Breeders | AIC | FFD | TargRB |
| 26 | Enzootic bovine leucosis | Active surveillance in cattle | 64/432/EEC | | 9 | All | Optional | FFD | TargRB |
| 27 | Equine infectious anaemia | Active surveillance in horses | 92/65/EEC | | 5 | Breeders | AIC | FFD | TargRB |
| 28 | Equine Viral Arteritis | Active surveillance in horses | 92/65/EEC | | 5 | Breeders | AIC | FFD | TargRB |
| 29 | Infectious bovine rhinotracheitis | Active surveillance in cattle | 88/407/EEC | | 2 | Breeders | AIC | FFD | TargRB |
| 30 | *Listeria* spp. | Active surveillance in multiple species | 2003/99/EC | | 2 | Slaughter | Optional | CHANGE | Optional |
| 31 | Multiple diseases | Active surveillance in crustaceae | 2006/88/EC | | 2 | All | Farm | Varies | Optional |
| 32 | Multiple diseases | Active surveillance in fish | 2006/88/EC | | 2 | All | Farm | Varies | Optional |
| 33 | *Salmonella* spp. | Active surveillance of animal feed | 183/2005 | | 4 | na | Varies | CD | Optional |
| 34 | *Salmonella* spp. | Active surveillance in chickens | 2160/2003 | | 7 | Various | Farm | CD | Optional |
| 35 | *Salmonella* spp. | Active surveillance in turkeys | 2160/2003 | | 4 | Various | Farm | CD | Optional |
| 36 | Scrapie | Active surveillance in small ruminants | 999/2001 | | 8 | All | Rendering | CHANGE | TargRB |
| 37 | Scrapie | Active surveillance in small ruminants | 999/2001 | | 9 | Slaughter | Abattoir | CHANGE | TargRB |
| 38 | Scrapie | Gentoyping of sheep | 999/2001 | | 5 | Breeder | Farm | FFD | TargRB |
| 39 | *Trichinella* spp. | Active surveillance in pigs | 2075/2005 | | 10 | Slaughter | Abattoir | CD | No |
| 40 | *Trichinella* spp. | Active surveillance in horses | 2075/2005 | | 7 | Slaughter | Abattoir | CD | No |
| 41 | *Trichinella* spp. | Active surveillance in wildlife | 2075/2005 | | 7 | Slaughter | Abattoir | CD | No |
| 42 | Trichomonas foetus | Active surveillance of cattle | 88/407/EEC | | 5 | Breeders | AIC | FFD | TargRB |
| 43 | Verotoxigenic *Escherichia coli* | Active surveillance in multiple species | 2003/99/EC | | 3 | Breeders | AIC | FFD | TargRB |

na = not applicable.

a. AIC: Artificial insemination centre;

b. CD = case detection, ED = early detection, FFD = Demonstrate freedom from disease;

c. Were risk-based strategies promoted: Targ RB = Targeted risk-based, yes = Stratified or targeted risk-based; if no, risk-based approaches may still be applied, in some situations requiring special approval (e.g. Trichinella).

***Supplementary Table S3: Number of active surveillance components in 2011 (n total), number of countries reporting this component (n countries) and median, minimum and maximum number of components per country by hazard reported by 10 study countries. Percentage of total and rank only refers to components targeting specific hazards.***

| Type | Hazard | Agenta | n total | n countries | No. components per country | | | Percentage of total | Rank |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | min | max |
| Hazard | |  |  |  |  |  |  |  |  |
|  | African swine fever | V | 6 | 4 | 1.5 | 1 | 2 | 0.9% | 25 |
|  | Antimicrobial resistance | B | 13 | 7 | 2 | 1 | 4 | 2.0% | 14 |
|  | Atrophic rhinitis | B | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Aujeszky’s disease | V | 22 | 9 | 2 | 1 | 4 | 3.3% | 9 |
|  | Avian influenza | V | 24 | 10 | 2 | 1 | 8 | 3.6% | 6 |
|  | Bluetongue disease | V | 25 | 10 | 2.5 | 1 | 5 | 3.8% | 5 |
|  | Border disease | V | 4 | 4 | 1 | 1 | 1 | 0.6% | 32 |
|  | Bovine hypodermosis | P | 2 | 1 | 2 | 2 | 2 | 0.3% | 38 |
|  | *Brucella* spp. | B | 51 | 10 | 4.5 | 1 | 12 | 7.7% | 2 |
|  | BSE | Pr | 18 | 10 | 2 | 1 | 2 | 2.7% | 11 |
|  | BVD | V | 16 | 7 | 2 | 1 | 3 | 2.4% | 12 |
|  | *Campylobacter* spp. | B | 12 | 7 | 2 | 1 | 3 | 1.8% | 15 |
|  | Caprine arthritis and encephalitis | V | 5 | 5 | 1 | 1 | 1 | 0.8% | 29 |
|  | Chronic wasting disease | Pr | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Classical swine fever | V | 26 | 10 | 2.5 | 1 | 4 | 3.9% | 4 |
|  | Contagious agalactia | B | 4 | 4 | 1 | 1 | 1 | 0.6% | 32 |
|  | Contagious bovine pleuropneumonia | B | 2 | 1 | 2 | 2 | 2 | 0.3% | 38 |
|  | Contagious equine metritis | B | 8 | 5 | 1 | 1 | 3 | 1.2% | 20 |
|  | Drug residues | O | 8 | 5 | 1 | 1 | 4 | 1.2% | 20 |
|  | Echinococcosis | P | 6 | 5 | 1 | 1 | 2 | 0.9% | 25 |
|  | Enzootic bovine leucosis | V | 22 | 10 | 2 | 1 | 4 | 3.3% | 9 |
|  | Equine infectious anaemia | V | 10 | 5 | 2 | 1 | 3 | 1.5% | 17 |
|  | Equine viral arteritis | V | 5 | 5 | 1 | 1 | 1 | 0.8% | 29 |
|  | Flavi virus | V | 12 | 4 | 3 | 1 | 5 | 1.8% | 15 |
|  | Foot and mouth disease | V | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
|  | Footrot | B | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Hepatitis E | V | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Infectious bovine rhinotracheitis | V | 15 | 8 | 2 | 1 | 3 | 2.3% | 13 |
|  | *Leptospira* spp. | B | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
|  | *Listeria* spp. | B | 3 | 3 | 1 | 1 | 1 | 0.5% | 35 |
|  | Liver fluke | P | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Maedi Visna | V | 7 | 6 | 1 | 1 | 2 | 1.1% | 22 |
|  | Mastitis | M | 4 | 2 | 2 | 1 | 3 | 0.6% | 32 |
|  | Metabolic disorders | O | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | *Mycoplasma* spp. | B | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Newcastle disease | V | 3 | 2 | 1.5 | 1 | 2 | 0.5% | 35 |
|  | Paratuberculosis | B | 10 | 7 | 1 | 1 | 3 | 1.5% | 17 |
|  | PRRS | V | 7 | 4 | 1.5 | 1 | 3 | 1.1% | 22 |
|  | Qfever | B | 6 | 5 | 1 | 1 | 2 | 0.9% | 25 |
|  | Rabies | V | 6 | 5 | 1 | 1 | 2 | 0.9% | 25 |
|  | *Salmonella* spp. | B | 107 | 10 | 10.5 | 1 | 22 | 16.1% | 1 |
|  | Schmallenberg | V | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Scrapie | Pr | 24 | 10 | 2 | 1 | 4 | 3.6% | 6 |
|  | Swine influenza | V | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
|  | Swine vesicular disease | V | 9 | 5 | 1 | 1 | 5 | 1.4% | 19 |
|  | Toxinogenic *E. coli* | B | 3 | 3 | 1 | 1 | 1 | 0.5% | 35 |
|  | Toxins | O | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
|  | Toxoplasmosis | P | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
|  | *Trichinella* spp. | P | 24 | 10 | 3 | 1 | 3 | 3.6% | 6 |
|  | Trichomonas foetus | P | 7 | 5 | 1 | 1 | 3 | 1.1% | 22 |
|  | Trypanosomiasis | P | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | Tuberculosis | B | 29 | 10 | 2 | 1 | 6 | 4.4% | 3 |
|  | Tularaemia | B | 5 | 2 | 2.5 | 1 | 4 | 0.8% | 29 |
|  | Varroasis | P | 1 | 1 | 1 | 1 | 1 | 0.2% | 46 |
|  | *Yersinia enterocolitica* spp. | B | 2 | 2 | 1 | 1 | 1 | 0.3% | 38 |
| Hazard group | |  |  |  |  |  |  |  |  |
|  | Bee diseases |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Cattle diseases |  | 5 | 1 | 5 | 5 | 5 |  |  |
|  | Emerging and endemic disease |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Emerging diseases |  | 8 | 2 | 4 | 2 | 6 |  |  |
|  | Endemic diseases |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Infectious diseases under surveillance in artificial insemination centres |  | 2 | 1 | 2 | 2 | 2 |  |  |
|  | Infectious diseases in bees |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Infectious diseases in crustaceae |  | 2 | 2 | 1 | 1 | 1 |  |  |
|  | Infectious diseases in fish |  | 12 | 7 | 2 | 1 | 3 |  |  |
|  | Infectious diseases in shellfish |  | 2 | 1 | 2 | 2 | 2 |  |  |
|  | Infectious diseases in wildlife |  | 4 | 4 | 1 | 1 | 1 |  |  |
|  | Infectious diseases of fish |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Many diseases |  | 6 | 3 | 1 | 1 | 4 |  |  |
|  | Notifiable diseases |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Parasites |  | 3 | 2 | 1.5 | 1 | 2 |  |  |
|  | Pig diseases |  | 7 | 2 | 3.5 | 3 | 4 |  |  |
|  | Rodent associated zoonotic pathogens | | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Sheep diseases |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Vectorborne diseases |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Zoonoses |  | 2 | 2 | 1 | 1 | 1 |  |  |
| Indicator | |  |  |  |  |  |  |  |  |
|  | Genetic indicators |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Health indicators |  | 1 | 1 | 1 | 1 | 1 |  |  |
|  | Welfare indicators |  | 8 | 6 | 1 | 1 | 2 |  |  |

a Type of disease agent: V = Viral, B = bacterial, P = parasitic, Pr = Prion, M = Multiple, O = Other.

1. If you are not familiar with the difference to “monitoring”, please consult the *Animal Health Surveillance Terminology Final Report* [↑](#footnote-ref-1)
2. There is a small risk of missing some information when excluding surveys or analytical studies. However, for some countries the inclusion of surveys or analytical studies would lead to an increase in workload that is not manageable. Therefore, SINGLE surveys or analytical studies shall not be included here. [↑](#footnote-ref-2)
3. If a break-down of expenditures for this surveillance component is available (e.g. admin, laboratory, field services, etc), please make a note in the comments box, as this may be a useful data source for further analysis in WP5. [↑](#footnote-ref-3)
4. Event-based refers to scanning the Internet and other communication media to detect information that may lead to the recognition of emerging threats). [↑](#footnote-ref-4)
5. e.g. drug sales, production or performance information, abattoir submissions [↑](#footnote-ref-5)