

Pig Health and Welfare Council

# Biennial Report 2015–2016



# Pig Health and Welfare Council

**The Pig Health and Welfare Council (PHWC) is a cross-industry alliance representing every stage of pig production along the chain which aims to promote a co-ordinated and integrated approach to improving pig health and welfare.**

## **The Members of the Pig Health and Welfare Council are:**

**Chairman:** Professor Jim Scudamore

Agricultural Industries Confederation (AIC)

The Animal Health and Welfare Board for England (AHWBE)

Animal Plant Health Agency (APHA)

AHDB Pork

British Meat Processors Association (BMPA)

British Pig Association (BPA)

Control of Antimicrobial Resistance Scotland (CARS)

Department for the Environment, Food and Rural Affairs (Defra)

Hybu Cig Cymru (HCC)

National Pig Association (NPA)

Northern Ireland Pork and Bacon Forum (NIPBF)

Pig Veterinary Society (PVS)

Quality Meat Scotland (QMS)

Red Tractor (RT)

Responsible Use of Medicines in Agriculture Alliance (RUMA)

Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Trading Standards

**In addition to the formal organisations there are producer members on all the subgroups of the council, to represent the diverse production systems within the UK**

**Observers** invited to attend PHWC meetings:

Food Standards Agency (FSA)

Chief Veterinary Officer (CVO) for England

Professor Nigel Gibbons

Chief Veterinary Officer (CVO) for Wales

Professor Christianne Glossop

Chief Veterinary Officer (CVO) for Scotland Shiela Voas

**The work of the Pig Health and Welfare Council would not be possible without the valued support from the Secretariats listed below:**

The Secretariat for the Pig Health and Welfare Council is provided by AHDB Pork

The Secretariat for the Antimicrobial Usage subgroup is provided by the VMD

The Secretariat for the Pig Meat Safety subgroup is provided by AHDB Pork

The Secretariat for the Surveillance subgroup is provided by AHDB Pork

The Secretariat for the Welfare subgroup is provided by the RSPCA.



# Foreword



**I welcome the publication of the third report from the Pig Health and Welfare Council (PHWC). The report highlights the achievements of the PHWC in identifying a range of issues affecting the industry and in developing solutions to minimise or eliminate any adverse impacts. It also provides detailed information on the state of the industry and identifies changes which could have an impact on the health and welfare of pigs in the UK.**

The significance of Antimicrobial Resistance (AMR) as a global One Health issue was reinforced by the final report of the O'Neill Review on AMR including, among other things, the strong call for action to reduce unnecessary antimicrobial use in livestock. The development of the Electronic Medicines book is a major achievement which will allow an accurate assessment of antimicrobial use in the UK pig industry and enable benchmarks to be set for others to follow. Reducing antimicrobial use is a top priority for the pig industry and will be achieved through a variety of programmes and measures to improve herd health and prevent infections. The development of improved diagnostics and vaccines along with biosecurity will be important as will be the need to consider potential structural changes within the industry.

I welcome the continued focus on the control strategy for Porcine Epidemic Diarrhoea virus (PEDv). This resulted in PEDv becoming notifiable in England in 2015 and the PEDv contingency plan has been developed further along with a series of updated standard operating procedures. This is an important measure as it reflects concern about the potential impact of the disease should it be introduced to the UK. It is one of the first collaborative sector-led approaches to animal disease management in the UK and established a model which could be applied to other diseases should the need arise.

The report provides invaluable information on horizon scanning, detailing potential threats to the UK pig industry that were flagged during 2015/16. This emphasises the importance of high quality and comprehensive surveillance in order to identify threats to the industry which can include emerging, exotic or endemic diseases or those which are of significant threat to trade. I am pleased that the industry is looking to identify ways of improving surveillance in partnership with the government. The PHWC has developed approaches to improve current disease surveillance methods, with a particular focus on the use of syndromic surveillance data drawn from and serving a wide range of partners.

Representatives from the devolved governments and industry participate in the PHWC and its subgroups. It is important to have a joint UK approach wherever possible to improve the health and welfare of the pig industry throughout the UK especially with the challenges being faced in the future.

In summary I would like to congratulate all those involved with the PHWC on the progress that has been made in the many different areas identified in the 20:20 strategy. Many challenges remain but the partnership working exemplified by the PHWC working with Government, the pig industry and other industries provides a good basis for supporting improvements to health and welfare and the productivity and competitiveness of the sector.

**Nigel Gibbens**  
Chief Veterinary Officer (UK)  
2017

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# 1

## Introduction

**Welcome to the third report of the Pig Health and Welfare Council (PHWC) which covers the activities of the council in 2015 and 2016. There has been a considerable amount of work in four key areas which include antimicrobial resistance and use, surveillance, food safety and welfare. In covering these topics the PHWC works collaboratively with producers, allied industries, welfare and assurance groups and other interested stakeholders along with the wider farming industry for the benefit of the UK pig industry. There is also close liaison and cooperation between the four countries of the UK with representatives from each country on the PHWC and its subgroups.**

An important theme during the two years has been partnership working between industry and government. This has manifested itself in many different ways both in operational terms and in the contribution to policy development. The electronic medicines book was a joint activity between the VMD and AHDB pork. Work to make Porcine Epidemic Diarrhoea virus (PEDv) notifiable was carried out by Defra but with important inputs from APHA, PHWC and AHDB Pork. The input from the APHA working with the AHDB Pork and the PHWC was critical for the successful outcome from the syndromic surveillance roundtable. At a higher level the input of the PHWC into the work of the Sector Council, which is one of the bodies established by the Animal Health and Welfare Board for England, provides an opportunity to liaise and contribute to the development of policy in a number of different areas.

The antimicrobial resistance roundtable held in October 2014 set the scene for the work of the PHWC in this area. The pig industry has responded to these challenges with a range of initiatives to ensure the overall use of antimicrobials is reduced but at the same time recognising the importance of disease control and the role that antimicrobials must continue play.

Animal health remains an important topic for the PHWC. In 2015 the focus of the work was on developing the contingency plan for potential outbreaks of highly virulent PEDv with a focus on practical control measures. This was industry led by AHDB Pork with assistance from the government through the APHA. Having developed the PEDv contingency plan the overall surveillance requirements of the industry were considered at the syndromic surveillance roundtable in 2016.

In dealing with the safety of pig meat there has been a wide range of issues raised ranging from MRSA, Hepatitis E and Salmonella. On the welfare side there has been work on tail docking, aggression, free farrowing and assurance schemes.

I would like to thank everyone who has contributed to the production of this report and to each of the secretariats for their support both in the preparation of the report and the PHWC and its subgroups. I would also like to thank all the members of the Council for their enthusiasm and invaluable input into the development and delivery of the pig industry's 20:20 health and welfare strategy. We are very grateful to AHDB Pork for their ongoing financial support without which the PHWC would not exist.

**Jim Scudamore**  
Chairman

# About PHWC

**The Pig Health and Welfare Council formed in 2004 to drive implementation of the Pig Health and Welfare Strategy launched in December 2003. Following the review of progress, a new strategy for pig health and welfare in England was developed with the input and support of a broad range of industry organisations, co-ordinated by AHDB Pork, the division with responsibility for the levy collected on pigs by the Agriculture and Horticulture Development Board.**

“20:20 Pig Health and Welfare, A Vision for 2020”, was launched in August 2011 and a new Pig Health and Welfare Council was appointed by the cross-industry sponsoring organisations – Agricultural Industries Confederation (AIC); Animal and Plant Health Agency (APHA); British Meat Processors Association (BMPA); AHDB Pork; British Pig Association (BPA); National Pig Association (NPA); Pig Veterinary Society (PVS); Red Tractor (Assured Food Standards); Responsible Use of Medicines in Agriculture Alliance (RUMA) and the Royal Society for the Prevention of Cruelty to Animals (RSPCA). Defra, Food Standards Agency (FSA) and Quality Meat Scotland (QMS) were invited to attend meetings as observers. Professor Jim Scudamore was appointed as PHWC Chairman in March 2012.

Animal health and welfare has been a major part of Defra’s role. Advice from the Independent Responsibility and Cost Sharing Group, set up following the FMD outbreak in England, in 2007 was that animal keepers could play a greater role in tackling animal disease. The Animal Health and Welfare Board for England (AHWBE), established in 2011, brought together independent people with the relevant knowledge and skills, regarding both farm and companion animals with government officials. The AHWBE can make direct recommendations to Defra Ministers, regarding strategic policy affecting health and welfare of animals.

Species-specific groups represent the interests of each sector. The Pig Health and Welfare Council (PHWC) plays an important role in liaising with AHWBE, Defra and the FSA on common Government and industry objectives to improve health and welfare.

2014 saw changes to the structure of the established Pig Health and Welfare Council (PHWC) from the 20:20 strategy with eight objectives to a more streamlined set of key strategic priorities. The reduction has allowed the council to focus in four key areas, which are of significant importance to the industry, while remaining nimble and agile enough to adapt to any unforeseen changes that may appear on the horizon.

The PHWC subgroups now cover the following areas:

- **Welfare subgroup** – Enhancing pig welfare
- **Pig Meat Food Safety subgroup** – Enhancing pig meat food safety
- **Disease Surveillance subgroup** – Improving preparedness for exotic and emerging diseases
- **Antimicrobials subgroup** – Reducing antimicrobial use in pig production

The proposed reorientation of the PHWC strategy into these four themes did not infer that other strategic themes, such as minimising the impact on the environment were no longer of key importance to the industry and wider stakeholders. It is acknowledged that the PHWC may not be the most appropriate forum to affect change in these areas and that a more precisely defined set of strategic themes could culminate in more tangible delivery and success.

The terms of reference for the new format of Pig Health and Welfare Council and its subgroups can be found below (for the full terms please refer to Appendix 1)

The **Pig Health and Welfare Council** aims to be a resource for the pig industry by providing advice on areas of strategic policy and setting strategies. Key areas of focus are surveillance and disease risk assessment, promotion of welfare as well as prudent antimicrobial usage through improved disease management. This can only be achieved by a close working relationship with pig keepers, the veterinary profession, government and allied industries. The PHWC recognises that its ongoing enterprises must be openly discussed with all interested parties in the pig sector and that results are communicated at all levels from the farmer to government and Chief Veterinary Officer when necessary. The main responsibility for the Pig Health and Welfare Council is to enhance the health and welfare of pigs in England.

# 2



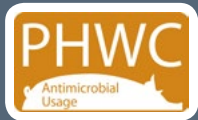
## Disease Surveillance subgroup

The **Disease Surveillance** subgroup has the main aim of providing advice to the PHWC on proposals for the effective surveillance of pig health and welfare in England. This is achieved through work collaboratively across the industry in the same manner as the main PHWC. This group's main focus is to provide horizon scanning on new pathogens and emerging diseases of importance to the pig industry and on changes in levels of endemic disease within the UK. The subgroup then uses this information to formulate strategies of benefit to the UK pig industry and to recommend a course of action in the prevention, reduction or eradication of significant diseases. The provision of a robust, reliable and integrated disease surveillance system forms one of the long term strategic aims for this group.



## Pig Meat Food Safety subgroup

The **Pig Meat Food Safety** subgroup aims to be the authoritative group for advice on strategic policy, surveillance, research and management and control of zoonotic hazards in pig meat production. This will be manifested by the development of a road map to achieve improvements in pig meat safety. This work requires extensive investigation and evaluation of current knowledge on reducing zoonotic related food risks and collaboration with Government, pig keepers, producers, veterinarians, processors, retailers and allied industries. The inclusion of all these groups is required to ensure that there is 'whole chain' ownership of the road map and that there is shared commitment to its outcomes.



## Antimicrobials subgroup

The **Antimicrobials** subgroup has been charged with reviewing and eliciting change in the pig industry with regards to responsible use and stewardship of antimicrobials. The group will actively seek out information on all aspects of antimicrobial usage by the pig industry and identify crucial gaps in knowledge. The group recognises the need to safeguard antimicrobials for future generations and to reduce the risk of resistance developing. This can only be achieved through an informed approach to antimicrobial usage, based upon evidence in optimising efficacy in antimicrobial administration, as well as investigating alternatives to antimicrobials wherever possible. In addition it is vital the whole pig industry supports and adopts these measures in good practice. The antimicrobials subgroup aims to ensure open and informed communications on its findings to the public and stakeholders.



## Welfare subgroup

The **Welfare** subgroup is focusing on all aspects of pig welfare applicable to the UK pig industry. Pig welfare within the British Isles needs to reflect the diverse production methods within the industry, which often presents unique challenges when compared to our European counterparts. The subgroup aims to bring a consensus on the key pig welfare issues to be investigated and the ultimate aims for each issue. This work requires considerable amounts of facilitation between the pig industry (including pig keepers, slaughterhouses and processors), allied industries, veterinary surgeons and paraprofessionals, welfare scientists, consumer organisations and Government. The aim of which is to develop workable strategies and initiatives to address the key issues identified.

The subgroup may engage research in areas to which it determines there is a gap in knowledge, and utilise this to inform the PHWC of any resulting recommendations.



# The pig industry structure

## 3.1. Size and distribution of the industry

### 3.1.1. Size of the UK pig herd

Latest figures from Defra show that in June 2016, the UK pig herd was just under 4.9 million head, up 3% on the previous year. While this was largely due to a 3% rise in the number of feeding pigs, the survey results also showed a 2% rise in the number of female breeding pigs.

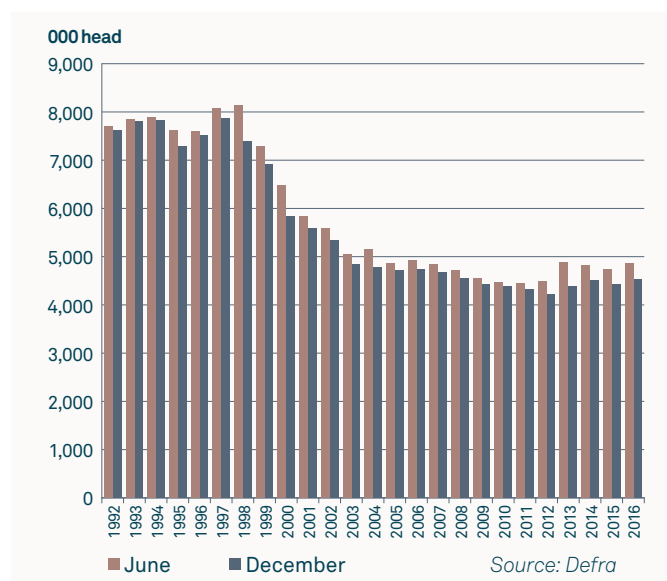


Figure 3.1 Total pigs on agricultural holdings in the UK, 1992–2016

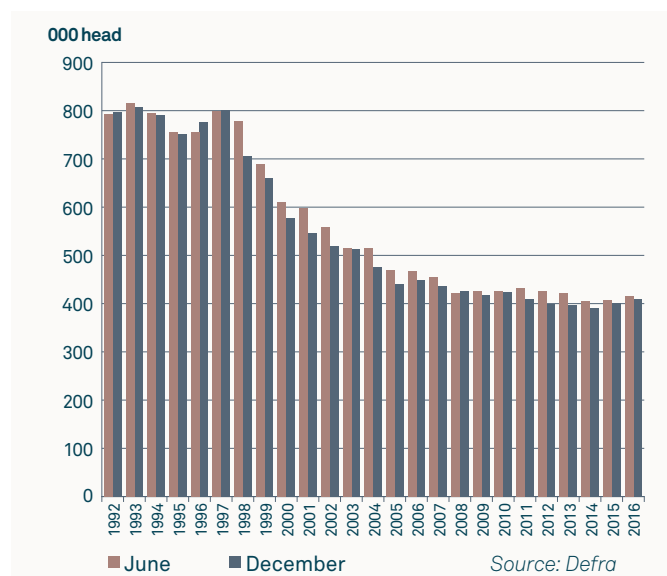


Figure 3.2 Female breeding pigs on agricultural holdings in the UK, 1992–2016

Thousand head	2014	2015	2016
<b>Total pigs</b>	<b>4,815</b>	<b>4,739</b>	<b>4,866</b>
Breeding pigs	501	507	509
Female breeding herd	406	408	415
Sows in pig	282	285	295
Gilts in pig	57	56	55
Other sows (suckling or dry)	67	66	65
Other breeding pigs	95	100	94
Boars for service	14	15	15
Maiden gilts	80	85	79
<b>Fattening pigs (incl. barren sows)</b>	<b>4,315</b>	<b>4,232</b>	<b>4,356</b>

Table 3.1 Pigs on agricultural holdings in the UK, June 2014–16

Source: Defra June Survey of Agriculture

The increase in the breeding herd was somewhat unexpected, given the difficult financial position of producers during late 2015 and early 2016. Subsequent slaughtering data suggests that both the breeding herd and the overall pig herd may actually have been smaller than reported. As well as anecdotal information supporting this view, there is also evidence from pig feed production statistics which show a sustained fall, particularly for breeding pig feed.

### 3.1.2. Number and size distribution of commercial holdings

Defra figures from the 2015 June Agricultural Survey show a 2% increase in the number of UK commercial agricultural holdings with pigs between June 2014 and June 2015, reaching 11,500. This was entirely driven by an increase in the number of small holdings of 1–9 pigs, which numbered 6,300, 19% up on a year before. However, these holdings contain less than 1% of the total UK herd, with 85% of UK pigs being held on holdings that number at least 1,000. There was also an increase in the number of farms with breeding pigs, which grew by 10% to just under 6,600. Again this was driven by an increase in smaller holdings, whilst the vast majority of the herd was located on a small proportion of this total. The 820 farms with 100 or more sows accounted for 89% of the national breeding herd. The number of holdings with feeding pigs was down 9% at 8,700, with around 3,800 of these also having breeding pigs. However, it should be noted that the June Agricultural Survey focuses on commercial holdings and therefore these data may not accurately reflect the number of smaller producers.

## 3

The numbers above include many holdings which keep pigs but which are also engaged in other agricultural activities. When holdings were classified based on their predominant activity (over two-thirds of output) there were 5,600 specialist pig holdings in the UK in 2010 (the latest year for which UK-wide figures are available). In England, there were 1,923 specialist pig farms in 2014, around 200 more than in 2013. These holdings accounted for 76% of pigs on commercial holdings in England. The 1,200 specialist pig holdings with breeding pigs had an average of 280 breeding pigs. Pig holdings with feeding pigs had an average of 1,440 animals.

### 3.1.3. Location of pig producers

Pig producers are highly geographically concentrated. Of the 4.5 million pigs in the UK, around 81% were in England, with 10% in Northern Ireland, 8% in Scotland and around 1% in Wales. In 2013, well over half of England's pigs were concentrated in just four counties: Norfolk, Suffolk and North and East Yorkshire. There are also significant concentrations in Northern Ireland, to the South and East of Lough Neagh and the East of Scotland.

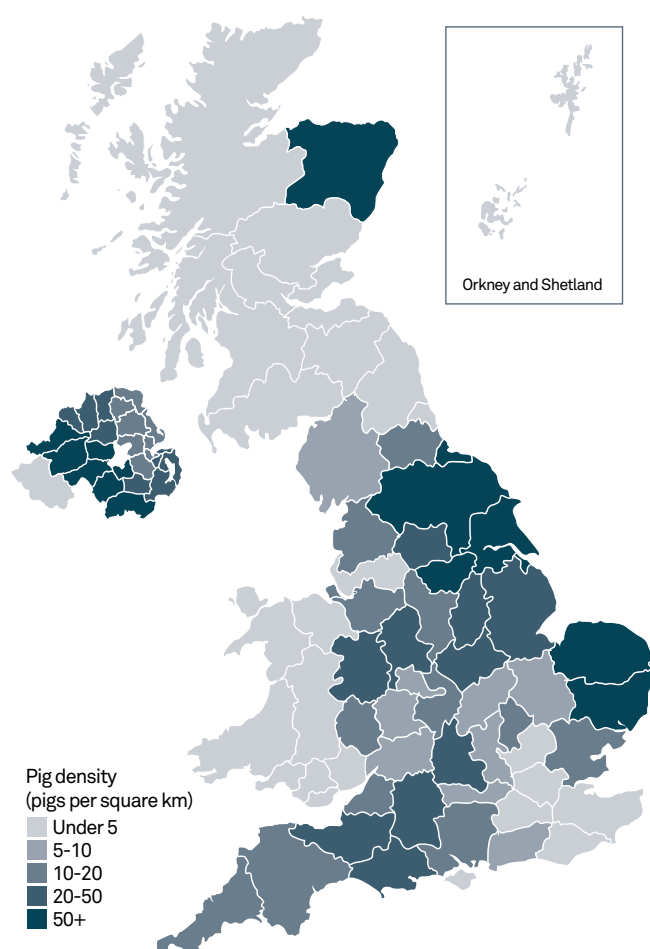


Figure 3.3 Geographical locations of pig production in the UK, June 2013

### 3.1.4. Abattoirs slaughtering pigs

The number of abattoirs slaughtering pigs has declined considerably over time as many small plants have stopped trading, to be replaced by fewer, larger ones. During 2015 there were 116 English abattoirs killing pigs, around half the number in the late 1990s. Only 14 of these specialised in pigs, with the remainder also handling other species. The decline in abattoir numbers has led to a high degree of concentration. The 14 specialist pig abattoirs accounted for around 70 per cent of all pigs slaughtered during 2015. In fact, the eight largest plants (including two non-specialist ones) killed over three-quarters of all pigs. The four largest companies, with nine sites between them, killed around 80% of English pigs.

### 3.1.5. Workforce on pig farms

Detailed figures are available on the workforce in England's specialist pig farms for 2014. At that time, they employed a total of 6,500 workers, an average of 3.4 per holding. A little more than half the workers on specialist pig farms were farmers, partners, directors and spouses, working either full-time or part-time. About 30% were regular full-time workers, including managers. The remainder was made up of part-time and casual workers.

The number of people working with pigs on non-specialist pig farms is unknown. However, estimates put the total amount of work with pigs at the equivalent of 3,000–4,500 full-time workers (depending on how this is defined). In reality, the workforce will be significantly higher than this, as many of them will work part-time or will only devote part of their time to pig production.

## 3.2. Production systems

### 3.2.1. Housing systems

There has been little change to the look of housing systems within England and the wider UK over the past three years. In England, around 40 per cent of the commercial pig breeding herd is kept outdoors. This percentage varies little between different stages in the breeding cycle and has risen from under 30% five years ago. The remaining 60% of sows and gilts are kept in indoor systems but here there are differences across the breeding cycle. During farrowing and while sows are suckling piglets, most are kept on fully or partly slatted floors, although a significant minority are kept on straw. However, for the remainder of the breeding cycle, most indoor sows are kept on straw-based systems. Almost all indoor maiden gilts are kept on straw.

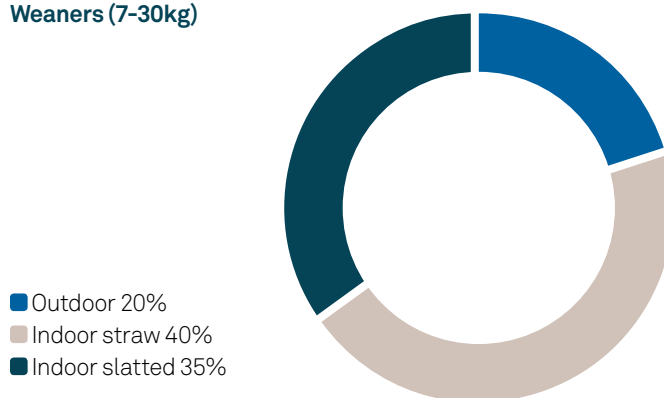
Outdoor breeding pigs are typically housed at a density of around 15 sows/gilts per hectare. In around 80 per cent of cases, outdoor pigs are used as part of a rotation system, with pigs spending an average of 17 months in a paddock before they are rotated. Most outdoor producers provide pig arcs for shelter, with some using cabins or tents as well as or instead of arcs.

Once piglets have been weaned, they are less likely to be kept outdoors. Only around one in five weaners (between 7 and 30kg) is housed outdoors, with stocking densities much higher than for breeding pigs, typically close to 400 per hectare. Where weaners are housed indoors, more than half are on straw with the remainder mainly on fully-slatted floors.

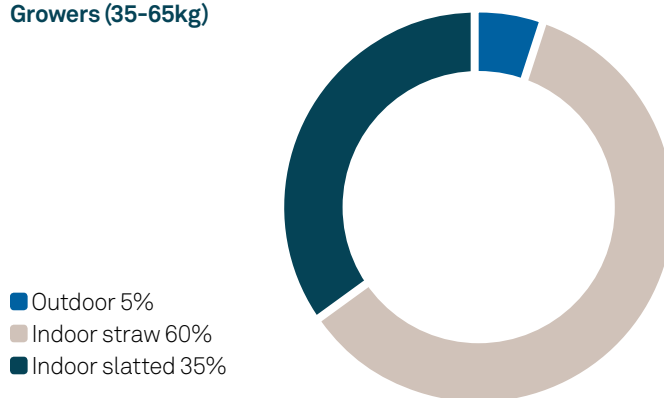
At later stages in the feeding process, pigs are much less likely to be housed outdoors. Only 3% of commercial growers (between 30 and 65kg) and finishers (over 65kg) are kept outdoors, although these figures are likely to be higher for smaller producers, for whom equivalent figures are not available. The majority of pigs which are housed indoors are on straw, a proportion which has increased in recent years. Finishers are more likely to be on slatted floors than growers.

Figure 3.4 Housing systems for English feeding pigs

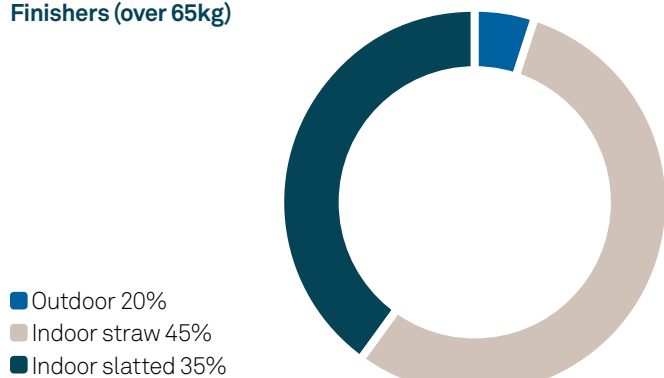
#### Weaners (7–30kg)



#### Growers (35–65kg)



#### Finishers (over 65kg)



Source: Defra Pigs and Poultry Farm Practices Survey 2009

# 3

## 3.2.2. Feeding systems

A variety of different types of feed is used by pig producers. All contain a mix of components designed to provide all of the nutrients required by pigs. Different mixes are used for pigs at different stages of their life cycle. Major components of feed in the UK include cereals (mainly wheat, barley or distillery co-products) and oilseed cake and meal (mainly soya or rape). A wide variety of other ingredients is used less frequently. Just over half of producers report they home mix some or all of the feed they use. Others buy in ready mixed feed.

There are three main forms of feed used by pig producers: pellets, meal and wet feed. Pellets are the commonest form for all stages of the lifecycle. They are used by around 80% of producers to feed weaners, about 60% for rearers and finishers and about 40% for sows. Meal is used by around 30% of producers to feed rearers, finishers and sows but only 10% for weaners. Wet feed is most frequently used to feed finishers, with around 20% of producers using it. For sows, it is only used in 10% of cases and for weaners around 6%. A small number of producers use other feeding approaches.

During 2015, more than 1.8 million tonnes of compound pig feed were produced in the UK, the highest output since 2001. Nearly half this was finisher feed, just over a fifth was sow feed and a similar amount was grower feed. The remainder was made up of feed for piglets and early growers, along with protein concentrates.

## 3.3. Key facts

1. Since the peak of production in 1997–98, the total number of pigs on UK agricultural holdings has fallen from more than **8 million** to **4.4 million** in 2015, **a fall of 45%**.
2. The number of female breeding pigs has fallen from **800,000** to **401,000 (50%)** over the same time period.
3. There were **11,500** commercial agricultural holdings with pigs and **6,600** had breeding female pigs (average number **62**) and **8,700** had fattening pigs (average number **486**) in 2015. With the very small units of 5 or fewer breeding pigs or 10 or fewer finishing pigs taken out, the average number of breeding females in a herd rises to **163** and finishing pigs to **933**.
4. Of the **4.5 million** pigs in the UK, **81%** are in England, **10%** in N. Ireland, **8%** in Scotland and around **1%** in Wales. More than half of the pigs in England are in E. Anglia and Yorkshire.
5. The number of abattoirs slaughtering pigs in England has halved over the last 16 years down to **116** and the 14 specialist ones that only handle pigs account for **70%** of pigs killed.
6. Approximately **6,500** people work on England's specialist pig farms, with others working with pigs on non-specialist farms, although the number of these is uncertain.
7. Approximately, **40%** of the commercial pig breeding herd is outdoors, but only **20%** of weaning pigs are reared outside. More than **90%** of growers and finishers are reared indoors but **60–70%** of them are reared on straw rather than slats.
8. Over **1.8 million** tonnes of pig feed was produced in the UK during 2015, **48%** for finishers, **22%** for sows, **21%** for growers and **9%** for piglets and early growers.

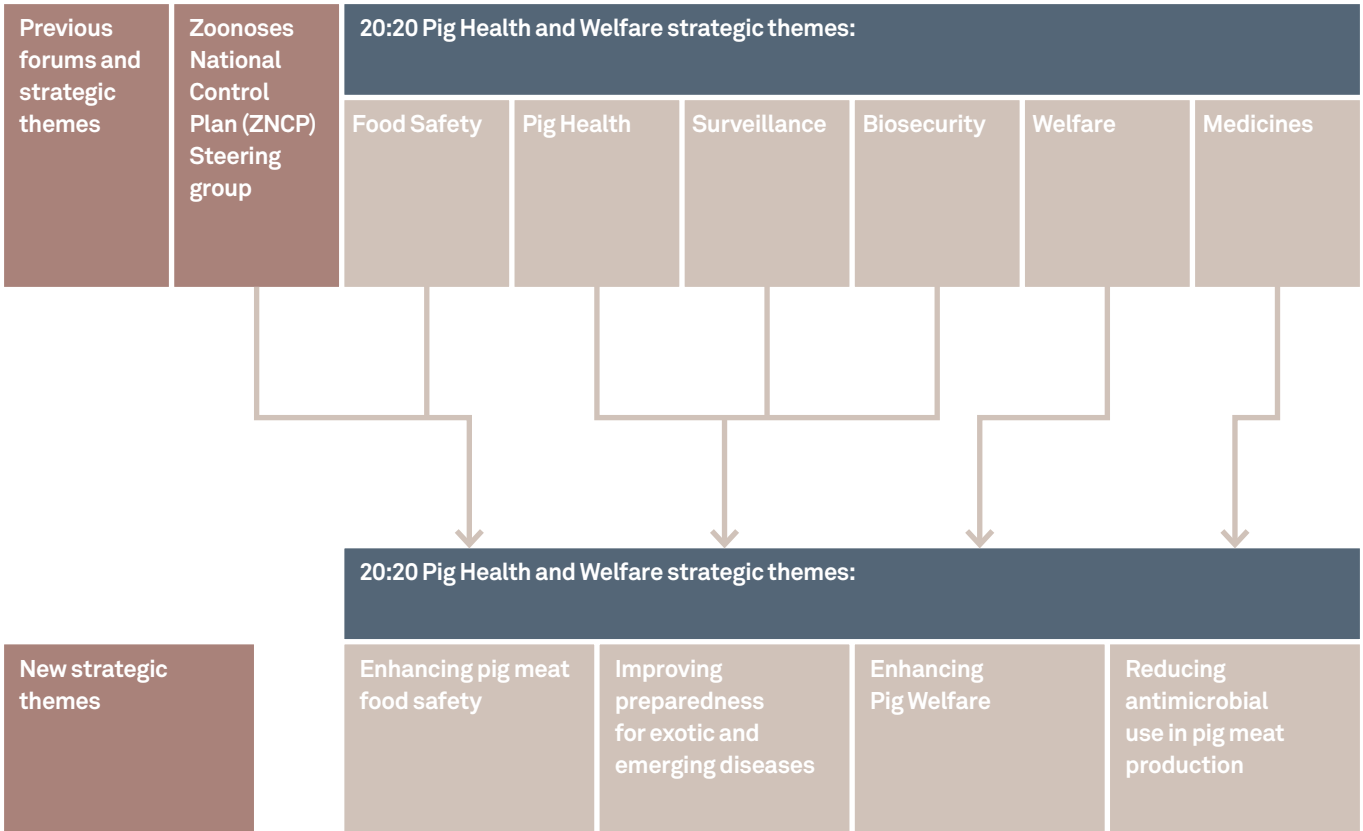


# 20:20 Pig Health and Welfare

## 4.1 Vision

The Vision in 20:20 Pig Health and Welfare for 2020 was established in 2012 to be “An English pig herd where health and welfare are continually improving, which results in better pig performance, the production of a safe and quality product, reduced environmental impact and increased sustainability of an industry that contributes fully to national food security.”

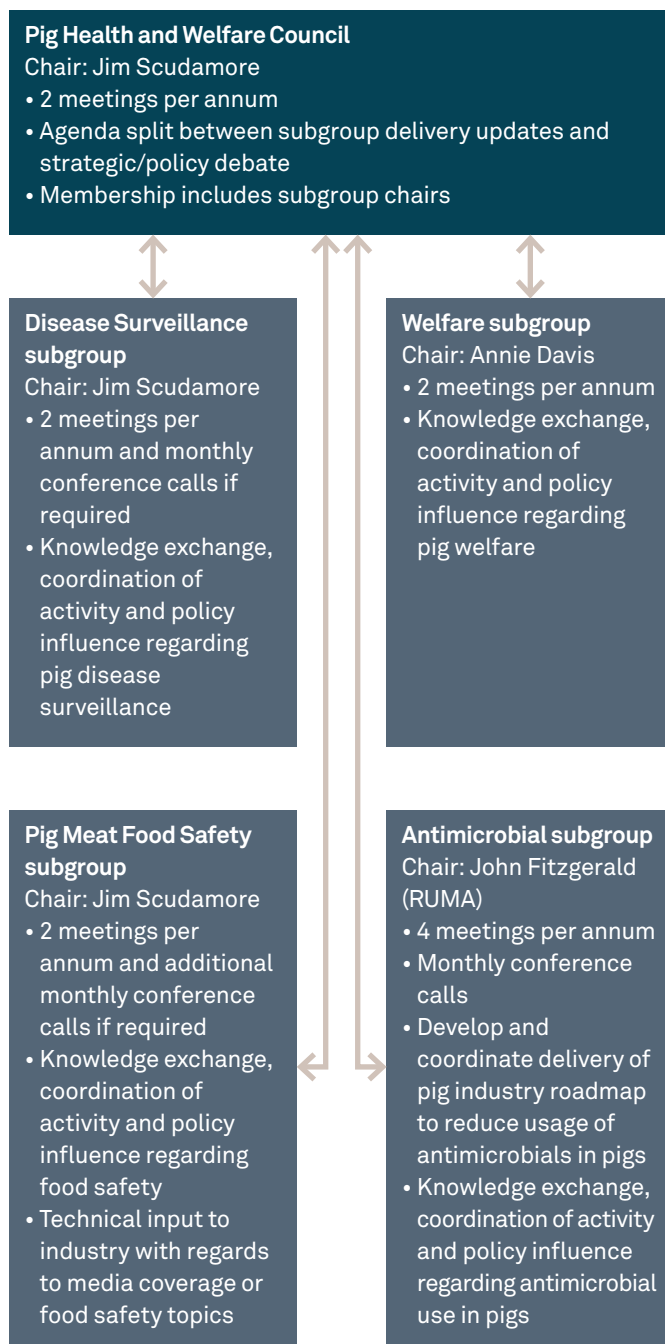
This vision has continued under the new structure of the Pig Health and Welfare Council, but with a more streamlined and targeted approach to try to achieve the same objectives but with a clearer direction on key topics which have been identified as potential issues for industry. The reduction of topics to a few key areas will allow the PHWC to affect more strategic change.



# 4

## 4.2 Current delivery structure

Following the restructure of the Pig Health and Welfare Council in 2014 the approach which was taken to continue the delivery of the 20:20 vision was to re-structure the Pig Health and Welfare Council around strategic themes. It was decided that the thematic subgroup approach already established for welfare and surveillance would be adopted for the two remaining themes regarding food safety and antimicrobial drugs. Currently the overall structure of the PHWC is:



The PHWC continues to operate and meet on a six monthly basis. This forum is used as a platform for the four subgroups to report activity and delivery. It also retains its original purpose, which is to bring together a range of industry and government stakeholders engaged in pig health or welfare related activities, or policy development resulting in greater visibility, collaboration and co-ordination between these parties. Efforts are being made to widen the remit of the PHWC to take in a more UK wide view of health and welfare matters, reflecting that disease does not respect boundaries and that sharing information between the devolved regions will be of universal benefit.

The operation of the four subgroups is more ad hoc and dynamic dependent upon the nature of activity being discussed or delivered. Experience to date indicates that informal, shorter, but more regular meetings of the subgroup via webinars and conference calls has resulted in more concerted activity and tangible delivery of this aspect of the strategy.

## 4.3 Objectives

The main objectives of the 20:20 Pig Health and Welfare Strategy for England are to:

- **Support** pig producers in delivering their objectives for continual improvements in pig health and pig welfare
- **Eliminate or control** significant enzootic pig diseases locally, regionally and nationally
- **Eliminate or control** significant infections of food safety and public health concern (eg Salmonella)
- **Develop and promote** new knowledge on the assessment of welfare outcomes
- **Promote** the open exchange of information on the disease status for herds and regions
- **Promote and encourage** responsible and appropriate use of antimicrobials
- **Maintain** freedom from notifiable exotic and emerging diseases of pigs
- **Deliver** an integrated approach to improving pig health and welfare with all stakeholders, allied support industries, retailers, foodservice and Government.

## 4.4 Milestones for the PHWC 2015–2016

The existing list of milestones set out in the previous PHWC report specified wide reaching and ambitious targets for the pig industry and the council to achieve in 2015–2016. Some of these targets have proved to be longer term goals and therefore work towards achieving them will continue into 2017–2018.

Key milestones for the PHWC 2015	Comments	Status
Review of progress towards the objectives and targets of the strategy	The PHWC will continue to review the progress of the milestones for each of the strategic subgroups, and the chair of the subgroups will update the council at the biannual meetings	Ongoing
Produce Biennial report for 2013–2014	The report for the Pig Health and Welfare Council has been produced to reflect the progress over a two year period, in line with the length required to meet the strategic targets	Complete
Key milestones for the PHWC Disease Surveillance subgroup	Comments	Status
Test the contingency plan for new and emerging diseases in a realistic virtual exercise and identify resources required for effective control of the disease threat	The PHWC subgroup will develop and implement the contingency plan to a point that a realistic virtual exercise can be carried out and the resources tested in a realistic situation	A disease simulation exercise is to be held in early 2017 and further work reviewing and developing the contingency plan is ongoing
Identify existing and future data sources which would enable detection of current, new and (re) emerging threats to pig health and describe the surveillance system required to integrate them	The PHWC supports the development of a disease surveillance system. This potentially can utilise existing information in a 'Big data' approach	Ongoing
Review options for and, if appropriate, develop a sustainable methodology for syndromic surveillance of GB pig disease	The PHWC is aware of the limited resources available to provide syndromic surveillance under current strategies, so is actively exploring alternative approaches	Ongoing – this is a long term goal of the PHWC
Key milestones for the Pig Welfare subgroup	Comments	Status
Gather information from those units that do not dock as to specifically what enables them to rear pigs with intact tails	The PHWC subgroup is proposing to investigate if specific husbandry methods can be attributed to low incidence of tail biting on farm	Ongoing – reducing the incidence of tail biting and tail docking is a long term goal for the PHWC WSG

# 4

Gather data on 'solutions' from PVS members for when an outbreak of tail biting has occurred	The PHWC subgroup is supportive of investigating better methods of managing tail biting on farm when outbreaks occur. With the aim of informing the industry on what is best practice	Ongoing – reducing the incidence of tail biting and tail docking is a long term goal for the PHWC WSG and this milestone has been rolled into one with focusing on rearing pigs with intact tails
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Review current practice with respect to euthanasia training at vet schools and for newly graduated vets and ensure the latest information on best practice is provided to producers including non-assured farms and smallholders	The PHWC subgroup has identified the importance of euthanasia training provided to veterinarians as being of significant importance in maintaining welfare on farm and at slaughter. In turn this will ensure dissemination of information to fellow vets, producers and smallholders	Ongoing
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## Key milestones for the Pig Meat Food Safety subgroup

	Comments	Status
Monitor levels of Salmonella in slaughter pigs using industry data submitted to the FSA database. Review the Salmonella control plan and recommend changes as necessary	PHWC subgroup supports the continued monitoring of Salmonella, recognising it as one of the most important zoonotic pathogens within the pig industry, which continues to require attention	The subgroup is looking to assess the quality of the existing abattoir testing to ensure high standards are being met
Support the commissioning of research to verify a method for the detection and measurement of live Hep E virus in pork and pork products	PHWC has identified Hepatitis E as a pathogen, that has the potential to be of health concern and existing knowledge is limited so further research is required	There are still no approved methods of detecting live virus. Testing of carcasses has been put on hold until more information on the pathology of the virus is available
Support the commissioning and delivery of four work streams to reduce the risk of Hepatitis E in slaughter pigs 1. Using trace back of samples from the 2013 Zoonoses study to the farm and map risk factors 2. An on farm study to consider the transmission route at farm level and why some pigs are viraemic at slaughter 3. The Identification of possible risk factors and interventions 4. Development of a risk assessment tool. An AHDB Pork-sponsored PHD which started in September 2015	As part of a structured approach to understand better the characteristics of hepatitis E as a pathogen, the PHWC subgroup has developed a staged strategy to investigate potential risk factors and routes to mitigate risk which could be utilised by the industry	1. Completed 2. On Hold –awaiting more detailed results from the review paper (4) and risk analysis 3. Identified in the outcomes from (4) 4. Project due to be completed in June 2017



**Key milestones for the  
Antimicrobials Usage subgroup**
**Comments**

Establish a standardised format of antimicrobial usage data collection which can be used by all parties across the whole of the UK pig production sector	The PHWC subgroup recognises better data collection and record keeping is a vital step in measuring baseline antimicrobial usage and informing changes in practice	Complete – the eMB system was launched in April 2016
Prepare guidelines for veterinary surgeons on the frequency necessary to review their clients' prophylactic use of antimicrobials and what should be included in the review	The PHWC subgroup recognises the role of the veterinary surgeon as on-farm advisor and prescriber of medications makes them a key figure in developing a responsible approach on farm	Complete
Identify and disseminate best practice advice on examples where antimicrobials are not being used, or being used minimally, in pig production both in the UK and elsewhere	The PHWC subgroup recognises that alternatives to antimicrobials will need to be explored as well as alternative approaches in the use of antimicrobials. Based on available data and on-farm field trials the PHWC aims to transfer knowledge directly to the industry	Ongoing
Carry out study tours to best-practice farms in the UK, Denmark and The Netherlands and develop an action plan for introducing best practices identified	The PHWC subgroup recognises the value in practical proof of principle and so is planning to visit farms where best practice can be demonstrated	Ongoing



# 5

## Pig health

### Disease Surveillance subgroup

The Disease Surveillance subgroup has been in its current format for four years and has been very active. The subgroup primarily focuses on disease threats of significance to animal health which can be emerging (a new disease), exotic (new to the UK) or endemic (already present in the UK) or those which are of significant threat to trade, such as many of the Notifiable Diseases. The scope of the council is to address the risks of these diseases, the methods by which they could be detected, or monitored (surveillance) and how the industry may cope in the event of a significant disease outbreak.

Within the past two years the group has continued to focus on the mitigation strategy for Porcine Epidemic Diarrhoea virus (PEDv). Which has resulted in one of the first collaborative approaches to animal disease management in the UK. The group has also focused on approaches to improve further current disease surveillance methods, with a particular focus on the use of syndromic surveillance data. These initiatives have resulted in significant developments within the pig sector and will be discussed in more detail below.

### 5.1 Continued PEDv activity

In May of 2013 the USA declared the first confirmed case of the highly virulent Chinese strain of PEDV. The exact point (and route) of introduction to the USA remains unclear as the index case was never identified. Three years on the PEDv outbreak in the USA caused significant economic damage to the US pig industry and also affected the Canadian industry when, in the January of 2014, the first case reached Canada through suspected contaminated porcine plasma in feed.

The PHWC decided to base its contingency plan upon the Canadian approach and experience as Canada had more opportunity to develop a strategic contingency plan and implement it in the face of a disease outbreak. To date the Canadian approach has been the most successful in containing, and in some areas eliminating, PEDv. The PHWC Disease Surveillance subgroup started to focus on the development of the contingency plan in 2014 with work continuing throughout 2015. The plan (which is publicly available on the AHDB Pork website) outlines the approach that would be taken in the event of a disease outbreak. The responsibilities are shared by APHA and AHDB, with APHA providing the diagnostic capacity, as well as, epidemiological experience and AHDB providing movement tracings and notification of outbreaks as well as the technical communications required if an outbreak occurred. Standard operating procedures have been produced in the eventuality of an outbreak and are available on the AHDB Pork website. These Standard Operating Procedures (SOPs) cover all aspects of production during an outbreak and give peer reviewed technical

advice on how to maintain biosecurity and limit the risk of spread if a case was detected in the UK.

Routine testing for PEDv has been ongoing since 2014, with all samples of porcine diarrhoea submitted to APHA being tested for PEDv, with costs covered by AHDB. The sampling gives an opportunity for early detection of clinical cases of PEDv, should they occur, as well as continued monitoring of the current status of the English pig herd. No submissions, to date, have tested positive for PEDv.

Since January of 2016 PEDv has been notifiable in England and was made notifiable in Scotland in the March of the same year. Gaining notifiable status for the disease was a collaborative effort between Government and industry, taking the 'Industry led, Government assisted' approach that was so effective in Canada. The notifiable status for PEDv, often referred to as 'notifiable lite' differs somewhat from the restrictions imposed in other notifiable disease outbreaks, as it does not impose any statutory movement restrictions or trade restrictions on sales of pork abroad. The PEDv notifiable status only requires that APHA and AHDB must be notified on suspicion of a clinical case of PEDv and that AHDB is able to communicate a positive case to the industry. This process is due to be tested in early 2017 through a disease outbreak exercise, which will mimic the reporting of an index case being confirmed in England. This will provide further guidance on future work and identify potential gaps in the current contingency documents should PEDv be confirmed on an English farm. This exercise will direct the future milestones and key priorities of the disease surveillance subgroup.

### 5.2 Wild boar

The rapidly expanding UK 'wild boar' population continues to be an area of concern, especially as these feral pigs have established themselves in many areas across the UK. While they predominate large wooded areas, they are highly adaptable to many terrains and are able to survive well in urban environments too, which is evidenced by issues seen with resident wild boar populations on the continent. Currently the population of wild boar in the Forest of Dean alone has expanded from 535 in 2012 to 2000 in 2016. While there are active efforts to control the population growth in affected areas, these are often not enough to prevent further expansion, with the population doubling every two to four years.

Feral Pigs are becoming a considerable nuisance in areas with high populations causing damage to property and to the woodland, foraging and overturning bins, but also injuring pets. The subgroup is concerned that feral pigs pose a risk to the UK national herd and a potential route of entry for exotic disease, due to their capacity to forage through waste. In 2016 AHDB Pork funded an APHA project, on behalf of the PHWC to investigate samples from culled wild boar to look at disease

profiles to inform the industry of what pig diseases they are currently harbouring.

### 5.3 Disease monitoring

The group monitors the emergence and progress of exotic diseases across the world, with a particular view to the risk pathways of introduction to the British Isles. Information is provided via representation from the APHA Pig Expert Group and Government monitoring of international disease epidemiology.

The spread of African Swine Fever (ASF) across Eastern Europe and the Baltic states continued to be a concern throughout 2015 and 2016. Much of the spread was associated with infected wild boar acting as a vector. Throughout this period the area affected has continued to increase, with the proximity to Western Europe edging ever closer. The PHWC Disease Surveillance group has invited speakers to discuss this threat and potential routes of entry.

New diseases have emerged in 2015–2016, most notable of which is the emergence of the picornavirus Senecavirus A, in the USA. The clinical picture with this virus is visibly indistinguishable from Foot and Mouth Disease (FMD) and has caused significant disruption to production in the USA and now Canada. Differential testing is available for the virus, but the regulatory standstill continues to put pressure on production in the areas affected. Atypical Porcine PestiVirus (APPV) is another pig pathogen which has been recently identified, which links with cases of congenital tremors in piglets. The pathogen has been identified in the UK, but it remains unclear how widespread it is.

(a more detailed explanation of the disease monitoring that occurred in 2015–2016 can be found on page 35 of the report)

### 5.4 Ten questions for industry

Another challenge, for the UK pig industry the disease surveillance subgroup has identified is that the current data on the profile of the industry can be patchy and there is a lack of accurate top-line epidemiological and industry data. These data can help to inform the industry on what areas of work may need to be focused upon, especially with regards to biosecurity and disease mapping.

The subgroup has developed a series of ten questions which would provide significant data on the profile of the pig industry and is in the process of discussing how these questions could be utilised to inform better Government, industry, allied industries and academia and reduce the burden of questionnaires and surveys, which are currently the 'go-to' method to gather this data.

### 5.5 Syndromic Surveillance round table

On 15 September 2016 the PHWC Disease Surveillance subgroup held an industry round-table discussion on the subject of syndromic surveillance. This meeting was held to gauge awareness of syndromic surveillance as a disease monitoring methodology, as well as to gather information on if and how this approach may be used in the UK and the perceived benefits and needs of providers and users of syndromic surveillance information. The meeting was well attended by stakeholders from the pig sector, Government, academia and allied industry.

Breakout sessions were held to gather information and opinion on the various approaches and methodologies that could be used. The information presented and gathered has been collated to form a summary *Report of Roundtable on Syndromic Surveillance in Pigs*<sup>1</sup>. Following the outcomes of the meeting, the Disease Surveillance subgroup hopes that a system to collect syndromic surveillance data will be trialled in 2017–18.

#### Key initiatives by the pig industry to support disease surveillance:

- PEDv was made notifiable in England in December 2015 and in Scotland in March 2016. The initiative to make PEDv notifiable was driven by the UK pig industry in collaboration with UK government.
- While highly virulent PEDv has never been identified in the UK it is an ongoing threat and routine surveillance continues.
- The disease surveillance subgroup continues to monitor the ASF outbreak in Eastern Europe. In order to minimise the risk to the UK herd from ASF and other exotics diseases AHDB Pork has issued guidance on the importance of maintaining strict biosecurity procedures and not feeding raw or cooked kitchen waste to pigs. This guidance is available in a range of different languages.
- The threat of the UK feral wild boar population continues to be a priority for the pig industry with concerns over their potential to spread disease within the commercial pig herd. The feral wild boar population is rising and is also causing a nuisance to locals in the Forest of Dean area.
- Following on from the syndromic surveillance roundtable event, the disease surveillance subgroup is co-ordinating a joint effort between government and industry to develop a national harmonised system for collecting robust syndromic surveillance data in pigs.
- APHA continues to publish a quarterly report on emerging threats to the UK pig herd based on data from voluntary submissions to the regional veterinary investigation centres and information from a wide variety of sources of pig disease surveillance intelligence as part of horizon scanning activities. These reports focus on diseases of importance to the UK pig herd and are an essential resource for the industry.

<sup>1</sup> [pork.ahdb.org.uk/media/273228/phwc-ss-roundtable-report-2016.pdf](http://pork.ahdb.org.uk/media/273228/phwc-ss-roundtable-report-2016.pdf)

## 6

## Welfare

## Welfare subgroup

## 6.1 20:20 Pig Health and Welfare

The scope of investigation specifies the need to:

- Evaluate the usefulness of measuring welfare outcomes and work with farm assurance schemes on incorporating a harmonised approach into standards. Such schemes can be used to earn recognition for progress made and provide a clear focus on ongoing improvement
- To achieve progress in improving pig welfare that is not at the expense of deterioration in other areas, eg. production costs that are unsustainable; reductions in tail docking should not be at the expense of an increase in pigs that are tail bitten
- To promote high welfare standards to consumers and work with retailers to create a virtuous cycle of investment and reward that should become the driver of progress in improving pig welfare
- To work specifically on the following:
  - Reduction in the damage to pig tails
  - Examine the welfare and production impacts of piglet teeth clipping and feasible ranges for reduction in teeth clipping and grinding
  - Reduction in the incidence of lameness.
  - Seek improvements in the farrowing environment

Regular welfare outcomes assessments have now been required for all units finishing pigs under the Red Tractor Pig Scheme since 2013. This means that between two and four times a year, veterinarians trained in welfare assessments visit farms and assess the welfare of a representative sample of finisher pigs. Although the introduction of the Real Welfare scheme was challenging, thanks to the continued involvement of key stakeholders the scheme is now an established and accepted part of Red Tractor Farm assurance for finisher pigs. Freedom Food and the Soil Association have also started to incorporate a more extensive welfare outcomes assessment into their Schemes, with data being collected through their trained assessors. The two welfare outcome assessments are aligned to avoid duplication. The Council has considered the Farm Animal Welfare Committee (FAWC) Review of the Implications for Animal Welfare of Farm Assurance Schemes and agrees with the conclusion that overall farm assurance schemes have helped to deliver improved animal welfare.

Prevention of tail biting remains a primary focus of the Pig Health and Welfare group, with a small programme of work planned for 2017. The group continues to consider the latest developments in welfare science, including the farrowing environment.

## 6.2 Real Welfare report

The Real Welfare report was published in March 2017 and includes welfare outcome data collected from 5,463,348 finishing pigs from April 2013 through to May 2016.

## Key initiatives by the pig industry to promote positive pig welfare:

- The pig industry continues to build on its success in promoting positive welfare in the UK pig herd.
- Tail biting has been identified as a key welfare concern. The industry has taken an integrated approach to investigating potential trigger factors and is seeking to provide producers with practical guidance on how to minimise the effects of tail biting on their herds. To help address this, AHDB has launched the Tail Biting WebHAT (Husbandry Advisory Tool); a website designed to be an interactive resource for producers about the key risks for tail biting in pigs and specific practical suggestions to reduce these risks on farm [webhat.ahdb.org.uk](http://webhat.ahdb.org.uk)
- Freedom farrowing is an area which has sparked increased interest among pig industry stakeholders in the UK and across Europe. UK stakeholders continue to review practical case studies and research on the application of different systems of free farrowing and the effects for both the sow and the piglets.
- The provision of environmental enrichment for pigs is another area of interest, as well as a legal requirement. Assessing the effectiveness of environmental enrichment materials for pigs is also ongoing, and the subject of several UK and EU projects.
- The Real Welfare Scheme (an on-farm assessment of finisher pig welfare using animal-based “welfare outcomes”) has built up a unique database that is the biggest of its kind anywhere in the world. The data from the first three years of the scheme (2013–2016) has been analysed by statisticians and the results have now been published as a report (**Real Welfare. Baseline report: 2013–2016 Measuring welfare outcomes in pigs<sup>2</sup>**) and peer-reviewed scientific paper (**The ‘Real Welfare’ scheme: benchmarking welfare outcomes for commercially farmed pigs<sup>3</sup>**). This initiative represents the first long-term, nationwide benchmarking of welfare outcomes for pigs, and has only been possible due to the collaboration between the specialist veterinary community and pig producers.

<sup>2</sup> [pork.ahdb.org.uk/media/273110/real-welfare-report-2017.pdf](http://pork.ahdb.org.uk/media/273110/real-welfare-report-2017.pdf)

<sup>3</sup> [www.cambridge.org/core/services/aop-cambridge-core/content/view/D8CC1413029E29C4F285D918F5491560/S1751731117000246a.pdf/div-class-title-the-real-welfare-scheme-benchmarking-welfare-outcomes-for-commercially-farmed-pigs-div.pdf](http://www.cambridge.org/core/services/aop-cambridge-core/content/view/D8CC1413029E29C4F285D918F5491560/S1751731117000246a.pdf/div-class-title-the-real-welfare-scheme-benchmarking-welfare-outcomes-for-commercially-farmed-pigs-div.pdf)



# Food safety and public health

## Pig Meat Safety subgroup

### 7.1 Zoonotic diseases

The group has continued to address the key milestones for the zoonotic diseases as set out in the 20:20 vision.

Salmonella remains the most relevant microbiological hazard to public health from pigs and the group continues to improve understanding of the controls that can be applied throughout the pork chain. Monitoring of Salmonella levels on pig carcasses is carried out by the FSA using data collected by abattoirs. The group considered it necessary to scrutinise the consistency and robustness of this carcass swab testing and has therefore proposed to evaluate the methodology in the numerous private laboratories used for the testing. The abattoirs collecting the samples have also been provided with further guidance on how to do so in a precise way. The group is looking for innovative decontamination methods and has received presentations on research into the use of bacteriophages and other decontamination technologies which may have application in this field.

The four year APHA funded R8 research project entitled 'A field based study of control measures for Salmonella on pig farms and their effect on endemic disease and productivity' has been completed. The valuable outcomes from this project continue to feed into the work of the relevant Pig Health and Welfare Council subgroups. Some of the research outcomes have wider implications than Salmonella control alone, with the results of the disinfectants and boot dip trial work already influencing best practice on cleaning and disinfection protocols, not only on livestock units, but also in abattoir lairages. The group is supportive of follow-on APHA work evaluating the effects of contact time for disinfectants on livestock vehicles and the development of an 'in-lab' simulated wheel wash project.

Hepatitis E virus (HEV): The group continues to strengthen links with Public Health England and monitors any changes in the number of human cases of HEV. The group has supported three fields of investigations regarding HEV. The first was an APHA farm level analysis using data from the 2013 baseline survey to determine on-farm risks of HEV. The findings highlighted some risk factors, but the study was considered too small to be statistically robust. The second used samples collected from the APHA Salmonella rodent study to determine the role of rodents in the spread of HEV on pig farms. Thirdly, the Royal Veterinary College (RVC) was commissioned to develop a probabilistic risk model for HEV. The group is awaiting the RVC report which should evaluate the risk of exposure of animals on the farm and at the abattoir (through accidental gut or bile spill etc), the factors that affect growth of the virus (time and temperature) and the risk of human exposure through meat.

The group has received the outcome of a joint EU project monitoring the zoonotic risk relating to Toxoplasma in pigs. Only 3.6% of pigs were identified as positive for Toxoplasma and the greatest on-farm risk factor was the presence of cats. The group will consider control measures to minimise risk to the consumer.

The group continues to monitor the implementation of the risk based Trichinella testing regime developed by the European Commission. The industry is now two years into a three year testing programme and Trichinella has not been identified during that time. The group will support applications for derogations from producers, or groups of producers that prove they have three years of robust negative results by November 2017. The collection of negative data contributes to establishing the criteria that will allow the UK to apply for the status of freedom from trichinella.

### 7.2 Abattoir work

#### Improving the Collection and Communication of Inspection Results (CCIR) by the FSA

The FSA has been working with abattoirs, vets and AHDB to improve the quality of meat inspection to provide reliable health information on slaughter pigs for processors, vets, producers and other industry stakeholders. Collection of data from inspections is critical information for improving health and welfare and this is viewed as a priority area for improvement. This work is continuing.

The group continues to assess new technologies that have the potential to contribute to improving end product safety. The Pig Meat Safety subgroup has worked closely with BMPA with regards to improving biosecurity in the supply chain including producing guidance on effective lorry washing. Further detail is outlined in the BMPA section (12.6).

### 7.3 Baseline survey

The last pork baseline survey was carried out in 2013 and continues to influence the groups' priorities – indeed, it has helped focus attention on key areas of risk – such as Hepatitis E virus (HEV), and Livestock Associated methicillin-resistant *Staphylococcus aureus* (LA-MRSA). Past surveys were carried out in 1999, 2003, 2007, and lastly in 2013. The group would like to recommend repeating some of the surveillance work in 2017/18 and is working towards a cost effective programme, such as standard data sharing agreements of research findings between different agencies.

## 7.4 Pig Health Scheme (BPHS)

English levy payers continue to be eligible for free BPHS abattoir reports if they are in a BPHS catchment area and submit animals to slaughter on the scheduled days for BPHS assessments. Coverage of the scheme has increased following a drive by AHDB and now represents over 70% of English pigs.

### Key initiatives by the pig industry to address food safety:

- The pig industry has been involved in research into key food safety pathogens such as *salmonella* and hepatitis E. Work is ongoing to identify risk factors for public health and to seek routes through which risk to human and animal health can be minimised
- A collaborative approach to food safety has been adopted by the FSA so that data are shared with key stakeholders in the pig industry to benefit the health of the UK pig herd
- Traceability throughout the food chain is recognised as a key priority of the pig industry. AHDB Pork is involved in ongoing trials to assess the reliability and sustainability of individual identifiers for pigs from birth through to the end of the slaughter line
- The BPHS health scheme continues to provide producers with data on their pig herds to monitor current health status and identify any subclinical disease issues



# Medicines

## Antimicrobial Usage subgroup

The PHWC Antimicrobial Usage subgroup continues work to implement an action plan, developed from an industry-wide workshop held in October 2014, to optimise the responsible use of antimicrobials in UK pig production.

In the 2013–2014 Biennial Report we set out the background to the threat of antimicrobial resistance (AMR) to the efficacy of antimicrobials in both human and veterinary medicine. The significance of AMR as a global One Health issue was reinforced by the final report of the O'Neill AMR Review team '*Tackling Drug Resistant Infections Globally: Final Report and Recommendations*' published in May 2016. The report's recommendations included reducing the unnecessary use of antimicrobials in agriculture and their dissemination into the environment and setting 10 year targets to reduce unnecessary antimicrobial use in agriculture.

Lord O'Neill recognised there were many gaps in the data and understanding of AMR, not least detail on how much antimicrobials are actually used in both human and veterinary medicine. As any use of an antimicrobial increases the risk of resistance developing the focus of the subgroup's work has been on developing a system for measuring the antimicrobial usage in pig production in the UK. In April 2016, following a major collaborative effort between AHDB Pork and the VMD, AHDB Pork launched an electronic medicines book (eMB) for recording and benchmarking antimicrobial and other medicine use. As data accumulates, the eMB will provide trend reports to farmers and provide aggregated, anonymised data to the Veterinary Medicines Directorate, to assist in interpretation of the sales data already collected from pharmaceutical companies and for submission to the European Commission when Member State reporting is required. The eMB also helps farmers meet their obligations under farm assurance schemes and in the future it may be used to capture data about antimicrobial use in other livestock species. From October 2017 it will be a Red Tractor requirement that quarterly antimicrobial use data are entered into eMB. This requirement also necessitates that producers upload retrospective data from April 2017 onwards by quarter.

By May 2017, 398 producers had submitted antimicrobial use data into eMB covering 1,840 sites. These data account for 65% of national production for 2015 and 2016. This total consists of 5,541,550 finishers and 4,805,617 weaners for 2015 and 5,773,779 finishers and 6,124,749 weaners for 2016.

The collection of representative data on national usage of antimicrobials in the pig industry is critical to facilitate the setting of meaningful targets, as required by Government, to optimise usage levels without damaging animal health and welfare.

The Pig Veterinary Society (PVS), in conjunction with the subgroup, has produced guidelines for veterinary surgeons attending pigs on the need and procedure for regular clinical review of the use of antimicrobials in their clients' pigs. The PVS has made the Society's prescribing principles for antimicrobials available to all vets, not just PVS members, on their website and, in response to scientific findings on transferable colistin resistance and the importance of this antimicrobial in human treatment, moved colistin into the class of last resort for antimicrobial use.

To help provide information to farmers considering how their antimicrobial use can be reduced, the subgroup published a report of a study tour to farms which have reduced usage in the Netherlands. Case studies were also obtained from UK farms which have significantly reduced their antimicrobial use. These will be used in communications to farmers by AHDB Pork.

The subgroup reviewed research projects funded by AHDB and BBSRC and AHDB field trials. Knowledge gaps identified centred on the development of better diagnostics and alternative therapeutics. The findings of the MinaPig project were presented to the subgroup; this looked at antimicrobial use in pig herds in seven EU countries and Norway and investigated 45 herds to assess the benefit of improving disease control measures and biosecurity on antimicrobial use and productivity. The lessons learned from this study will be used to help develop advice for UK pig producers.

Our membership has been increased to include two pig producers and the Controlling Antimicrobial Resistance in Scotland (CARS) group.



### Key initiatives by the pig industry to tackle antimicrobial resistance:

- The Pig Veterinary Society Antimicrobial Prescribing Principles provide a reference document for veterinary surgeons on the usage of different antimicrobial classes. This document is dynamic and has been updated based on current knowledge and use. For example, critically important antimicrobials including the fluoroquinolones, the third and fourth generation cephalosporins and colistin are all class three products (products only to be used as a last resort and supported by antimicrobial sensitivity testing)
- AHDB Pork launched the electronic medicines book (eMB) in April 2016 as a system to collect farm level data on antimicrobial use in pigs. This was a collaborative project with the VMD and will allow the UK to fulfil future requirements for the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) to provide aggregated anonymised antimicrobial data for pigs
- Red Tractor assurance scheme members will be required to upload their antimicrobial usage data directly into eMB from November 2017. Going forward these data will be required quarterly from November 2017 however, data from April 2017 will be required to be entered retrospectively
- The NPA Pig Industry Antimicrobial Stewardship Programme was launched in May 2016 and outlines the commitments of the pig industry to achieve and demonstrate responsible use of antimicrobials. It supports the use of eMB to collect superior data on antimicrobial use in pigs at a farm level and supports the future goal of enabling producers to benchmark usage against similar farms. This initiative also aims to educate pig producers in effective disease control methods
- Through RUMA, the UK pig industry agreed to restrict voluntarily the use of colistin in pigs due to public health concerns over antimicrobial resistance. From November 2015 the industry agreed that colistin would only be used if antimicrobial susceptibility testing proved it to be the only effective treatment option
- In response to Government's requirement for sector-specific targets to be set for the pig industry, RUMA set up a 'Targets Taskforce' to look at how meaningful reduction targets could be developed to replace, reduce and refine antimicrobial use in livestock. The target setting will be guided by 2015 antimicrobial use data from eMB and aims to develop beneficial targets to reduce antimicrobial use while maintaining and promoting high levels of animal health and welfare
- AHDB Pork is conducting research to assess current water quality across UK pig units and to scope the best methods for testing, maintaining and cleaning waterlines. This project will also identify considerations when medicating through waterlines to target in-water antimicrobials and vaccinations. This is essential work as the pig industry looks to alternative methods of preventing disease to in-feed antimicrobials





# Biosecurity

Biosecurity has become even important to the pig industry in the face of new and emerging diseases such as African Swine Fever (ASF) and PEDv. There is also a role for biosecurity in reducing disease risk and burden in the face of demands to be more prudent in the use of antimicrobials.

While the view of the pig industry is that biosecurity measures are of a high standard, the concept of biosecurity and the understanding of its value, by industry still remains an area for improvement. The development of the industry-led PEDv contingency plan led to much scrutiny with regards to measures on an individual farm. There was concern that the concept of biosecurity was limited to the measures at the farm gate rather than a more holistic approach across the farm. The need for a risk-based approach was developed with a particular focus on customising the approach to the individual farm. Individual farms are unique with regards to the existing and potential disease risks that will affect them, so it is important to develop strategies which are proportionate to those risks and tailored to that farm. This approach removes the assumption that biosecurity measures cannot be applied to outdoor systems, but recognises that controlling movements on and off a site, wherever possible and practicable, will reduce the disease risk on that farm.

AHDB Pork has developed the Think! Biorisk biosecurity hazard perception tool to provide practical training for staff on pig farms. The programme has been developed with interactive videos showing good and bad practice, in terms of biosecurity and provides a score based upon recognition of poor biosecurity. The tool is freely available to all UK pig producers and provides an educational resource for the workers on the ground, who may not be as aware of the risks that poor biosecurity can pose.

The forthcoming targets to reduce antimicrobials will present the industry with a new set of challenges and a renewed need for good biosecurity on farm. The benefits of good biosecurity in preventing disease and reducing the potential need for antimicrobial use on farm, have long been known. However, research as part of the EU funded Minapig project has demonstrated the understanding of internal biosecurity (within a site) was poor in comparison with external biosecurity (at the perimeter of a site). The project then demonstrated that improving internal biosecurity can have a positive effect on antimicrobial reduction, which is more effective than by just addressing the external biosecurity alone.

The PHWC continues to communicate the importance of the responsible use of antimicrobials in pigs, through its members, good practice in biosecurity and to demonstrate through case studies, online tools and programs to help develop resilience within the sector.



## 10

# Research

The PHWC continues to promote and support research into the areas of pig health and welfare topics. This is in recognition of the need to continue to develop and help the English pig industry to become a lead on the world stage, which is becoming even more important in the light of Brexit. Research topics commissioned by the PHWC are wide and varied and contribute towards the aims and objectives of each of the strategic areas, now the subgroups, of the Council.

The latest AHDB Pork strategies “Going for Growth” and “Capturing the Opportunity” have a greater emphasis on the running of protocol-driven scientifically robust on-farm field trials and engaging with producers and the wider industry via tailored on farm reviews and regional forums. Health and welfare topics that have been investigated through the new trial programme from 2015-2016 include: optimal environments for rearing pigs; optimising the management of small newborn piglets; the use of Ultra High Frequency (UHF) ear tags; improving water hygiene and evaluating the effect of Electrostatic Particulate Ionisation (EPI) in pig buildings to reduce dust and pathogen contamination. Future trial work will continue to focus on optimising the hygiene of the pig environment and investigating non-invasive diagnostics.

Significant progress has been made in the area of alternatives to antimicrobials. A recent AHDB funded trial at the University of Leicester has led to the development of a Salmonella phage library, which is now available for the industry to use and further develop through efficacy studies. This opportunity is currently being explored through the Centre for Innovation Excellence in Livestock (CIEL). Further work is required by the PHWC to overcome potential barriers to licencing phage in pigs and investigating other alternatives such as peptides.

The Centres for Agricultural Innovation are a new collaborative model between the agri-tech sector and government. The centres will help the UK:

- turn agricultural innovation into commercial opportunities for UK businesses
- encourage inward investment
- improve farming practice

The two centres of importance to the pig industry are: the Centre for Innovation and Excellence in Livestock (CIEL) and the Agricultural Engineering Precision Innovation Centre (Agri-EPI). The Pig Health and Welfare council will encourage collaboration with the centres to deliver projects of priority in the fields of health and welfare.

The PHWC will utilise the EU Pig Innovation Group (EU PiG), launched in November 2016, to disseminate knowledge on key health topics to the industry (and to highlight gaps in knowledge for further research). EU PiG is a four-year project to look at health management, precision production, animal welfare and meat quality, made up of a consortium of 19 organisations from all across Europe and led by AHDB. The consortium represents 13 Member States that together accounted for 93% of the EU's pig meat production (92% of slaughterings) and 90% of the EU's pig herd (88% of the breeding herd) in 2015. EU PiG aims to improve the connection between producers and the latest science, husbandry techniques and technologies from within their industry via fellow producers, academics and advisors connected through thematic and regional platforms and addressing two topics per theme per year in accordance to producer and wider industry needs. It is funded by the European Commission's research and development programme, 'Horizon 2020'.

The next four years' tools will be created and practical guidance provided to all parts of the industry. Innovative best practice combined with scientific knowledge will be identified and shared via a comprehensive website. AHDB will be responsible for coordinating the project and the Pig Health and Welfare Council will feed in to this group via a UK wide Regional Pig Innovation Group, consisting of a range of stakeholders across the sector.

A list of research projects that the PHWC is involved in can be found in Appendix 2 of this document.

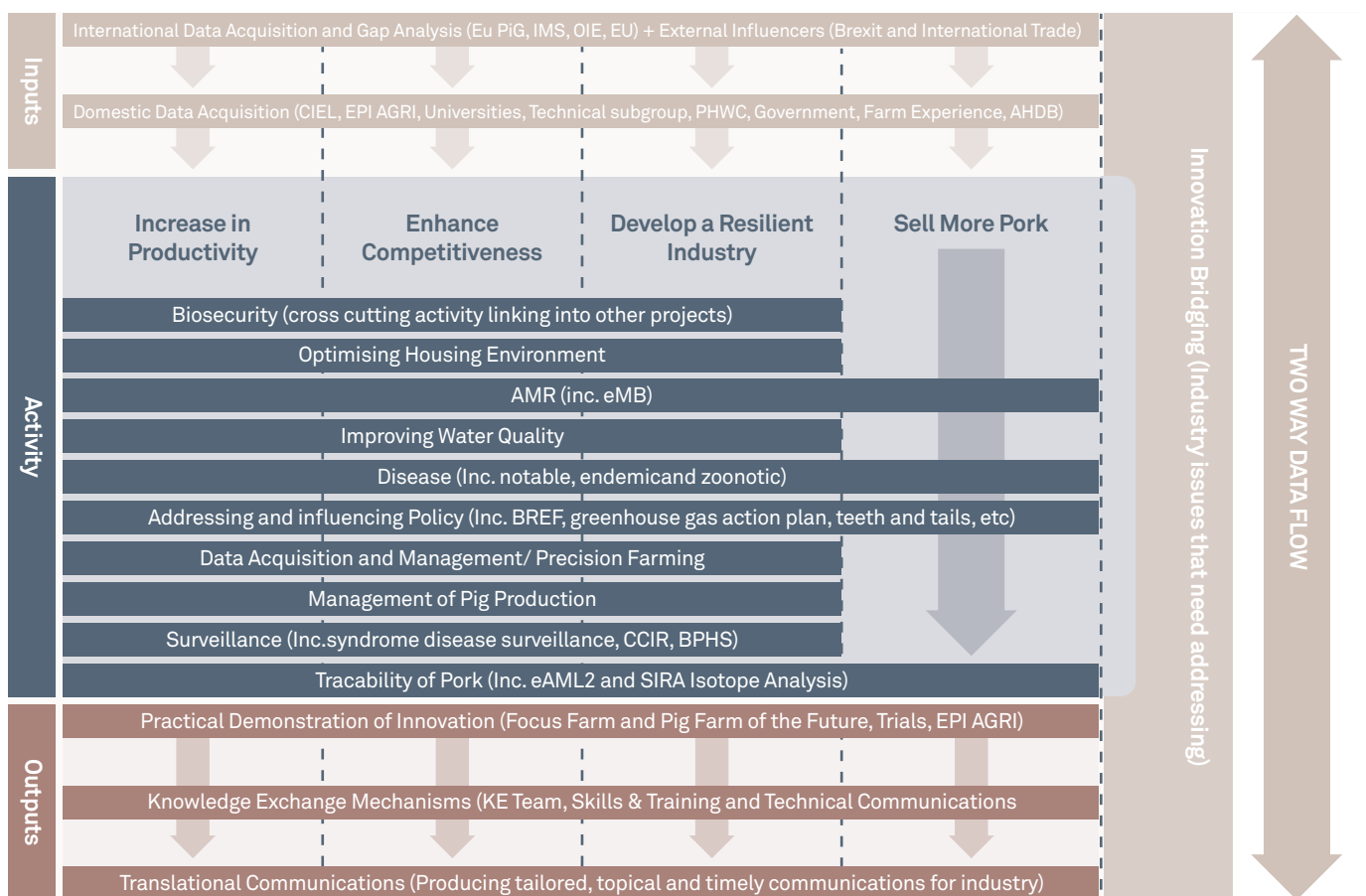
# Knowledge transfer and training

## 11.1 Specific activities and services

In 2014 AHDB Pork launched its new strategy called Going For Growth, within which the KE (Knowledge Exchange) team has been working on the “Closing the Gap” aspect of the strategy in which we are helping producers with three main Key Performance Indicators - +1 pig weaned, improving FCR by 0.1 and DLWG by 50 g/day to help our producers get production levels nearer to our European counterparts.

AHDB Pork launched a new strategy in early 2017. The key aims of the strategy were to:

- **Improve productivity.** AHDB Pork will work with producers to seek new and innovative ways to adapt businesses to a more competitive market place focusing on improving profitability. This will include communicating knowledge and ideas from networks with colleagues from across the UK and further afield; centred around the EU PiG innovation network
- **Increase demand.** AHDB Pork will build on the success of the Pulled Pork campaign and continue to invest in rejuvenating the image of pork in the domestic market. It will seek to secure new export markets and promote pork from Britain in these and existing growth markets around the world
- **Improve information.** AHDB Pork will work to stimulate the introduction of a new carcass classification system which more effectively transmits consumer demands through the supply chain to producers. It will work with other sectors to increase the in-depth understanding of the market dynamics vital for businesses across the supply chain which are planning to invest.





The KE (Knowledge Exchange) function of this activity will be split into three areas: campaign activity, core activity and pulse activity. All work-streams are looking to have measurable outcomes such as return on levy invested or value to a specific business.

The new strategy will also see the KE team looking to build relationships with colleges and universities while further enhancing the existing relationships with producers, vets and AIG.

Pig Pro, a new training and development web-based tool for the pig industry will be launched by AHDB in September 2017 to provide farmers with a simple and flexible way to record and monitor staff skills and development. Pig Pro will be a free, online and easy-to-use business tool available to all. The aim of Pig Pro is to build on training records already kept within businesses and encourage additional businesses to start recording. The online tool has additional features in terms of helping to identify training needs, evaluating training at a business level and demonstrating skill and knowledge level of staff. Accessed through AHDB's Pig Hub, the new system is the

result of a 12-month consultation with industry members and will be an alternative to PIPR – the Pig Industry Professional Register. According to feedback from the consultation the industry wanted a more robust and flexible system that enabled producers to register and recognise the development and training of their workforce.

**The following range of services is now on offer from AHDB Pork to help producers achieve their targets:**

- On-farm reviews
- On-farm investigations and field trials
- Innovation grants
- Staff development and training
- Business insight trips
- Regional producer events
- Environment and building services
- Media and publications
- Practical Pig App
- Think BioRisk App
- On-farm training
- Corporate accounts
- Pig clubs
- Regional forums



# Integrated Approach

## 12.1 20:20 Pig Health and Welfare

The Vision specifies the need to:

- Address issues of co-ordination and integration in annual reviews of progress towards the objectives and targets of the strategy
- Ensure that where the 20:20 Pig Health and Welfare Strategy, other industry initiatives and Defra's Structural Reform Priorities (Defra Business Plan 2011–2015) are aligned, then activity can be integrated for mutual benefit

## 12.2 Agricultural Industries Confederation (AIC)

The role of the feed industry is to supply nutritionally balanced diets for each class of livestock together with sound feeding management advice which together with good livestock management and husbandry helps reduce the need for the use of antimicrobials at farm level.

Medicated feeds are manufactured as a service to the farmer customer and only on receipt of a prescription issued by a veterinary surgeon. Once instructed by a veterinary surgeon the feed manufacturers' role is to produce feed with the prescribed antimicrobials accurately incorporated to the specified levels.

Feed manufacturers support the Antimicrobial Stewardship Plans of the livestock industry by providing and researching nutritional factors that support health.

### AIC and the UK feed industry

On behalf of its feed members, AIC:

- keeps its members up-to-date with all legal requirements controlling the marketing and use of animal feed, including those containing veterinary medicinal products (VMPs) and specified feed additives (SFAs)
- continues to develop the Universal Feed Assurance Scheme (UFAS) for the protection of human and animal health by ensuring safe practices in the manufacture, merchandising and distribution of feed for farm livestock. It is a requirement of UFAS that participants comply with all feed safety legislation, including those provisions controlling the manufacture and supply of medicated feedingstuffs. The scheme contains a section dealing specifically with medicated feed. UFAS is accredited to ISO 17065, is independently audited on an annual basis and has been granted Earned Recognition by the FSA working with the VMD
- is a long standing and active member of the Responsible Use of Medicines in Agriculture Alliance (RUMA)
- continues to develop the Feed Adviser Register (FAR) which promotes efficient feeding advice and high standards of animal health and welfare

## Nutrition and animal feed

The feed industry has a major positive input on livestock well-being through sound nutrition and feeding management advice. This advisory role works at two levels:

- a level where sales staff provide general knowledge on good husbandry and management
- a technical level where the nutritionist may work with the prescribing veterinary surgeon and the farmer to help review factors affecting the animals' health with the aim of reducing as many contributors to a problem as possible in order that the veterinary surgeon has better clarity for a diagnosis

Feed companies also research and design diets to maximise health by enhancing the immune system, the microbiome, gut health and general wellbeing.

### Specific and relevant AIC initiatives

1. On behalf of its members, and in consultation with Defra and the FSA, AIC prepared the "Code of Practice for the Control of Salmonella during the Production, Storage and Transport of Compound Feeds, Premixtures, Feed Materials and Feed Additives." This non-statutory Code of Practice has now been issued by Defra and the Devolved Administrations
2. Following discussions with the VMD, BVA and PVS, AIC issued guidance to its feed members on the "management of prescriptions" for the manufacture of medicated feedingstuffs. The purpose of the guidance is to ensure that the vet is in control of the diagnosis of any disease in the animals under his/her care and the subsequent medication required. To aid this process, an agreed text of a "Notification to vet practice of request for a medicated feed" was also circulated to AIC feed members

### Feed industry statistics

AIC members produce an estimated 90% of the feed fed to UK farm livestock.

AIC regularly surveys members of two of its standing committees and data on medicated feed production is shared with the VMD. Medicated feed production for the pig sector has reduced significantly in the past year (2015–2016).

Feed companies provide their farmer customers with information on medicine usage so that they can comply with the requirements of the Red Tractor Farm Assurance Scheme.



## 12.3 Animal and Plant Health Agency (APHA)

The Animal and Plant Health Agency (APHA) supports the work of the Pig Health and Welfare Council (PHWC) and is represented on the Council as well as providing input into each of subgroups (Surveillance, Antimicrobial use, Welfare and Food Safety) in working towards improvements in both pig health and welfare in British pigs and food safety. APHA has a wide-ranging and key role in pig health and welfare through its involvement in notifiable disease, surveillance, contingency planning, disease diagnosis and scanning surveillance, animal welfare, international trade, Salmonella and antimicrobial resistance monitoring and other activities. APHA's scientific expertise in pig pathogens, such as classical swine fever, swine influenza, porcine reproductive and respiratory syndrome (PRRS) virus and Salmonella and disciplines such as virology, bacteriology, antimicrobial resistance, epidemiology and pathology, are highly relevant to the Council's work.

APHA collaborated as part of the PHWC surveillance subgroup in developing the contingency plan for virulent porcine epidemic diarrhoea (PED), in particular contributing to identification of risk pathways for PED introduction to the UK and has maintained surveillance for early detection of the virus with industry support. This partnership work through the surveillance subgroup culminated in late 2015 in PED being made a notifiable disease in England and Scotland enabling information on PED outbreaks to be shared with the pig industry to facilitate industry-led PED control. The APHA International Disease Monitoring Team maintains awareness of developments in Eastern Europe on outbreaks of African Swine Fever in wild boar and domestic pigs. The continuing threat of this disease from the region emphasises the need for strict biosecurity on pig farms and for all pig keepers to observe legislation banning feeding of meat and meat products, including kitchen scraps to pigs.

Scanning surveillance by APHA across England and Wales underwent restructuring in 2014–15 and is now delivered by a network of Post Mortem Examination (PME) sites made up of APHA Veterinary Investigation Centres and non-APHA partner post-mortem providers, with a carcase collection service in certain areas to ensure access to PME sites. Veterinary practitioners and pig keepers are the “eyes and ears” of pig disease surveillance and a step towards systematic capture of pig disease incident information from veterinarians was taken when APHA co-organised the PHWC surveillance subgroup's Syndromic Surveillance Roundtable meeting with AHDB Pork. Stakeholder input was obtained to assist the development of this form of surveillance to complement data from diagnostic submissions to APHA's surveillance network and pilot work is planned.

In 2015–16, a variety of threats or potential threats were identified and investigated as summarised in Section 14. Threats reported from outside the UK were assessed with vesicular disease due to Senecavirus A and PED being the most prominent, while the association of an atypical porcine pestivirus with congenital tremor type A2 was reported by several countries. There have also been cases confirmed in England. Increases in the diagnostic rates of various diseases at different times were noted and investigated and PRRS arguably remains the most significant endemic viral disease in pigs in England. Although the diagnostic rate of swine dysentery was low, diagnosed cases remain of great concern and most recent newly diagnosed commercial premises underwent depopulation. Cases of coal tar toxicity were highlighted to raise awareness about possible sources. Antimicrobial sensitivity testing of pathogens isolated from pig disease surveillance was key to the detection, in late 2015, of transferable plasmid-encoded *mcr-1* gene-associated colistin resistance in *Escherichia coli* and *Salmonella* from diarrhoeic pigs submitted to APHA for diagnostic investigation. Further details are given in the quarterly scanning surveillance reports for 2015–2016 available on this link: [www.gov.uk/government/publications/pig-disease-surveillance-reports](http://www.gov.uk/government/publications/pig-disease-surveillance-reports).

Provision of Continuing Professional Development and dissemination of surveillance outputs to veterinary practitioners who work with pigs and pig producers continues to be an essential component of APHA's role in knowledge transfer and maintaining disease awareness and preparedness for both non-notifiable and notifiable pig diseases. Guidance on diagnosis of enteric, respiratory and bone disease, disease associated with vitamin E and selenium deficiency and updates on current threats, PRRS and PED are examples of topics presented in the last two years.

## 12.4 Red Tractor (Assured Food Standards)

Red Tractor (RT) is the UK's biggest farm and food standards scheme, and the Red Tractor logo is on more than £12 billion worth of food and drink annually. A major objective is to define and set robust standards of good agricultural practice covering food safety, traceability, protection from pollution and for livestock, animal welfare, biosecurity and animal health. The regular independent spot checks and assessments of producers and licensees ensure compliance with the standards.

The standards are continuously under review and, by working with industry stakeholders, RT ensures that the requirements reflect best practice and meet legal requirements while being achievable, practical and based upon sound technical or scientific evidence. As part of the ongoing review RT has been

collaborating with and participating in the work of PHWC by providing input to the Council and its subgroups to support the key strategic priorities and bring benefit to the pig industry.

Agreed changes to the RT standards reflect and support the key milestones set by the PHWC subgroups. These include strengthening of existing standards around responsible antibiotic use to meet concerns of increasing antimicrobial resistance in humans, for example requiring the retained veterinarian to be a member of PVS, to declare that they only prescribe antibiotics on the unit in accordance at all times with the PVS Prescribing Principles for Antimicrobials and a specific new requirement for RT assurance scheme members to use the eMB to upload quarterly antibiotic collations. Producers will be required to have uploaded antibiotic use data directly into eMB by 11 November 2017 for data relating to quarter two (April 1 – June 30) and quarter three (July 1 – September 30) and thereafter each quarter's data must be uploaded by six weeks of the last day of the quarter.

The PHWC Welfare subgroup has identified the importance of euthanasia training and the latest RT proposals reflect the need for the provision of direct supervision by either a vet or suitably trained person (as signed off by a vet) during staff training.

New standards are also being put forward on biosecurity and disease control to help support PHWC initiatives on contingency planning for the effective control of any disease threats.

RT has developed a training platform that all assessors must complete as part of the continuous improvement of assessments for everyone involved. More than 320 assessors have completed online training, which requires them to take a test at the end of the course to ensure their full understanding of the standards, general conduct and communication skills as well as engagement with farmers and farm personnel. Over the next few months' auditors will shadow each assessor to see how well they are assessing the RT standards. As well as improving assessment quality and efficiency, this process will allow the delivery of consistent, smooth assessments for assessors and producers.

## 12.5 AHDB Pork

A sustainable and efficient pig industry is the core of AHDB Pork activity. Since 2014 the AHDB Pork technical team has been working in a more integrated structure, taking a holistic approach to its strategic themes, incorporating multidiscipline team-wide projects which deliver real benefits for the pig industry. The continued improvement of pig health and welfare is the key to the sustainable development of the pig industry. This approach helps in developing opportunities for reducing costs, improving performance efficiencies and generating

market growth. A sustainable market will be vital to meet the current challenges to the agricultural sector both pre- and post-Brexit.

AHDB Pork has continued to work alongside the PHWC in preparedness for PEDv reaching the UK shores and the delivery of industry advice and communications. Since November 2015 PEDv has been notifiable within England and AHDB Pork is entrusted with mapping and communicating details of an outbreak, should they occur. Should PEDv reach UK shores AHDB Pork will work in collaboration with industry to provide evidence on best practice in disease control and biosecurity as well as maintaining production levels wherever possible.

AHDB Pork has also committed to provide support for the establishment of better disease surveillance systems within the UK. AHDB Pork co-funded a syndromic surveillance round table meeting in collaboration with APHA to investigate the possibility of establishing an on-farm data collection system for clinical disease. This system has great potential to strengthen further the existing surveillance data and provide real time feedback on syndromic disease trends.

The Real Welfare Scheme, is now a well-established scheme run in collaboration between RT, PVS members and AHDB Pork. In 2015 it was determined that a report containing the headline data from the scheme should be published. The report has been published as two academic papers looking at the data sets in more depth and a more general data analysis has been provided by an industry report. Data in the report runs from April 2013 to April 2016 and provided a strong insight into the improvements that have been made in managing the key issues measured in the scheme.

AHDB continues to work closely with Defra, the Food Standards Agency (FSA) and the pig industry, to continually monitor and review current and emerging zoonotic pathogens that have the potential to cause human illness. This has included continued work on Hepatitis E, as well as providing financial support for monitoring of other zoonotic pathogens and monitoring for the emergence of antimicrobial resistant strains of bacteria.

Finally AHDB launched its 'electronic Medicines Book for Pigs' (eMB Pigs) in April 2016. The fully digital system provides producers with a portal to enter farm level data for antimicrobial usage, as well as providing itemised reports and quarterly reporting of antimicrobial use by product class. The system has been built to provide access to producers and their vets, but also to provide an aggregate total to the Veterinary Medicines Directorate in fulfilment of the forthcoming European requirements and as a response to the new 10-year targets outlined by the Government's response to the O'Neill Report. The system has been well adopted by the industry,

thanks to support from all levels of the industry and it provides the UK pig sector with the only fully electronic record of antimicrobial use of any livestock sector.

## 12.6 British Meat Processors Association (BMPA)

The BMPA has worked to improve biosecurity in the supply chain in its recent review of the BMPA Pork Schemes. The principal change is the requirement that every livestock lorry is cleaned and disinfected before it leaves the abattoir site. To ensure the cleaning and disinfecting is both effective and efficient, new requirements on the standard of the washing facilities have also been included.

## 12.7 British Pig Association (BPA)

The British Pig Association (BPA) continues to work with small scale producers raising awareness of biosecurity issues. Bob Stephenson, veterinary advisor for BPA, has conducted a series of workshops on practical measures that smaller producers can take to safeguard the health of their pigs.

BPA have worked closely with APHA and the Defra Farm Animal Genetic Resources committee to draw up a set of biosecurity guidelines for keepers of breeds at risk. These guidelines will assist small scale producers in meeting the requirements of the veterinary risk assessment which will be carried out before any decision on sparing from culling can be made. There is a need to establish and maintain a track record of good biosecurity standards to ensure that small scale production is prepared should they be faced with any major disease threats.

Over the last six years Bob Stevenson has written a series of Veterinary Q&A features for Practical Pigs magazine building up a library of information for smaller producers on pig health issues. In addition the BPA pages of the magazine have been used to remind small scale producers of the threat of importing non-notifiable diseases such as Highly Pathogenic Porcine reproductive and respiratory syndrome (HP-PRRS). BPA have continued to work with the Council and other sectors to ensure that pedigree breeders and small scale pig keepers are aware of the need for additional testing of imported animals.

Working alongside AHDB Pork, BPA have commissioned a series of articles which take the existing published material on pig health and welfare and present it in a format more easily understood by small scale producers and those new to pig keeping. In 2017 they will be launching Pig Clubs for smaller producers with support from AHDB Pork where pig health and welfare issues in smaller herds can be discussed.

## 12.8 National Pig Association (NPA)

The use of antimicrobials in livestock has become a politically hot topic and the pig industry in particular has come under intense scrutiny from Government, retailers, the media and various NGOs. In order to bring together all of the important work going on within the industry into one coherent strategy, NPA launched its Pig Industry Antimicrobial Stewardship Programme in which key priorities and actions for replacing, reducing and refining antimicrobial use in the pig sector are laid out. Promoting the Stewardship Programme is an important way of showing the pig industry recognises the concerns of consumers and is committed to minimising antimicrobial use where possible.

With more producers choosing to import breeding stock into the UK, the NPA felt an update to the harmonised imports protocol was necessary and we have worked with Red Tractor to improve the auditing of testing regimes followed by importing farms. Producers must seek derogation from Red Tractor to import pigs into the UK but until recently there was no robust way for auditors to check that an import protocol was followed when new stock came in. Consequently, the NPA lobbied for a new requirement in the standards for a signed veterinary statement, from the vet responsible for the unit importing the stock/semen, confirming that the NPA Imports Protocol had been complied with. Senecavirus A, an emerging threat that has been causing disease in the United States and Brazil that is indistinguishable from Foot and Mouth, has also been added to the imports protocol to raise awareness.

The NPA continues to put pressure on Defra to recognise the threat of the expanding population of feral wild boar in the Forest of Dean and the need for more support to manage the population effectively to protect the health of the national herd and our export trade. The association has also been working with Defra to ensure a risk-based approach to preventing spread of bovine TB from pigs is developed, however, a national policy for dealing with pig herds found to be positive for bTB has not yet been agreed.

## 12.9 Pig Veterinary Society (PVS)

The Pig Veterinary Society (PVS) exists to assist its members to care for pigs in the UK and abroad, through exchange and dissemination of knowledge about health, disease, the pig's welfare and its management. The majority of UK commercial pigs are part of assurance schemes and are regularly visited by veterinary practitioners, most of whom are members of the PVS.

The optimisation of pig health is increasingly recognised as being one of the highest priorities needed to safeguard pig health and welfare and enable profitable and sustainable

pig production. Veterinary advisors work closely with their pig-keeping clients to select and implement interventions to prevent and control disease in their pigs and improve their health and welfare. This advice can cover specific inputs to vaccine and treatment requirements, biosecurity and hygiene measures, slaughterhouse monitoring, production record analysis, improvements in pig welfare, disease diagnosis and monitoring and other areas to guide decisions.

PVS members are represented on the Pig Health and Welfare Council and its subgroups, contributing to the aims of these subgroups individually and also through consultation with other PVS members. During 2015-16, there has been increased integration and involvement of PVS representatives in specific PHWC initiatives. For example, PVS was involved in developing the PEDv contingency plan and worked in partnership with others towards PEDv being made a notifiable disease. PVS has also been active in the evolving discussion on antimicrobial use and resistance in pigs, that has led to the development of the electronic medicines book for pigs, as well as raising awareness about the need for reduced and ever more responsible use of antimicrobials in pigs.

The Society holds two scientific meetings each year to provide continuing professional development to PVS members and an opportunity to discuss and debate pig health, diseases, welfare, and many other issues that relate to the pig industry and pig production. Details can be found on the PVS website ([www.pigvetsoc.org.uk](http://www.pigvetsoc.org.uk)).

## 12.10 Responsible Use of Medicines in Agriculture Alliance (RUMA)

The responsible use of medicines continues to play a key role in maintaining the health and welfare of pigs and RUMA continues to participate actively in the Pig Health and Welfare Council and its Antimicrobial Use subgroup.

RUMA is delighted to support the initiatives of the subgroup to provide more practical information to pig producers on how they can reduce the disease threat on farm and so reduce the need to use antimicrobials. RUMA supports evidence based decision making on the use of antimicrobials and is pleased to see the launch of the eMB pigs plus the good uptake from the industry. Accurate knowledge of how much is really being used in UK pig production will help the sector, through the RUMA Targets Task Force, to set meaningful usage targets in order to minimise the risk of AMR while protecting animal health and welfare.

RUMA provides guidance for farmers and vets on the responsible use of medicines on farm. The guidelines are species specific and are available free of charge for download from the RUMA website [www.ruma.org.uk](http://www.ruma.org.uk). In November 2016,

RUMA launched a new website in to provide more balanced information on the use of antimicrobials on farm [www.farmantimicrobials.org](http://www.farmantimicrobials.org)

## 12.11 Royal Society for the Prevention of Cruelty to Animals (RSPCA)

The RSPCA continues to work towards improving the welfare of pigs and undertook a number of key initiatives over the past couple of years, which directly supported the work of the Pig Health and Welfare Council and the targets set in its 20:20 strategy.

More than 30% of pigs in the UK are currently reared to the RSPCA welfare standards under the RSPCA Assured scheme, formerly known as Freedom Food. The standards and the scheme therefore offer highly tangible mechanisms for the Society to support practically and drive the aims of the strategy. There have been a number of changes to the **RSPCA Welfare Standards for Pigs**, including developments with respect to indoor free farrowing and welfare outcome measures.

One of the key targets, with respect to animal welfare, identified in the Council's 20:20 strategy is to work towards improvements in the farrowing environment. The RSPCA Welfare Standards for Pigs have prohibited the use of farrowing crates by members of the RSPCA Assured scheme since the end of 2013. New standards that set out more detailed requirements for indoor free farrowing were issued in December 2015 and covered areas such as space, flooring and bedding/enrichment materials. It is hoped that these inclusions will assist those producers wishing to make the transition to indoor free farrowing.

Measuring welfare outcomes on farm is also a key target within the Council's strategy and in April 2016 Welfare Outcome Assessment became fully integrated into the RSPCA Welfare Standards for Pigs. Members of the RSPCA Assured scheme, both breeding and finishing producers, are now being assessed against a number of key welfare measures, including lameness, enrichment use, body marks and tail lesions. The Society believes that the inclusion of welfare outcome assessment within farm assurance scheme assessments is important and beneficial to the scheme itself as well as individual producers and the wider industry. Not only can it help provide a practical, objective, animal-focused 'picture' of the level of welfare being achieved on-farm for some important measures, it can also help inform what effect the inputs (ie the provision of resources) is having overall on pig health, physical condition and behaviour.

## 13

# Horizon scanning

## Summary of disease-related threats and potential threats to GB pigs identified in 2015–2016

Pig disease-related threats identified in 2015–2016 and reported in the Quarterly GB Emerging Threats for Pig Diseases Reports are summarised below. More details on each threat, or potential threat, are included in the Quarterly report(s) cited for each threat. The quarterly reports are produced by the APHA Pig Expert Group and include actions taken to address identified threats.

They are found through the following links:

- [www.gov.uk/government/publications/pig-disease-surveillance-reports-2015](http://www.gov.uk/government/publications/pig-disease-surveillance-reports-2015)
- [www.gov.uk/government/publications/pig-disease-surveillance-reports-2016](http://www.gov.uk/government/publications/pig-disease-surveillance-reports-2016)

Veterinary Investigation Diagnosis Analysis (VIDA) diagnoses and analyses referred to in the table below are recorded on the APHA FarmFile database and SAC Consultancy: Veterinary Services LIMS database and comply with agreed diagnostic criteria against which regular validations and audits are undertaken.

Type of threat		Notifiable diseases	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
African Swine Fever in Eastern Europe			
a) First ASF in Moldova and spread in Poland	ASF outbreaks have occurred in domestic pigs for first time in Moldova and further west in Poland, EU restriction zones have changed accordingly. Other EU countries are stepping up awareness and biosecurity with Denmark implementing stringent lorry cleaning and disinfection and stand-down times	No	2016 Q3
b) Increased ASF threat to Moldova	ASF outbreak reported in Ukraine in early April 2016 on backyard pig farm near the Moldovan border. About two thirds of Moldovan pigs are in small backyard farms where biosecurity tends to be poorer. ASF in Moldova would increase the risk of spread to Romania which has more transport links and people movements to UK. Improving biosecurity and maintaining the swill feed ban remains important in these countries	No	2016 Q1
c) Increased ASF in wild boar	Rise in African Swine Fever cases in wild boar in Eastern Europe	No	2015 Q1, Q2
Type of threat		New disease or pathogen	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Atypical porcine pestivirus (APPV) associated with congenital tremor (CT)	CT type All found to be associated with APPV in US, Germany, Netherlands. Testing confirmed presence of this APPV in one current and several archived CT type All cases from English pig units	Yes	2016 Q2
Senecavirus A (SVA) vesicular disease	Vesicular disease successfully reproduced by experimental infection of growing pigs using a contemporary 2015 US SVA field isolate from a case in which notifiable vesicular diseases ruled out by authorities	No	2015 Q4



Senecavirus A and associated disease manifestations	Idiopathic Vesicular Disease and epidemic Transient Neonatal Losses described in multiple pig herds in Brazil and in several herds in the US. Detection of Seneca A virus a consistent finding	No	2015 Q3
New neonatal porcine diarrhoea syndrome (NNPDS)	Publication of study indicates that NNPDS unlikely to have a primary infectious case. NNPDS first reported in 2008 by several European countries including Denmark and France	No	2015 Q2
Novel pathogenic mammalian orthoreovirus from diarrhoeic pigs in US	Experimental infection produced severe diarrhoea and mortality in three-day-old piglets, clinical relevance in field not known. These viruses are not known to be in pigs in EU at present, although there may not have been any specific surveillance undertaken	No	2015 Q2

Type of threat	New pathogen variant		
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Swine influenza: a) New influenza virus D	Influenza D virus previously classified as type C first isolated in US from a diseased pig in 2011, although later found that cattle were the primary reservoir. Virus identified in the US, Italy and France in cattle and in the US and Italy in pigs. Zoonotic potential is not confirmed. No evidence for this C/D influenza virus in GB pigs with respiratory disease in small sample set tested from Defra swine influenza surveillance project	No	2016 Q3
b) Evolution of pandemic H1N1 2009 in Chinese pigs	Publication of evolution of Eurasian H1N1 swine influenza virus strains in Chinese pigs which have acquired new traits	No	2015 Q4
Virulent Porcine Epidemic Diarrhoea Virus (PEDV): a) Recombinant TGEV-PEDV virus strain	Two publications reported detection of previously undescribed recombinant TGEV-PEDV virus strains in samples from 2009 in Italy and in 2012 in Germany with clinical disease reported to be similar to cases of PED. Reinforces importance of measures in place to prevent entry of PEDV, which also reduce the risk of entry of other pig enteric coronavirus	No	2016 Q1
b) Study on introduction PEDV to US	USDA report concluded that virulent PEDV may have been carried into the US on reusable tote bags used in international trade	No	2015 Q3
c) PED INDEL strain in Europe	Porcine Epidemic Diarrhoea virus strain similar to US OH-851, INDEL strain now detected in 2014 or 2015 causing diarrhoea in pigs in Germany, Italy, Netherlands, Austria, Belgium and Spain	No	2015 Q1
Divergent sapelovirus strain with nervous disease reported in US	Outbreak of polioencephalomyelitis associated with a genetically divergent sapelovirus strain in the US. Porcine enteroviruses and sapelovirus present in GB pig population, but prevalence of infection not known	No	2016 Q3
<i>Klebsiella pneumoniae</i> septicaemia outbreaks	First case of <i>Klebsiella pneumoniae</i> subsp <i>pneumoniae</i> ST25 septicaemia diagnosed in the APHA Thirsk VIC region, features typical of outbreaks in East Anglia since 2011	Yes	2015 Q3

Type of threat		New rare or emerging antimicrobial resistance	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Putative beta-lactam resistance in <i>Pasteurella multocida</i>	Ampicillin (putative beta-lactam) resistance not common in APHA <i>P. multocida</i> from pigs; three resistant isolates detected in 2013, one in 2014 and none in 2015 and one in late 2016. Similar resistance detected in a low number of <i>Haemophilus parasuis</i> and <i>Actinobacillus pleuropneumoniae</i> from pigs in England in recent years. Potential for transfer of plasmid-encoded resistance genes between pathogens co-habiting pig's respiratory tract exacerbated when respiratory disease is not controlled or by selective pressure from use of relevant antimicrobials	Yes	2016 Q4
Possible anthelmintic resistance in sows	Possible ivermectin resistance in <i>Oesophagostomum</i> species worms in sows investigated, likely related to pharmacodynamics and high pretreatment burdens rather than true resistance	No	2016 Q3
Transferable betalactam resistance detected in putative <i>Haemophilus parasuis</i> isolates	Betalactam (ampicillin) resistance detected in two of 14 clinical <i>Haemophilus parasuis</i> (Hps) isolates archived from diagnostic submissions to APHA in Q1 2016. Resistance found to be transferable (plasmid-encoded). Important as penicillins are commonly used for treatment of Hps infection and, as a member of the same family as <i>Pasteurella</i> and <i>Actinobacillus</i> species, resistance could be transferable between these	Yes	2016 Q1
Colistin-resistant <i>Salmonella</i> Typhimurium and <i>E.coli</i>	Colistin resistance detected in <i>Salmonella</i> Typhimurium and <i>E.coli</i> isolated from pigs with enteric disease and high mortality. Found to be plasmid-mediated (mcr-1 gene) and therefore transferable following publication from China	Yes	2015 Q4
Ampicillin-resistant <i>Actinobacillus pleuropneumoniae</i> detected	Ampicillin (beta-lactam) resistance detected in 14% of APHA submissions from which APP was recovered since November 2009. No betalactam resistant APP were found in 2014, two of 12 tested in Q1 2015 were resistant	Yes	2015 Q1

Type of threat		Public health related	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Coal tar toxicity: a) Tarmac residue source	Food safety incident investigated due to coal tar toxicity following access by pigs to tarmac residue following removal of pen surfaces. Voluntary period of restriction of exposed pigs agreed to protect food chain	Yes	2016 Q1
b) Old clay pigeon fragments source	Another small scale case of possible coal tar toxicity prompting potential food safety concern.	Yes	2016 Q2

Type of threat		Changes in endemic disease trends	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Porcine reproductive and respiratory syndrome (PRRS); a) Diagnoses reach a quarterly high	VIDA diagnostic rate for PRRS in GB in Q4 2016 was highest in the last 12 years. While the seasonality pattern with a peak in diagnoses in winter months is familiar, there was only a shallow dip in the rate over summer months in 2016 compared to usual. Data supports anecdotal reports from pig practitioners of continued clinical problems associated with PRRS	Yes	2016 Q1
b) Sequencing detects vaccine-like PRRSV strains	Strains in which the ORF5 sequence is identical or closely homologous to live vaccine strains have now been detected in relation to each of the three live vaccines licensed in the UK. Detection of vaccine-like viruses per se is not a surprising finding and is reported elsewhere and is an inevitable sequel to using attenuated live attenuated vaccine virus albeit with limited replication and transmission capability. They are not necessarily vaccine virus as the sequencing only covers 4% of the viral genome	Yes	2016 Q2
c) Increased PRRS diagnoses	Raised diagnostic rate from VIDA data of PRRS persists into second quarter of 2016 following typical winter rise	Yes	2016 Q2
d) Seasonal rise in PRRS	Typical seasonal rise in diagnostic rate in VIDA for PRRS and sequencing results reported showing increasing diversity as existing viruses continue to evolve in pigs but no evidence of new incursions of 'foreign' virus strains	Yes	2016 Q1
Porcine circovirus 2: a) Genotyping reveals more PCV2d strains in England	Porcine circovirus 2 (PCV2) genotyping reveals more PCV2d strains in diagnostic cases in England. There is no unequivocal evidence to suggest that PCV2d genotype has greater virulence or escapes vaccinal immunity more than typical PCV2b, but the literature indicates that its prevalence is increasing globally and these findings suggest the same is occurring in England	Yes	2016 Q1
b) PCV2d strains globally	Rapid global increase of variant PCV2b (now classified as PCV2d). One outbreak involving PCV2d genotype diagnosed in pigs in England in autumn 2013	Yes	2015 Q3
c) PCV2d strains Germany	New cluster of porcine circovirus genotype 2b variant (now called 2d) strains in pigs in Germany	Yes	2015 Q1
d) Porcine circovirus 2 - associated disease	Severe reproductive disease due to porcine circovirus 2-associated (PCV2) foetopathy in England. Genotyping confirmed PCV2b typical for GB (not variant genotype)	Yes	2015 Q1

Streptococcal diagnoses show upward trend	VIDA diagnostic rate of streptococcal disease increased in Q3 2016 reaching highest for any individual quarter in the last 12 years. Serotyping at APHA in Q3 shows <i>Streptococcus suis</i> serotype 2 remains predominant but serotypes 1 and 14 which, like serotype 2, are associated with primary streptococcal disease were also prominent. Increase may, in part, reflect ongoing initiatives to use alternative disease control interventions and minimise antimicrobial use	Yes	2016 Q3
Erysipelas serotyping investigates increased diagnostic rate	Increased VIDA GB erysipelas diagnostic rate and verbal reports from pig practitioners of increased erysipelas outbreaks in the field prompted serotyping of <i>Erysipelothrix</i> species isolates from late 2014 to 2016. Serotypes obtained for 18 and no new or unusual serotypes detected. Most were serotype 2 (10), the others were 1a and 1b	Yes	2016 Q3
Upward trend in the diagnostic rates of certain bacterial diseases	Upward trend in the VIDA annual diagnostic rate of several bacterial diseases; seasonality data shows erysipelas and <i>Haemophilus parasuis</i> disease incidents were higher in April to June 2016, <i>E. coli</i> and streptococcal disease incidents showing annual increase	Yes	2016 Q2
Swine dysentery (SD): a) Outbreaks in Thirsk region	Recent SD diagnoses in Thirsk region by APHA and SAC CVS since April 2016 reflecting new outbreaks suspected to be from undisclosed local endemically infected herd	Yes	2016 Q2
b) Outbreak in East Anglia	First swine dysentery diagnosis by APHA in East Anglia since May 2014 when a commercial pig unit was affected and underwent depopulation	Yes	2015 Q3
Leptospirosis	Leptospirosis causing abortion with mummified fetuses on farm in England. Diagnoses of leptospirosis in pigs are not commonly recorded in VIDA; it is a potential zoonosis and surveillance also remains important for exotic serovars, this outbreak was on a small scale	Yes	2016 Q1
Increase in swine influenza diagnoses	In the first quarter of 2016, the trend in the VIDA diagnostic rate for swine influenza increased significantly to the highest recorded in the last 12 years at 8.6%. Data supported by anecdotal reports from pig practitioners of increased outbreaks in the field in 2016	Yes	2016 Q1
Coccidiosis in older pigs	Features of coccidiosis in older pigs highlighted following typical case in breeding replacements and analysis of VIDA diagnoses	Yes	2015 Q2
<i>Haemophilus parasuis</i> (Hps) disease incidents	Increased rate of <i>Haemophilus parasuis</i> VIDA diagnoses. Serotyping of Hps isolates by Germany funded by AHDB Pork did not indicate increase due to a particular strain	Yes	2015 Q2
Salmonellosis	Increase in salmonellosis diagnostic rate and proportion of salmonellosis due to monophasic <i>Salmonella</i> Typhimurium-like variants	Yes	2015 Q1

Type of threat		Unusual diagnoses or presentations	
Description of threat	Brief summary	Threat confirmed in GB	Q Report
Septicaemia in weaners due to <i>Streptococcus suis</i> type 6	Serotype 6 of <i>Streptococcus suis</i> identified as primary cause of septicaemia in five-week-old weaners on an indoor nursery-finisher unit. This serotype is rarely isolated in APHA submissions, and was last detected at APHA in 2012	Yes	2016 Q4
<i>Streptococcus gallolyticus</i> as a cause of endocarditis	<i>Streptococcus gallolyticus</i> was formerly known as <i>S. bovis</i> and has been isolated from sporadic cases of endocarditis and septicaemia in pigs by APHA and others. This serves as a reminder that not all cases of endocarditis are due to erysipelas or <i>S. suis</i>	Yes	2016 Q3
Scrotal swelling in boars due to Glässer's disease	Severe Glässer's disease outbreak ( <i>H. parasuis</i> ) diagnosed by APHA in late finishers in which disease manifested with an unusual, but previously recognised, clinical sign of swollen scrotums	Yes	2016 Q3
Porcine haemagglutinating encephalomyelitis virus in China	Severe outbreak of porcine haemagglutinating encephalomyelitis virus in China. Clinical signs of widespread vomiting, depression, nervous signs and mortality in young piglets. Severity and unusual nature of the disease make it likely that a similar outbreak in UK pigs would either be reported as suspect notifiable disease (e.g. Aujeszky's) or would prompt contact with/submissions to the APHA or SACCVS surveillance network	No	2016 Q3
Haemorrhagic bowel syndrome	Haemorrhagic bowel syndrome on two unrelated units on home-mix diets investigated by APHA. Likely due to dietary factors	Yes	2016 Q1
Bacterial causes of abortion	Abortions diagnosed due to <i>Actinobacillus rossii</i> , <i>Nocardia</i> and <i>Yersinia</i> by APHA and SAC CVS - key messages re culture, identification and histopathology highlighted	Yes	2015 Q4
Acute salmonellosis	Incident of unusually acute and rapidly spreading salmonellosis in finishers resembling porcine epidemic diarrhoea. Treated as suspect PED and tested negative, salmonellosis diagnosed by APHA	Yes	2015 Q4
Metabolic bone disease: a) Rickets	Severe rickets diagnosed by APHA in lame nursery pigs associated with deficiency of available phosphorus in the feed ration	Yes	2015 Q3
b) Lactational osteoporosis	Osteoporosis leading to pathological fractures in weaned first-litter sows diagnosed by APHA	Yes	2015 Q2
c) Osteochondropathy	Ill-thrift and lameness in growers associated with multiple deficiencies in home-mix diet diagnosed by APHA	Yes	2015 Q1



# Milestones for 2017–2018

As well as general milestones for the PHWC each of the subgroups sets out milestones for the upcoming year. These milestones illustrate strategic goals and specific objectives which are in line with the horizon scanning performed by each group. The approach of the overarching Pig Health and Welfare Council is to ensure that these milestones are on target to achieve their objectives and that progress is continuing to be made.

In addition to the milestones outlined below a longer term priority of the PHWC is to:

**Review the methods for integration of existing and future data sources considered to be of surveillance value to provide a comprehensive surveillance system for pig health and welfare.**

## Key milestones for the PHWC 2017–2018

## Comments

To review the pig health and welfare objectives in the 20:20 Vision	To evaluate the success to date and identify feasible priorities for the next three years to 2020
To continue to participate in the Sector Council and ensure a comprehensive input on the issues impacting on the pig industry	This will include producing a Biennial report for 2017–2018 to report back the progress of the PHWC over the two year period
Explore the potential impacts of Brexit on pig health and welfare	In exploring the potential impacts of Brexit on pig health and welfare PHWC will suggest how to mitigate any negative effects and identify the opportunities Brexit might give the UK pig industry

## Key milestones for the PHWC Disease Surveillance subgroup

## Comments

Use the lessons learned from PED since its emergence to produce template(s) for managing new and emerging diseases	Work with Government and industry to resolve areas of concern or further work identified by a disease simulation exercise to test the robustness of the Contingency Plan planned for early 2017
To develop a syndromic surveillance system for disease in pigs	Develop a comprehensive action plan to implement the recommendations from the syndromic surveillance roundtable to enable this methodology to be used for pig disease surveillance and help prompt detection of new and emerging threats
Identify the priority steps required for a PRRS control programme	This is to be led by veterinarians with an overall aim of reducing disease and production losses due to PRRS

## Key milestones for the Pig Welfare subgroup

## Comments

Gather information from those units that do not dock tails as to specifically what enable them to rear pigs with intact tails. Compile data on 'solutions' to ameliorate outbreaks when they occur, recorded centrally	The PHWC subgroup is proposing to investigate if specific husbandry methods can be attributed to low incidence of tail biting on farm. The PHWC subgroup is supportive of investigating better methods of managing tail biting on farm, when outbreaks occur. With the aim to inform the industry on what is best practice
Consider and review the research around welfare with regard to finishing pigs at heavier weights with the focus on welfare proximate to, before and during slaughter	The PHWC proposes to investigate and recognise the additional challenges involved in rearing pigs to heavier weight and the potential impact this has on welfare. Welfare at the time of slaughter to be kept under review in light of current or new research

Review current practice with respect to euthanasia training at vet schools and for newly graduated vets and ensure the latest information on best practice is provided to producers including non-assured farms and smallholders

The PHWC subgroup has identified the importance of euthanasia training provided to veterinarians as being of significant importance in maintaining welfare on farm and at slaughter. In turn this will ensure dissemination of information to fellow vets, producers and smallholders

#### Key milestones for the Pig Meat Food Safety subgroup

#### Comments

Collection of evidence to engender confidence in the results reported by Industry for the prevalence of Salmonella on pig carcasses

PHWC subgroup supports the continued monitoring of Salmonella, recognising it as one of the most important zoonotic pathogens within the pig industry, which continues to require attention

Develop a Salmonella testing routine which could be used to monitor changes of Salmonella prevalence on farm

Consider the recommendations from the RVC report and the EFSA report on Hepatitis E, when published, and select the key actions required to reduce the risks of UK produced pigs carrying live virus at slaughter

PHWC continues to support research into any potential food safety risk from hepatitis E

#### Key milestones for the Antimicrobials Usage subgroup

#### Comments

The Antimicrobial Usage subgroup is coming to the end of the action plan from the October 2014 workshop and preparing a new action plan covering issues arising from the O'Neill Review. This will include working closely with the RUMA Targets Task Force as they develop an antibiotic usage target plan for pigs

The PHWC will work closely with and support the RUMA Targets Task Force to advise on a suitable antibiotic usage reduction plan for pigs and to monitor progress against the plan. This is in-line with the Government's recommendations from the O'Neill review on Antimicrobial Resistance

Increase awareness of antimicrobial resistance and the importance of minimising unnecessary use of antimicrobials in pigs

This includes raising public awareness and seeking to incentivise veterinary surgeons and farmers to reduce antimicrobial usage in pigs whilst maintaining high health and welfare in the national herd

Identify optimal housing and management conditions for minimising antimicrobial use in pigs

Identify best practice examples for reducing antimicrobial use in commercial pig herds. This will include a focus on hygiene measures to reduce the spread of pathogens including a focus on internal and external biosecurity

To explore potential routes for improved surveillance of antimicrobial resistance in the UK pig herd

Development of economically feasible and practically viable 'pen-side' tests in order to assist in accurate diagnosis of bacterial disease and assist in appropriate antimicrobial selection

Continue to seek effective antimicrobial alternatives and methods of ensuring that when antimicrobial use is necessary it is targeted and optimal

For example, supporting research efforts into finding effective and economically viable vaccinations for pigs

## 15

## Conclusions

**The 20:20 vision remains relevant, clear and easily understood with a number of important objectives which can only be delivered through all those involved working together at every stage of production. This integrated approach is essential to ensure industry and government initiatives are aligned so any activities are to the mutual benefit of all concerned. Very effective working partnerships have been developed especially between the industry and government departments and agencies. Examples include the development of the contingency plan for Porcine Epidemic Diarrhoea (PED) and the electronic medicines book.**

PHWC membership of the Sector Council continues to provide an important conduit for advice to the Animal Health and Welfare Board for England on important issues affecting the pig industry and for the two way exchange of information. This will be of increasing importance in dealing with all aspects of Brexit.

The main objectives in the 20:20 strategy remain but events have occurred during the two year period which has meant that priorities have been reviewed and modified. The four subgroups dealing with disease surveillance, pig welfare, pig meat food safety and antimicrobial resistance have been well placed to deal with changing situations and new events. Underlying all of this is the requirement to identify how the pig industry may need to adapt in the future with the pressure to reduce antimicrobial use, improve aspects of welfare, handle the potential of food-borne zoonoses and ensure new and emerging diseases are rapidly identified and controlled or eliminated.

The development of the contingency plan and associated standard operating procedures for PEDv was completed and is due for testing in 2017. The template used for the contingency plan could be extended to other diseases should they pose a major threat to the pig industry. Effective horizon scanning and surveillance is vital as it identifies emerging threats including notifiable diseases, new diseases, pathogens or their variants, new and rare emerging antimicrobial resistance, public health related pathogens and changes in endemic disease trends.

Antimicrobial resistance remains a critical issue for the pig industry with the need to optimise the responsible use of antimicrobials. The introduction of the electronic medicines book developed as a collaborative effort by the VMD and AHDB will enable a better assessment of antimicrobial usage as well as providing appropriate benchmarks.

The development of welfare outcome assessments is important to enable benchmarking. A number of schemes have been developed. These include the welfare outcomes assessments for all units finishing pigs under the Red Tractor scheme and the RSPCA welfare outcomes assessments under their assured scheme. The safety of pig meat and the maintenance of consumer confidence is critical both for domestic consumption and for the export market.

The milestones for the 2015–2016 period were wide ranging and ambitious for both the pig industry and the PHWC to achieve. As a consequence work on some will continue into future years. In addition a new set of milestones is in place for the period 2017–2018. These are also ambitious but the PHWC and subgroups will continue to prioritise these while retaining the ability to re-deploy resources should unforeseen events occur as happened with PED in 2014.

# Glossary of abbreviations

## 16.1 Abbreviations of organisations or institutions

<b>AIC</b>	Agricultural Industries Confederation
<b>AFS</b>	Assured Food Standards (See also Red Tractor)
<b>AHWBE</b>	Animal Health and Welfare Board for England
<b>APHA</b>	Animal and Plant Health Agency (Formerly AHVLA)
<b>AHDB Pork</b>	Agriculture and Horticulture Development Board - Pork division (Formerly BPEX)
<b>BMPA</b>	British Meat Processors Association
<b>BPA</b>	British Pig Association
<b>CARS</b>	Control of Antimicrobial Resistance Scotland
<b>Defra</b>	Department for the Environment, Food and Rural Affairs
<b>EFSA</b>	European Food Safety Authority
<b>FAWC</b>	Farm Animal Welfare Committee
<b>FSA</b>	Food Standards Agency
<b>HCC</b>	Hybu Cig Cymru (Meat Promotion Wales)
<b>NIPBF</b>	Northern Ireland Pork and Bacon Forum
<b>NPA</b>	National Pig Association
<b>PEG</b>	Pig Expert Group
<b>PVS</b>	Pig Veterinary Society
<b>RDPE</b>	Rural Development Programme for England
<b>RT</b>	Red Tractor (see also Assured Food Standards)
<b>RUMA</b>	Responsible Use of Medicines in Agriculture Alliance
<b>RSPCA</b>	Royal Society for the Prevention of Cruelty to Animals
<b>SRUC</b>	Scottish Rural University College
<b>QMS</b>	Quality Meat Scotland

## 16.2 Abbreviations of terms

<b>AMR</b>	Antimicrobial Resistance
<b>ASF</b>	African Swine Fever
<b>BPHS</b>	Pig Health Scheme
<b>EP</b>	Enzootic Pneumonia
<b>FMD</b>	Foot and Mouth Disease
<b>hvpEDv</b>	highly virulent Porcine Epidemic Diarrhoea virus
<b>KE</b>	Knowledge Exchange
<b>MFSp</b>	Medicated Feedingstuffs Prescription
<b>PCR</b>	Polymerase Chain Reaction
<b>PED</b>	Porcine Epidemic Diarrhoea
<b>PEDv</b>	Porcine Epidemic Diarrhoea virus
<b>PRRS</b>	Porcine Reproductive and Respiratory Syndrome
<b>ZNCP</b>	Zoonosis National Control Programme



## Appendix 1

# Subgroup terms of reference

The new subgroups, as well as the Pig Health and Welfare Council, has established key milestones for each group for 2015, which are available through the AHDB Pork website.

### PHWC – terms of reference:

The terms of reference agreed by the Pig Health and Welfare Council are:

- The Council will **advise on** strategic policy and setting priorities for surveillance, research and disease risk assessment, management, elimination and control
- The Council will **work with** pig keepers, the veterinary profession, the livestock, food and allied support industries, Government, consumers and other stakeholders to foster ownership of the Strategy and a shared commitment to its outcomes
- The Council may **investigate** any topic falling within the scope of the Strategy and publish such advice, analysis and commentary as it considers appropriate
- The Council will **promote** a co-ordinated and integrated approach to best practice in the prevention and control of disease to maintain and/or enhance the health, welfare and well-being of pigs in England

### PHWC subgroups:

There are four subgroups of the Council.

#### The Disease Surveillance subgroup:

- The subgroup will **provide** evidence based advice to the Pig Health and Welfare Council on proposals for effective surveillance of pig health and welfare in England and the wider UK when required
- The subgroup will **work with** pig keepers, the veterinary profession, the livestock, food and allied support industries, Government, consumers and other stakeholders to identify surveillance needs and delivery mechanisms.
- The subgroup will **investigate** issues of relevance to the delivery of surveillance for the pig industry
- The subgroup will **gather** and analyse relevant information on all aspects of new and emerging diseases including scientific, practical experience, commercial, economic issues and identify crucial gaps in knowledge
- The subgroup will **facilitate** better knowledge exchange with EU and global colleagues
- The subgroup will **provide** the Pig Health and Welfare Council with analysis, commentary and recommendations on endemic and exotic diseases as appropriate
- The subgroup will **facilitate** on-going activities and set measurable milestones and objectives for each issue being addressed
- The subgroup **may** co-opt relevant experts from outside the group as necessary on an ad hoc basis
- The subgroup will **advise** the Pig Health and Welfare Council but final decisions on adopting any strategy shall rest with the Council

#### The Pig Meat Food Safety subgroup aims to:

- Identify and focus on zoonoses identified by industry, current research and survey findings to be the most relevant biological hazards to public health
- Facilitate and promote implementation of a risk management plan which drives the reduction of the risks to consumers from significant hazards of food safety and public health concern in UK pig-meat products (eg Salmonella) by the following activities:
  - Evaluate, coordinate and promote new knowledge and effective protocols for reducing food safety and public health risks from zoonoses of pigs
  - Promote the open exchange and timely dissemination of information on management of zoonotic risks

- iii. Promote an integrated whole chain approach to improving pig meat safety with all stakeholders, allied support industries, retailers, foodservice and Government
- iv. Provide expert support to the communications teams in respect of pig meat safety
- Review progress in reducing food safety risks and changes in the prevalence of zoonotic or indicator organisms at key cost effective stages, such as on pig carcasses in abattoirs
- Support development and implementation of a National Control Programme if required by statute
- Support the implementation of the revision of meat hygiene controls in 854/2004 that require the collection and reporting of FBO testing against the salmonella criteria and an action plan and strict supervision of its outcome for FBO's who regularly fail to comply with the salmonella limits in 2073/2005 as amended
- Provide expert evidence to the competent authority when required

## The Antimicrobials subgroup:

- **Provide** evidence based advice to the Pig Health and Welfare Council on proposals to ensure effective and responsible antimicrobial usage for the pig industry in the UK
- **Gather and analyse** relevant information on all aspects of antimicrobial usage in the pig industry and identify crucial gaps in knowledge
- **Investigate issues** of relevance to antimicrobial usage for the pig industry
- **Facilitate** cooperation and collaboration between all relevant parties (pig keepers, scientists, consumer organisation(s), the veterinary profession, the livestock, food and allied industries, Government and other stakeholders with relevant expertise [eg agricultural economist, social scientist])
- **Facilitate** on-going activities and set measurable milestones and objectives for each issue being addressed
- **Provide** advice on approaches to public and stakeholder engagement and communication
- **Communicate** to the public and stakeholders as necessary

## The Welfare subgroup:

- The subgroup aims to achieve consensus on the key pig welfare issues to be investigated and on the ultimate aims for each issue
- The subgroup will gather and analyse relevant information on all aspects of the welfare issues to be addressed – welfare science, practical experience, commercial and economic – and identify crucial gaps in knowledge
- The subgroup will provide the Pig Health and Welfare Council with analysis, commentary and recommendations as appropriate
- The subgroup will facilitate cooperation and collaboration between all relevant parties (pig keepers, welfare scientists, consumer organisation(s), the veterinary profession, the livestock, food and allied industries, Government and other stakeholders with relevant expertise [eg agricultural economists, social scientists]) to enable development of strategies and feasible timelines for addressing each welfare issue, including undertaking initiatives aimed at effective support mechanisms and knowledge transfer etc
- The subgroup may co-opt relevant experts from outside the group as necessary on an ad hoc basis
- The subgroup will facilitate on-going activities and set measurable milestones and objectives for each issue being addressed

**All subgroups may co-opt relevant experts from outside the group as necessary on an ad hoc basis.**

## Appendix 2

# Research

Research project title	Institution/ contractor	Type of research	Description	Status
Improving udder quality traits in sows to aid survival, health and lifetime performance of piglets	Newcastle University	PhD	Udder quality is vital in the sow to ensure that the maximum number of piglets can be reared with a view to ongoing health, vitality and performance. This research is investigating some of the genetic traits which are required to optimise the measures mentioned	Complete
The contribution of oocytes and follicular fluid to pig fertility	The Roslin Institute, The University of Edinburgh	PhD	The results of this study could provide novel approaches to assess the characteristics of a healthy and fertile pig ovary and lead to the development of management strategies to enhance pig fertility and enhance litter sizes in UK herds	Ongoing
Production animal pathology with a research component and specialisation in porcine pathology.	Royal Veterinary College	Residency	Disease surveillance continues to remain under-resourced, with the risk of industry specific expertise being lost if replacements are not trained. This project sets out to develop a veterinary surgeon in the area of pig pathology to continue to invest in expertise within the sector	Ongoing
Development of novel (bio)sensor technology for boar taint detection to assist with the production of taint-free pork	University of the West of England	PhD	Boar taint remains a significant factor in consumers being 'put off' consuming fresh pork and pork products. Currently the UK does not castrate pigs and slaughters at a younger age to reduce the risk of taint. However, occasionally taint is still present. This research has the potential to identify animals developing taint before it reaches the consumer	Ongoing
Reduce variability and improve the efficiency of pig production systems	Newcastle University	PhD	This project intends to find intervention strategies that reduce weight variability within pig herds and by doing so to improve the efficiency of UK production systems. The project will develop strategies that will enable lightweight pigs to catch up with their heavier weight counterparts	Ongoing
Discovery and application of bacteriophages for <i>Salmonella</i> and <i>brachyspira species</i>	University of Leicester	Project	Bacteriophages, can be used as specific and targeted treatments for certain bacteria. This project is to identify specific bacteriophages for <i>Salmonella</i> and <i>brachyspira species</i> and to investigate their practical use for the pig industry	Ongoing
Water hygiene	RAFT and AHDB Pork collaboration	Project	This project aims to collate information on how best to test, maintain and clean waterlines, as well as highlight considerations when using water as a delivery vehicle for medication	Ongoing

## Appendix 2

Research project title	Institution/ contractor	Type of research	Description	Status
EU Pig Innovation Grant	AHDB Pork	Project	EU PiG is a four-year project to look at health management, precision production, animal welfare and meat quality, made up of a consortium of 19 organisations from all across Europe and led by AHDB	Ongoing
Environmental particle ionisation	AHDB Pork	Project	This trial is to assess the effects of environmental particle ionisation on pig productivity, environmental measures such as ammonia and bacterial levels in housing and on lung pathology at slaughter	Complete
Ultra High Frequency Ear Tags	AHDB Pork	Project	This project is to assess the Ultra High Frequency ear tags as a way of tracing pigs from farm to fork	Ongoing
The effects of supplementation with omega-3 PUFA on reproductive performance of sows	AHDB Pork	Project	This study showed that feeding omega-3 PUFA to sows during gestation and lactation had no effect on numbers born alive or piglet survivability	Complete
The effects of lighting on pig productivity	AHDB Pork	Project	The project looked at the effects of 'blue light' from LEDs on performance indicators in pigs on a commercial unit. Pigs in this project performed in excess of AHDB targets	Complete
The use of an outdoor farrowing tent as an alternative form of housing for weaners	AHDB pork	Project	The farrowing tent showed no advantage over traditional pig arcs in terms of productivity figures however, the tent proved to be superior in maintaining optimal temperatures in summer and winter for weaners	Complete

**Pig Health and Welfare Council**

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