Mapping of Antimicrobial Data Availability and Associated Database Resources in the UK Cattle Sector

A Report prepared by
The Cattle Health and Welfare Group (CHAWG) for the
Veterinary Medicines Directorate (VMD)

June 2015

AHDB AHDB

Contents

Executive Summary

The Veterinary Medicines Directorate (VMD) commissioned the Cattle Health & Welfare Group (CHAWG) to undertake a scoping study to ascertain what antimicrobial usage data are currently being collected and what should be done to develop data collection systems in the UK cattle sector (both dairy and beef).

A set of questions was agreed with the VMD and then a 'list' of key people/organisations across all parts of the UK and along the beef and dairy supply chains was drawn up. These named individuals were then interviewed in person or by telephone. In all cases the details of the project and the specific questions to be asked had been emailed prior to the discussions. In total 30 interviews were undertaken which CHAWG felt gave a good overview of the current situation.

In addition the British Cattle Veterinary Association (BCVA) conducted an on-line survey monkey of their 1200 individual members (approximately 200 practices). Four questions were posed largely to do with practice software and how easy it would be for data to be aggregated, anonymised and shared with the industry and the VMD. 60 responses were received and although a wide range of practice software is used one package was used by 24 out of the 60 responses.

What has emerged from this study is that the central collection of current 'medicines book' entries is virtually non-existent. Most data are paper based and even the majority of vet practices still operate on a paper-based 'chit' system with the results then incorporated into the vet practice software back at the office.

A very wide range of electronic recording systems are operated by cattle farmers and although milk recording organisations/farm software companies have the facility for electronic medicine book type recording there is little or no promotion or collection of such data.

Assurance schemes review but do not collect or collate, whilst vet practice software does collect what is prescribed but not what is administered and to what species.

Mixed farms were identified as an issue whilst it was clear from this scoping study that any medicine data base should be part of a wider cattle data hub rather than being a stand alone activity.

All those contacted recognised the importance of antimicrobial resistance (AMR) and there is a huge willingness to develop a robust and effective system that meets the requirements of both the VMD and ultimately the EU but at the same time does not create unnecessary burden at farm level or for those servicing cattle farmers.

For the future a two stage process is suggested that initially utilises data from veterinary practice records followed by an industry agreed approach to extracting farm level data. To make this happen a small working group of selected individuals working through CHAWG should be tasked with this role.

Introduction and Context

The development of antimicrobials was one of the landmark achievements in medicine. Availability of effective antimicrobial therapy has had a profound impact on human and animal health, improved human and animal welfare and fostered the growth of safe and largely sustainable food production.

However, concern has been expressed about the use, and perceived overuse, of antimicrobials in food producing animals and the consequences for animal and human health, just as there are concerns about antimicrobial use and antimicrobial resistance (AMR) in humans. This complex area will not be easily resolved, but it is clear that there is a need for improved antimicrobial use practices in veterinary medicine, human medicine and animal production, to reduce the prevalence and impacts of AMR[1].

In 2011 an EU Action Plan was launched promoting the "One Health" agenda. This noted resistance is a natural phenomenon – accelerated and spread by a number of factors:

- Inappropriate use of therapeutic antimicrobials
- Use of antimicrobials for non therapeutic purposes
- Pollution of the environment by antimicrobials
- Increasing global trade and travel.

Following the Action Plan there have been significant proposals for revisions to EU policy in this area, most notably from the European Commission relating to legislative controls on veterinary medicines and medicated feedingstuffs. These will, once passed, have ramifications on how vets are allowed to prescribe antimicrobials in the future. There will be less reliance on antimicrobials and greater emphasis placed on a preventative animal health approach within food production.

A UK Five Year AMR Strategy (2013-2018) was published in September 2013 with the overarching goal to slow the development and spread of AMR. It will do this by focussing activities around three strategic aims:

[1]The class of antimicrobials about which there is the greatest concern around development of resistance are the antibacterial medicines, also termed antibiotics. Throughout this report the term antimicrobial is used but in practice data on antibiotic usage will be of primary interest and focus (Redmond 2014)

- Improve the knowledge and understanding of AMR
- Conserve and steward the effectiveness of existing treatments
- Stimulate the development of new antimicrobials, diagnostics and novel therapies.

Seven key areas for action were identified including action on better access to and use of surveillance data.

The VMD has collected veterinary antimicrobial sales data from marketing authorisation holders since 1993 and publishes an annual UK Veterinary Antibiotic Resistance & Sales Surveillance (VARSS) report. Sales data has significant limitations and although the use of the Population Correction Unit (PCU) has been applied to place total volume of antimicrobials sold into context of animal population demographics, there are still considerable gaps in knowledge about actual animal usage, reasons for treatment etc.

Antibiotic Sales by species of authorisation (tonnes active ingredient)

	2011	2012	2013
Cattle Only	12	14	14
Pig Only	62	65	61
Poultry Only	23	22	19
Sheep Only	<1	<1	<1
Fish Only	2	2	1
Pig & Poultry Only	162	245	226
Non Food Species	35	35	36
Multi-species Food	29	33	34
Multi-species Food & Non Food	21	29	29
TOTAL	**346**	**445**	**420**

(VMD, 2014)

In summary the 2013 data show:

- 14 tonnes active ingredient is sold in products authorised for cattle only

- 34 tonnes active ingredient is sold in products authorised for use in multiple food producing species

- 144 out of 146 of these products were authorised for use in cattle. Two thirds of these were injectable products.

- 29 tonnes active ingredient sold in products authorised for use in multiple food and non-food producing species

- 57 out of 71 of these products were authorised for use in cattle.

This illustrates that although products authorised for use in pigs and poultry dominate, there is still a significant proportion of products that have authorisation for use in cattle. Sales data do not allow differentiation between the species of final use and therefore it is currently not possible to say whether or not these products have been used in cattle. Addressing this knowledge gap is an essential step along the path to preserving antimicrobial medicines into the future, as it would enable more accurate assessment of the impacts of current antimicrobial usage and recommendations to be made based on evidence rather than speculation.

The VMD undertook a scoping study in 2014 on the collection of data on antimicrobial usage in animals in the UK (Redmond, 2014). The study looked at options which would allow a more detailed understanding of where antimicrobial products are actually being used in animals. They recommended an incremental approach and a focus on antibiotics, which are the antimicrobial medicines that have antibacterial actions and about which there is the greatest concern around the emergence of resistance. Priority species will be pigs, poultry and cattle based on the levels of use and potential risk pathways. These are also the species upon which the European Commission is focussing and thus the most likely targets for future European legislation.

The VMD recommended that for each species sector a slightly different approach will be needed but coordination between the species will also be essential. This co-ordination can be achieved through the respective industry-wide health and welfare groups/councils, with RUMA, the Responsible Use of Medicines in Agriculture Alliance, now in agreement that as a cross-industry alliance they will have a watching/coordinating brief to ensure that the data gathering is proportionate, does not impose unnecessary burden throughout the supply chain and encourages interchange between livestock sectors to avoid duplication of effort and to ensure mixed farms do not have to record and report usage data differently for each species farmed.

The VMD has recommended incrementally building towards a UK-wide all species data collection and capture system with benchmarking at farm level. The minimum requirement will be annual aggregated data by antimicrobial product and commodity sector group.

A number of meetings/discussions have been held with the VMD and out of these the Cattle Health and Welfare Group (CHAWG) has been commissioned to do a scoping study to map what antimicrobial usage data are currently being captured and what more could be done in the UK cattle sector. Details about CHAWG can be found in Appendix 1. It is perhaps worth noting that CHAWG, in the first ever report giving an overview of the state of health and welfare of the GB cattle sector published in 2012 highlighted concerns about AMR (CHAWG, 2012) and followed this up by a section on the use of medicines in its second report in 2014 (CHAWG, 2014)

The CHAWG Antimicrobial Usage Data Availability Project

This project has five key deliverables:

1. Pursue a mapping exercise of existing data collation resources for the UK cattle sector. What data currently exists, how specific are the data being collected, how representative are they, how are the data collected, collated and stored.

2. Appreciate the Availability/Accessibility of these data - How 'portable' are the data, who owns these data and any other intellectual property (IP) storage protocols.

3. Identify any potential data gaps

4. Review what data storage facilities are already in place that could potentially take on the role of 'aggregator'

5. Provide recommendations on the way forward towards a common database hub

This project plots a way forward to address the significant gaps in knowledge about the actual consumption of antimicrobials in the dairy and beef sectors across the UK. It also highlights the challenge on farms where more than one species are kept.

Method

A set of questions was agreed with the VMD and then a 'list' of key people/organisations across all regions of the UK and along the supply chain was drawn up and agreed with the CHAWG who coordinated this work. Representatives of these organisations and individuals were then interviewed in person or by telephone. In all cases the details of the project and the specific questions to be asked had been emailed prior to the discussion.

The following organisations were approached:

- Veterinary Groups (BCVA, XL Vets, Westpoint)
- Milk Recording Organisations (MROs – NMR/NML, CIS, QMMS)
- Assurance Schemes (Red Tractor, OMSCO, Freedom Foods)
- Practice Software Developers (Vet Solutions)
- Research (RVC, EGENES)

- Retailers (M&S, Waitrose, Dairy Crest, ASDA)
- Farm Software Providers (Sum-It, Uniform Agri, FarmPlan)
- Milking Machinery Manufacturers (De Laval, Lely)
- Levy boards (DairyCo, EBLEX, QMS, LMC (NI))
- Representative/Trade Organisations (NFU, NFUS, NOAH, AHDA, AMTRA, Dairy UK)

In total 30 interviews were undertaken which CHAWG felt gave a good overview of the current position.

The questions posed were:

- What do you collect?
- How specific?
- Format held?
- Data ownership?
- Number of producers using the system? Species?
- Data collection mode?
- Issues with sharing – anonymised/aggregated?
- Ease of exporting the data?
- What form can the data be exported in?
- Industry database – good approach or not?
- Provision of the Service?

In addition to this questionnaire, the British Cattle Veterinary Association (BCVA) conducted for the purposes of this study, a survey, using the on-line Survey Monkey facility of their 1200 individual members (approximately 200 practices) which asked four questions:

1. What practice software do you use? Who owns and provides support and updates?

2. Can the software compile reports on antimicrobials prescribed per farm by production type (dairy, beef & veal)?

3. Could the practice software generate an aggregated/anonymous report per antimicrobial and by species?

4. If not, can the practice find a way to anonymise and aggregate the data that could be shared with the industry and the VMD?

Representatives of the CHAWG also came together on March 12, 2015 to discuss the review findings and debate the most appropriate way forward with the knowledge gained. This report is a reflection of both the study outcomes and this meeting where there was unanimous agreement regarding the route forward.

Key Findings

- A recurring theme throughout the review was the fact that the **collection** of current on-farm 'medicine book' entries is virtually non-existent.

- The majority of on-farm data recording is in the form of paper based medicine books/diaries. Even large veterinary practices work on a paper-based 'chit' system (when prescriptions are written and dispensed on the farm a carbon copy document is hand written, with a copy provided to the farmer and a copy taken back to the vet practice for entering into the practice management system) with the results then added back into the electronic practice management system at the veterinary practice office.

- A wide range of electronic recording systems are operated by farmers. The farm software companies and milk recording organisations (MRO's) do have the facility for electronic medicine book type recording but do not promote/collect. Data is held on farms almost exclusively i.e. not exported to any third party data collation/reporting facility.

- Though there are many electronic systems available for the recording of medicine book requirements there is an extremely limited amount of data collected – mostly veterinary health management programmes, where the farmer and vet have developed a proactive health plan with objectives and targets that requires the information from the medicines book to succeed.

- The electronic systems available are extremely powerful tools, with all that we engaged having the capability to export the records if necessary. The issue is, these 'tools' are sold as part of a package with for example farm management or milking machine software, with the supplying company having no real interest in whether the records section of the software is actually utilised by the customer.

- Most dairy farmers (75%) milk record. In the beef sector there is no easy and uniform recording although there is some recording of beef animals on electronic systems if they are on dairy farms as these farms only operate one recording system.

- No coordinated approach to recording and collection – even the large veterinary practices have no common agreed protocols.

- Farm assurance schemes review but do not collect or collate data on antimicrobial usage. They also do not require farmers to collate Assurance data, as has been a requirement in the meat poultry and pig sectors under the Red Tractor Assurance scheme since October 2014. They do ask that the herd health plan which includes the medicines book is reviewed annually with the farm vet.

- Veterinary practice software does collect (once entered from the paper-based chit system) what is prescribed and dispensed though not what is administered and to what species.

- Considerable range in approaches as evidenced by the BCVA survey (see below).

- Operating a sector based approach is prudent, although mixed farms are a genuine challenge. It is important to recognise that in the cattle sector, antimicrobial utilisation is predominantly at the individual (and not batch) level which in itself brings challenges with recording and collation aspirations.

- Every organisation taking part in this review recognised the importance of this work and was totally supportive of the need to collaborate to find a viable solution that would both answer the needs of the VMD and the European Medicines Agency and also provide valuable aggregated information for the industry.

BCVA Survey Outcomes

It is clear that individual veterinary practices all operate different approaches. The vast majority still use the paper-based 'chit' system and upload information onto the practice management software when back at the practice. There is some interest in developing apps, both for recording information at the farm and for uploading onto a more central database, but confidentiality and the

need for a standardised approach are vital whilst extra hassle both for farmers and vets was mentioned.

In total 60 survey responses were received to this BCVA request. The range of software used is large although one key package covers 24 of the 60 responses.

Software	No. of Responders
EzVetPro	3
Ventanan	6
RxWorks	7
RoboVet	24
Vetsys	1
Teleos	3
PemVet	2
Ammana	1
Jupiter/Voyager	3
Hardkeeper	1
Practices Own	1
Vetit	2
Tristan	3
Atvision	1
None	2
	60

Although there are a huge variety of packages used, all appeared to be able to compile farm-level reports for antimicrobials prescribed and by production type (dairy, beef, veal). However only 44% of respondents felt that such reports could be aggregated and anonymised. If the respondents had answered 'No' to the aggregation of data we asked if there is a manual alternative. Some of the comments received are given below:

If not, can the practice find a way to anonymise and aggregate the data that could be shared with the industry and the VMD?

A wide range of responses were received as detailed below:

- No – 9 replies
- Would have to be done longhand via a printed off list
- The system can show for each antimicrobial who the 'users' are and how much they have had. This is gone through for each farm as part of the farm assurance.
- It may be possible if we change how each farm account is set up. Currently it will just have species i.e. cattle and not specify if beef or dairy as many farmers have both. I could

generate a report that tells me antimicrobials for cattle. It may have to be manually anonymised though.

- Need to run reports
- Data can be mined manually for example to look at tubes prescribed/cow, ml antibiotic prescribed for calves. Calculating mg antibiotic prescribed/kg beef not possible without collecting far more data from farms. We do report back to farmers with anonymised data.
- I have answered no to the above as I don't know if the practice software can provide this information.
- Print out reports, which would be very long as many stock codes, then manually delete names, addresses etc.
- Gathering visit records per farm and totalling up
- It may be possible to anonymise reports with some attention, otherwise names and reports could be collected manually
- We can convert them to excel and then delete names/addresses etc
- Manual search
- Don't know but happy to try
- Could be done but would take considerable time to do
- Already been done and used as benchmarking
- Export to Excel
- Relatively easy to export database and assess antimicrobial use in Excel by client
- Would be long-winded. Can produce report lists by product and client. May be able to get more detail but would need to read the manual! Not really sure whether possible to extract the data from the system in automated process. Would need to look into this. Use is additionally reviewed on a monthly basis during the billing check.

Despite the above challenges, the veterinary practice level of data capture would potentially be an excellent starting point to obtain a better understanding of 'on farm' antimicrobial use. Talking to a number of the veterinary practice software developers they felt that it was quite possible to make progress here using the approach being adopted in the companion animal sector and utilising a standard recording and reporting format.

Discussion

A study undertaken by The University of Liverpool (Coyne et al, 2014) showed very large differences between vets and their farmer clients in term of drivers and motivators behind antimicrobial use and prescribing for those working in the UK pig industry. Veterinary opinion was that “external pressures” such as pressure from clients, legislation and public perception strongly influenced their prescribing behaviour whereas farmers considered issues surrounding farming systems and management to be more important drivers of antimicrobial use. The majority of both vets and farmers considered that they were prudent antimicrobial users and both placed the main burden of responsibility for the prudent use of antimicrobials on the vet.

All veterinary practices have access to antimicrobial dispensing and prescribing information relating to their farm clients, a legal requirement and requirement of professional registration. With the advent of large multi-practice businesses with electronic practice management software systems the potential for collection/collation is substantial, though this is not currently being done.

Virtually all interviewed in this study made reference to the on-farm Medicine Book as a potential source of data on antimicrobial treatment of cattle, be it in paper format or recorded via the Milk Recording Organisations (MROs). Equally, many dairy farmers use software tools such as ‘Interherd’ and ‘DairyComp’. Those farmers on supermarket contracts are expected to keep detailed records though there is no standardised system of collation or reporting. One retailer requires their farmer suppliers to record the use of third and fourth generation cephalosporins in addition to maintaining detailed records.

The farm management software companies and milking machine manufacturers have the facilities to record any medicine usage but this is not currently promoted as there is limited demand from farm customers. Modern milking machine installations have the medicine recording facility as standard with the installation software.

The Farm Assurance Schemes do not currently collect data or require on-farm data collation as is now Red Tractor Assurance required for meat poultry and pigs. Auditors only check that the medicine book is kept up to date and compare medicine book details with actual products in the medicine cabinet (Kerrigan, 2014).

So at farm level there appears to be little or no information collected other than as a legal requirement via the medicine book. The collection of this information is in a vast array of formats starting with the farm diary and paper based medicine book, right through to a more complex electronic system that is regularly reviewed by both farmer and their vet. Though the records are maintained, this study would suggest that over 80% of these records are paper based.

Everyone interviewed agreed that the current very fragmented system was not satisfactory and requested a clear brief regarding what should be recorded and an honest independent holder of the information appointed and agreed such as AHDB on behalf of the cattle sector. The UK pig sector approach, where AHDB Pork is proposing to procure and host a system for collecting data, could act as a model. The real challenge in the cattle sector is the transferral of paper based records to uploadable electronic formats using a standardised approach between farms.

The real barrier to accessing and aggregating the required data is to find a simple and effective method of extracting paper-based records to electronic in a consistent format. The potential of a bureau service is extremely high, though the barrier to its implementation is the cost and who is responsible for funding such a facility.

Having said that, there is still (as previously mentioned) the challenge of transferring the paper based records to an electronic format. This is a substantial barrier as many livestock farms do not have the resources to undertake this task. It may be that the sector needs to operate a system similar to that being proposed for the pig sector, where a bureau service undertakes the transferral. Importantly, if farmers were to receive a return 'report' of their antimicrobial use, this would increase the level of uptake and accuracy by providing immediate benefit to the farmer, supporting delivery of improved business practices as well as farm assurance requirements.

At the national level, effective control of key endemic disease is constrained in Great Britain by the lack of integrated data sets. This lack of infrastructure was further highlighted in a recent DairyCo funded study (Velasova et al, 2015). Fifty-nine systems recording cattle data were identified, of which 36 had their key characteristics defined through a web-based questionnaire. Selection bias, data ownership and lack of integration of data from differing systems were identified as key limitations on the future use of existing systems for nationwide monitoring. It was concluded that none of the systems above could provide accurate and reliable estimates for any conditions of interest at national level.

There are various projects currently being pursued under the Agri-Tech Strategy looking at creating a centralised National GB Cattle Data Exchange Hub, initially to deal with bovine TB and risk based trading (AHDB, 2015) but there was a clear feeling from this survey that it was important that any aggregated medicine recording system should be part of the 'bigger picture' and incorporated into this Agri-Tech feasibility study. Quite how this will fit in with the possible delivery of a single multiple-species livestock database by government by 1st April 2018 remains to be seen. Initial discussions with AHDB regarding the incorporation of aggregated and anonymised medicines book records into this process have been positively received.

The government databases for livestock identification and movement recording are under review, and in particular single multi-species livestock identification and movement record databases are under consideration. It will be important that the interconnections and potential synergies between these systems are considered and explored when designing a system for collection of data on antimicrobial treatments in cattle, as in other species.

In Northern Ireland the industry would be keen to have an All Ireland solution linking in with Irish Cattle Breeding Federation/Animal Health Ireland south of the border.

The conclusion we reached was that veterinary practice systems would be a useful place to start for obtaining data on antimicrobial usage in cattle. Legally the veterinary profession must maintain records of their prescriptions and associated dispensary activities. This could potentially be an effective 'starting point' to initiate the collection of the required data, as the industry embarks on its journey to find a way through the aforementioned challenges. It is also important that linkages are made with other initiatives currently looking at national systems for data collection and disease control databases on aspects of cattle health and production such as identification and movement systems.

Project Summary Against Key Deliverables

1. ***Pursue a mapping exercise of existing data collation resources for the UK cattle sector:***

This review has highlighted that although farmers were maintaining records at farm level and veterinary practices are maintaining practice sales records, there is extremely limited evidence of the collection and collation of these data beyond the initial record entry.

2. ***Appreciate the availability/accessibility of this data***

Though records are maintained at farm and veterinary practice level there is no collection and

collation currently in place. This is not as a result of major barriers but more a result of it not being required to date.

All organisations in the cattle sector with which we engaged, are willing to explore how to make this work as they recognize the importance of these data being collected and utilized in an aggregated and anonymised basis.

All electronic recording systems have an export facility which can be activated relatively simply. The barrier in this instance is the aggregation and anonymising – which we were informed is not a major issue to amend.

The greatest barrier that the sector has is in regard to the on farm records, where the vast majority (80%+), are maintained as paper based records. A simple process for the transferal of this data needs to be explored.

3. ***Identify any potential 'data gaps'***

As accurate medicine usage records are required as an integral aspect of farm assurance and by law, the recording of medicine use on farm under the required headings is already widespread.

The only limitation/potential gaps will be from farms that are not farm assured (i.e. not having a regular check of their medicine book records) and are not abiding by legal requirements. This study was not able to ascertain the size of this 'group' though would suggest that it is a small number, largely in the beef sector.

4. ***Review what data storage facilities are already in place that could potentially take on the role of 'aggregator'***

Though there are many commercial industry databases already available, a regular comment from sector stakeholders is that any data storage facility would need to be 'owned' and managed by an independent body (such as AHDB) on behalf of the sector.

Not one stakeholder indicated that an industry database/aggregation facility was not a positive action. To implement this approach, would require an industry facility to be established with the responsibility of aggregating and anonymising data prior to providing an annual or bi-annual upload of cattle sector antimicrobial use data for the VMD.

The AHDB are currently exploring a data platform facility that links a number of databases

together. It is the intention of the CHAWG to hold further discussions with AHDB to ensure the requirements outlined as a result of this project are considered at an early stage of the Agritech Strategy funded data hub feasibility project.

5. ***Provide recommendations in the form of 'in principle' proposals for how a common database hub, to fulfil the needs of all stakeholders, could be established.***

It is important to recognise that although those interviewed can see the value in collection and collation of these data, the implementation of such a system regardless of how simple it is, will take time. The industry needs to develop an effective approach that adds value to what is already practiced. Change will be necessary and time must be allocated for this change to take place. As such we suggest a two stage process, that initially utilises data from veterinary practice records followed by an industry agreed approach to extracting farm level data.

Though the cattle sector recognises the importance of addressing this challenge and is committed to doing so, they also want to ensure that any changes asked of the sector with reference to record keeping protocols are agreed and aligned with the final decisions of the EU. When taking the industry as a whole on a journey of change, what is not needed is process/system amendments soon after the industry have implemented what they thought was the definitive system. The proposed two stage approach will permit the sector to initiate their journey and will enable a balance between providing the VMD with key evidence to inform their position in the EU as well as maintaining directional momentum whilst the negotiations are completed and to decide what is actually required of Member States.

With these considerations in mind, the following section sets out a recommended way forward.

Suggested Way Forward

Below is a suggested approach to be applied to engage the sector and agree the necessary actions. It is difficult to place time lines at this early stage, though it is recommended that the key timeline is the formation of the industry working Group by the Autumn of 2015.

The very first meeting will focus on key actions and timelines so the work of the group can be shared with all industry stakeholders, not just those on the working Group.

Phase 1

1. ***Small*** (essential to ensure progress) industry working group (facilitated by CHAWG) to establish agreed outcomes and how best these can be achieved. There will need to be an extensive communications plan put in place throughout the dairy/beef supply chain to ensure all are clear on key milestones and associated delivery programme.

2. The sector in discussion with the VMD develop a pro-forma of what must be included and how it must be reported in the data collection facility, regardless of the system (app, software, paper etc)

3. Develop system for data collection at veterinary practice level as soon as feasible recognising the constraints detailed in this report

4. Evaluate the outcomes of the veterinary practice implementation; determine whether veterinary practice software data is sufficient to meet industry needs and VMD reporting requirements or whether development of a system for capturing on-farm data should proceed.

5. Any AMR database needs to be part of a wider centralised industry owned data hub which will then impart relevant information to VMD. Connection with AHDB on this will take place as a matter of urgency, once agreement to proceed is reached.

Phase 2:

1. Should farm level (as opposed to veterinary practice level) data collection be deemed appropriate and necessary, take the outcomes of the veterinary data provision and implement at farm level in full discussion with the relevant Assurance Schemes, particularly Red Tractor.

2. Processes, associated costs and timelines will be explored at the earliest opportunity and shared with the cattle sector to ensure all are on the same page and importantly, have the opportunity to comment on the proposal.

3. To achieve real progress it is vital that both the dairy and beef sector are fully engaged. The latter sector will be much harder to address due to its fragmented structure and the myriad of production systems.

Appendix 1 – About CHAWG

The GB Cattle Health and Welfare Group (CHAWG) was established with funding from the relevant levy boards (EBLEX and DairyCo) in 2009. Nineteen bodies are currently members representing the vast majority of relevant organisations within the cattle sector. The Group started as an England only activity but it was quickly recognised that disease does not recognise Hadrian's Wall or Offa's Dyke and thus we now have a GB wide remit with the active participation of both the Welsh and Scottish Governments and their respective Chief Veterinary Officers (CVOs).

CHAWG's remit is to:

1. Provide an industry forum that will encourage and coordinate a programme of economically focussed improvements to cattle health and welfare across Britain.

2. Act as a forum to prioritise the research, development and knowledge interaction needs of the GB cattle industry and to assist in dissemination through their participating organisations.

3. Liaise closely with all stakeholders to promote consistent regional dissemination of national work and to encourage uptake of best practice.

4. Provide industry guidance and be a resource for the CVOs across GB and other relevant government bodies on cattle health and welfare matters including the early stages of policy development where appropriate.

CHAWG, with limited resources, has focussed its work programme on issues not currently being tackled by other bodies or initiatives but with the potential to impact heavily on the cattle industry. Our four current work streams are Farm Health Planning, Surveillance and Monitoring, BVD and Dairy Cow Welfare. Thus the VMD commissioned study fits very comfortably within our current work programme, remit and sector coverage. For more details about CHAWG please visit www.chawg.org.uk.

Appendix 2 – List of Acronyms

- AHDB Agriculture and Horticulture Development Board
- AHDA Animal Health Distributors Association
- AMR Anti-microbial resistance
- AMTRA Animal Medicines Training Regulatory Authority
- BCVA British Cattle Veterinary Association
- BPEX British Pig Executive
- CHAWG Cattle Health and Welfare Group
- CIS Cattle Information Systems, a wholly owned subsidiary of Holstein UK
- DEFRA Department for the Environment, Food and Rural Affairs.
- EBLEX English Beef and Lamb Executive
- EGENES Edinburgh Genetic Evaluation Services
- ESVAC European Surveillance of Veterinary Antimicrobial Consumption
- LMCNI Livestock and Meat Commission of Northern Ireland
- M and S Marks and Spencer
- MRO Milk Recording Organisation
- NFU National Farmers Union
- NFUS National Farmers Union of Scotland
- NML National Milk Laboratories
- NMR National Milk Records
- NOAH National Office of Animal health
- OMSCO Organic Milk Suppliers Cooperative
- QMS Quality Meat Scotland
- QMMS Quality Milk Management Services Ltd.
- RVC Royal Veterinary College
- VMD Veterinary Medicines Directorate

Appendix 3 – References

Agriculture and Horticulture Development Board (AHDB) (2015), Cattle Industry Project to Streamline Data Exchange. Press release issued 31st March 2015 by EBLEX

Cattle Health and Welfare Group (CHAWG) (2012), First Annual Report, GB Cattle Health and Welfare Group. September 2012

CHAWG (2014), Second Report, GB Cattle Health and Welfare Group. July 2014

Coyne, L.A., Pinchbeck G. L., Williams N. J., Smith R. F., Dawson S., Pearson R.B and Latham S.M. (2014), Understanding Antimicrobial Use and Prescribing Behaviour by Pig Veterinary Surgeons and Farmers: A Qualitative Study. Veterinary Record (2014). 175,593 cite as doi: 10:1136/v.r. 102696

Kerrigan, E (2014), Red Tractors Approach. Presentation made at CHAWG Meeting, 17th December 2014.

Redmond, E. (2014), Collection of Data on Antimicrobial Usage in Animals in the UK – A Scoping Study. A report for the Veterinary Medicines Directorate (VMD) October 2014 (unpublished).

Velasova, M., Drewe, J. A., Gibbons, J., Green, M., Guitian, J., (2015), Evaluation of the usefulness at national level of the dairy cattle health and production recording systems in Great Britain. A DairyCo funded study (Vet Record In press)

Veterinary Medicines Directorate (2014), UK Veterinary Antibiotic Resistance and Sales Surveillance Report. UK – VARSS 2014

UK 5 Year Antimicrobial Resistance (AMR) Strategy 2013-2018
https://www.gov.uk/government/publications/UK-5-year-antimicrobial-resistance-strategy-2013-to-2018