November 2024

RESPONSIBLE USE OF MEDICINES IN AGRICULTURE ALLIANCE

RUMA

RUMA Targets Task Force 2:

Four Years On

RUMA Targets Task Force 2: A report summarising the fourth year of progress against antibiotic use targets identified by the UK livestock industry's Targets Task Force 2 (TTF2) in November 2020

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Cat McLaughlin

RUMA Chair & Chair of the RUMA Targets Task Force 2

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Introduction

2023 has been another year of great effort and commitment from across UK livestock sectors in the responsible use of antibiotics. Whilst there is broadly a positive story to report back on, there are some increases in usage in some sectors which have been the result of disease outbreaks, lack of availability of key vaccines, environmental impacts, and in some cases, a combination of all three.

There is also a reality that we are facing into that for some sectors, reductions in use have been significant over the past decade and there will be a point where a plateau in reduction levels is to be expected. I make no apology for stating once again that antibiotics remain a critical tool in a vet's medicine 'cabinet' and, even with the best husbandry standards, animals can fall ill due to disease outbreaks or as a result of environmental impacts, which can mean antibiotics are necessary at times to treat animals and prevent unnecessary suffering.

The UK has some of the highest health and welfare standards in farming globally, something we should all be very proud of, but that doesn't mean we can rest on our laurels. I am reassured and impressed by the continued innovation and commitment I see from the UK farmed animal, bird and fish sectors in addressing AMR – these efforts must remain an ongoing priority.

We also know that data collection must remain a high priority, and it is pleasing to see the ongoing progress with Medicine Hub from AHDB. If we are to continue to lead the way in tackling AMR then we must do so from a solid foundation of evidence that helps us understand use and set appropriate targets.

On the subject of vaccine availability, for the last two years our agricultural and companion animal sectors have been reporting shortages in vaccine availability, with shortages across some sectors starting to curtail the veterinary response to some diseases. This is a red flag in efforts to tackle AMR and we are concerned that there could be a resultant increase in antibiotic usage to resolve the consequences of failing to effectively prevent disease threats through vaccination - as a direct result of these shortages. This would be a significant backward step for both AMR and animal welfare and is something that we're all desperate to avoid. We believe there is a need for political recognition of this risk and more collaboration to highlight the importance and availability of veterinary vaccines, both within the UK but accepting the global infrastructure of vaccine supply on which the UK is reliant. A reliable supply of vaccines is vital for the UK (and further afield), across our livestock keepers and companion animal owners and vets in their ongoing efforts to contribute positively to the One Health agenda and AMR mitigations. Everyone acknowledges that solving the veterinary vaccine supply issue will require a long-term strategy, but that needs to start with increasing awareness, recognition of the issue and the potential consequences, and taking positive action wherever possible to bring the right stakeholders together to address the matter. We will continue to raise this issue wherever we can to ensure vaccine availability is built into strategic priorities.

Looking ahead, the next cycle of RUMA Targets (TTF3) will be developed over the coming year and will be launched in Autumn 2025. As we bring the TTF together for this third cycle, evidence and insights gained over the last decade will be used to help further evolve the new set of targets. We also have the new UK 5-year national action plan for antimicrobial resistance 2024 to 2029 and updated Veterinary Medicines Regulations (VMRs) to refer to – both of which help frame and shape the journey, challenge and opportunities that lie ahead as we set out the TTF3 roadmap.

Cattle Sectors: Beef, Dairy and Calves

Overview

Ongoing collaboration has continued in 2023 between the different ruminant sector bodies on responsible antibiotic use across the UK. BCVA has continued to provide high quality training and education to its members in the past year, including collaboration with other industry bodies promoting Animal Health and Welfare Initiatives. The Royal College of Veterinary Surgeons (RCVS) revised Under Care Guidance on Prescribing for vets commenced in September 2023 which provides greater clarity for vets in practice on what responsible prescribing looks like as well as a tightening of the guidelines surrounding antimicrobial and anthelmintic prescribing. In addition, in September 2023 the Board of Dairy UK approved an updated strategy for minimising medicine residues in raw milk.

Medicine Hub

The Medicine Hub figures included in this RUMA TTF Report do not represent a full year of data collection. This is because annual data for 2023 will continue to be inputted right up until the end of 2024. This reflects the cycle of on-farm data collection in the cattle sector which is often aligned to the annual vet/farmer reviews of herd health plans as part of farm assurance. The figures in the TTF report cannot therefore be taken as fully comprehensive and only provide a 'snapshot' at the time of going to print.

The Cattle industry continues its support of Medicine Hub (MH) from AHDB, and its encouragement of cattle farmers and vets to input data. The second collated dataset of antibiotic use in the UK cattle and sheep sectors is now available from Medicine Hub, which has been developed and resourced by AHDB on behalf of industry. Totalling 8,685 enterprises across dairy, beef and sheep, these are still early data but give an indication of antibiotic use in ruminants.

It is important to note that the sector is large and this number of enterprises is not considered representative of the wider industry. Anecdotally, it has always been felt that the ruminant sector was a low user of antibiotics, but the data have not been available, particularly in the sheep and beef sectors, to validate this view. The good news is that the data being seen across dairy, beef and sheep from Medicine Hub which is still preliminary, go some way to giving that confidence. It is also becoming evident that the use of Highest Priority Critically Important Antibiotics (HP-CIAs) is minimal across the ruminant sector.

Medicine Hub uptake to date has been voluntary and the scale and complexity of the ruminant sector means it will take time to build up the volume of data. Given the diversity of farms in the sectors, as more enterprises enter data, the usage figures are expected to change. Neither is it possible to draw conclusions by directly comparing 2022 and 2023 published data, as they will not be derived from exactly the same dataset year to year. However, the depth of understanding and value of the data to the industry will continue to increase. As data submission accelerates over the next couple of years, the data will become more robust, such that industry can set a national

baseline of current performance and start to implement management strategies based on data and intelligence from Medicine Hub, within enterprise types.

At the time of the RUMA TTF Report going to print, Medicine Hub drew on data from 2,662 dairy enterprises to calculate a mean usage of 15.5 mg/PCU (not a full year of data). This is comparable to the mg/PCU figure contained in the VARSS report, as the denominator (number of adult dairy cows) and adjusted live weights used in Medicine Hub are identical. In population terms, this represents 34% of adult dairy cows in the UK. The Medicine Hub figure for HP-CIA use in dairy was low, at 0.01 mg/PCU. The Hub used 3,498 beef enterprises to calculate a mean antibiotic usage of 2.7 mg/kg. Mean HP-CIA use was 0.002 mg/kg. Medicine Hub has adopted the Cattle Health and Welfare Group (CHAWG) methodology to calculate beef metrics. This uses a denominator based on the overall population of beef cattle which are 'at risk', across a range of animal categories and standard weights. The ESVAC methodology, adopted by VARSS, uses only slaughtered beef animals as the denominator in its calculation. Therefore, total antibiotic use is distributed over a smaller number of animals and is more prone to bias, depending on the proportion of beef farm types contributing to the overall dataset

Both the "mg/PCU" and "mg/kg" metrics published are extremely useful for national trend monitoring within the dairy, sheep and beef sectors. However, due to the differences in how these figures are calculated, they should not be used to compare antibiotic use between the different sectors. These are still very early days in the drive to capture a comprehensive picture of antibiotic use across the beef, dairy and sheep sectors. Work continues to engage stakeholders all along the supply chain to encourage even more use of Medicine Hub for new and existing data sets, in order to strive towards achieving the ambitious targets set for Medicine Hub for the years ahead.

Medicine Hub is grateful for the collaboration of individual farmers, vets, bulk data holders/data integrators (Kingshay, Map of Ag, Foods Connected, NML, Bos International), farmer groups (Welsh Lamb and Beef Producers, Blade Farming, ABP Gamechanger, Buitelaar), milk buyers (Arla, First Milk, Muller, Barbers), Herdwatch farm software, the FIIA Group and others for sharing, or facilitating access, to these important data.

Beef, Dairy and Calves Sectors Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Calculation, benchmarking and central upload of data	**Data from 95% of UK dairy herds captured by 2024**	Medicine Hub (MH) - please see MH summary in the overview section above. **Red Tractor (RT):** The average number of Beef & Lamb memberships in 2023 was 19,772 (England). N.B. In Jan 2025 for beef & lamb and dairy, the medicine training standard will be updated so that one person who is responsible for administering medicine has completed the training within the last five years rather than since 2016. Additionally, this will reflect the changes in legislation regarding the medicine regulations which means some standards will be updated – such as the expected upload of ruminant medicine data to Medicine Hub; this is a significant driver for improved collation of sheep flock data. **Scotland:** The Scottish One Health Antimicrobial Use and Antimicrobial Resistance (SONAAR) team reviewed sources of data on antibiotic use and resistance in animals in Scotland and concluded SONAAR should continue to be engaged with and actively support and advocate for maximum join up from Scottish groups to UK wide solutions. The Scottish Government awarded funding to the Scottish Agricultural Organisation Society (SAOS) to address the challenge of AMR and AMU in animals through an 18-month pilot project, working alongside Quality Meat Scotland (QMS). Using existing data sources, this pilot involves six vet practices with their farming clients to monitor, understand and demonstrate good practice of antimicrobial use on farm. Post pilot, the plan is to build a roadmap for a national roll-out which will record and hold Scottish cattle and sheep AMU data; it is hoped this will pave the way for a Scottish recording scheme for AMU on cattle and sheep farms that will share aggregated data with the AHDB Medicine Hub (MH). The Scottish Government is also working to streamline the annual sheep and goat inventory to make it easier to complete and to administer. **Wales:** Welsh Lamb & Beef Producers Ltd (WLBP) members continue to work with their veterinary surgeons to calculate the average amount of antibiotics used on beef, sheep, and dairy farms in Wales using the WLBP Antimicrobial Calculator. Members of the Farm Assured Welsh Livestock (FAWL) scheme are required to have their antibiotic usage calculated on the platform. This process takes place during the annual health and welfare review, which the vet completes in conjunction with the farmers, taking the burden away from the farmers needing to upload and calculate their own usage data. Antibiotic sales data are captured and collated via the specially designed WLBP AMU Calculator. This novel reporting tool produces standardised antimicrobial usage (AMU) reports based on industry-agreed metrics. The results are expressed as milligrams of antibiotic used per kilogram of animal, a measurement accepted by government and supply chain stakeholders. Welsh farmers and vets have embraced this voluntary approach, which has resulted in what is believed to be the largest independent data set of its kind in the UK. WLBP have published two reports in May 2024. These reports cover the 2021 and 2022 reporting years. The 2022 WLBP AMU report show that veterinary surgeons completed AMU calculations in excess of 5,500 Welsh beef, sheep, and dairy enterprises under their care. The information continues to come in, and currently, the figure stands at over 13,000 data sets. **These reports can be found:** https://wlbp.co.uk/wlbp-annual-amu-reports/2021 https://wlbp.co.uk/wlbp-annual-amu-reports/2022	✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		WLBP have developed and are about to launch a reporting and benchmarking facility which will be available to registered vet practices servicing Welsh farmers. This new functionality will help vets to further analyse individual farms and benchmark them to similar farm clients within their practice in order to identify areas where they can help farmers to improve the health and production status of the livestock. Other reports include the ability for vets to view farms with Mg/kg Increases and Decreases, medicine characteristics filtered by European Medicine Agency (EMA) category, number of calculations submitted by farm profile and sorting products by those used most frequently on farms different farm types. WLBP are continuing to work with the lamb, beef and dairy supply chains to measure usage on Welsh farms. Alongside developing a benchmarking facility to evidence AMU, which will improve the vet-farmer discussions and decision making during the annual health and welfare review on farm. When requested by farmer members, WLBP can enable the sharing of the farmers data under strict permission with specific supply chains if they so wish. This provides the additional benefit to the farmer in not having to replicate any calculations for numerous supply chains. Arwain DGC (Defnydd Gwrthficrobaidd Cyfrifol / Responsible Antimicrobial Use) is a Welsh project, funded by Welsh Government in which WLBP continues to be a part of. This project aims to reduce the need to use antimicrobials, such as antibiotics by improving productivity, animal health and welfare through new and innovative technology and 'good practice'. WLBP work with scientists at the University of Bristol, who are also part of the Arwain DGC project, to produce and analyse critical AMU data. Collaborating with other UK nations on understanding antibiotic use in a wider context is also on the agenda for WLBP. Including working closely with the Responsible Use of Medicines in Agriculture Alliance (RUMA), the electronic Medicine Hub and sharing experiences in capturing antibiotic data with a pilot project for Scotland - the pioneering work by WLBP farmers is really reaping the benefits.	
	Data from 50% of UK calf rearing units captured by 2024	Medicine Hub - please see MH summary in the overview section above.	✓
	Data from 8,000 (10% of total) UK beef captured by 2024	Medicine Hub - please see MH summary in the overview section above.	✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Farm Vet Champions (FVCs) network	**2,800 FVCs in 900 veterinary practices across UK by 2024**	There are 1,047 FVC users. 50 SMART goals have been set and 20 teams have been created. RCVS Knowledge has promoted FVC at nine events reaching over 750 delegates. Resources are available for all organisations and all veterinary team members to use to promote further uptake in the network, training materials, and the SMART Goals tool. These resources have been accessed 4,016 times. Number of FVC users identifying as vet students – 129 users have selected student status. RCVS Knowledge has worked with both the VMD and AHDB to utilise the Farm Vet Champion network to reach the wider veterinary community and encourage veterinary teams to work with their farmers to upload ruminant data onto Medicine Hub. In the first half of 2024, as part of this project, a total of 23 online and 20 in-person meetings were held with a total of 87 veterinary professionals and 35 veterinary admin team members from Vet Partners, IVC Evidensia, CVS, XL Vets and independent practices as well as involving students and teaching staff from the University of Nottingham and personnel from Vet Impress. Feedback from the workshops were consistently positive (e.g. “very useful practically” “very interesting and informative”, “well organised, informative and relevant CPD to industry”) with 79% of delegates claiming they felt more confident in navigating Medicine Hub and 74% more confident to have conversations with clients about AMU data.	✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Training uptake among vets	**Specify appropriate training**	See FVC information above. A total of 20 teams have been created with 50 SMART goals being set. There have been 9 events, and 752 delegates reached through the network. **BCVA** The British Cattle Veterinary Association continues to provide quality training and education, with an aim to support our members across all stages of their farm vet career. There is a particular focus on clinical content to advance cattle health and welfare. BCVA's education offering is supported with representation on relevant bodies and initiatives by those on its Medicines Group, on the Herd Health and Welfare Group, Government & Agency Liaison Group, the TB Working Group and the Sustainability Group. BCVA continues to support the aims of the Medicine Hub and Farm Vet Champions, particularly with communication to its members via digital comms and at events (including BCVA Congress). Training & Information: Responsible use of veterinary medicines in UK agriculture is a priority for BCVA, along with offering related evidence-based information and training for the farm vet profession. This is evidenced in the association's CPD programme and online resources. Medicines is an inevitable thread across BCVA's training and a key feature of the Foundation course for vets <5yr qualified (256 places filled in 2024), and the popular Medicine Bitesize course (164 places filled in 2024). There is an accessible, low-cost online offering that aims to reduce the incidence of BVD, Johnes, mastitis and lameness that also impacts on an overall reduction in medicine use – primarily antimicrobials. As of August 2024: • Number of BVD qualified vets - 1017 • Number of Johnes qualified vets - 1867 • Number of QuarterPro qualified vets - 99 • Number of mobility mentors - 91 • Number of foot health trainers - 26 Print and online resources made available by BCVA for farm vets include Cattle Quarterly, Cattle Practice (print and online), CattleCast (podcasts), Webinary Archive (website) – and a new member benefit include access to the CABI Digital Library, VetMed Resource, with a large and growing collection of full text content, journal articles, conference papers, reports and book chapters, as well as news, review articles and disease datasheets. The Medicines section of the BCVA website includes supporting material for the RCVS Under Care guidance, Cascade guidelines, and positions on the responsible use of antimicrobials.	✓✓
	Reduced training non-compliances (NC's) in Red Tractor Dairy	There was a drop in NC's from 7% to 5% from 2022 – 2023.	

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
	Training becomes requirement in Beef farm assurance	**Red Tractor (RT) Medicine Training** 88% of RT Beef & Lamb members have completed medicine training and the quarterly trend shows the compliance level increasing to 95% in the last quarter of 2023. **RT Health Plans** 80% of B&L members show compliance with the requirement to have a health plan, the granularity of the data shows that typically non- conformances are raised as the health plan has not been signed by the vet not that the farm doesn't have a health plan. NOAH's Animal Medicines Best Practice (AMBP) farmer training for dairy, beef and sheep farmers has been updated. The programme is now presented in a more interactive, user-friendly manner, while the content itself has greater emphasis on the importance of biosecurity, and disease prevention. A total of 43 people purchased the AMBP - Antibiotics in Dairy course and 83 people purchased the Antibiotics in Beef course. **Northern Ireland Beef and Lamb Farm Quality Assurance Scheme - NIBL FQAS** • Number of members across sheep and cattle for NIBL FQAS –11,414 active participants • Any revisions to recommendations/standards and month of change related to AMU – Current NIBL FQAS standards require the following: All persons involved in the administration of animal medication must be competent based on experience and/or training to perform the tasks they are required to undertake. At least one person responsible for administering animal medicines must be formally trained in the responsible use of antimicrobials. A written herd/flock health plan, which includes a farm bio-security policy, must be established, implemented and reviewed at least annually or more frequently in the event of any substantial changes to husbandry practices. A Health, Performance & Antibiotic Usage Review must be completed in consultation with the farm vet. Farmers must consult with their vet before using Highest Priority Critically Important Antibiotics (HP-CIA's) (3rd and 4th generation cephalosporins, fluoroquinolones, polymyxins (colistin)). The farm bio-security policy must identify the risks of disease being introduced onto the farm relating to animals, vehicles and personnel moving on and off the farm, and detail the procedures that are in place for minimising the risk. As a minimum, farms must have cleaning and washing facilities and a DAERA approved disinfectant available for personnel, vehicles or machinery coming from or going to other livestock farms or premises. The DAERA approved disinfectant must be effective against Foot and Mouth Disease, TB and General Orders. • In Northern Ireland it is mandatory for participants of the Northern Ireland Beef and Lamb Farm Quality Assurance Scheme (NIBL FQAS) to attend training on the Responsible Use of Antimicrobials. Over 10,600 FQAS farm businesses have been trained through the College of Agriculture Food and Rural Enterprise (CAFRE) Responsible use of Antimicrobials on beef and sheep farms training, which was open to all beef and sheep farmers free of charge under the Farm Family Key Skills Programme. This training programme came to an end on 31 October 2023, with FQAS participants now attending other alternatives such as NOAH/Lantra.	✓✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Medicines best practice training uptake among students	**All vet school and agriculture college/ university courses include medicines best practice content by 2024**	All vet school courses include information on medicines best practice. There are 129 Farm Vet Champion users who have identified as veterinary students (though this is not a compulsory field so may not encompass all student users). In May 2024, The Vet School Council and FIIA published a joint report 'A new vision for responsible antibiotic use' with a call for improved availability of national level AMU data across all farm species.	✓✓
Farmer & vet herd/flock health plans	**Reduced non-compliances (NC's) annually in Dairy & Beef farm assurance for development of annual health/ medicines plan**	Each of the devolved nations have animal health planning within ongoing funding streams **Ruminant health planning England** The Animal Health and Welfare Pathway is a long-term, project partnership co-designed by government and industry, across cattle (beef and dairy), sheep, pig and poultry (layer and broiler) sectors to support continual improvement in health and welfare. The first of four steps of the Animal Health and Welfare Pathway programme was launched in February 2023. This provides farmers in England with a fully funded vet visit to support enhanced health planning. A series of 8 resources for vets were funded by Defra and developed by AHDB in collaboration with the Sheep Veterinary Society, British Cattle Veterinary Association, the Pig Vet Society and the Pathway's co-design team. The resources include species specific resources to support responsible medicine use, improved biosecurity, enhanced health and welfare and reduce disease risks. https://ahdb.org.uk/annual-health-and-welfare-review Since March 2023, farmers have been able to apply for grants to co-fund capital investments that support key health and welfare priorities. A further two support packages that will enable disease eradication control programmes and payment by results will follow. Dairy UK activity is focused in reducing medicine residues in raw milk. Dairy UK refreshed its Medicine Residues strategy in 2023 and is now working with stakeholders to achieve its implementation. The strategy seeks progress on: • Scope – ensuring activity covers all medicine types • Data Recording – creating a clear timetable for expanding data collection to cover on farm usage and all medicines. • Data Sharing and Analysis – ensuring farmers are given feedback on the data they provide. • Farmer Training – encouraging greater frequency and coverage of training. • Review of Farmer Training – ensuring all training packages are subject to periodic review.	✓✓✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		• Antibiotic test frequency – increasing the frequency of testing • Selective Dry Cow Therapy – raising industry awareness of the restrictions placed on blanket dry cow therapy by the new Veterinary Medicines Regulation. • On farm legal compliance with medicines – clarifying sanctions for persistent misuse of medicines. • Investigation of AB Fails – standardising investigation procedures for antibiotic test failures. • Analysis of Vet Investigation Reports – undertaking a centralised analysis of vet investigation reports. • Earned Recognition – seeking opportunities to reduce duplication of investigations. • Annual Reporting – compiling an annual report for the sector. • Communication – communicating activity and progress under the strategy. To achieve these outcomes amongst others Dairy UK has been working with its members, Red Tractor, the BCVA and the VMD. Dairy UK is also continuing to provide secretariat support to the Action Johne's Initiative. Dairy UK also undertakes a Due Diligence survey of raw milk to detect any emerging issues on medicines usage that could affect raw milk quality. **Ruminant health planning Scotland** Scottish Government has funded Scotland's Rural College (SRUC) to develop farmer-focused livestock health planning software, which is aimed to be inclusive of all sizes of enterprise, puts the farmer at the centre of decision-making, and facilitates compliance with farm assurance and other external audit/ inspection requirements. HerdPlan will launch in October 2024. Scottish Government's Agriculture Reform Programme's farm payments will start in April 2025 with a basic ("Tier 1") payment that will be partially conditional on a Whole Farm Plan. The Whole Farm Plan has five elements, one of which is a livestock health plan. In the first payment year (2025-26) claimants will only require two of the five elements, but this is expected to increase to all five elements for financial year 2027-28. The livestock health plan format is not prescribed and existing health plans e.g. required for farm assurance, will be acceptable. **Ruminant health planning Wales** Arwain DGC (Responsible Antimicrobial Use) is at the forefront of the drive to prevent the spread of antimicrobial resistance (AMR) in animals and the environment in Wales. The aim of the project is to help farmers, equine keepers and vets reduce the need to use antimicrobials through training, technology, data gathering and intelligence. It uses a collaborative approach to improve productivity, animal health and welfare through new and innovative technology and 'good practice'.	

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		The main activities undertaken through the project include; • Support Vets to set high standards of antimicrobial prescribing • Establish a code of conduct and guidelines for antimicrobial prescribing across Welsh farm practices • Use novel technology to explore biosecurity and precision agriculture solutions to reduce overall disease burden and the need for antimicrobials in Sheep, beef, and dairy farms • Collate and analyse a large dataset (AMU Calculator led by WLBP) of antimicrobial use (from 4500+ farms (Sheep, Beef and dairy)) to enable better understanding of antimicrobial use and trends on livestock units in Wales. • Investigate and build an understanding of AMR on Welsh dairy, beef and sheep farms through environmental sampling on farms • Provide factual information on antimicrobial stewardship to vets, farmers and equine owners • Collect syndromic surveillance data and pilot a system for vets and farmers to use active surveillance programme Below are updates on some of the key work undertaken through Arwain DGC. Since its launch in October 2021, Arwain DGC has used many channels to engage the public and stakeholders, including radio, television, social media, a quarterly bulletin, local, national and international events. The annual Arwain Vet & Farmer conference held at Aberystwyth University was well attended in 2023 and 2024 providing a good opportunity to showcase the work undertaken and included a keynote talk from public health Wales, to give a human health perspective. There are 12 Proof of Concept farms (four beef, four sheep and four dairy farms) across Wales piloting new technologies to explore biosecurity and precision agriculture solutions to reduce the need to use antibiotics and other antimicrobials in farm animals. Several workstreams of the project encompass the Veterinary Prescribing Champions Network led by Dr Gwen Rees. This is a multi-award-winning network of farm animal vets focussing on antimicrobial stewardship and AMR in farm animals. The project maintains a network of highly trained veterinary surgeons and co-creates several key animal health policies across the network of veterinary practices in collaboration with academics, which represent almost 90% of practices who treat farm animals in Wales. The primary focus of this group is the co-development of antimicrobial stewardship policy for the ruminant sector in Wales. Some key outputs have been a National voluntary prescribing code of conduct; a series of clinical treatment guidelines and 50 bespoke antimicrobial stewardship action plans for veterinary practices. The VPC network won the UK Health Security Agency's Antibiotic Guardian Award for Prescribing and Stewardship 2023 and the Royal College of Veterinary Surgeons' Impact Award 2022	

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		An active AMR surveillance programme to understand the abundance, type and transmission of resistant E. coli has been initiated on 70 dairy, beef and sheep farms. As of June 2024, 2,700 samples, collected from faecally contaminated environments by vets representing 14 farm practices in Wales, have been processed. Epidemiological analyses have focused on using sophisticated statistical modelling techniques to identify risk factors for AMR on these farms, in addition to exploratory methods to unravel the complexity of factors influencing on-farm AMU, utilising AMU data captured by the WLBP AMU Calculator. **Biosecurity App** The Biosecurity App trials, organised by Iechyd Da, features seven vet practices and 20 farms across Wales, and aims to help farmers and vets in Wales conduct an objective biosecurity risk assessment. Farmers use the application along with their vet to generate a numerical personalised “risk score” at the start and end of a 9–12-month period to give a measure of progress. The Biosecurity App, easily identifies areas for improvement, enabling the farm’s vet to give practical advice on making three priority improvements and agree a strategic control plan of agreed tasks to reduce risks. The tool additionally offers the opportunity to anonymously benchmark biosecurity against other participating farms. The App trials have demonstrated that this approach can reduce the risk of spreading infectious diseases from farm to farm. In the first stage pilot 60% of the recommendations were implemented, resulting in healthier and more productive livestock, reduced disease, and a reduced need for antibiotics. **Practice Syndromic Surveillance** As part of the Arwain DGC project, the Practice Syndromic Surveillance Data Collection Project is led by Iechyd Da in collaboration with the Wales Veterinary Science Centre (WVSC) and the University of Liverpool. This pilot trials the collection of disease symptom data from a network of vets across Wales to enable the health status of livestock populations to be monitored. By detecting and responding to health threats early, informed interventions such as targeted vaccinations, biosecurity measures and treatment protocols could be implemented promptly to stop further spread or, even better, avoid disease altogether. It could potentially issue alerts to the possibility of new and emerging (or re-emerging) diseases. Existing artificial intelligence programs are being adapted to interrogate the clinical data to see if clinical syndromes can be identified from keywords associated with illness and then used to investigate whether any trends in syndromic disease incidence can be detected and related back to medicines dispensed. The University of Liverpool team, with the assistance of the WVSC are in the process of reviewing this information to establish the quality and quantity of the data.	

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
	Reduced non-compliances for BVD control in Red Tractor Dairy	Data not available at the time of going to print.	
	Initiatives to tackle BVD in the UK cattle industry* ***Formerly this box referenced: 'Calves sourced from farms eradicating BVD, or screened'. This target has been updated to reflect the broader industry effort underway to tackle BVD.**	BVDFree England Launched in July 2016. This industry owned scheme delivers a voluntary elimination programme for BVD in cattle breeding herds in England. Since the scheme began, 6,972 holdings have registered with the scheme. This represents 45% of beef and dairy breeding cattle in England, with 28% of registered herds holding a test negative herd status. CHECS There were 3,717 herds on a CHECS BVD program (either Accredited Free, Vaccinated Monitored Free or on the Eradication Programme) at the end of May 2024. Gwaredu BVD The scheme had 9,369 farms (85% of farms) that had engaged with the programme by the close of the programme in December 2022. At the close of the programme 77% of farms were negative for BVD. Scotland's BVD eradication scheme has been mandatory since 2013. The scheme operates on a herd basis and is focused on herds where calves are born, i.e. breeding herds. As elsewhere in UK, the number of Scottish herds is decreasing with consolidation resulting in increased average herd size: 1. Number registered with scheme since the scheme began: all, although because it is a mandatory scheme there is no requirement for registration. 2. % of Scottish breeding herd registered: 100% 3. % of registered herds with negative herd status: 92%, although NB only breeding herds are required to have a BVD herd status. Data is published monthly on the EPIC website: EPIC (epicscotland.org) The NI BVD Programme has been industry-led since 2013 and is overseen by an Implementation Group, comprising key stakeholders and chaired by Animal Health and Welfare NI (AHWNI), a not-for-profit body that administers the Programme. The Programme is underpinned by legislation and there is ongoing collaboration with DAERA in aspects of monitoring and development of the scheme. 1. Number registered with scheme since the scheme began: BVD testing of all newborn calves and any bovine animals suspected of being infected with the BVD virus has been compulsory since March 2016. From 01/03/2016 to 30/06/2024, over 4.5 million tests have been carried out. At 19/07/2024, 98.38% of the entire bovine population in NI had a direct or indirect BVD Negative status. (Previously untested dams of BVD Negative calves receive an indirect negative status.)	✓✓

Beef, Dairy and Calves Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		2. % of Northern Ireland's breeding herd registered: 100% of the NI breeding herd is included in the scheme, comprising approximately 21,700 herds. **3.** % of registered herds with negative herd status Herd statuses are not provided for NI herds at present, however approximately 20,500 herds (approximately 94%) have not had a BVD Positive result disclosed in the past 18 months. The rolling 12-month BVD animal incidence in calves tested for BVD virus has decreased from 0.66% at the end of the first year of the compulsory programme to 0.205% at the end of April 2024, indicating a significant decrease in the level of circulating virus with a concomitant decrease in associated conditions for which antimicrobial therapies might have been considered. AHWNI also manages the Northern Ireland Johne's Disease Control Programme for Dairy Herds. This programme complies with Red Tractor Quality Assurance requirements and requires all participating herds to undertake a standardised annual on-farm veterinary risk assessment and management plan (V-RAMP) for Johne's disease, which assesses infection risks and allows for the provision of farm specific advice to mitigate any risks identified. Each assessment is carried out by an AHWNI trained veterinary practitioner and is captured electronically by a bespoke online system developed and managed by AHWNI. To date around 250 vets have been trained in the delivery of V-RAMPs and over 4000 VRAMPs have been completed.	

Beef, Dairy and Calves Sectors Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Dairy, Beef, and Calves Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (centralised data)	**15% mg/kg fall in dairy herds by 2024; baseline 2020/21**	Data unavailable	Data pending	Data pending	Data pending	✓
	25% mg/kg fall in calf rearing units by 2024; baseline 2020/21	Data unavailable	Data pending	Data pending	Data pending	✓
Number of calves treated	**7.5 fewer treated/100 calves by 2024; baseline 2020/21**	Data unavailable	Data pending	Data pending	Data pending	
Sales of lactating cow tubes in dairy	**Annual reduction in 3-yr rolling average; baseline of 0.69 DCDVet**	0.63 (2018-2020)	0.51 (2019-2021)	2022 – 0.43 (2020 – 2022)	0.38 rounded up (0.376) (2021-2023)	✓✓✓
Sales of dry cow tubes in dairy	**Annual reduction in 3-yr rolling average; baseline of 0.59 DCDVet**	0.57 (2018-2020)	0.54 (2019-2021)	2022 – 0.49 (2020 – 2022)	0.53 rounded up (0.526) (2021-2023)	✓✓✓
Highest priority antibiotic use (from centralised data)	**Reduction in dairy mg/kg by 2024; baseline 2020/2021**	Data unavailable	Data unavailable	Data pending	Data Pending	
	Establish baseline for calves from 2020/2021 data, then review	Data unavailable	Data unavailable	Data pending	Data pending	

Dairy, Beef, and Calves Indicators of Progress		2020	2021	2022	2023	Progress
Highest priority antibiotic sales	**Reduction in cattle injectables by 2024; baseline 0.26 mg/kg**	0.29 mg/kg	Injectable HP CIA products licenced for cattle were 0.24mg/ kg in 2021, representing an 18% reduction since 2020 (0.29mg/kg). There has been an 0.86 mg/ kg (-78%) decrease since 2014.	Sales of injectable HP-CIA products licensed for cattle were 0.2mg/kg in 2022, which represents a 14% decrease since 2021 and an 81% reduction since 2014.	Sales of injectable HP-CIA products licensed for use in cattle were 0.19 mg/kg in 2023 having reduced by a further 9% (0.02 mg/ kg) between 2022 and 2023. Sales have fallen by 83% (0.91 mg/kg) since 2014.	✓✓✓
	Reduction in tubes for dairy cows by 2024; baseline 0.03 DCDVet	0.07 mg/kg	Intramammary HP-CIA products in 2021 were 0.02mg/ kg which is lowest they have been and represents a 96% reduction since 2014.	Sales of intramammary HP-CIA products licensed for cattle in 2022 were 0.014 DCDVet, which is 13% (0.002DCDVet) lower than in 2021 and represents a 96% decrease since 2014.	Sales of intramammary HP-CIA products licensed for cattle in 2023 were 0.0097 DCDVet, which is 30% (0.0043 DCDVet) lower than in 2022 and represents a 97% decrease since 2014	✓✓✓
Mortality rates	**Mortality falls in beef & dairy cows; baseline 2020**	Data unavailable	Data unavailable	Data no longer available due to data processing limitations.	Data no longer available due to data processing limitations.	
	Calf mortality falls 1%/ year 2020-2024; baseline 2018	Data unavailable	Data unavailable	Data no longer available due to data processing limitations.	Data no longer available due to data processing limitations.	

Dairy, Beef, and Calves Indicators of Progress		2020	2021	2022	2023	Progress
Health and welfare metrics	**Fall in dairy lameness and mastitis from various 2019 indicators**	As part of a wider project monitoring clinical and subclinical mastitis, data were collated from 79 'Sentinel' herds across the UK. This work was carried out by QMMS Ltd and the University of Nottingham, funded by AHDB Dairy under the Dairy Research Partnership. Between 2012 and 2020 there was a 32% reduction in mean clinical mastitis rate from 44.1 to 30.2 cases per 100 cows per year. Clearly, this reduction in clinical cases is likely to result in reduced use of antimicrobial therapy. At the same time, the mean weighted bulk milk somatic cell count dropped from 186,000 to 159,000 cells/ ml, suggesting a lower prevalence of infection and therefore improved mastitis control. One major change in prescribing habits over the past 10 years is the widespread introduction of selective dry cow therapy i.e. withholding antimicrobial treatment in uninfected cows. It is encouraging that this has not led to an increase in new infections over the dry period, as measured by a 40% reduction in clinical cases of dry period origin (mean 1.07◊0.64 cows in 12), and a 14% reduction in new cell count infections over the dry period (mean 18.0◊15.5%).	The AHDB Sentinel Herds Project involves collating data from 92 sentinel farms to monitor trends in mastitis over time at a national level. This work began in 2017 and was carried out by QMMS Ltd and the University of Nottingham, funded by AHDB Dairy under the Dairy Research Partnership. Between 2020 and 2021, there was a significant reduction ($p<0.001$) in mean clinical mastitis rate from 29.9 to 24.9 cases per 100 cows per year. Clearly, this reduction in clinical cases is likely to result in reduced use of antimicrobial therapy. One major change in prescribing habits over the past 10 years is the widespread introduction of selective dry cow therapy i.e. withholding antimicrobial treatment in uninfected cows. It is encouraging that this has not led to an increase in new infections over the dry period. Between 2020 - 2021, there was a significant reduction ($p<0.01$) of 15.9% in rate of clinical cases of dry period origin. In 2021, in the third year of the AHDB Herd Advance project, farmers enrolled onto the AHDB Dairy Mastitis Control Plan found there to be a significant reduction in median clinical mastitis incidence rate from 23.5 to 20.5 cases per 100 cows per year.	82 sentinel herds continued to show improvement in mastitis infection levels between 2021 and 2022, although only the reduction of 17%in dry period new infection rate reached statistical significance	Data not available at the time of going to print.	✓
	Fall in beef respiratory disease from various 2019 indicators	Data unavailable	Data unavailable	Data unavailable	Data currently unavailable.	

Sheep Sector

Overview

There has been ongoing and considerable progress in the sheep industry efforts towards responsible antibiotic stewardship despite an incredibly challenging environment in 2023.

There is plenty of evidence from Wales of positive activity around responsible antimicrobial stewardship throughout the farming and veterinary communities with collation of good antibiotic usage data from all quality-assured sheep farms. Scotland and Northern Ireland are also making progress in terms of collating data by running pilots and exploring appropriate mechanisms for collation of data.

RCVS Knowledge, AHDB and VMD worked together to hold a successful series of meetings and workshops in England, designed to rally ruminant vets via the Farm Vet Champion community to set SMART goals and make progress in the uploading of client antibiotic data onto Medicine Hub. For some practices these are still early days, but this groundwork sets good precedents for ongoing routine data collation via veterinary practices, in preparation for anticipated requirements for Farm Assured flocks. Although there are differences in approach across the devolved regions of the UK, it is pleasing to see that all are pulling in the same direction and working together to demonstrate overall usage within the UK sheep sector.

The key challenges of note include significant vaccine supply disruption which continued to affect the industry, most particularly the supply of both enzootic abortion and clostridial vaccines. The Sheep Veterinary Society (SVS) and Sheep Antibiotic Guardian Group (SAGG) have been monitoring the situation and has released advice regarding the lack of EAE abortion vaccine to urge ongoing responsible use of antibiotics. There has been recovery in the supplies of some vaccines (notably Toxovax and Footvax) but the overall ongoing supply situation is fragile with the impending risks of a widespread bluetongue serotype 3 (BTV3) outbreak putting further pressure on vaccine manufacture.

Schmallenberg virus (SBV) has also had an impact on the sheep sector, especially affecting December and January lambing flocks and causing large lamb losses in some of these flocks. Schmallenberg virus is spread by midges, with UK sheep flocks at the limits of its usual range, meaning severe periodic disease. Unfortunately, the impact in 2023/24 has been shown to be more severe than in previous outbreaks in either 2012/13 or 2016/17.

As in previous years, the Sheep Veterinary Society (SVS) and Sheep Antibiotic Guardian Group (SAGG) have issued clear guidance to vets to ensure appropriate prescribing takes place, particularly in the face of challenging vaccine supply and to help in the practical outworkings of the new Veterinary Medicine Regulations.

Medicine Hub

The Medicine Hub figures included in this RUMA TTF Report do not represent a full year of data collection for the sheep sector. This is because annual data for 2023 will continue to be inputted right up until the end of 2024. This reflects the cycle of on-farm data collection in the sheep sector which is often aligned to the annual vet/farmer reviews of flock health plans as part of farm assurance. The figures in the TTF report cannot therefore be taken as fully comprehensive and only provide a ‘snapshot’ at the time of going to print.

The sheep industry continues its support of Medicine Hub (MH) from AHDB, and its encouragement of sheep farmers and vets to input data. The second collated dataset of antibiotic use in the UK cattle and sheep sectors is now available from Medicine Hub, which has been developed and resourced by AHDB on

behalf of industry. Totalling 8,585 enterprises across dairy, beef and sheep, these are still early data but give an indication of antibiotic use in ruminants.

It is important to note that the industry is large and this number of enterprises is not considered representative of the wider industry. Anecdotally, it has always been felt that the ruminant sector was a low user of antibiotics, but the data have not been available, particularly in the sheep and beef sectors, to validate this view. The good news is that the data being seen across dairy, beef and sheep from Medicine Hub which is still preliminary, go some way to giving that confidence. It is also becoming evident that the use of Highest Priority Critically Important Antibiotics (HP-CIAs) is minimal across the ruminant sector.

Medicine Hub uptake to date has been voluntary and the scale and complexity of the ruminant sector means it will take time to build up the volume of data. Given the diversity of farms in the sectors, as more enterprises enter data, the usage figures are expected to change. Neither is it possible to draw conclusions by directly comparing 2022 and 2023 published data, as they will not be derived from exactly the same dataset year to year. However, the depth of understanding and value of the data to the industry will continue to increase. As data submission accelerates over the next couple of years, the data will become more robust, such that industry can set a national baseline of current performance and start to implement management strategies based on data and intelligence from Medicine Hub, within enterprise types.

A total of 2,525 sheep enterprises were submitted at the time of the RUMA TTF Report going to print (not a full year of data), equivalent to 13% of UK finished lambs. Mean antibiotic usage was calculated to be 4.7 mg/kg. This differs slightly from the figure (5.6mg/PCU) contained in the VARSS report. Medicine Hub has adopted the Sheep Health and Welfare Group (SHAWG) methodology to calculate sheep metrics. This includes topical antibiotics, which are more widely used in sheep production and also includes flock replacements in the denominator, alongside ewes and finished lambs. Mean usage of HP-CIAs was particularly low for sheep at 0.0007 mg/kg. Both the “mg/PCU” and “mg/kg” metrics published are extremely useful for national trend monitoring within the dairy, sheep and beef sectors. However, due to the differences in how these figures are calculated, they should not be used to compare antibiotic use between the different sectors. These are still very early days in the drive to capture a comprehensive picture of antibiotic use across the beef, dairy and sheep sectors. Work continues to engage stakeholders all along the supply chain to encourage even more use of Medicine Hub for new and existing data sets, in order to strive towards achieving the ambitious targets set for Medicine Hub for the years ahead. Medicine Hub is grateful for the collaboration of individual farmers, vets, bulk data holders/data integrators (Map of Ag, Foods Connected), farmer groups (Welsh Lamb and Beef Producers), the FIIA Group and others for sharing, or facilitating access, to these important data.

Sheep Sector Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Calculation, benchmarking and central upload of data	**Data from 8,000 (10% of total) UK sheep flocks captured by 2024**	Medicine Hub (MH) - please see MH summary in the overview section above. Red Tractor (RT) - The average number of Beef & Lamb memberships in 2023 was 19,772 (England). N.B. In Jan 2025 for beef and lamb and dairy, the medicine training standard will be updated so that one person who is responsible for administering medicine has completed the training within the last five years rather than since 2016. Additionally, this will reflect the changes in legislation regarding the medicine regulations which means some standards will be updated – such as the expected upload of ruminant medicine data to Medicine Hub – this is a significant driver for improved collation of sheep flock data. Scotland: The Scottish One Health Antimicrobial Use and Antimicrobial Resistance (SONAAR) team reviewed sources of data on antibiotic use and resistance in animals in Scotland and concluded SONAAR should continue to be engaged with and actively support and advocate for maximum join-up from Scottish groups to UK wide solutions. The Scottish Government awarded funding to the Scottish Agricultural Organisation Society (SAOS) to address the challenge of AMR and AMU in animals through an 18-month pilot project, working alongside Quality Meat Scotland (QMS). Using existing data sources, this pilot involves six vet practices with their farming clients to monitor, understand and demonstrate good practice of antimicrobial use on farm. Post pilot, the plan is to build a roadmap for a national roll-out which will record and hold Scottish cattle and sheep AMU data; it is hoped this will pave the way for a Scottish recording scheme for AMU on cattle and sheep farms that will share aggregated data with the AHDB Medicine Hub (MH). The Scottish Government is also working to streamline the annual sheep and goat inventory to make it easier to complete and to administer. Wales: Welsh Lamb & Beef Producers Ltd (WLBP) members continue to work with their veterinary surgeons to calculate the average amount of antibiotics used on beef, sheep, and dairy farms in Wales using the WLBP Antimicrobial Calculator. Members of the Farm Assured Welsh Livestock (FAWL) scheme are required to have their antibiotic usage calculated on the platform. This process takes place during the annual health and welfare review, which the vet completes in conjunction with the farmers, taking the burden away from the farmers needing to upload and calculate their own usage data. Antibiotic sales data are captured and collated via the specially designed WLBP AMU Calculator. This novel reporting tool produces standardised antimicrobial usage (AMU) reports based on industry-agreed metrics. The results are expressed as milligrams of antibiotic used per kilogram of animal, a measurement accepted by government and supply chain stakeholders.	✓

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		Antibiotic sales data are captured and collated via the specially designed WLBP AMU Calculator. This novel reporting tool produces standardised antimicrobial usage (AMU) reports based on industry-agreed metrics. The results are expressed as milligrams of antibiotic used per kilogram of animal, a measurement accepted by government and supply chain stakeholders. Welsh farmers and vets have embraced this voluntary approach, which has resulted in what is believed to be the largest independent data set of its kind in the UK. WLBP have published two reports in May 2024. These reports cover the 2021 and 2022 reporting years. The 2022 WLBP AMU report show that veterinary surgeons completed AMU calculations in excess of 5,500 Welsh beef, sheep, and dairy enterprises under their care. The information continues to come in, and currently, the figure stands at over 13,000 data sets. **These reports can be found:** https://wlbp.co.uk/wlbp-annual-amu-reports/2021 https://wlbp.co.uk/wlbp-annual-amu-reports/2022 WLBP have developed and are about to launch a reporting and benchmarking facility which will be available to registered vet practices servicing Welsh farmers. This new functionality will help vets to further analyse individual farms and benchmark them to similar farm clients within their practice in order to identify areas where they can help farmers to improve the health and production status of the livestock. Other reports include the ability for vets to view farms with mg/kg Increases and Decreases, medicine characteristics filtered by European Medicine Agency (EMA) category, number of calculations submitted by farm profile and sorting products by those used most frequently on farms different farm types. WLBP are continuing to work with the lamb, beef and dairy supply chains to measure usage on Welsh farms. Alongside developing a benchmarking facility to evidence AMU, which will improve the vet-farmer discussions and decision making during the annual health and welfare review on farm. When requested by farmer members, WLBP can enable the sharing of the farmers data under strict permission with specific supply chains if they so wish. This provides the additional benefit to the farmer in not having to replicate any calculations for numerous supply chains. Arwain DGC (Defnydd Gwrthficrobaidd Cyfrifol / Responsible Antimicrobial Use) is a Welsh project, funded by Welsh Government in which WLBP continues to be a part of. This project aims to reduce the need to use antimicrobials, such as antibiotics by improving productivity, animal health and welfare through new and innovative technology and 'good practice'. WLBP work with scientists at the University of Bristol, who are also part of the Arwain DGC project, to produce and analyse critical AMU data.	

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		Kristen Reyher, Professor of Veterinary Epidemiology and Population Health at the University of Bristol, said, "WLBP's work has been fantastic in providing Wales with important data to evidence its leading role in antibiotic stewardship across the UK and globally. These data allow farmers and vets to work together to reduce antibiotic use down to the lowest levels possible, which will have a knock-on effect on keeping antimicrobial resistance (AMR) to a minimum and help us ensure antibiotic use really is 'as little as possible but as much as necessary'." Collaborating with other UK nations on understanding antibiotic use in a wider context is also on the agenda for WLBP. Including working closely with the Responsible Use of Medicines in Agriculture Alliance (RUMA), the electronic Medicine Hub and sharing experiences in capturing antibiotic data with a pilot project for Scotland - the pioneering work by WLBP farmers is really reaping the benefits. WLBP will continue to work with the industry and veterinary profession in Wales and wider to ensure that antibiotic use is utilised responsibly without compromising animal health and welfare.	
Farm Vet Champions (FVCs) network	**2,800 FVCs in 900 veterinary practices across UK by 2024**	By August 2024, there were 1,047 FVC users. 50 SMART goals have been set and 20 teams have been created. RCVS Knowledge has promoted FVC at 9 events reaching over 750 delegates. Resources are available for all organisations and all veterinary team members to use to promote further uptake in the network, training materials, and the SMART Goals tool. These resources have been accessed 4,016 times. Number of FVC users identifying as vet students – 129 users have selected student status RCVS Knowledge have worked with both the VMD and AHDB to utilise the Farm Vet Champion network to reach the wider veterinary community and encourage veterinary teams to work with their farmers to upload ruminant data onto the Medicine Hub. In the first half of 2024, as part of this project, a total of 23 online and 20 in-person meetings were held with a total of 87 veterinary professionals and 35 veterinary admin team members from Vet Partners, IVC Evidensia, CVS, XL Vets and independent practices as well as involving students and teaching staff from the University of Nottingham and personnel from Vet Impress. Feedback from the workshops were consistently positive (e.g. "very useful practically" "very interesting and informative", "well organised, informative and relevant CPD to industry") with 79% of delegates claiming they felt more confident in navigating Medicine Hub and 74% more confident to have conversations with clients about AMU data.	✓

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Training uptake among vets	**Specify appropriate training within Farm Vet Champion plan**	See FVC information above. A total of 20 teams have been created with 50 SMART goals being set. There have been nine events, and 752 delegates reached through the network.	✓
Medicines best practice training uptake among farmers	**Training becomes requirement in Beef/Lamb farm assurance**	**Red Tractor (RT) Medicine Training** 88% of RT Beef & Lamb members have completed medicine training and the quarterly trend shows the compliance level increasing to 95% in the last quarter of 2023. **RT Health Plans** 80% of B&L members show compliance with the requirement to have a health plan, the granularity of the data shows that typically non- conformances are raised as the health plan has not been signed by the vet not that the farm doesn't have a health plan. NOAH's Animal Medicines Best Practice (AMBP) farmer training for dairy, beef and sheep farmers has been updated. The programme is now presented in a more interactive, user-friendly manner, while the content itself has greater emphasis on the importance of biosecurity, and disease prevention. A total of 37 people purchased the AMBP antibiotics in sheep training course in 2023 reflecting 20% of the AMBP course content accessed. **Northern Ireland Beef and Lamb Farm Quality Assurance Scheme - NIBL FQAS** Number of members across sheep and cattle for NIBL FQAS –11,414 active participants Any revisions to recommendations/standards and month of change related to AMU – Current NIBL FQAS standards require the following: • All persons involved in the administration of animal medication must be competent based on experience and/or training to perform the tasks they are required to undertake. At least one person responsible for administering animal medicines must be formally trained in the responsible use of antimicrobials. A written herd/flock health plan, which includes a farm bio-security policy, must be established, implemented and reviewed at least annually or more frequently in the event of any substantial changes to husbandry practices. A Health, Performance & Antibiotic Usage Review must be completed in consultation with the farm vet. Farmers must consult with their vet before using Highest Priority Critically Important Antibiotics (HP-CIA's) (3rd and 4th generation cephalosporins, fluoroquinolones, polymyxins (colistin)). The farm bio-security policy must identify the risks of disease being introduced onto the farm relating to animals, vehicles and personnel moving on and off the farm, and detail the procedures that are in place for minimising the risk. As a minimum, farms must have cleaning and washing facilities and a DAERA approved disinfectant available for personnel, vehicles or machinery coming from or going to other livestock farms or premises. The DAERA approved disinfectant must be effective against Foot and Mouth Disease, TB and General Orders.	✓✓

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		• In Northern Ireland it is mandatory for participants of the Northern Ireland Beef and Lamb Farm Quality Assurance Scheme (NIBL FQAS) to attend training on the Responsible Use of Antimicrobials. Over 10,600 FQAS farm businesses have been trained through the College of Agriculture Food and Rural Enterprise (CAFRE) Responsible use of Antimicrobials on beef and sheep farms training, which was open to all beef and sheep farmers free of charge under the Farm Family Key Skills Programme. This training programme came to an end on 31 October 2023, with FQAS participants now attending other alternatives such as NOAH/Lantra.	
Medicines best practice training uptake among students	**All vet school and agriculture college/ university courses include medicines best practice content by 2024**	All vet school courses include information on medicines best practice. There are 129 Farm Vet Champion users who have identified as veterinary students (though this is not a compulsory field so may not encompass all student users). In May 2024, The Vet School Council (VSC) and FIIA published a joint report 'A new vision for responsible antibiotic use' with a call for improved availability of national level AMU data across all farm species: FINAL-VSC-FIIA-AMR-report-A-new-vision-for-antibiotic-use-1.pdf (vetschoolscouncil.ac.uk)	✓✓
Farmer & vet herd/flock health plans	**Increased health planning on sheep farms tracked through FVCs**	Each of the devolved nations have animal health planning within ongoing funding streams. **Ruminant health planning Scotland** Scottish Government has funded Scotland's Rural College (SRUC) to develop farmer-focused livestock health planning software, which is aimed to be inclusive of all sizes of enterprise, puts the farmer at the centre of decision-making, and facilitates compliance with farm assurance and other external audit/inspection requirements. HerdPlan will launch in October 2024. Scottish Government's Agriculture Reform Programme's farm payments will start in April 2025 with a basic ("Tier 1") payment that will be partially conditional on a Whole Farm Plan. The Whole Farm Plan has five elements, one of which is a livestock health plan. In the first payment year (2025-26) claimants will only require two of the five elements, but this is expected to increase to all five elements for financial year 2027-28. The livestock health plan format is not prescribed and existing health plans e.g. required for farm assurance, will be acceptable. **Ruminant health planning Wales** Arwain DGC (Responsible Antimicrobial Use) is at the forefront of the drive to prevent the spread of antimicrobial resistance (AMR) in animals and the environment in Wales. The aim of the project is to help farmers, equine keepers and vets reduce the need to use antimicrobials through training, technology, data gathering and intelligence. It uses a collaborative approach to improve productivity, animal health and welfare through new and innovative technology and 'good practice'.	✓✓

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		The main activities undertaken through the project include; • Support Vets to set high standards of antimicrobial prescribing • Establish a code of conduct and guidelines for antimicrobial prescribing across Welsh farm practices • Use novel technology to explore biosecurity and precision agriculture solutions to reduce overall disease burden and the need for antimicrobials in Sheep, beef, and dairy farms • Collate and analyse a large dataset (AMU Calculator led by WLBP) of antimicrobial use (from 4500+ farms (Sheep, Beef and dairy)) to enable better understanding of antimicrobial use and trends on livestock units in Wales. • Investigate and build an understanding of AMR on Welsh dairy, beef and sheep farms through environmental sampling on farms • Provide factual information on antimicrobial stewardship to vets, farmers and equine owners • Collect syndromic surveillance data and pilot a system for vets and farmers to use active surveillance programme Below are updates on some of the key work undertaken through Arwain DGC. Since its launch in October 2021, Arwain DGC has used many channels to engage the public and stakeholders, including radio, television, social media, a quarterly bulletin, local, national and international events. The annual Arwain Vet & Farmer conference held at Aberystwyth University was well attended in 2023 and 2024 providing a good opportunity to showcase the work undertaken and included a keynote talk from public health Wales, to give a human health perspective. There are 12 Proof of Concept farms (four beef, four sheep and four dairy farms) across Wales piloting new technologies to explore biosecurity and precision agriculture solutions to reduce the need to use antibiotics and other antimicrobials in farm animals. Several workstreams of the project encompass the Veterinary Prescribing Champions Network led by Dr Gwen Rees. This is a multi-award-winning network of farm animal vets focussing on antimicrobial stewardship and AMR in farm animals. The project maintains a network of highly trained veterinary surgeons and co-creates several key animal health policies across the network of veterinary practices in collaboration with academics, which represent almost 90% of practices who treat farm animals in Wales.	

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		The primary focus of this group is the co-development of antimicrobial stewardship policy for the ruminant sector in Wales. Some key outputs have been a National voluntary prescribing code of conduct; a series of clinical treatment guidelines and 50 bespoke antimicrobial stewardship action plans for veterinary practices. The VPC network won the UK Health Security Agency's Antibiotic Guardian Award for Prescribing and Stewardship 2023 and the Royal College of Veterinary Surgeons' Impact Award 2022 An active AMR surveillance programme to understand the abundance, type and transmission of resistant E. coli has been initiated on 70 dairy, beef and sheep farms. As of June 2024, 2,700 samples, collected from faecally contaminated environments by vets representing 14 farm practices in Wales, have been processed. Epidemiological analyses have focused on using sophisticated statistical modelling techniques to identify risk factors for AMR on these farms, in addition to exploratory methods to unravel the complexity of factors influencing on-farm AMU, utilising AMU data captured by the WLBP AMU Calculator. **Biosecurity App** The Biosecurity App trials, organised by Iechyd Da, features seven vet practices and 20 farms across Wales, and aims to help farmers and vets in Wales conduct an objective biosecurity risk assessment. Farmers use the application along with their vet to generate a numerical personalised "risk score" at the start and end of a 9–12-month period to give a measure of progress. The Biosecurity App, easily identifies areas for improvement, enabling the farm's vet to give practical advice on making three priority improvements and agree a strategic control plan of agreed tasks to reduce risks. The tool additionally offers the opportunity to anonymously benchmark biosecurity against other participating farms. The App trials have demonstrated that this approach can reduce the risk of spreading infectious diseases from farm to farm. In the first stage pilot 60% of the recommendations were implemented, resulting in healthier and more productive livestock, reduced disease, and a reduced need for antibiotics.	

Sheep Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
		Practice Syndromic Surveillance As part of the Arwain DGC project, the Practice Syndromic Surveillance Data Collection Project is led by Iechyd Da in collaboration with the Wales Veterinary Science Centre (WVSC) and the University of Liverpool. This pilot trials the collection of disease symptom data from a network of vets across Wales to enable the health status of livestock populations to be monitored. By detecting and responding to health threats early, informed interventions such as targeted vaccinations, biosecurity measures and treatment protocols could be implemented promptly to stop further spread or, even better, avoid disease altogether. It could potentially issue alerts to the possibility of new and emerging (or re-emerging) diseases. Existing artificial intelligence programs are being adapted to interrogate the clinical data to see if clinical syndromes can be identified from keywords associated with illness and then used to investigate whether any trends in syndromic disease incidence can be detected and related back to medicines dispensed. The University of Liverpool team, with the assistance of the WVSC are in the process of reviewing this information to establish the quality and quantity of the data. **Ruminant health planning England** The Animal Health and Welfare Pathway (AHWP) is a long-term, project partnership co-designed by government and industry, across cattle (beef and dairy), sheep, pig and poultry (layer and broiler) sectors to support continual improvement in health and welfare. The first of four steps of the Animal Health and Welfare Pathway programme was launched in February 2023. This provides farmers in England with a fully funded vet visit to support enhanced health planning. A series of eight resources for vets were funded by Defra and developed by AHDB in collaboration with the Sheep Veterinary Society, British Cattle Veterinary Association, the Pig Vet Society and the Pathway's co-design team. The resources include species specific resources to support responsible medicine use, improved biosecurity, enhanced health and welfare and reduce disease risks. https://ahdb.org.uk/annual-health-and-welfare-review Since March 2023, farmers have been able to apply for grants to co-fund capital investments that support key health and welfare priorities. A further two support packages that will enable disease eradication control programmes and payment by results will follow.	

Sheep Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Sheep Sector Indicators of Progress		2020	2021	2022	2023	Progress
Oral antibiotic sales for lambs	**Annual reduction of 10% in doses/year; baseline 7.45 million**	21.5% reduction from 7.45 million doses in the year from Sept 19 to Aug 20 to 5.85 million doses in the year from Sept 20 to Aug 21 47.9% reduction over last 5 years	No longer an applicable metric. Following the considerable reduction in use of oral antibiotic for neonatal lambs reported in the last TTF report, all authorised products were removed from the market for the 2022 lambing season which means that using the same metrics as previous years, usage would now be zero.	No longer an applicable metric. Following the considerable reduction in use of oral antibiotic for neonatal lambs reported in the last TTF report, all authorised products were removed from the market for the 2022 lambing season. Vets had the option to import an equivalent oral spectinomycin from Europe and SAGG continued to monitor import licences and UK purchases. Sales of imported spectinomycin for lambing 2023 were less than half of what they were for lambing 2022 and only 7% of the 2021 oral spectinomycin sales.	There are no authorised oral antibiotics available for neonatal lambs so this is no longer a metric that is useful.	N/A
Highest priority antibiotic use (from centralised data)	**Ensure does not rise in sheep above 0.05% of total sheep use**	Use remains very low and there is no evidence that it has increased.	Use remains very low and there is no evidence that it has increased. Exact figures pending	Use remains very low and there is no evidence that it has increased. Exact figures pending.	Use remains very low and there is no evidence that it has increased.	✓

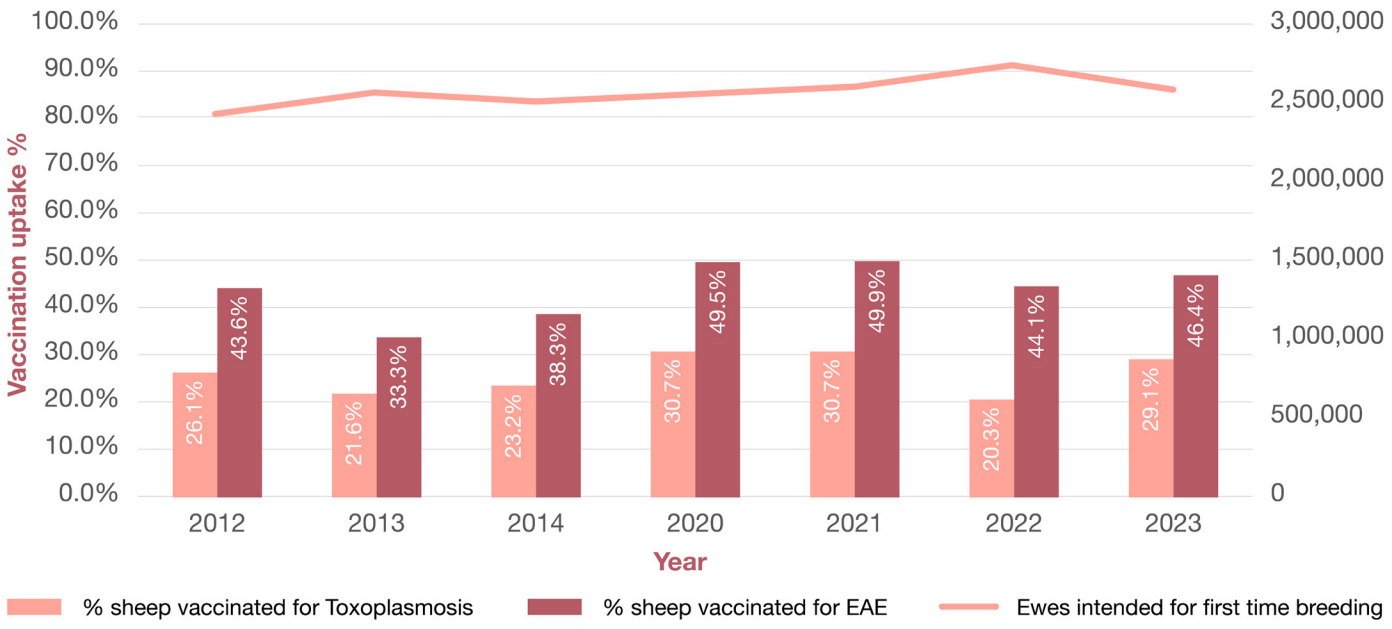
Sheep Sector Indicators of Progress		2020	2021	2022	2023	Progress
Mortality rates	**Increase in lamb survivability from various indicators**	Completion of levy board Neonatal Survival Project – planned vet CPD courses. Survivability data and trends not currently available.	Survivability data and trends not currently available. The Neonatal Survival Project (a collaborative project funded by the joint levy boards of England, Scotland and Wales) culminated in vet CPD sessions in January 2021 with 41 attendees over three events, and very positive feedback.	Survivability data and trends not currently available. In light of ongoing issues with sheep vaccine supplies, SAGG will consider in 2024 whether national surveillance data on abortions could provide a useful metric to report EAE and toxoplasmosis prevalence trends against vaccine use.	Following the recommendation from SAGG last year, national surveillance data on abortions has been sourced. Schmallenberg virus (SBV) causes abortions and stillbirths in sheep. As a midge-born virus, it periodically impacts UK sheep flocks. A 2024 Schmallenberg survey undertaken by University of Nottingham demonstrated higher lambing mortality in 2024 compared with the previous survey undertaken in the last SBV year 2016/17. Participant comments directly attributed this high mortality to due to Schmallenberg virus as well as the very poor lambing season weather in 2024.	✓

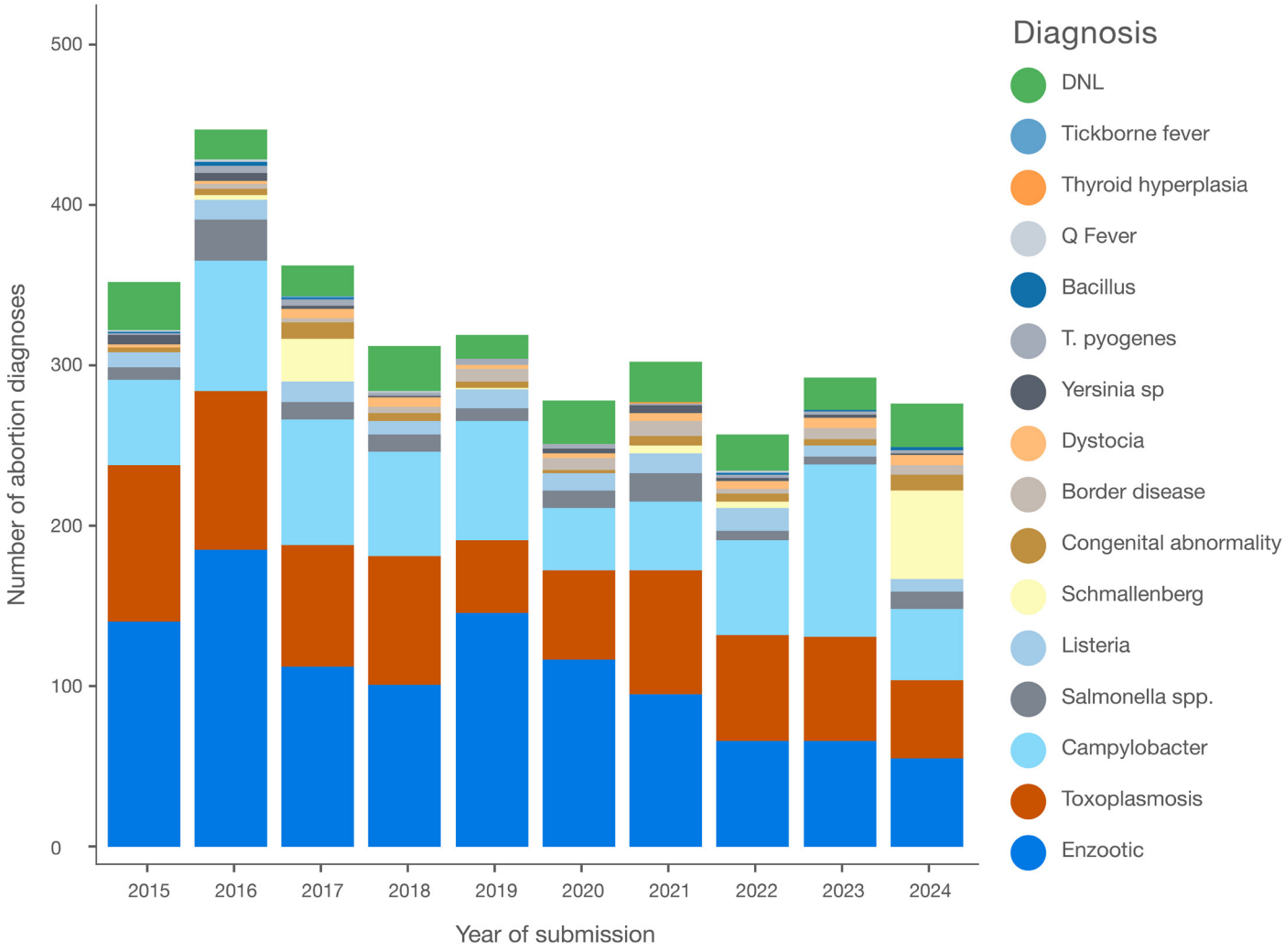
Sheep Sector Indicators of Progress		2020	2021	2022	2023	Progress
Health and welfare metrics	**Increased annual uptake of vaccines in sheep, baseline 2019**	Analysis of vaccine use in sheep and cattle for 2020 was completed and was published on the AHDB website as webpages - http://www.ahdb.org.uk/vaccineuse. Penetration of EAE vaccine increased from 43% in 2019 to 50% in 2020 and penetration of Footrot vaccine increased from 14% in 2019 to 16% in 2020.	Analysis of UK vaccine use in sheep for 2021 has been completed and is published on the AHDB website. For the sheep vaccines monitored, the total number of doses sold increased by 12.6% between 2011 and 2021. Penetration of clostridial disease vaccines increased from 57.0% in 2020 to 62.8% in 2021, with a 10.2% increase in doses sold observed within this period. Similarly, penetration of Footrot vaccinations increased from 15.6% in 2020 to 19.4% in 2021. Penetration of EAE vaccines only increased by 0.7% between 2020 and 2021 and penetration of Toxoplasma vaccinations remained at 30.7% between 2020 and 2021. NOAH has launched a Livestock Vaccination Guideline (for dairy, beef, and sheep sectors), providing support to vets, SQPs and farmers, to help improve the health and welfare of UK sheep and cattle and support farm resilience and sustainable improvements in productivity.	Analysis of UK vaccine use in sheep for 2022 has been completed and is published on the AHDB website (https://ahdb.org.uk/knowledge-library/use-of-vaccines-in-sheep). For the sheep vaccines monitored, the total number of doses sold increased by 13.9% between 2011 and 2022 to approximately 37 million doses. From 2021 to 2022, Clostridia and Pasteurella vaccine use increased. Unfortunately, due to vaccine supply shortages, use of Footrot, Toxoplasma and EAE vaccinations decreased during this period. In 2022, the estimated proportion of sheep vaccinated for clostridial diseases (65.2%) and for pasteurellosis (52.4%) were both above the 2012-2022 average. In the year to 2022, the number of doses of Clostridia vaccine sold increased by 3.8%, whilst the number of doses of Pasteurella vaccine increased by 2.7%. The estimated proportion of breeding sheep vaccinated for Toxoplasma decreased from 30.7% in 2021 to 20.3% in 2022.	Vaccine supply has again been challenging so Sheep Veterinary Society (SVS) and Sheep Antibiotic Guardian Group (SAGG) have been keeping a close eye on the situation and released a press release in the light of the lack of EAE abortion vaccine to urge ongoing responsible use of antibiotics. Analysis of UK vaccine uptake in sheep for 2023 has been completed and is published on the AHDB website (https://ahdb.org.uk/knowledge-library/use-of-vaccines-in-sheep). For the sheep vaccines monitored, the total number of doses sold decreased by 9.2% between 2022 and 2023 to approximately 33.6 million doses. From 2022 to 2023 Clostridia and Pasteurella vaccine uptake decreased marginally but supply of these vaccines were very challenging in 2023 and could largely explain this drop.	✓

Sheep Sector Indicators of Progress		2020	2021	2022	2023	Progress
				Uptake of Footrot vaccinations, which had previously risen rapidly to 19.4% during 2021, fell to 16.3% in 2022. Similarly, uptake of EAE vaccines fell from 49.9% to 44.1% during the year to 2022. There was a large reduction in Toxoplasma vaccination use from 30.7% in 2021 to 20.3% in 2022. These decreases are likely a result of supply issues with Footvax, Toxovax and EAE vaccinations in 2021 and 2022. A recent longitudinal study over six years failed to demonstrate a direct link between the quantity of antibiotic and vaccine use on 272 GB sheep farms[1] though the authors point out that there are a wide range of potential confounding biological and behavioural factors that may influence the relationship between vaccine use, vaccine efficacy, disease prevalence and AMU and that unravelling this complex relationship was outside the scope of the study. For this reason, as well as the ethical and welfare benefits to preventative health measures such as vaccination, SAGG considers it is important to continue to encourage and monitor vaccine use in the sheep sector.	Footrot vaccine uptake is up from 16.3% to 17.8%, following ongoing supply shortages in 2022 which took some time to recover. Recovery from supply shortages were also seen in the uptake of Toxoplasma vaccines increasing from 20.3% to 29.1%, and Enzootic Abortion of Ewes (EAE) vaccines increasing from 44.1% to 46.4%. Unfortunately, further supply issues in 2024 will see this drop again this coming year. The abortion vaccine graph can be seen alongside the APHA VIDA data on abortion diagnoses in England and Wales.*	

[1] Longitudinal study of antimicrobial use patterns, vaccination and disease prevalence in British sheep flocks Peers L. Davies, Robert M. Hyde, Fiona M. Lovatt *First published: 20 March 2023* https://doi.org/10.1002/vetr.2786

Abortion vaccination





* APHA VIDA data on Abortion diagnosis in England and Wales on submission of foetus or stillborn lamb from 2015 to 2024
Key – DNL means 'Diagnosis not listed' i.e. a diagnosis was reached that does not have a VIDA code.
'Diagnosis not reached' submissions excluded (these make up approximately 40% of foetal submissions each year)

Pig Sector

Overview

In 2023 the pig sector has continued to promote the responsible use of antimicrobials in the preservation of the health and welfare of the national pig herd. Therefore, when needed to treat sick animals, antimicrobials are used. 'As little as possible, but as much as is necessary' remains the mantra of the sector.

There has been a continued decline in pig numbers nationally in 2023, with a 10% drop year-on-year and sow numbers at a low of 337,933 (June 2023 and an 11% drop in fattening herd population year-on-year). Overall, 2023 was a better year with respect to the financial impact on the pig sector with sustained price and some reduction in cost of production. However despite this, producers remaining in a much-contracted sector have felt the pressure of recouping financial losses of previous years despite improvements in both cost of production and sale price.

The sector has faced significant health challenges affecting the national herd: swine dysentery cases increased, PRRSv (Porcine Reproductive and Respiratory Syndrome virus) breakdowns, and swine influenza. Overall enteric health has been more unstable with the swine dysentery challenge and the sector is starting to see the impact of the zinc oxide ban on some weaned pigs, the full extent of which is not yet fully understood.

There have also been challenges regarding vaccine availability; the impact on herd health management and disease prevention has resulted in the need for antimicrobial interventions to preserve the health and welfare of affected herds.

Pig Sector Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Pig Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Persistently High Users (PHUs)	**Introduce a programme in 2021 supporting PHUs to reduce use**	Quality Meat Scotland (QMS) has introduced a standard in line with Red Tractor standards that requires Persistently High Users (as defined and reviewed by the Pig Health and Welfare Council - PHWC) to develop an antibiotic reduction plan in conjunction with their vet using the PHWC template. This should be reviewed quarterly and must indicate progress made. Agriculture and Horticulture Development Board (AHDB) continues to notify producers in the upper 5-10% usage range that they are close to being identified as a PHU in the eMB as an early warning system. The PHWC continues to review the definition of PHU, but no changes were made in 2023.	✓✓✓
Pig Health metrics	**Monitor effects of reduced antibiotic use annually**	The PHWC Pig Health subgroup, meets regularly to discuss pig health and makes use of any available data to inform the discussion and establish whether relevant activity is required. Discussions between the subgroups of the PHWC are frequent at the PHWC Council meetings. The Wholesome Pigs Scotland (WPS) scheme continues to operate providing producers and their vets with health information on pigs slaughtered in Scotland. No parallel scheme is in place in England after the loss of British Pig Health Scheme (BPHS) at the end of 2022 although the potential to use Collection and Communication of Inspection Results (CCIR) data collected by Food Standards Agency (FSA) as a broad indicator of health trends is under discussion.	✓✓
Plan for weaner management	**Identify/launch best-practice weaner management before 2022**	Communication with NPA, AHDB and PVS on the Rapid Evidence Assessment and best practice for weaner management has continued through 2023.	✓✓

Pig Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Shift from in-feed medication	**Ensure Government post-Brexit plans support switch to in-water**	This data is collected by the VMD and published in the VARSS report annually. The proportion of medication delivered in-feed has remained stable between 2022 and 2023 as has the proportion delivered in-water. The overall trend since 2017 has been a reduction in in-feed delivery and a move towards a greater amount administered via water. As part of the Animal Health and Welfare Pathway (AHWP) the Government provided financial support for producers in England through the Equipment and Technology Grants to support the improvement of pig health and welfare. This included equipment to facilitate in-water medication.	✓✓
e-Medicine Book (eMB) data	**Maintain/increase on-time submission of data to eMB annually**	Timely submission of eMB data continues and has improved on the 2022 figure, with 90% on time. AHDB, QMS and other stakeholder groups remind producers ahead of the submission dates for antibiotic usage data.	✓✓✓
Medicines training uptake	**Review gaps and increase opportunities for uptake, baseline 2020**	QMS has a standard which recommends that there is a named person responsible for medicines on farm, who is trained and revised every two years. Compliance is high for the Red Tractor standard which requires at least one team member on each unit to have undertaken approved training in the responsible use of medicines, with 99% of Red Tractor pig farms meeting the standard at audit. This figure remains unchanged from 2022. Red Tractor has approved 22 pig-specific responsible use of medicines courses.	✓✓✓

Pig Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Pig Sector Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (from eMB)	**30% reduction in total use by 2024, baseline 2020**	Antibiotic usage was 105 mg/ PCU in 2020.	The 2021 eMB data was published in June 2022. Antibiotic usage was 87mg/ PCU in 2021. Antibiotic usage in the pig sector has reduced by 17% from the 2020 baseline. This equates to an overall reduction of 69% since 2015.	The 2022 eMB data was published by AHDB in June 2023. Antibiotic usage was 72mg/ PCU in 2022. Antibiotic usage in the pig sector has reduced by 17% from 2021. This equates to an overall reduction of 74% since 2015.	Antibiotic usage was 84.8 mg/ PCU in 2023. This figure is 18% higher than in 2022 but lower than the 2021 figure of 87.2 mg/ PCU. There has been an overall reduction of 69% since 2015.	✓✓
Highest priority antibiotic use (from eMB)	**Use equal to or lower than 2019 baselines**	0.05 mg/PCU No colistin use was reported in pigs 2020.	2021 figures: 0.03mg/PCU - a slight decrease from recorded use in 2020 (0.05mg/PCU). No Colistin use was reported in pigs in 2021.	The 2022 eMB data showed use of highest priority critically important antibiotics remains very low at 0.01 mg/ PCU. No Colistin use was reported in pigs in 2022.	The 2023 eMB data shows use of highest priority critically important antibiotics has further reduced to 0.007 mg/ PCU. No Colistin use was reported in pigs in 2023.	✓✓✓
Antimicrobial resistance surveillance	**Monitor current data; aim for reduction on 2020 baselines**	Antibiotic resistance continues to be monitored by the VMD and reported annually in the VARSS report. PHWC works with the VMD if concerns arise from this to ensure any action is based on evidence. Clinical surveillance continues and helps the PHWC to identify emerging issues, although the group is mindful that it is not representative data.				✓✓

Salmon Sector

Overview

In 2023, the Scottish salmon farming sector continued to focus on the responsible use of antibiotics, balancing the need to protect fish health and welfare with a global aim to reduce use. The sector continues to successfully achieve all its targets, with activity against those targets, data collation, and overall antibiotic stewardship, driven forward through the Salmon Scotland Prescribing Vets (SSPV) group.

Salmon farmers recorded an overall increase in the volume of antibiotic used, compared to 2022, but use remains significantly below the levels recorded in 2020 and 2021. Increases were observed in both the freshwater and marine phases of production. Antibiotic treatments are still limited to a relatively small number of farms each year, with 7.5% of freshwater farms and 9.8% of marine farms undertaking an antibiotic treatment in 2023.

Similar to 2022, the sector experienced challenging conditions within the marine environment where salmon are farmed. Increased water temperatures and oceanic changes further afield led to, in particular, significant challenges with blooms of harmful algae and micro jellyfish during late summer and autumn. Although antibiotics are not used against such organisms, jellyfish and harmful algal blooms can impact fish health, potentially leading to secondary bacterial infection.

In 2023, similar quantities of oxytetracycline and florfenicol were used. As with 2021 and 2022, there was no use of oxolinic acid, which is defined as a higher priority antibiotic.

Salmon are farmed in the wild lochs around Scotland's coastline. They are sensitive to environmental changes, which can have direct impacts on the fish, but which more often affects the development and proliferation of some of the harmful organisms that can impact fish health and welfare. Alongside these challenges, the sector experienced significant issues with the supply of florfenicol, which led to an unavoidable reliance on oxytetracycline, which is administered at a higher dose rate, thus elevating overall use figures. The sector continues to monitor their fish and the farming environment on a daily basis, promptly reacting wherever necessary and possible.

Salmon Sector Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Salmon Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Highest priority antibiotic use	**Only prescribed as last resort after sensitivity testing**	No HP-CIAs used	✓✓✓
Vaccination of Atlantic salmon	**All Atlantic salmon vaccinated before seawater phase**	100% of fish vaccinated against key bacterial and viral health challenges.	✓✓✓
Use of autogenous vaccines	**To be developed in absence of licensed vaccines**	Autogenous vaccines developed where appropriate.	✓✓✓
Prescribing Vets' group input	**Quarterly meetings, antibiotic stewardship a standard item**	Quarterly meetings of the Salmon Scotland Prescribing Vets group (SSPV) held alongside adhoc meetings as required.	✓✓✓
Compliance with Code of Good Practice	**All producers compliant with Code of Good Practice**	100% of salmon produced to the standards of the Code of Good Practice.	✓✓✓
Collection/ collation of data	**100% collection and reporting of antibiotic use**	Data collated from all prescribing veterinary practices, covering 100% of the salmon farmed in Scotland.	✓✓✓

Salmon Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Salmon Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (from usage data)	**Aim for maximum 5 mg/kg annually**	2020 usage = 29.3mg/kg	2021 usage = 43.1mg/kg	2022 usage = 18.6 mg/kg The TTF Indicator of Progress is highly ambitious. Fish veterinarians will continue to focus on responsible use of antibiotics, balancing the health and welfare needs of the fish against an overall desire to reduce use and to meet this ambitious level.	2023 usage = 19.9 mg/kg* The TTF Indicator of Progress is highly ambitious. Fish veterinarians will continue to focus on responsible use of antitbiotics, balancing the health and welfare needs of the fish against an overall desire to reduce use and to meet this ambitious level. *This use figure for 2023 is based on estimated production figures, as published in the Marine Directorate Production Survey 2022. Published figures for 2023 were not available at the time of publication of this TTF report.	✓
Metric for % fish treated	**Develop new metric to indicate the % of fish treated annually**	In 2020 the Prescribing Vets Group established a new metric that reports the percentage of active farms that were treated with antibiotic in 2020. This metric considers the freshwater and marine production phases separately. In 2020 6.9% of freshwater farms and 4.4% of marine farms were treated with antibiotics.	In 2021, 8.5% of freshwater farms and 4.9% of marine farms were treated with antibiotics.	In 2022, only 1.5% of freshwater farms and 8.7% of marine farms were treated with antibiotics. This continues to demonstrate that use is restricted to a small number of farms, where antibiotics were responsibly prescribed in response to a specific health issue.	In 2023, 7.5% of freshwater farms and 9.8% of marine farms were treated with antibiotics. This demonstrates that use was restricted to a small number of farms, where antibiotics were responsibly prescribed in response to a specific health issue.	✓✓✓

Trout Sector

Overview

Usage of antibacterials decreased in 2023 to 6.9 mg/kg. The decrease is very positive news (following a disease outbreak in 2022 which saw a rise in antibiotic use to treat the fish) and the sector is back on track to keeping below 20mg/kg. The Trout sector has a proven track record of reduced usage over the past six years.The industry remains committed to decreasing usage overall and there is no prophylactic usage of antibacterials.

The sector is still undergoing changes with a move towards larger fish production. Total tonnage has increased based on fewer but larger fish. Through the production cycle this means that farms buy fewer fry to grow on, stocking densities are then lower and fewer problems are seen.

The extreme weather conditions remain a concern and can cause higher water temperatures which at times can prove challenging for some farms. The sector is looking at ways of mitigating issues caused by extreme weather.

Bug Bank

The Trout sector now has over 175 bug samples that have been submitted. This will allow The Centre For Environment Fisheries and Aquaculture Science (CEFAS) to collect data on the bug type and distribution across the UK and checking for any resistance to antibiotics that are used for treatments. The bugs will be kept in cryo for future work on vaccines. It is intended to keep this work going and The British Trout Association (BTA) is very grateful for the support from CEFAS and the VMD.

Trout Sector Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Trout Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Stewardship of antibiotics	**No preventative use; no highest priority antibiotics used routinely; pathogen surveillance through 'bug bank' initiative.**	This has proved successful, but can only go so far as treatment cannot be withheld on welfare grounds. With support from CEFAS and VMD, the 'Bug Bank' project is now up and running.	✓✓✓
Vaccine uptake	**Vaccination in freshwater phase to be increased, baseline 2020.**	Uptake of vaccines continues to be high, held back only by supply challenges during 2023.	✓✓
Promotion of best practice	**All members compliant with quality standards.**	The industry follows best practice. Table Trout production follows best practice by being audited to the Quality Trout UK Standard.	✓✓✓

Trout Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Trout Sector Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (from usage data)	**Maintain usage below 20 mg/kg**	13.9mg/kg	5.9mg/kg	44.1 mg/kg	6.9 mg/kg	✓✓
Metric for % fish treated	**Develop a new metric to indicate the % of fish treated annually**	In progress		In development. Treatment at hatcheries is common. Vaccines are not available.	In development. Treatment at hatcheries is common. Vaccines are not available.	✓

Gamebird Sector

Overview

The gamebird sector has seen an uplift in usage during 2023. The weather is having an increasing impact on antibiotic use; the sector is more vulnerable to the effects of weather than any other, and this is equally true during the rearing cycle at the time of release. As the effects of climate change appear to create more extreme weather patterns, there is a distinct correlation with weather patterns and the effect on antibiotic use in the gamebird sector, whether it be due to wet weather affecting egg cleanliness, hot weather leading to heat stress, damp weather creating problems with hexamita and coccidiosis, or cold windy weather making it difficult to maintain uniform temperatures in brooder huts; all these factors contribute to increasing the need for medical intervention.

Gamebird Sector Progress Against Targets

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Gamebird Sector Targets			
Measurement Metric	**Target**	**2023 status**	**Progress**
Discussion with vets	**Every rearer to calculate use and discuss with their vet**	Progress made with gamebird vets more widely used in the sector and having greater influence.	✓✓
Improve husbandry	**Monitor uptake of Trusted Game Health and Welfare Scheme**	Trusted Game Health and Welfare scheme refined after 2021 launch.	✓
Increase education	**Enhance existing learning tools**	Good uptake of BVPA, AIC other vet delivered training modules.	✓✓
Medicated feed stewardship	**Work with Game Feed Trade Association to steward sales**	Communications focus with non-gamebird vets identified as an area to be progressed.	✓✓
Monitor welfare effects	**Ensure antibiotic reductions are safe and sustainable**	Greater involvement of gamebird vets in the sector has ensured that antibiotic use has been minimised without compromising welfare.	✓✓
Research into damaging diseases	**Promote research into ways to reduce disease pressures**	Research is continuing into hexamita (the single biggest cause of antibiotic use in the sector).	✓

Gamebird Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Gamebird Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic Use (from usage data)	**Reduce use by 40%, baseline 2019 of 10.4 tonnes**	2020 use: 6.0 tonnes (42% reduction from 2019 baseline)	2021 use: 9.0 tonnes in line with the 40% reduction by 2024, a 10%* reduction was made when compared to 2019. *excluding 2020 figures due to pandemic	2022 use: 6.4 tonnes against TTF2 target of 6.24 tonnes (but with reduced number of birds reared).	9.9 tonnes, a 47% increase. The increase was largely offset by a significant increase in the number of birds reared (with some data suggesting numbers were higher than pre Covid/AI). In addition, one consequence of the 2022 AI related shortage was a significant increase in the value of gamebirds. This resulted in a far more conservative approach to disease management, which combined with poor weather during the releasing season increased the amount of antibiotic used per bird.	✓✓
Highest priority antibiotic use (from usage data)	**Reduce use by 19% to 47kg, baseline 2019 of 58 kg**	2020 use: 22Kg (63% reduction from 2019 baseline)	2021 showed a 48% reduction compared to base year of 2019.	2022: HP-CIA use in the sector fell by 12% to 20kg in 2022 (but with 17% less birds reared).	2023: 27.7Kg which is a 19% increase on 2022. This represents a reduced proportion of overall antibiotic used and is a smaller increase than in the number of birds reared compared to 2022. It still equates to a 57% reduction since 2016.	✓✓✓

Laying Hens Sector

Overview

The antibiotic use data from members of the British Egg Industry Council (BEIC) Lion Scheme for 2023 shows a further reduction from 2022 by another 6.8% to 0.219% bird days treated, which continues to be below the target of 1% bird days, and for the seventh year running no HP-CIAs were used. This is a significant achievement, especially considering that the national flock expanded by nearly 2 million birds over this time period.

The Lion Code of practice Version 8 continues to focus on bird health through good biosecurity and hygiene, as well as feed and water quality and veterinary health plans. Training for all staff via the Lion Training Passport within version 8 of the Lion Scheme is mandatory, and the training modules encourage prudent use of antibiotics.

All Lion accredited breeder, pullet rearing, and laying farms, have to be registered with a vet and have an up-to-date flock specific or annual veterinary health and welfare plan.

The industry is continuing the trend towards “cage free” production and there has also been a steady increase in the prevalence of white birds, which have different characteristics and management requirements to brown that can be reflected in lower antimicrobial use.

The sector is confident that it will continue to remain below its ongoing antibiotic use target of 1% bird days, and 0.05% bird days for HP-CIAs. The sector has maintained robust vaccination programmes and good biosecurity with ongoing cooperation and understanding amongst vets and farmers that antibiotic use is generally a last resort.

Most antimicrobial use is just one treatment per flock (60 weeks), but the sector will now start to focus on sites that use antimicrobials more frequently. Data is being collated to monitor the reasons for antimicrobial use to enable it to focus on management practices and pre-emptive techniques such as autogenous vaccines, more successfully.

Laying Hens Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Laying Hens Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (usage data)	**Maintain bird days treated below 1%**	The antibiotic usage data from members of the BEIC Lion Scheme continues to remain below the 1% bird days.			The sector remains below target by 22% (reduction from 2022 of 6.8%)	✔✔✔
HP-CIA use (usage data)	**Fluoroquinolone days medicated remains below 0.05%**	No HP-CIAs were used.				✔✔✔

Poultry Meat Sector

Overview

British poultry is half the meat the nation eats and British Poultry Council (BPC) businesses are proud to play a vital role in feeding people safe, affordable, nutritious food that tackles the inequalities that define a changing climate.

Part of that role is a responsibility to deliver excellent animal health and welfare, and it is one BPC members take incredibly seriously. With a responsibility to feed the nation and a duty of care to protect bird health and wellbeing, BPC member businesses have reduced their total antibiotic use by 81% since 2012.

BPC members remain below target usage levels: broiler chickens are at 13.54 mg/PCU (under the 25 mg/PCU sector-specific target) and turkeys are 33.62 mg/PCU (under 50 mg/PCU), both down from last year. Overall use of all classes of antibiotics was down and use of HP-CIAs (including Fluoroquinolones, Macrolides and Polymyxins) has decreased by 98.9% since 2012. These are prescribed as a last resort only after other treatments have been considered.

The BPC Antibiotic Stewardship is at the core of producers' commitment to progress. It has played a crucial part in driving positive change. Working together in a pre-competitive manner, data is monitored and transparency prioritised to ensure the sustainable and responsible use of antibiotics, safeguarding their efficacy to ensure the sector can continue producing food people trust and value.

The Stewardship promotes collective responsibility to preserve the effectiveness of a limited number of antibiotics licenced for use in poultry species. This covers various aspects, from investment to veterinary input. In pooling knowledge and expertise and putting this in the context of continuous improvement towards the desired outcomes, BPC Antibiotic Stewardship creates an important feedback loop: trends are spotted, ideas implemented, and practices refined based on data. This approach not only enhances its effectiveness, but also contributes to the long-term resilience and sustainability of the British, and global, poultry meat industry.

Poultry Meat Sector Indicators of Progress

✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved

Poultry Meat Indicators of Progress		2020	2021	2022	2023	Progress
Antibiotic use (usage data)	**Use remains < 25mg/kg PCU in broiler production; reviewed 2021**	16.3 mg/kg PCU	13.66 mg/kg PCU	14.05 mg/kg/ PCU	13.54 mg/kg/ PCU	✓✓✓
	Use remains < 50mg/kg PCU in turkey production; reviewed 2021	25.7 mg/kg PCU	42.55mg/kg PCU	36.36 mg/kg/ PCU	33.62 mg/kg/ PCU	✓✓✓

Red Tractor Update

As an observer on RUMA's Targets Task Force, Red Tractor (the UK's largest food and farming assurance scheme) identifies ways to support RUMA members and the livestock and poultry sectors, in making progress against their agreed targets for the responsible use of antibiotics. Over 95% of poultry (chicken, duck and turkey), pig and dairy farms, as well as a large proportion of finished beef and sheep farms are Red Tractor Assured, so Red Tractor has an important role to play in supporting the ambitions of these sectors.

Throughout this report are references to Red Tractor standards aimed at ensuring vets and farmers use antibiotics responsibly, as verified by independent certification bodies at the Red Tractor assessment. For example, Red Tractor pig and ruminant standards require at least one person on the farm to have undergone approved training in the responsible use of medicines, and conformance data from assessments on Red Tractor farms in 2023 is included in the relevant sector updates in this report. Red Tractor also has standards aimed at ensuring minimal and responsible use of the highest-priority critically important antibiotics, where use of these must be supported by veterinary justification and sensitivity testing and/or diagnostics.

With the recent revision of the Veterinary Medicines Regulations, Red Tractor is focusing on reflecting the key legislative changes that are relevant to farmers within its standards. For instance, the amended legislation places greater restriction on the use of antibiotics for preventing disease. Red Tractor will be revising its standards to ensure it's clear to farmers that prophylactic use of antibiotics should only be done in exceptional circumstances. Red Tractor will be supporting these changes with guidance to its farmer members as well as the independent assessors who audit farms against these standards. Overall, this should help to ensure the ambitions of the regulatory changes filter down to farm-level and Red Tractor is supporting farmers with meeting legal requirements around responsible use of antibiotics.

Red Tractor is also closely involved in the development of the Medicine Hub infrastructure, which aims to establish a national baseline of antibiotic usage within the ruminant sectors. Ultimately, Red Tractor's ruminant standards may be used as a vehicle for directing submission of antibiotic data to Medicine Hub, as has been the case in its pig standards since 2017. However, complexities around industry partner engagement, duplication of audit and devolved participation must be resolved before this happens. Red Tractor also recognises that for those sectors where participation in assurance is low, an alternative mechanism may be more appropriate. Nonetheless, Red Tractor is committed to working with AHDB and industry and will support through its standards and assessment when appropriate.

Appendices

The RUMA Targets Task Force 2:

Chair of the RUMA TTF - Cat McLaughlin

Beef	**Mark Jelly** – Beef Farmer **Elizabeth Berry** – Vet
Dairy	**Karen Halton** - Dairy Farmer **Elizabeth Berry** – Vet
Calves	**Richard Cooper** – Vet
Sheep	**Charles Sercombe** – Sheep Farmer **Fiona Lovatt** – Vet
Pigs	**Richard Lister** – Pig Farmer **Alex Thomsett** – Vet
Salmon	**Iain Berrill** - SSPO
Trout	**Oliver Robinson** – BTA **Peter Scott** – Vet
Gamebirds	**Paul Jeavons** – Game Farmer **Dan King** – Vet
Laying hens	**Ian Lowery** – Vet
Poultry Meat	**Thomas Wornham** – Poultry Farmer **Farmer Daniel Parker** – Vet

Observers:

Gwyn Jones	Past Chair
Anna Judson	BVA
Fraser Broadfoot	VMD
Donal Murphy	NOAH
Georgina McDowell	Red Tractor
Mandy Nevel	AHDB

RUMA Chairing and Organisation:

Catherine McLaughlin	Chair
Chris Lloyd	Secretary General
Bryan Lovegrove	Deputy Chair
Tim Brigstocke	RUMA Treasurer
Mary Bawn	Communications Manager

Abbreviations & glossary

AHDA	Animal Health Distributors' Association
AHDB	The Agriculture and Horticulture Development Board (AHDB) is a statutory levy board, funded by farmers, growers and others in the supply chain to help the industry succeed in a rapidly changing world.
AHWP	Animal Health and Welfare Pathway
AIC	Agricultural Industries Confederation
AMR	Antimicrobial Resistance
AMU	Antimicrobial Use
Antibiotic	A medicine specifically used to prevent and treat bacterial infections. This report is primarily focused on the use of antibiotics, as a subset of wider antimicrobials
Antimicrobial	A product which kills or slows the spread of a range of microorganisms including bacteria, viruses, protozoa, and fungi. Antibiotics are antimicrobials.
APHA	Animal and Plant Health Agency, formerly AHVLA
AHWBE	Animal Health and Welfare Board England
BCMS	British Cattle Movement Service
BCVA	British Cattle Veterinary Association
BEIC	British Egg Industry Council
BGA	British Game Assurance
BMPA	British Meat Processors' Association
BPC	British Poultry Council
BTA	British Trout Association
BVPA	British Veterinary Poultry Association
BVA	British Veterinary Association
BVD	Bovine Viral Diarrhoea
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CHAWG	Cattle Health and Welfare Group of Great Britain
CoGP	Code of Good Practice for Scottish Finfish Aquaculture
CTS	Cattle Tracing System
CVO	Chief Veterinary Officer
Dairy UK	The trade association for the British dairy supply chain
Defra	The UK Government's Department for Environment, Food and Rural Affairs

DCDVet	Defined Course Dose for animals, the assumed average dose per kg animal per species per treatment
DDDVet	Defined Daily Dose for animals, the assumed average dose per kg animal per species per day
DMCP	Dairy Mastitis Control Plan
DSC	Disease Surveillance Centres
EBV	Estimated Breeding Value
EFSA	European Food Safety Authority
eMB-Pigs	The electronic Medicine Book, developed by AHDB to electronically collate antibiotic usage data from the UK pig sector
EMA	European Medicines Agency EMA
EMS	Extra Mural Studies
AMEG	European Medicines Agency's Antimicrobial Expert Group
FAO	Food and Agriculture Organisation of the United Nations
FAVS	Farm Association of Veterinary Students
FAWL	Farm Assured Welsh Livestock
FSA	Food Standards Agency
FSS	Food Standards Scotland
FUW	Farmers Union of Wales
FVC	Farm Vet Champions, a collaborative antimicrobial stewardship scheme led by RCVS Knowledge
FVS	Fish Veterinary Society
GFA	Game Farmers' Association
HCC	Hybu Cig Cymru, responsible for the development, promotion and marketing of Welsh red meat
HPAI	Highly Pathogenic Avian Influenza
HP-CIA	Highest Priority Critically Important Antibiotic (for human medical purposes), as defined by the European Medicines Agency (category B)
Hybu Cig Cymru	Meat Promotion Wales (HCC) is the industry-led organisation responsible for the development, promotion and marketing of Welsh red meat.
IBR	Infectious Bovine Rhinotracheitis
iSAGE	Innovation for Sustainable Sheep and Goat Production in Europe
ISG	Independent Scientific Group (RUMA)
MA	Marketing Authorisation
Medicine Hub (MH)	The centralised database for medicine use in UK ruminants, developed by AHDB

Metaphylaxis	The treatment of a group of animals after the diagnosis of infection and/or clinical disease in part of the group, with the aim of preventing the spread of infectious disease to animals in close contact and at considerable risk and which may already be (sub-clinically) infected or incubating the disease. Also called Control treatment
mg/kg PCU and mg/kg	Milligrams per PCU, the unit of measurement developed by the EMA to monitor antibiotic use and sales across Europe, which has also been adopted by the UK in its national reports although convention in 2017 was to refer to mg per kg for simplicity
NFU	National Farmers' Union (England and Wales)
NFU Cymru	The National Farmers' Union (Wales)
NFUS	National Farmers' Union of Scotland
NIBL FQAS	Northern Ireland Beef and Lamb Farm Quality Assurance Scheme
NPA	National Pig Association
NSA	National Sheep Association
PCU	Population Correction Unit, which is used to help measure antibiotic use. PCU takes into account the animal population as well as the estimated weight of each particular animal at the time of treatment with antibiotics
PCV2	Porcine Circovirus Type 2 viruses
PCVAD	Porcine Circovirus Associated Disease
PHU	Persistently High Use/Users (of antibiotics)
PHWC	Pig Health and Welfare Council
PI	Persistently Infected (with BVD)
Prophylaxis	The treatment of an animal or a group of animals, before clinical signs of infectious disease, in order to prevent the occurrence of disease or infection. Also called Preventative treatment.
PRRS	Porcine Reproductive and Respiratory Syndrome Virus, also known as Blue Ear Disease
PVS	Pig Veterinary Society
QMS	Quality Meat Scotland, the levy board representing the red meat industry in Scotland
RABDF	Royal Association of British Dairy Farmers
RCVS	Royal College of Veterinary Surgeons
REA	Rapid Evidence Assessment
Red Tractor (RT)	A food assurance scheme which covers production standards on food safety, hygiene, animal health, welfare and environment
RMDP	Red Meat Development Programme in Wales
RTFS	Rainbow Trout Fry Syndrome
RUMA	Responsible Use of Medicines in Agriculture

SAAG	Sheep Antibiotic Guardian Group
SHAWG	Sheep Health and Welfare Group
SPVS	Society of Practising Veterinary Surgeons
SSPCA	Scottish Society for Prevention of Cruelty to Animals
SSPO	Scottish Salmon Producers' Organisation
SSPV	Salmon Scotland Prescribing Vets
SVA	Sheep Veterinary Association
Therapeutic treatment	The curative treatment of a sick animal or group of animals following the diagnosis of infection and/or clinical disease in those animals.
Trusted Game	Gamebird Health and Welfare Scheme
TTF	Targets Task Force group, established to reduce antibiotic use in food producing animals
TTF1	The first Targets Task Force and the period their targets cover (2017-2020)
TTF2	The second Targets Task Force and the period their targets cover (2021-2024)
VARSS	Veterinary Antimicrobial Resistance and Sales Surveillance, a collection of reports from the VMD providing the details of UK veterinary antibiotic resistance & sales surveillance
VMD	Veterinary Medicines Directorate
VPC	Veterinary Products Committee
WHO	World Health Organisation
WLBP	Welsh Lamb and Beef Producers Ltd
WPS	Wholesome Pigs Scotland

RESPONSIBLE USE OF MEDICINES IN AGRICULTURE ALLIANCE

RUMA

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