RUMA Targets Task Force 2:

One Year On

November 2021

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

RESPONSIBLE USE OF MEDICINES IN AGRICULTURE ALLIANCE

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Contents

Introduction

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The Responsible Use of Medicines in Agriculture Alliance (RUMA), was established to promote the highest standards of food safety, animal health and animal welfare in the British livestock industry. It has a current focus to deliver on the Government objective of identifying sector-specific targets for the reduction, refinement or replacement of antibiotics in animal agriculture. The creation and roll out of the first set of sector specific targets in 2017 through the RUMA Targets Task Force, helped focus activity across the UK livestock sectors to achieve a 50% reduction in antibiotic use since 2014. This has been realised principally through voluntary multi-sector collaboration, cross sector initiatives, codes of practice, industry body support and farm assurance schemes.

The first set of targets issued in 2017 became the industry roadmap and focus for everyone along the supply chain and across each of the sectors. Last year the second set of targets up to 2024 (developed by the Targets Task Force 2 – TTF2) were released. This 'one year on' review of the second set of targets provides the first annual progress update and should be read alongside the original Targets Task Force 2020 report for full context.

It should be noted that the contents for each sector in this report, while sharing some standard headings, are very different with regards to structure, content length and the way targets are expressed. This reflects not only the very different nature and challenges of each sector, but also the way in which the targets have evolved, developed and are now owned and delivered by their respective sectors.

The past year has been unprecedented; a global pandemic and the UK's exit from the European Union combined, have resulted in significant industry challenges including supply chain resource and infrastructure issues, and labour difficulties. Without doubt it has been a testing time and these unique set of circumstances have had far reaching and varying impacts, some of which are yet to be fully understood across the industry and the journey towards the targets.

For example, some sectors had reduced production and others experienced significant supply chain issues with animals remaining on farm for significantly longer periods of time than normal. It is therefore important to note that some of the figures reported have been impacted and are not representative of a 'normal' year of activity.

The process the sectors have gone through to work towards their targets has, in some cases, also been unavoidably affected and caused delays to the development and launch of key initiatives; we don't yet know the full effect this will have on the targets and how long it will take for these impacts to be truly felt, understood, and addressed.

Equally, the onset of environmental issues related to global climate change have had impacts in some sectors too.

Despite an exceptional 12 months, there have been some great achievements realised in year one of the second set of targets - testament to the hard work and commitment across all sectors.

Events of the past year have undoubtedly affected the industry in many ways, but producers, vets, and wider industry, have continued to manage with the utmost professionalism and commitment to the responsible use of antibiotics through this challenging time.

My thanks go to everyone who has contributed to the production of this report, especially the RUMA Targets Task Force, RUMA Alliance and the various sector groups that have been established, all of which bring together a hugely experienced group of representatives to galvanise support across all sectors.

A reminder of the journey so far

In 2019 work began on the second phase of targets by the Targets Task Force 2 (TTF2) building on the lessons learned from phase 1 which ran from 2017-2020. The first three years of the TTF (2017-2020) saw technical developments, the capture of data and microbiological research which has changed the understanding of antibiotic use and resistance. These findings informed new targets launched in November 2020 which run from 2021 to 2024. This second set of targets looks to further enhance and strengthen the response of Agriculture to the AMR challenge. There has been a general shift of focus from national numerical targets to 'on-farm' health and welfare, data and engagement targets, especially in ruminants. This ensures metrics are more relevant to individual farms and farmers. Where targets exist, they now act as more of a guide and indicator to progress.

Feedback showed that national targets are understood, but relaying messages and insight using individual farm data is also important. Industry level data and figures are still essential to illustrate the general direction and provide focus for sector activities, but farm level data is vital and gives farmers the autonomy to set their own goals and targets to achieve realistic and sustainable levels of responsible use.

The targets are not about driving towards zero antibiotic use. It is important to acknowledge that antibiotics are there as a tool to treat sick animals and to improve and maintain animal welfare. Each sector will ultimately reach a sustainable level below which further reductions could create issues of animal welfare. For now, reductions continue across most sectors but in others, usage is beginning to level out or even bounce back a small amount where sustainable use has been achieved. Seasonal weather or disease challenges also result in targeted increased use of medicines.

The new sector targets fall into three groups in terms of focus[1]:

01. Ruminant sectors of beef, dairy, calves and sheep, for which usage remains largely unknown or unproven due to unavailability of data. The focus in these sectors going forward is on understanding antibiotic use and encouraging on farm benchmarking with engagement between farmer and vet and the development of health plans.

02. Pigs and gamebirds are still on their downward trajectory and are making strong progress on reducing use. The new targets plan to reduce use by a further 30% and 40% respectively

03. Those which have already achieved low levels of use, and whose target is to maintain them in the face of biosecurity or disease control challenges amid shifting external environmental and market forces. This group includes salmon, trout, laying hens and poultry meat sectors

[1] Targets Task Force Report 2020. SO-469-RUMA-REPORT-021220.pdf

Cattle Sectors: Beef, Dairy and Calves

Overview

One of the main challenges facing all ruminant sectors and identified in the first round of targets published in 2017, is data collection. Evidence from the limited usage data that is available for cattle[2] and sheep[3] suggest that all ruminant sectors are comparatively low users of antibiotics, although there is a continued need for robust data to demonstrate this and to help engage producers in efforts to encourage responsible use. It is recognised that as an overall sector, Cattle has positive stories of best practice, as well as opportunities for ongoing improvement with regards to data collection.

The TTF2 targets set out ambitious data collection targets, with the expectation being that ruminant sector data recording will take place on the Medicine Hub (MH), a web-based recording system developed by the Agriculture and Horticulture Development Board (AHDB). Development of the system was hampered by Coronavirus, but the system underwent a soft launch to the industry in Spring 2021. This has allowed AHDB to start pulling in historic data sets from both farmers and other data holders to test the system, and to identify further needs before wider public launch and promotion.

To ensure industry 'buy in' and support for the MH, an Industry Liaison Group (ILG) has been formed in 2021. The ILG is tasked with creating a coherent and consistent communications plan for the various parties involved in data collection. Further challenges identified by AHDB include the ability of the MH to draw on animal numbers from BCMS (and in the future the proposed new Livestock Information System from Defra) and the need to integrate usage data held in farm management software into a format consistent with MH requirements.

To date, the need for and concept behind the MH has achieved widespread support from the ruminant sectors and it is hoped this will become the primary Data Hub for collating ruminant antibiotic usage data.

Another target set at the launch of the report in 2020 was the creation of Farm Vet Champions (FVC). This major collaborative project, led by RCVS Knowledge, has brought together UK specialised veterinary and agriculture organisations to provide farm veterinary professionals with free learning materials, including technical species-specific modules, communication skills and behaviour change principles, the legal use of veterinary medicines, and One Health aspects of antibiotic prescribing and stewardship.

Responsibility for attracting stakeholder support and activity towards delivering the second phase of ruminant sector antibiotic reduction targets falls on the sector stewardship groups. These groups, the Sheep Antibiotic Guardian Group (SAGG) and Cattle Antibiotic Guardian Group (CAGG), have a multi stakeholder membership drawn from a cross section of the industry and this update reflects a collation of the various activities from across that stakeholder base.

[2] VARSS 2019. https://www.gov.uk/government/publications/veterinary-antimicrobial-resistance-and-sales-surveillance-2019

[3] TTF report for sheep. https://www.ruma.org.uk/wp-content/uploads/2020/11/SO-469-RUMA-REPORT-021220.pdf

Beef, Dairy and Calves Sectors Progress Against Targets

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Calculation, benchmarking, and central upload of data	**Data from 95% of UK dairy herds captured by 2024**	The dairy industry has been supporting the MH and encouraging dairy and beef vets and farmers to input data.	✓
	Data from 50% of UK calf rearing units captured by 2024	The calf rearing sector has been supporting the MH and encouraging dairy and beef vets and farmers to input data.	✓
	Data from 8,000 (10% of total) UK beef captured by 2024	The beef industry has been supporting the MH and encouraging dairy and beef vets and farmers to input data. From January 2022, members of the Farm Assured Welsh Livestock Scheme (FAWL) in Wales will need to have their antibiotic usage calculated and determined with their vet on the WLBP Antimicrobial Usage (AMU) Calculator; work to onboard the vets is underway with early adopters already calculating usage on the platform.	✓
Farm Vet Champions (FVC) network	**50% of farm veterinary professionals at 50% of farm vet practices**	Farm Vet Champions (FVC) launched in May 2021, with over 24 hours of CPD available. In the first four months since the launch there have been 438 registered now and 358 who have accessed the learning modules. 35 have completed the whole cattle module. With respect to the cattle specific module: • 79 have registered on the module • 35 have completed the whole cattle module • 73 have watched dairy, 76 youngstock and 49 the suckler sessions	✓

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Training uptake among vets	**Specify appropriate training**	• The British Cattle Veterinary Association (BCVA) provides a range of CPD for all vets, available in online and face-to-face formats. Free monthly webinars for students and members are provided as a member benefit and are well attended. MilkSure is a training and stewardship programme for dairy farmers delivered by their private vet. It focuses on the use of veterinary medicines with a strong message on best practice and avoiding milk residue failures. From January 2022 only vets who have undergone training, delivered by the BCVA, will be eligible to deliver MilkSure accreditation. There were 348 MilkSure Registered vets at the end of 2020; another 142 have trained since 2021. Alongside MilkSure, BVCA offers a suite of accredited online training and associated logos covering Johne's, BVD, CHECS TB entry level, Mobility Mentors and the recently launched QuarterPRO training module. The focus is always on recognition, control and prevention of disease, which ultimately reduces antimicrobial usage. A medicine course is in planning to cover in more detail some of the areas not covered in MilkSure – this is planned for 2023 • Arwain Vet Cymru is an antimicrobial stewardship programme which is funded by the Welsh Government's Rural Development Programme and delivered by Bristol University, Iechyd Da(gwledig) Ltd and WLBP (Welsh Lamb and Beef Producers). This has involved the creation of a national collaborative network of highly motivated and trained vets (veterinary prescribing champions) with one vet from each farm or mixed practice in Wales invited to be the responsible prescribing champion and prescribing lead. The vets must attend training sessions and a series of workshops with an overall goal of developing and implementing at least one bespoke antimicrobial stewardship intervention from January 2021. Over 80% of cattle practices in Wales have at least one veterinary prescribing champion (43 vets in total). As a result of the workshops, the main intervention categories include improving within-practice communication, farmer knowledge transfer, implementing prescribing protocol, dispensary re-organisation and benchmarking. In addition, the programme conducts research to understand the role of non-clinical veterinary practice staff in the process of prescribing and dispensing antimicrobials to cattle and sheep farmers • Welsh Lamb and Beef Producers (WLBP) AMU Calculator went live in Spring and is on boarding practices in Wales. From 1 January 2022 members of the FAWL assurance scheme will be required to have their antibiotic usage calculated on the platform during their annual review with the vet	✓

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
		• CPD events are planned in three nations (England, Scotland, and Wales) for 75 vets to improve neonatal survival and sustainable antibiotic use in beef cattle and sheep. The CPD day will cover different sections of an evidence-based control plan including communication, benchmarking and targets, biological drivers of survival and end with real life case studies	
Medicines best practice training uptake among farmers	**Dairy**	• Under the Red Tractor farm assurance scheme, at least one person on each dairy farm (who is responsible for administering medicines) must undertake an approved medicines training course. This was a recommendation up until October 2019 when it became a full standard. In 2019 46.5% of dairy members were compliant with the recommendation, which increased to 77% in 2020 as the requirement became a full standard, and further uptake is expected • The Animal Medicines Best Practice online farmer training has now been accessed by 551 dairy farmers since its launch in 2018	✓ ✓
	Beef	• Under the Red Tractor farm assurance scheme, it is a recommendation that at least one person on a beef farm (who is responsible for administering medicines) to have completed an approved medicine training course since October 2016. This will become a full requirement in November 2021. Currently for beef, medicine training was at 51% compliance in 2020, but it is expected that this figure will rise over the next 12 months when this becomes a full standard • Quality Meat Scotland (QMS) anticipate inclusion of a recommendation for training in an upcoming review • In Northern Ireland it is mandatory for members of the Northern Ireland Beef and Lamb Farm Quality Assurance Scheme (NIBL FQAS) to attend training on the Responsible Use of Antimicrobials on beef and sheep farms. The new standard was introduced in February 2020 and as of September 2021, approximately 8,000 of the 12,000 members have been trained. This is particularly encouraging given the challenges COVID-19 posed for face-to-face training events • The Animal Medicines Best Practice online farmer training has now been accessed by 97 beef farmers since its launch in 2018	✓ ✓

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved
	All cattle	• NOAH carried out a #vaccineswork campaign in April 2021, which secured increased YOY engagement (see appendices for further detail)	✓ ✓
Medicines best practice training uptake among students	**All vet school and agriculture college/ university courses include medicines best practice content by 2024**	• The majority of veterinary schools have either added Farm Vet Champions to the clinical Extramural Studies list or integrated it into the curriculum • Medicines best practice content is incorporated into courses at Northern Ireland's College of Agriculture, Food and Rural Enterprise	✓ ✓
Farmer & vet herd/flock health plans	**Reduced non-compliances annually in Dairy & Beef farm assurance for development of annual health/ medicines plan**	In 2020, the compliance rate against the Red Tractor requirement for a livestock health plan was 87.7% for dairy members participating in the scheme and 93.9% for beef members. Note that non-compliance may be related to an element of the plan, rather than the whole plan, being missing.	✓ ✓

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved
Impact of Bovine Viral Diarrhoea	**Reduced non-compliances for BVD control in Red Tractor Dairy**	• Under the Red Tractor farm assurance scheme, there is a requirement that members document the BVD eradication plan in the Health Plan and this is implemented. The compliance rate for 2020 was at 96.1% • In Northern Ireland the BVD Eradication Scheme Order was enshrined in legislation in 2016. Since then, NI has seen a significant reduction in disease incidence with the 12-month animal level BVD incidence to the end of June 2021 at 0.31%. To further reduce disease prevalence, industry stakeholders agreed that from 3rd February 2020 members of the Northern Ireland Beef and Lamb Farm Quality Assurance Scheme (NIBL FQAS) would lose their assured status if they retained persistently infected animals in an FQAS approved herd for more than 35 days. This has had a significant impact in reducing the number of retained PIs on the ground and as of September 2021, there were 86 retained PIs alive in 62 herds • Eradicating BVD (Bovine Viral Diarrhoea) is a priority of the Wales Animal Health and Welfare Framework Group. “Gwaredu BVD” is a national scheme funded by the Welsh Government’s Rural Development Programme. The programme is overseen by a cross industry stakeholder steering group and delivered by AHWW (Animal Health and Welfare Wales). The scheme was launched in 2017 and is due to end in December 2022. It involves yearly BVD blood screening of youngstock cohorts at the same time as the annual herd TB test by the farmer’s own veterinary practice. This model provides the necessary support and guidance to ensure the quick identification of herds with active BVD infection along with tailored advice on management and biosecurity. Funding support is subsequently made available to find the persistently infected (PI) animals from infected herds. This is a voluntary scheme which has been made available to all 11,000 Welsh cattle holdings. So far, over 8,600 (80%) of Welsh herds have been screened at least once. Farmers with herds that have screened clear, are awarded a ‘Certificate of Gwaredu BVD Status’ in either gold (three or more negative tests), silver (two or more negative tests), or bronze (one negative test) • In Scotland, the number of BVD Positive cattle is falling, with approximately 90% of herds maintaining negative status. BVD testing continues, thanks to the good work of Scotland’s farmers and vets, and the eradication scheme appears to maintain a good level of engagement	✔ ✔

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
		• BVDFree launched in July 2016. This is an industry owned company which delivers a voluntary elimination programme for BVD in cattle breeding herds in England. At the end of five years 6,500 herds had registered with BVDFree representing close to an estimated 45% of the national cattle breeding herd in England. There was also £5M in RDPE support for BVD control in herds with breeding cattle delivered through Stamp It Out BVD. The aim of Stamp It Out BVD was to engage at least 50% of the dairy and beef breeding herd in England in BVD control by the end of June 2021. As of the end of June, the scheme had enrolled 6326 farmers out of the target of 8,000 (roughly 2645 dairy producers and 3681 beef producers). The total number of animals engaged has been 690,162, against the target of 950,000 (50% of the English breeding herd) • A new BVD sub-group has been formed under the Defra Pathway, with a small group of industry experts forming a plan to eradicate BVD in England; drawing on experience and expertise from the Welsh, Scottish and Northern Ireland Schemes • Farms will be asked how they are taking action to eradicate bovine viral diarrhoea (BVD). This needs to be documented in a health plan and implemented. This new recommendation will become a full standard from October 2022, allowing members a lead time for a change in system or testing routine, where necessary to control endemic disease	
	Calves sourced from farms eradicating BVD, or screened	Similar to above	✓ ✓

Beef, Dairy and Calves Sectors Indicators of Progress

Dairy, Beef and Calves Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Antibiotic use (centralised data)	**15% mg/kg fall in dairy herds by 2024; baseline 2020/21**	Data currently unavailable	
	25% mg/kg fall in calf rearing units by 2024; baseline 2020/21	Data currently unavailable	
Number of calves treated	**7.5 fewer treated/100 calves by 2024; baseline 2020/21**	Data currently unavailable	
Sales of lactating cow tubes in dairy	**Annual reduction in 3-yr rolling average; baseline of 0.69 DCDVet**	The three-year rolling average (including 2020) is 0.63, which is below the baseline	✓
Sales of dry cow tubes in dairy	**Annual reduction in 3-yr rolling average; baseline of 0.59 DCDVet**	The three-year rolling average (including 2020) is 0.57, which is below the baseline	✓
Highest priority antibiotic use (from centralised data)	**Reduction in dairy mg/kg by 2024; baseline 2020/2021**	Data currently unavailable	
	Establish baseline for calves from 2020/2021 data, then review	Data currently unavailable	

Dairy, Beef and Calves Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Highest priority antibiotic sales	**Reduction in cattle injectables by 2024; baseline 0.26 mg/kg**	2020 figure – 0.29 mg/kg, which is 0.03mg/kg higher than the baseline 2019 figure, although it is still 0.21mg/kg (42%) lower than usage reported in 2018.	✓
	Reduction in tubes for dairy cows by 2024; baseline 0.03 DCDVet	2020 figure – 0.07 mg/kg, which is 0.04 course doses higher than the baseline 2019 figure, although it is still 0.05 course doses (42%) lower than usage reported in 2018. It should be noted that there were availability issues with lactating cow intramammary products in 2020, which may have affected product choice.	✓
Mortality rates	**Mortality falls in beef & dairy cows; baseline 2020**	Data currently unavailable	
	Calf mortality falls 1%/year 2020-2024; baseline 2018	Data currently unavailable	
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 have been 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. In the same time, the mean weighted bulk milk somatic cell count has 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%).	✓
	Fall in beef respiratory disease from various 2019 indicators	Data currently unavailable	

Sheep Sector

Overview

One year into the new TTF2 Targets and there are already a number of positive developments to report back on.

There has been a continued decrease in the use of oral antibiotics in neonatal lambs with a 21% decrease at 2021 lambing compared to 2020 lambing and an overall decrease of 47.9% since 2016.

There has been an increase in uptake of vaccination for ewes against enzootic abortion (50% penetration vs 43% in 2019) and foot rot (16% penetration vs 14% in 2019) and the Farm Vet Champions initiative has been successfully launched to wide acclaim (see appendices).

The delayed launch of the Medicine Hub (MH) has impacted data collection and now that it is live, work is underway to encourage vets and farmers to input data onto the MH and to provide users with clear and prominent messaging alongside simple procedures to encourage and drive uptake.

Sheep Sector Progress Against Targets

Measurement Metric	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Calculation, bench-marking, and central upload of data	**Data from 8,000 (10% of total) UK sheep flocks captured by 2024**	• The sheep industry has been supporting the MH and encouraging sheep farmers and vets to input data • Welsh Lamb and Beef Producers (WLBP) AMU Calculator went live in Spring 2021 and is working with vet practices in Wales. Early adopters are already calculating usage with the platform. From 1 January 2022 members of the FAWL assurance scheme will be required to have their antibiotic usage calculated on the platform during their annual review with the vet	✔
Farm Vet Champions (FVC) network	**50% of vets at 50% of practices across the UK by 2024**	FVC launched in May 2021. In the first four months since the launch of the FVC learning platform there have been 438 registrations. (See separate FVC update in appendices).	✔
Training uptake among vets	**Specify appro-priate training within Farm Vet Champion plan**	• 358 vets have started • 29 FVC have completed the sheep module	✔

Measurement Metric	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Medicines best practice training uptake among farmers	**Training becomes requirement in Beef/Lamb farm assurance**	• Under the Red Tractor farm assurance scheme, it has been a recommendation that at least one person on a sheep farm (who is responsible for administering medicines) has completed a medicine training course since October 2016. This will become a full requirement in November 2021. Amongst Red Tractor sheep farms 51% met this recommendation in 2020, but it is expected that this figure will rise over the next 12 months when this becomes a full standard • Scotland: QMS expect to include a recommendation for medicines training in their next review of the standards • In Northern Ireland it is mandatory for members of the Northern Ireland Beef and Lamb Farm Quality Assurance Scheme (NIBL FQAS) to attend training on the Responsible Use of Antimicrobials on beef and sheep farms. The new standard was introduced in February 2020 and as of September 2021 approximately 8000 of the 12000 members were trained	✓ ✓
	All vet school and agriculture college/ university courses include medicines best practice content by 2024	Veterinary students are welcome to access the FVC learning platform and completion of the full CPD can count to completing required EMS (extra-mural-studies). There are plans to advertise FVC at the FAVS (Farm Association of Veterinary Student conference). The majority of veterinary schools have either added Farm Vet Champions to the clinical Extramural Studies list or integrated it into the curriculum. Medicines best practice content is incorporated into courses at Northern Ireland's College of Agriculture, Food and Rural Enterprise. There have been 60 registrations for the sheep module of the AMBP online training.	✓

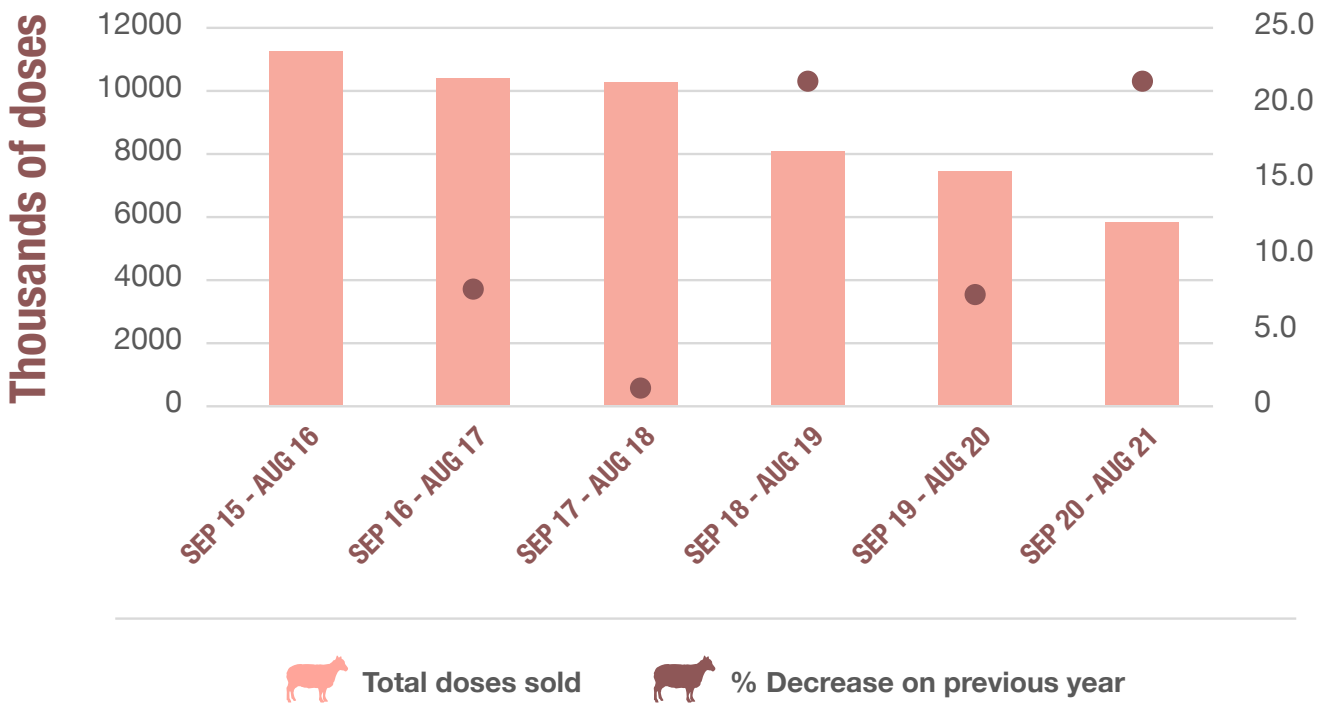
Measurement Metric	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
	Increased health planning on sheep farms	• SMART goals tracking within FVC still in progress with delivery due March 2022 • There are 12,060 members of the Red Tractor Beef & Lamb scheme. In 2020 93.9% demonstrated compliance with the requirement for a Livestock Health Plan • Wales: ARWAIN 2 is a successor to ARWAIN 1 and will look at aspects of measuring/ sampling for resistance on farms and the environment, how syndromic surveillance can be improved, collating data on antibiotic use through WLBP AMU tool, the use of novel technology in preventing disease in the first place, further developing a voluntary code of practice and good practice in antibiotic dispensing through practices, farmer and vet events and other elements as well	✔

Sheep Sector Indicators of Progress

Sheep indicators of progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
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 *	✔ ✔ ✔
	Ensure does not rise in sheep above 0.05% of total sheep use	Use is very low and there is no evidence that it has increased.	✔
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	
Health and welfare metrics	**Increased annual uptake of vaccines in sheep, baseline 2019**	• Analysis of vaccine use in sheep and cattle for 2020 has been completed and has been 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	✔

* See graph on page 17

Sale of oral antibiotics for UK lambs



Kynetec data supplied by kind permission of MSD Animal Health

Pig Sector

Overview

2020 was a challenging year for all who were involved in the pig sector given disruption to pig flow due to the impact of COVID-19 on the supply chain. However, despite these difficulties, pig producers, vets and wider industry continued to meet high health and welfare standards and reduce the level of antibiotic usage to 105 mg/PCU.

Use of highest priority critically important antibiotics (HP-CIAs) remained at a very low level at 0.05 mg/PCU in 2020 compared to 0.04 mg/PCU in 2019. No colistin use was reported in 2020.

The Pig Veterinary Society guidance supports EMA advice that veterinary surgeons should prescribe a lower priority alternative to HP-CIAs unless there is no other option. This could explain why, despite the reducing trend overall, there was an increase in use of some lower priority antibiotics such as neomycin. Alternatively, these could be short term adjustments as the industry accommodates the phasing out of therapeutic zinc oxide, which treats post-weaning diarrhoea in piglets.

The pig sector continued to see some impact from swine dysentery cases in 2020 with some large herds undergoing a medicated disease elimination programme, although use due to this issue was lower than in 2019.

Due to the focus on keeping processing plants operational during the pandemic, some proactive work, such as the Pig Health Scheme, was put on hold.

In summary, the COVID-19 pandemic affected the industry in many ways but producers, vets and wider industry continued to manage through this challenging period well. During the latter part of 2020 there was considerable disruption to pig flow which meant pigs remained on farm for significantly longer periods of time. Health and welfare remained a top priority and the industry managed very well, even carrying out virtual veterinary visits where necessary to ensure veterinary oversight was maintained.

Pig Sector Progress Against Targets

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved
Persistently High Users (PHUs)	**Introduce a programme in 2021 supporting PHUs to reduce use**	The Pig Health and Welfare Council (PHWC) developed an Antibiotic Reduction Plan (ARP) template for producers and vets to use and guidance was provided to vets on what to consider when putting together the ARP. The AHDB launched a benchmarking tool in the summer to identify Persistently High Users, who are prompted to complete an ARP in conjunction with their vet. The AHDB also notified producers in the upper 5-10% usage range that they were close to being identified as a PHU as an early warning system. Red Tractor consulted on whether to add the requirement for PHU's to complete and implement an ARP and this has been added as a full standard in version 5 of the Pig Standards effective from November 2021. Quality Meat Scotland (QMS) will review their standards in 2022. Red Tractor covers about 95% of pigs produced in the UK.	✓ ✓ ✓
Pig Health metrics	**Monitor effects of reduced antibiotic use annually**	The Pig Health and Welfare Council 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. Unfortunately, due to COVID-19 restrictions, the Pig Health Scheme abattoir monitoring was suspended in 2020, but restarted in late summer 2021 with a phased approach. This scheme provides objective, real-time data on disease conditions for the industry, for example lung scores.	✓ ✓
Plan for weaner management	**Identify/ launch best-practice weaner management before 2022**	The NPA, PVS and AHDB are planning a zinc workshop to bring together key parties from the industry to discuss weaner management in the context of the loss of zinc oxide in June 2022. The group will build on the learnings from the workshop and plan to share the output in an accessible format for producers and vets. There are many companies carrying out in-depth feed trials which will feed into and add to the output from the workshop.	✓

Measurement Metric	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Shift from in-feed medication	**Ensure Government post-Brexit plans support switch to in-water**	This data is collected by the Veterinary Medicines Directorate and published in the VARSS report. In-feed medication is still the most common route of administration, although use relative to other routes of administration has decreased from 78% in 2017 to 61% in 2020. Correspondingly, in-water antibiotics now account for 34% of active ingredient used (compared with 19% in 2017).	✓
e-Medicine Book (eMB) data	**Maintain/ increase on-time submission of data to eMB annually**	AHDB and other stakeholder groups continue to remind producers ahead of submission dates. Timely submission of eMB data continues to be good with 85% on time.	✓ ✓ ✓
Medicines training uptake	**Review gaps and increase opportunities for uptake, baseline 2020**	Red Tractor has brought in a standard which requires at least one team member on each unit to have undertaken training in the responsible use of medicines. This went live with version 5 of the standards and so will provide a metric for uptake in the coming years given audits take place annually. Existing knowledge and training carried out after January 2018 will be recognised, if a certificate can be provided. Only courses approved by Red Tractor as meeting the required learning objectives are accepted.	✓ ✓ ✓

Pig Indicators of Progress

Pig Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Antibiotic use (from eMB)	**30% reduction in total use by 2024, baseline 2020**	The 2020 eMB data was published in June 2021. Antibiotic usage was 105 mg/PCU in 2020 and this will form the baseline for this target. Antibiotic usage in the pig sector has reduced by 62% from 2015.	✓ ✓
Highest priority antibiotic use (from eMB)	**Use equal to or lower than 2019 baselines**	Use of highest priority critically important antibiotics (HP-CIAs) in 2020 remains at a very low level, although a slight increase from 0.04 mg/PCU in 2015 to 0.05 mg/PCU has been recorded in 2020. No colistin use was reported in 2020.	✓ ✓
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. The harmonised monitoring of antibiotic resistance carried out by the VMD is a programme set out by the European Commission, whereby EU Member States monitor and report antibiotic resistance in zoonotic and commensal bacteria from healthy food-producing animals and food products at retail. The UK has continued to carry out this work even though the country is no longer an EU member state. The programme monitors antibiotic resistance in pigs and poultry in alternate years. In 2019 the VMD focused on pigs and the reports indicate nothing of concern; the VMD will continue the work programme biannually. Clinical surveillance continues and is useful for the group to identify emerging issues, but the group is mindful that it is not representative data.	✓ ✓

Salmon Sector

Overview

In 2020, 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. All targets were achieved by the sector, with activity against the targets, data collation and overall antibiotic stewardship driven forward through the SSPO Prescribing Vets group.

Where Indicators of Progress are concerned, the sector has successfully established and reported a new metric for the percentage of farms treated with antibiotic. This new metric shows very clearly that use is restricted to a small number of farms in both the freshwater and marine phases of production. Antibiotic use on these farms was all under veterinary care.

2020 did see an increase in overall antibiotic use compared to previous years. However, as highlighted in previous RUMA TTF reports, and as demonstrated by the new metric documenting the percentage of farms treated, overall use continues to be skewed by a small number of farm treatments during the marine phase, where larger fish require proportionately higher volumes of antibiotic to ensure safe and effective treatment.

The three-year production cycle for salmon complicates the interpretation of annual fluctuations in use; longer-term trends naturally provide greater insight into the sector's overall use. In that regard, long-term trends demonstrate that antibiotic use by the sector is low, and therefore, even a marginal increase in the already small number of farms requiring use of antibiotics in any one year, especially during the marine phase of production, can lead to a spike in overall use figures. The salmon sector Indicators of Progress relating to antibiotic use is acknowledged as being highly ambitious. These targets were established at the very start of the TTF process, using a then very limited dataset. The comprehensive dataset now collected by the sector since 2017 makes it even more apparent that the sector's usage target remains ambitious and challenging.

Environmental impacts: Salmon are farmed in the wild lochs around Scotland. They are highly sensitive to environmental changes such as those brought about by, for example, global climate change. Changes in the seasonal temperature profile, as well as in the quality and composition of the water, not only impact the development and physiology of salmon, but also many of the pathogens and organisms that can affect them, including jellyfish and other plankton.

COVID-19 impacts: In 2020, COVID-19 brought additional demands on the salmon farming sector. Challenging market conditions and staffing pressures within farming and processing, led to significantly more fish, of a larger size, being held on farms across the entire production system.

These two globally relevant factors placed pressure on fish health management in 2020, with health professionals remaining vigilant to ensure appropriate management of sometimes complex and unavoidable health issues due to impacts out of the sectors control.

In summary, although the sector recorded an overall increase in the amount of antibiotic used, they continue to be used responsibly and only ever in response to the clinical presentation of a bacterial infection. In 2020, antibiotics were used on a relatively small percentage of farms with overall usage figures skewed by a small number of treatments on marine farms, where biomasses are higher.

Salmon Sector Progress Against Targets

Salmon Targets	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Highest priority antibiotic use	**Only prescribed as last resort after sensitivity testing**	Accepted industry practice.	✓ ✓ ✓
Vaccination of Atlantic salmon	**All Atlantic salmon vaccinated before seawater phase**	100% of fish vaccinated against the key bacterial and viral health challenges.	✓ ✓ ✓
Use of autogenous vaccines	**To be developed in absence of licensed vaccines**	Autogenous vaccines developed where necessary.	✓ ✓ ✓
Prescribing Vets' group input	**Quarterly meetings, antibiotic stewardship a standard item**	Quarterly meetings of the SSPO Prescribing Vets group held alongside ad hoc 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

Salmon Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Antibiotic use (from usage data)	**Aim for maximum 5 mg/kg annually**	2020 usage = 29.3mg/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.	✔
Metric for % fish treated	**Develop new metric to indicate the % of fish treated annually**	The Prescribing Vets Group has 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. This demonstrates that use is restricted to a small number of farms, where antibiotics are responsibly prescribed in response to a specific health issue.	✔ ✔ ✔

Trout Sector

Overview:

2020 has been a year of great uncertainty due to the pandemic and Brexit. COVID-19 had a very negative impact on trout sales with pubs, restaurants and some retail fish counters closed for the first six months of 2020.

Equally, the export market to the USA has been very challenging due to the lack of air freight, and exports to the EU have been affected due to Brexit.

The result of slow sales has meant higher stock being held on farms but despite this, the sector has managed well with only a small increase in antibiotic used and usage is still below the maximum of 20mg/kg target currently sitting at 13.9mg/kg.

Generally, the weather has been kind with average or above rainfall which has kept a good flow in the rivers which in turn has helped as the farms have been carrying higher stock.

As a sector we continue to encourage the use and development of vaccines. The British Trout Association (BTA) is working very closely with Aberdeen University to develop a vaccine for Proliferative Kidney Disease (PKD). PKD has been a major challenge for the trout sector for many years but with the uplift in the understanding and development of vaccines it is hoped that in time a PKD vaccine might be possible. As highlighted in the sector targets report (Responsible Use of Medicines in Agriculture Alliance, 2017), vaccines are a vitally important tool in preventing disease in trout farms and increasing the use as well as improving the availability of cost-effective authorised vaccines is crucial.

There has been no growth of resistance problems. However, to monitor the situation the industry is setting up a monitoring scheme to look at isolates from all over the country on a rolling basis. The project will be looking at sensitivity profiles, majoring on the four drugs used in the UK with fish (oxolinic acid, florfenicol, oxytetracycline and amoxycillin) plus any others of general interest. The DEFRA laboratory at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in Weymouth will be involved at gold standard and MIC determinations will be carried out to support and further inform the studies which already exist back to 1960. As an observation there is more sensitivity in recent years than in samples collected between 1960-1999. It is planned that this study will enable the building of a 'bug bank' which may be used in manufacture of autogenous vaccines. With farm visits now allowed, the bug bank project will get under way over the next 6 months.

Trout Sector Progress Against Targets

Measurement Metric	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Stewardship of antibiotics	**No preventative use; no highest priority antibiotics used routinely; pathogen surveillance through 'bug bank' initiative**	The trout sector is committed to monitoring antibiotic usage and focusing on biosecurity and good management practices in order to minimise the use of antibiotics. Since 2017 the trout sector has reduced antibiotic use by 28% and use remains below the sector target of 20 mg/kg.	✓ ✓
Vaccine uptake	**Vaccination in freshwater phase to be increased, baseline 2020**	With the market requiring a larger average size trout, this will allow the use of injectable vaccines which potentially are more effective.	✓ ✓
Promotion of best practice	**All members compliant with quality standards**	All farms selling to the retail market are now UK Quality Trout Approved	✓ ✓ ✓

Trout Sector Indicators of Progress

Trout Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Metric for % fish treated	**Develop a new metric to indicate the % of fish treated annually**	It is hoped that during the next year data will be collected on the % of fish treated.	✓
Antibiotic use (from usage data)	**Maintain usage below 20 mg/kg**	13.9mg/kg	✓ ✓

Antibiotic	2017	2018	2019	2020	Change 2017–2020
Oxytetracycline	7.3	3.8	5.1	7.7	4%
Oxolinic acid	6.6	5.8	2.4	4.3	-35%
Florfenicol	4.4	2.2	1.9	1.9	-56%
Amoxicillin	0.9	1.2	0.2	0.0	-100%
Total mg/kg	19.2	13.0	9.7	13.9	-28%

Gamebird Sector

Overview:

Antibiotic use in gamebirds in 2020 was much reduced from 2019; in fact, the sector achieved the 40% reduction from the 2019 baseline of 10.4 tonnes that has been set as the 2024 target. There was also a fall in the use of HP-CIA's. However, both of these metrics were primarily due to a significant reduction in the number of birds reared and a very complex interaction of numerous factors that arose out of the reduced output for the sector as a direct result of the COVID-19 pandemic.

Reliable data of the sector's output is unfortunately not available, but what there is suggests that numbers were down by 25-35%. Feed companies reported a fall of approximately 20% in game-feed sales for the year (this does not link directly to the number of birds reared but is a good indicator. Some feed was used to feed stock later into the shooting season than normal due to lock-down restrictions which impacted the shooting calendar).

The reduction in the number of birds reared was entirely due to COVID-19. Concerns that shooting could be restricted, naturally led to a reduction in the numbers of birds ordered, reared, and released. There was a reduction in the importation of stock from abroad, and many producers operated at lower stocking densities over a shorter season, which coincided with reasonable weather conditions. All these factors contributed to a reduction in antibiotic use, but from the available data it is not possible to define the extent to which each factor was responsible. However, it is certain that the reduction in the overall number of birds reared was the most significant factor at play.

The large reduction in HP-CIA's is thought to be due to a reduction in the incidence of mycoplasma resulting from a lower than usual dependence on caught-up breeding stock, again due to the fall in demand due to COVID-19.

Gamebird Sector Progress Against Targets

Measurement Metric	Target/Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Discussion with vets	**Every rearer to calculate use and discuss with their vet**	This was highlighted in the sector's joint communication on antibiotics this year, and feedback from the veterinary community suggests it is gaining substantial momentum.	✔
Improve husbandry	**Monitor uptake of new British Game Alliance Game Farm Audits**	Uptake of the BGA audit has been modest, but an alternative scheme developed by the veterinary sector is helping to encourage engagement in this area.	✔
Increase education	**Enhance existing learning tools**	A comprehensive suite of training modules has been developed and is in the process of being rolled out to the sector.	✔
Medicated feed stewardship	**Work with Game Feed Trade Association to steward sales**	Widespread engagement and communication with the Game-feed Trade Association and the AIC (Agricultural Industries Confederation) has resulted in significant progress.	✔ ✔
Monitor welfare effects	**Ensure antibiotic reductions are safe and sustainable**	Discussions on how this will be progressed have taken place but not yet actioned, due to complications caused by COVID-19 during the rearing seasons of 2020 and 2021.	
Research into damaging diseases	**Promote research into ways to reduce disease pressures**	After an unfortunate interruption to two major research projects due to COVID-19 in 2020, both projects have restarted this year and have progressed well through the 2021 rearing season.	✔ ✔

Gamebird Sector Indicators of Progress

Gamebird Sector Indicators of Progress		Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
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)	✔ ✔*
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)	✔ ✔*

*** Although the figures show that in year 1 of the new TTF2 targets, the targets have been achieved, it is important to note that these figures have been impacted by COVID-19 and therefore are not representative of a 'normal' year of activity.**

Laying Hens Sector

Overview:

In 2020, members of the British Egg Industry Council (BEIC) Lion Code, which represents 90% of the laying hen industry (and includes breeders and pullets) continued to be below the 1% bird days, and no HP-CIAs were used for the fourth consecutive year. The data published as 'daily dose/100 chicken days at risk' represents the average number of daily doses administered per chicken over a 100-day period and was calculated from prescribing data provided directly to BEIC.

Overall, the laying sector recorded a total of 3.1 tonnes of antibiotic active ingredient use in 2020. 0.47 actual bird days treated/100 birds was recorded for the period. This represents a reduction on the reported values in previous years.

In 2020, this was collected through an online portal for the first time, which has facilitated the analysis of the data and improved feedback to subscribers, producers, and vets. It has also made it possible to share data on reasons for medication with prescribing veterinarians. In the laying hen sector, there continues to be a focus on disease prevention, including widespread vaccination programmes. It is also a requirement for all farms to have a written biosecurity and veterinary health plan and, in addition, the Lion Training Passport provides a common training standard on key topics, including welfare, biosecurity and medicine usage. From January 2021 the Lion Training Passport, which includes medicine training has been a required standard for all farms.

There are currently some significant structural changes taking place in the industry with a move away from enriched colony cage production for retail supply towards 'barn' production. While this will create challenges, we are confident that, through a continued focus on disease prevention and antibiotic changes stewardship, the sector will remain below our on-going target of keeping below 1% bird days, and 0.05% bird days for HP-CIA's.

Laying Hens Sector Indicators of Progress

Laying Hens Sector Indicators of Progress	Target/ Indicator of Progress	Progress	✔ = in progress ✔ ✔ = well advanced ✔ ✔ ✔ = achieved
Antibiotic use (usage data)	**Maintain bird days treated below 1%**	The antibiotic usage data from members of the BEIC Lion Scheme for 2020 continues to be below the %1 bird days.	✓ ✓ ✓
HP-CIA use (usage data)	**Fluoroquinolone days medicated remains below 0.05%**	No HP-CIAs were used for the fourth year in a row.	✓ ✓ ✓

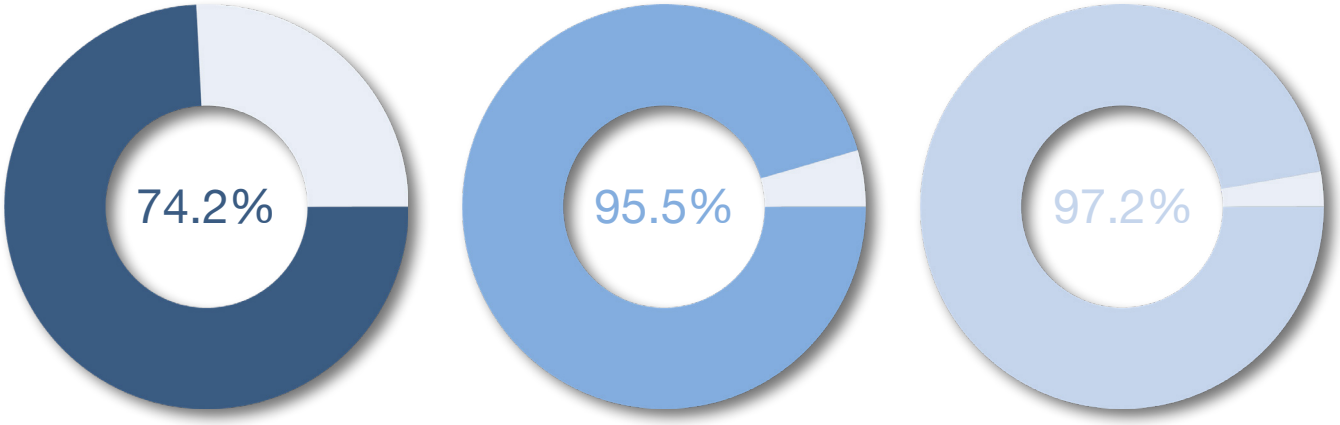
Poultry Meat Sector

Overview:

The poultry meat sector remains below the Government approved RUMA species specific sector targets. As the sector producing half the meat the country eats, the British poultry meat industry was the first to voluntarily develop a strategy for the responsible use of antibiotics, finding the path for other sectors to follow suit. The British Poultry Council's (BPC) Antibiotic Stewardship plays a crucial role in delivering good bird health and welfare, ensuring responsible use of antibiotics, safeguarding the efficacy of antibiotics, and helping produce food people can trust. Of particular note is the huge effort to reduce use of antibiotics, particularly Critically Important Antibiotics, in turkeys which has seen usage fall to 25.7 mg/kg PCU – almost 50% lower than the RUMA species-specific target. Since 2014, the turkey sector has reduced mg/PCU by 88.2%. This success demonstrates the commitment of the sector to upholding the UK's stance on tackling antimicrobial resistance.

In September 2021, the BPC released its landmark Antibiotic Stewardship Report, celebrating ten years of Stewardship success.

The report shows that since 2012, BPC Antibiotic Stewardship has helped achieve:



74.2% reduction in the total use of antibiotics

95.5% reduction in the use of critically important antibiotics

97.2% reduction in the use of fluroquinolones

In 2020, the sector used 21 tonnes of antibiotics.

UK poultry meat producers have stopped all preventative treatments and the highest priority antibiotics that are critically important for humans are used only as a 'last resort' for chickens, turkeys, and ducks.

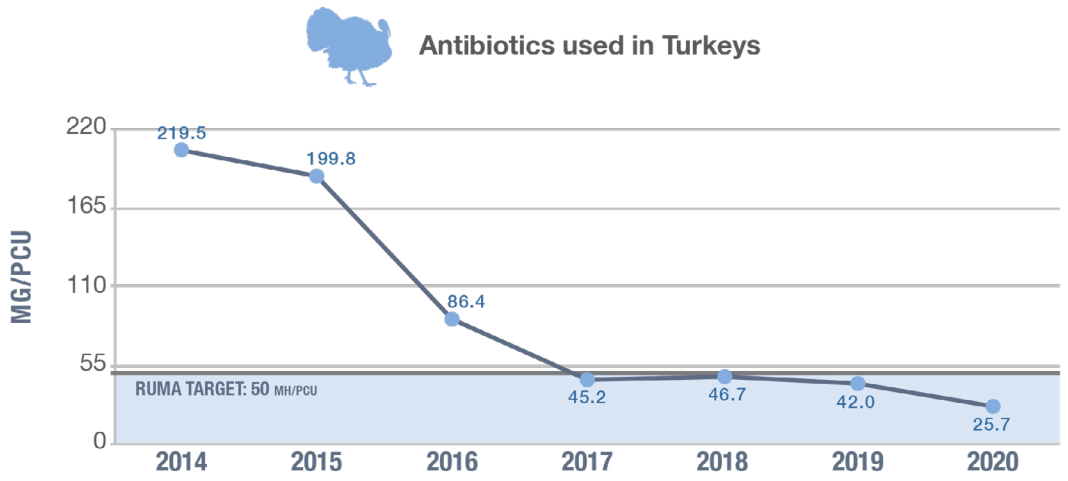
[4] British Poultry Council, Antibiotic Stewardship Report 2021; Paving the way: celebrating ten years of Antibiotic Stewardship success - The British Poultry Council

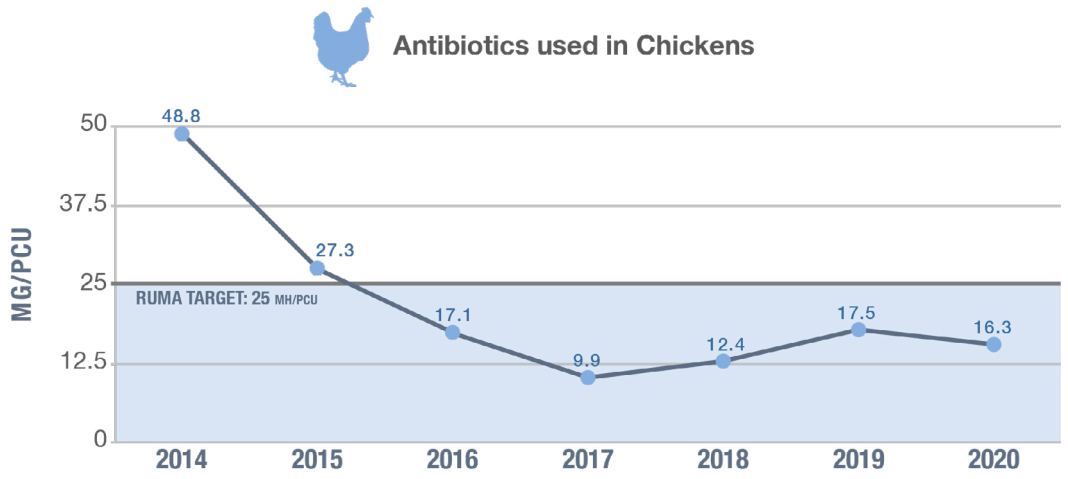
The British poultry meat industry was the first livestock sector to voluntarily develop a strategy for the responsible use of antibiotics. Since then, BPC member businesses have successfully reduced their total antibiotic use by nearly 75%.

Through further coordinated action between poultry farmers, veterinarians, producers and policy makers at local, regional, national and global levels, the sector is committed to preserving the efficacy of antibiotics helping to turn the tide against antimicrobial resistance.

Poultry Meat Sector Indicators of Progress

Poultry Meat Sector Indicators of Progress	Target/Indicator of Progress	Progress	✔ = in progress ✔✔ = well advanced ✔✔✔ = achieved
Antibiotic use (usage data)	**Use remains < 25mg/kg PCU in broiler production; reviewed 2021**	16.3 mg/kg PCU	✔ ✔ ✔
	Use remains < 50mg/kg PCU in turkey production; reviewed 2021	25.7 mg/kg PCU	✔ ✔ ✔





Appendices

The RUMA Targets Task Force 2:

Chair of the RUMA TTF - Cat McLaughlin

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

Observers:

Gwyn Jones – Past Chair, **James Russell** – BVA, **Fraser Broadfoot** – VMD, **Grace O'Gorman** – NOAH, **Georgina McDowell** – Red Tractor, **Mandy Nevel** – AHDB

RUMA Chairing and Organisation:

Catherine McLaughlin - Chair, **Chris Lloyd** - Secretary General, **Dawn Howard** - 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.
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
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, designed by AHDB to electronically collate antibiotic usage data from the UK pig sector
EMA	European Medicines Agency EMA
AMEG	European Medicines Agency's Antimicrobial Expert Group
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
HP-CIA	Highest Priority Critically Important Antibiotic (for human medical purposes), as defined by the European Medicines Agency (category B)
IBR	Infectious Bovine Rhinotracheitis
iSAGE	Innovation for Sustainable Sheep and Goat Production in Europe
Medicine Hub	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
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)
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
Red Tractor (RT)	A food assurance scheme which covers production standards on food safety, hygiene, animal health, welfare and environment
RTFS	Rainbow Trout Fry Syndrome
RUMA	Responsible Use of Medicines in Agriculture
SHAWG	Sheep Health and Welfare Group
SSPCA	Scottish Society for Prevention of Cruelty to Animals
SSPO	Scottish Salmon Producers' Organisation
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.
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

Industry and sector initiatives

Farm Vet Champions

Farm Vet Champions, a major collaborative project that is spearheaded by RCVS Knowledge and funded by the VMD, aims to unite and empower UK farm animal veterinary practitioners to establish good antimicrobial stewardship in practices and on farms.

By September 2021, 438 people had registered on the Farm Vet Champions learning platform and 358 of these users had completed the initial access badge. The Farm Vet Champions learning platform includes species-specific learning modules (cattle youngstock, dairy cows, suckler cows, sheep, goats, pigs, laying hens, turkeys and gamebirds) as well as modules on the legal use of veterinary medicines, policies and One-Health aspects of antibiotic prescribing and stewardship, and a variety of short sections on vet-farmer communication and behaviour change.

The education modules were designed by the relevant members of the steering group and working parties to provide free-to-use online training packages.

There are over forty organisations who have given their support to Farm Vet Champions and are represented on the stakeholder group. These include the Chief Veterinary Officers for England, Scotland, Northern Ireland and Wales, each of the major veterinary corporate groups, as well as the British Veterinary Association (BVA), British Cattle Veterinary Association (BCVA), Sheep Veterinary Society (SVS), Goat Veterinary Society (GVS), Pig Veterinary Society (PVS), British Small Animal Veterinary Association (BSAVA), British Veterinary Nursing Association (BVNA), British Equine Veterinary Association (BEVA), Small Animal Medicine Society (SAMSoc), Responsible Use of Medicines in Agriculture (RUMA), National Office of Animal Health (NOAH), Food Industry Initiative on Antimicrobials (FIIA), Animal and Plant Health Agency (APHA) and the funders, the Veterinary Medicine Directive (VMD).

To find out more go to **rcvsknowledge.org/fvc**

The Medicine Hub (MH) for dairy, beef and sheep farmers

The Medicine Hub is an online tool to help dairy, beef and sheep producers monitor and compare medicine use and tackle the threat of antimicrobial resistance.

It provides a safe, secure, and independent central repository to collate, report and compare antibiotic use at individual farm level. AHDB has played an important role in developing the Medicine Hub infrastructure and along with industry partners, farmers are being encouraged to share their medicine use data.

This will help prove the industry's credentials to the public, the supply chain and to competitors and customers around the world. Both BCVA and the Sheep Veterinary Society have promoted the Medicine Hub in 2021. Registering farm clients is now a key first step towards demonstrating the success of a wide range of antibiotic stewardship activities undertaken in these sectors over the past five years.

To find out more go to **Medicine Hub for dairy, beef and sheep farmers | AHDB**

Vaccines Work campaign

The Vaccines Work Campaign was initially launched by RUMA in 2018 and is now delivered by NOAH. It highlights the role vaccines can play in helping to protect health and welfare in all farm animal sectors and in supporting reductions, replacements or refinements in antibiotic use.

The overall objectives are:

- To raise awareness of how and why vaccines work and the range of diseases they protect against
- To review and improve how vaccines are stored and administered
- To encourage use of existing vaccines

The campaign has been well received since its launch with increasing year on year levels of activity and engagement especially across social media channels.

During 2020 and 2021 there has been ongoing activity which has included (not an exhaustive list):

- A Twitter campaign which gathered over 24K impressions and nearly 1000 engagements
- A promotional video explaining how vaccines work which has had 383 views to date
- Campaign content promoted to NOAH's LinkedIn audience (currently 837 followers)
- Blog: 'Why vaccination is important for pets as well as humans' which achieved a reach of 2,619

Colostrum is Gold:

Colostrum Is Gold is an award-winning industry campaign. It highlights the key role colostrum plays in farm animal performance through improved health while reducing antibiotic use. This long-running, collaborative industry campaign aims to raise awareness and improve youngstock health through gold standard colostrum management. Although now hosted by AHDB, it is industry-wide. Levy boards, levy payers, industry stakeholders and any other industry parties can communicate the benefits of colostrum and its role in improving welfare, reducing disease and reducing antibiotics in cattle (dairy and beef), sheep and pigs. During the most recent activity (2021) the campaign saw an increased level of engagement on social media across both of the AHDB Beef and Lamb Twitter and Facebook accounts in comparison to the 2020 activity. Average engagement for Twitter increased by 113% in a year-on-year comparison and for Facebook it increased by 46%. Despite their being fewer posts and a lower level of impressions or reach, this indicates that the people who did see the messages were more engaged with the content. Media coverage was provided through Farmers Guardian and the National Sheep Association Newsletter. A cross sector podcast had 532 listens (https://audioboom.com/posts/7789101-colostrumisgold-optimising-colostrum-management-in-cattle-beef-dairy-sheep-and-pigs)

Sheep sector initiatives

- Work has commenced on a project investigating current health strategies, including antibiotic use in store lamb production. The findings will provide a sound basis for better engagement between vets, advisors and producers as it identifies areas for improvement both in terms of antibiotic usage and the correct use of preventative therapies. This UK Store Lamb production project will complete at the end of 2021 and is funded by AHDB through the SAGG.

- A two-year project to further understanding of Contagious Ovine Digital Dermatitis, a painful and contagious cause of lameness in sheep, has completed. A webinar for farmers and vets on the project results with updated industry advice for prevention and control, including responsible antibiotic use, will be held on 28th September 2021. The project was funded by BBSRC, AHDB and HCC.

- CPD events are planned in three nations (England, Scotland and Wales) for 75 vets to improve neonatal survival and sustainable antibiotic use in beef cattle and sheep. The CPD day will cover different sections of an evidence-based control plan including communication, benchmarking and targets, biological drivers of survival and end with real-life case studies. The events follow a two-year neonatal survival project for the GB Beef & Lamb sector led by the universities of Edinburgh, Liverpool, Nottingham and Synergy Farm Health Ltd, funded by AHDB, HCC and QMS through red meat ring fenced funding. Two webinars from this project were held in December 2020 and January 2021 for vets and farmers respectively and have had 207 and 404 views to date.

RESPONSIBLE USE OF MEDICINES IN AGRICULTURE ALLIANCE

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