

Gender	Female 14 (11%)	Male 104 (85%)	Prefer not to say 4 (3%)		
Age (years)	0-30 15 (12%)	30-50 48 (39%)	50-65 41 (31%)	65+ 15 (15%)	
Highest agricultural qualification	Nothing formal 53 (44%)	NVQ 2 or 3 35 (29%)	HNC / HND 13 (11%)	Degree or higher 20 (17%)	
Flock size (breeding ewes)	1-50 24 (21%)	51-100 31 (25%)	101-200 31 (25%)	Over 201 32 (26%)	Store lambs only 4 (3%)
Farm size (hectares)	0-9.9 14 (12%)	10-19.9 19 (16%)	20-29.9 42 (35%)	30-49.9 27 (23%)	Over 50 17 (14%)

Table one: A summary of the demographic information about the one-hundred and twenty-two Northern Irish sheep farmers who participated in an online survey, and the flock and farm sizes represented in the sample. NVQ – National Vocational Qualification level 2 or 3, HNC – Higher National Certificate, HND – Higher National Diploma



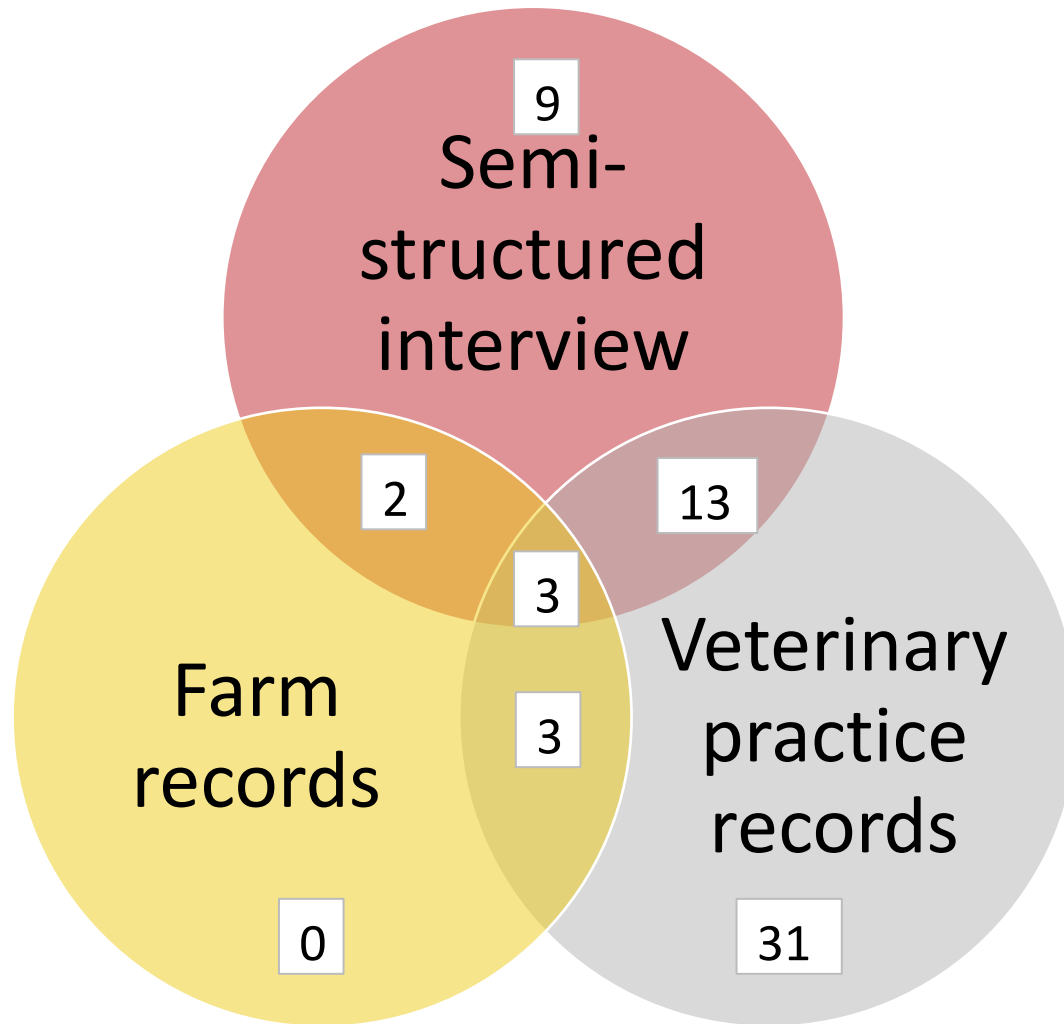


Figure one: Number of Northern Irish sheep farmers contributing to each element of the final medicine record analysis and semi-structured interviews.

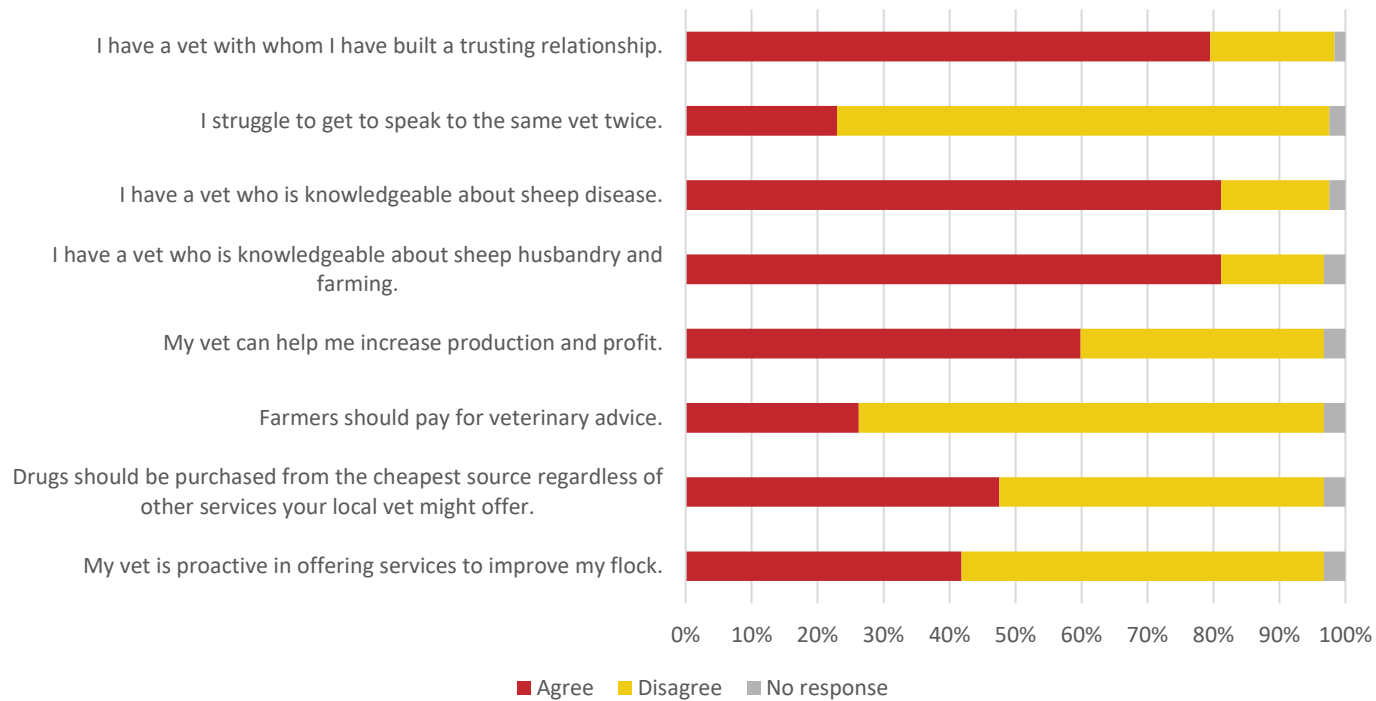


Figure two: Percentage of respondents agreeing, disagreeing with, or not responding to statements regarding their relationship with the veterinarian and services obtained from them.

Reference	Gender	Age	County where farm is located	Flock size (breeding females)	Farm size (hectares)	Other farming enterprises	Medicine records supplied	Semi-structured interview participant?
SF18	M	+	C	194	120	N	Both	Y
SF42	M	+	A	595	215	N	Both	Y
SF13	M	+	D	730	71	HR	Both *	Y
SF03	M	U	A	115	20	SC-B	Farm	Y
SF30	M	-	C	150	39	C, A	Farm*	Y
SF05	M	+	D	300	35	A	Veterinary	Y
SF28	M	+	C	100	49	S-B	Veterinary	Y
SF33	F	+	C	215	81	A	Veterinary	Y
SF38	M	+	D	350	39	A	Veterinary	Y
SF40	M	-	A	480	148	SC-B	Veterinary	Y
SF41	M	-	A	360	81	SC-B	Veterinary	Y
SF65	M	-	D	255	47	SC-B, S-B, A	Veterinary	Y
SF66	M	+	C	145	28	N	Veterinary	Y
SF72	M	U	A	640	51	P, S-B	Veterinary	Y
SF29	M	+	C	340	40	SC-S	Veterinary *	Y
SF51	M	+	B	130	49	SC-S	Veterinary *	Y
SF54	M	+	B	469	22	S	Veterinary *	Y
SF62	M	+	C	300	29	B&B	Veterinary *	Y
SF32	M	+	C	U	U	SC-B	None	Y
SF50	M	U	B	400	79	C	None	Y
SF52	F	-	B	290	31	N	None	Y
SF57	M	+	D	40	4	N	None	Y
SF61	M	+	C	350	79	SC-S	None	Y
SF63	M	-	A	615	748	SC-B	None	Y

SF83	M	-	E	450	U	N	None	Y
SF68	M	-	C	100	35	SC	None *	Y
SF69	M	+	B	520	217	SC-B	None *	Y
SF06	M	+	D	199	U	N	Both	N
SF07	M	+	C	230	26	N	Both	N
SF20	F	-	C	90	20	N	Both	N
SF10	M	+	C	165	40	N	Veterinary	N
SF16	M	-	C	365	22	SC	Veterinary	N
SF21	M	+	C	275	49	S-B	Veterinary	N
SF22	M	+	C	370	121	S-B	Veterinary	N
SF24	M	+	C	120	21	SC-B, C, A	Veterinary	N
SF25	M	+	C	210	90	SC-S, A	Veterinary	N
SF31	M	+	C	330	45	N	Veterinary	N
SF35	M	+	A	300	202	SC-B	Veterinary	N
SF37	F	-	D	35	9	SC-B	Veterinary	N
SF39	M	U	D	300	57	HR	Veterinary	N
SF55	M	+	C	600	U	U	Veterinary	N
SF67	M	U	C	240	19	N	Veterinary	N
SF70	M	U	A	420	40	N	Veterinary	N
SF71	M	U	C	45	30	S	Veterinary	N
SF73	M	U	D	400	170	N	Veterinary	N
SF74	M	+	C	650	141	SC-S	Veterinary	N
SF75	M	+	C	130	40	SC-B	Veterinary	N
SF76	M	+	C	235	34	N	Veterinary	N
SF77	M	+	C	153	16	N	Veterinary	N
SF79	M	U	D	165	28	Po	Veterinary	N
SF80	M	+	D	300	54	N	Veterinary	N

SF84	M	+	C	300	121	SC	Veterinary	N
SF85	F	-	A	30	4	N	Veterinary	N
SF88	M	+	C	170	28	A, Po	Veterinary	N
SF90	M	U	F	50	12	N	Veterinary	N
SF91	M	+	E	120	36	N	Veterinary	N
SF92	M	+	E	74	8	S	Veterinary	N
SF93	M	-	A	75	9	N	Veterinary	N
SF94	M	-	A	700	182	SC	Veterinary	N
SF95	M	-	A	80	12	N	Veterinary	N
SF96	M	-	B	480	40	C	Veterinary*	N

Table two: Demographic information about Northern Irish sheep farmers who took supplied medicine records for analysis and / or were interviewed about the medicine use in their flock. In all fields U indicated information the farmer chose not to disclosed (U). Farmers' ages were recorded as less than fifty year (-) or fifty years of age or more (+). To ensure anonymity of participating farmers, county names have been replaced by a letter A-F representing each of the six counties of Northern Ireland. Other enterprises: SC-B suckler cows through to beef; A -arable; N – no other farming enterprises; HR – dairy heifer rearing; SC – suckler cows; SC-S – suckler cows to store; S-B stores to beef; C-B calf to beef; B&B winter housing and feeding of cattle owned by another; P pigs; Po poultry.

Farmers marked \* provided medicine records from more than one veterinary practice or indicated during interview that they source medicines from more than one veterinary practice.

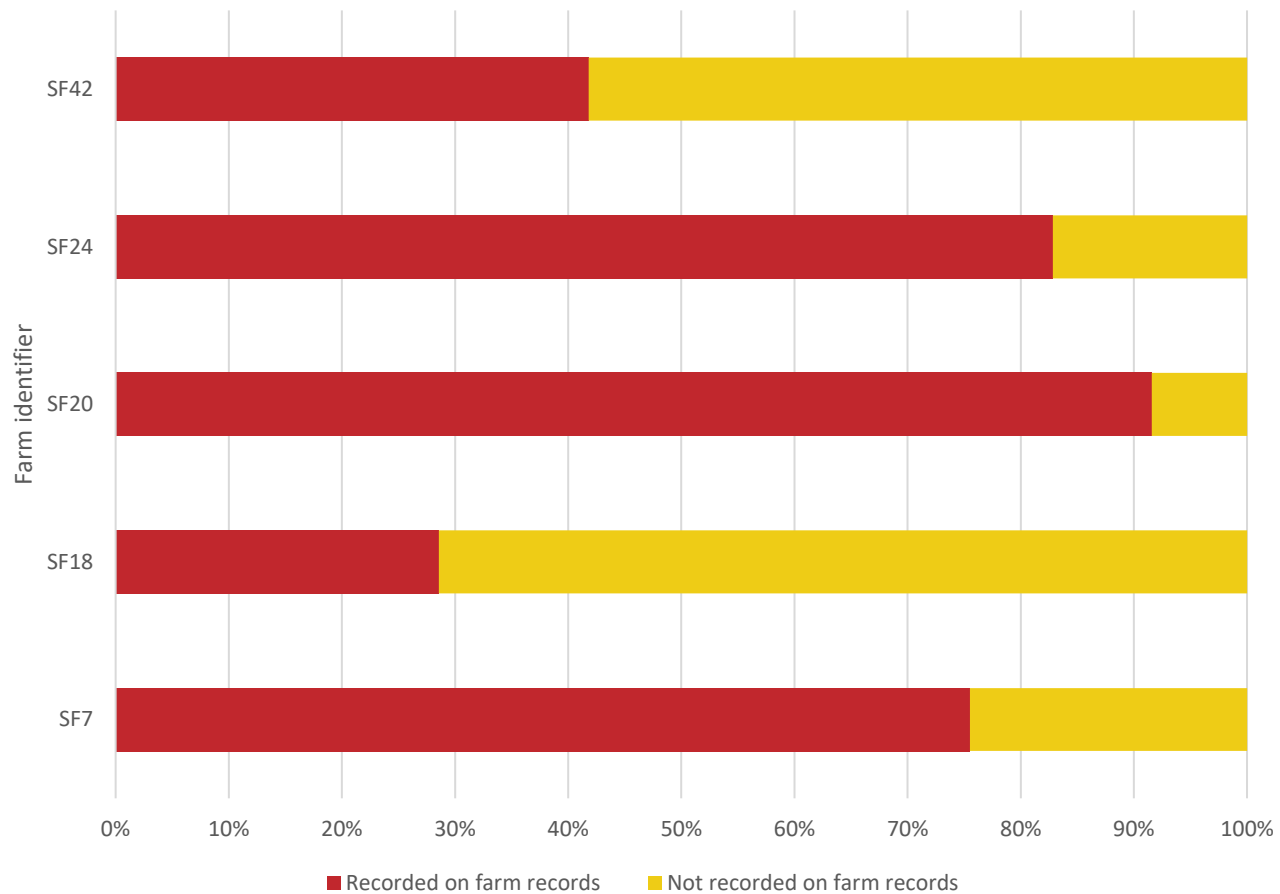


Figure three: The antibiotic purchases from the veterinary practice sales records and whether or not these were recorded in on farm records, displayed as a percentage of total antibiotic purchased, for the five (9.6% of the sample of 52) Northern Ireland sheep farms from which temporally matched paired records were obtained. On farm records recorded a mean of 44.9% less antibiotic than was recorded in veterinary sales records.



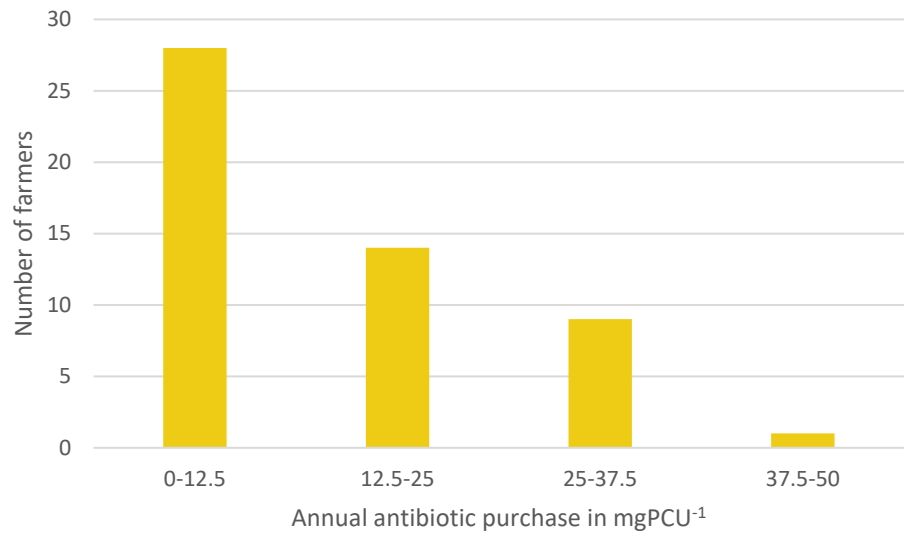


Figure four: Distribution of fifty-two Northern Irish sheep farmers' annual antibiotic purchase, measured in mgPCU<sup>-1</sup>.

Class of antibiotic	
Tetracyclines	40.1%
Beta lactams	29.5%
Aminoglycosides	19.3%
Macrolide	7.4%
Phenicols	2.2%
Sulphonamides	1.1%
Lincosamides	0.3%
Quinolones	0.1%

Route of administration	
Injectable	89.20%
Topical – spray	7.58%
Oral	2.09%
Ophthalmic ointment	1.11%
Intramammary	0.03%
Footbath	0.00%

Table three: The distribution of antibiotic purchased, by pharmaceutical class, and by the route of administration of the product by fifty-two Northern Irish sheep farmers.

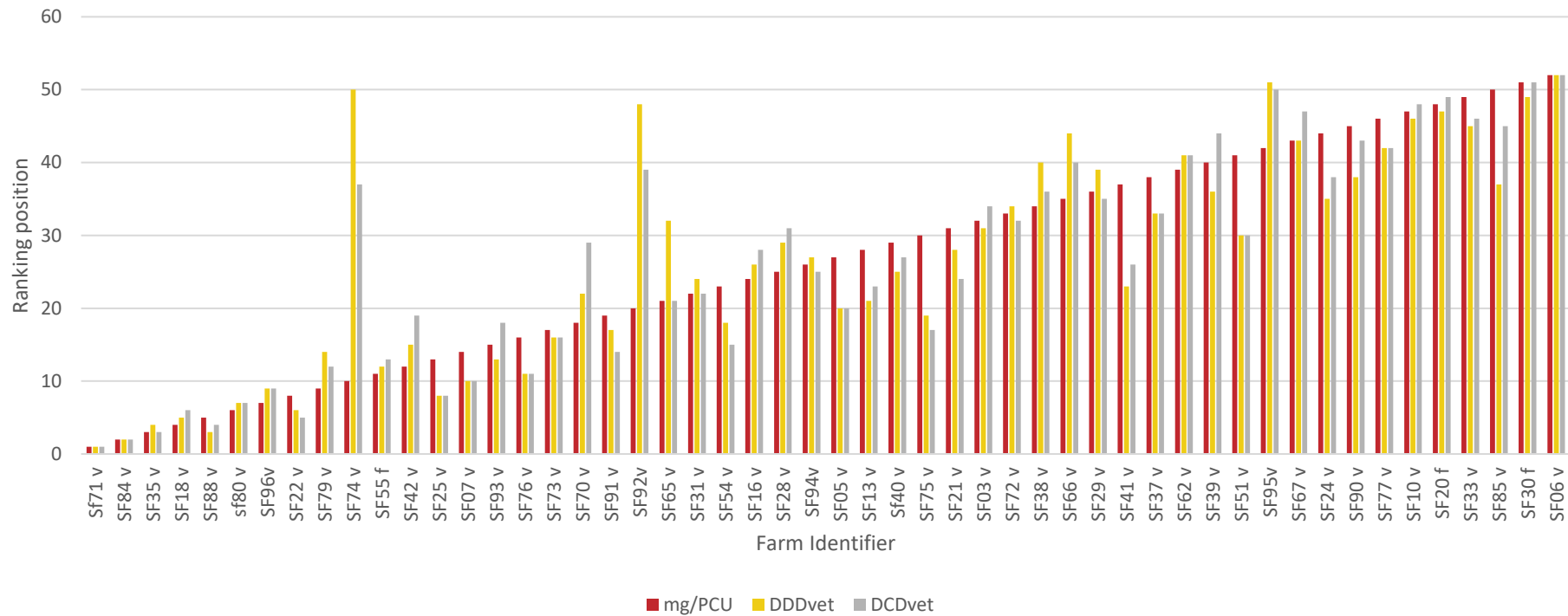


Figure five: The rankings of fifty-two Northern Irish sheep farmers based on differing metrics for antibiotic use: mgPCU<sup>-1</sup>, DDDvet and DCDvet. Results are displayed in increasing purchase volume, left to right, by the mgPCU<sup>-1</sup> metric.

Metric	Sheep farmer's unique identifier			
	SF74	SF92	SF29	SF6
mgPCU <sup>-1</sup>	3.2	8.55	17.71	45.29
mgPCU <sup>-1</sup> ranking	10 <sup>th</sup>	20 <sup>th</sup>	36 <sup>th</sup>	52 <sup>nd</sup>
DDDvet ranking	50 <sup>th</sup>	48 <sup>th</sup>	39 <sup>th</sup>	52 <sup>nd</sup>
DCDvet ranking	37 <sup>th</sup>	39 <sup>th</sup>	35 <sup>th</sup>	52 <sup>nd</sup>
Courses of injectable antibiotic purchased for lameness management*	493	65	107	232
Courses per adult ewe	2.05	0.88	0.31	1.66
Distribution of the classes of systemic antibiotic purchased for lameness control by each of the four farms as a percentage of total systemic antibiotic purchased for lameness control.				
	SF74	SF92	SF29	SF6
Oxytetracycline	25.0%	67.3%	42.5%	65.6%
Tilmicosin	0.0%	0.0%	0.0%	32.8%
Tulathromycin	75.0%	32.7%	2.3%	1.6%
Tylosin	0.0%	0.0%	55.2%	0.0%

Table four: Data from four farmers' records are presented showing their relative ranking position for each of the three metrics studied (lowest user to highest) and data on their antibiotic use for the management of lameness in their flock. \* Based on datasheet dose recommendations, or 10mgkg<sup>-1</sup> for tylosin, for a 75kg adult sheep as this product does not carry a licence indication for sheep usage in Northern Ireland.