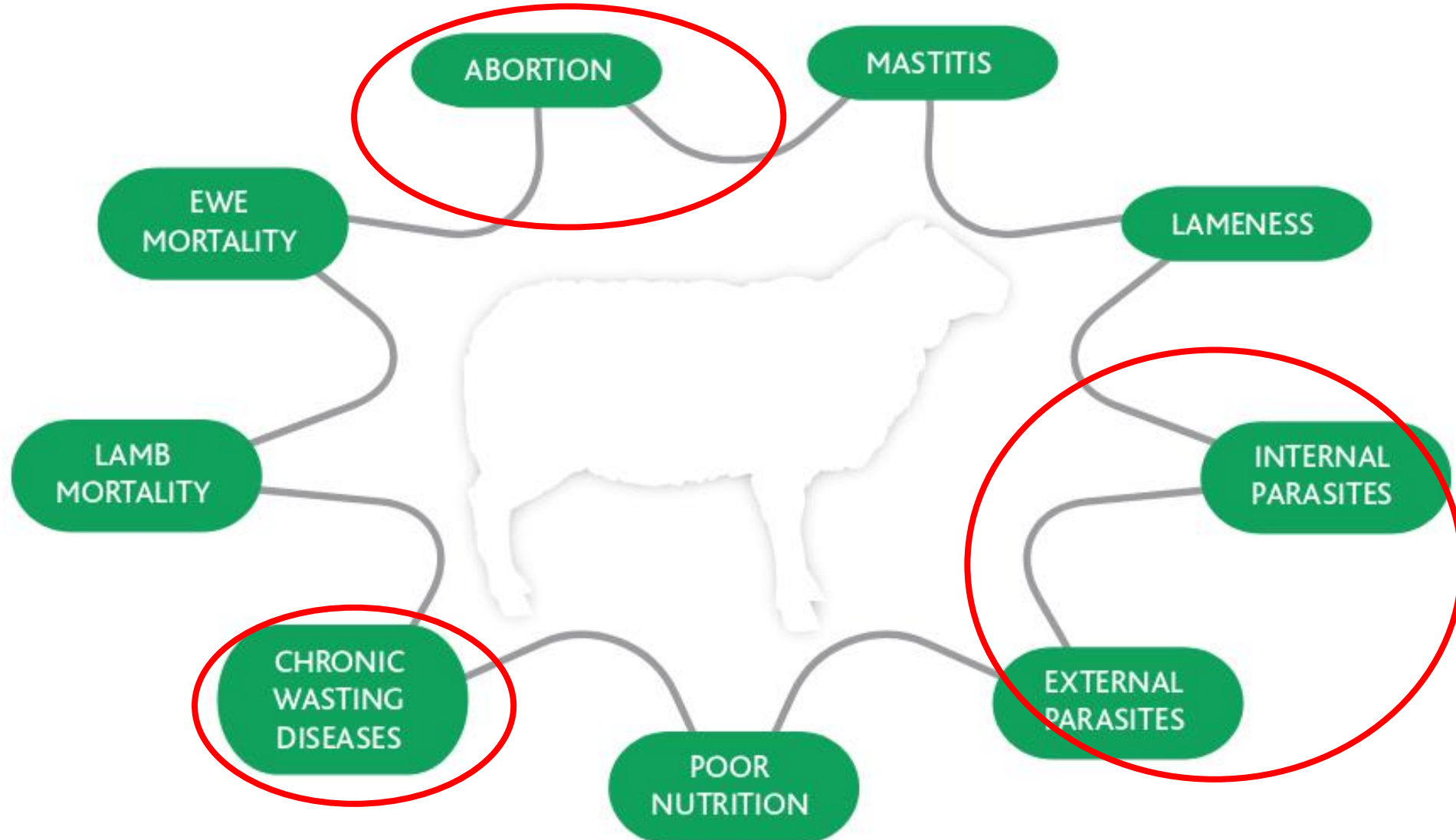


Sustainable Sheep Management

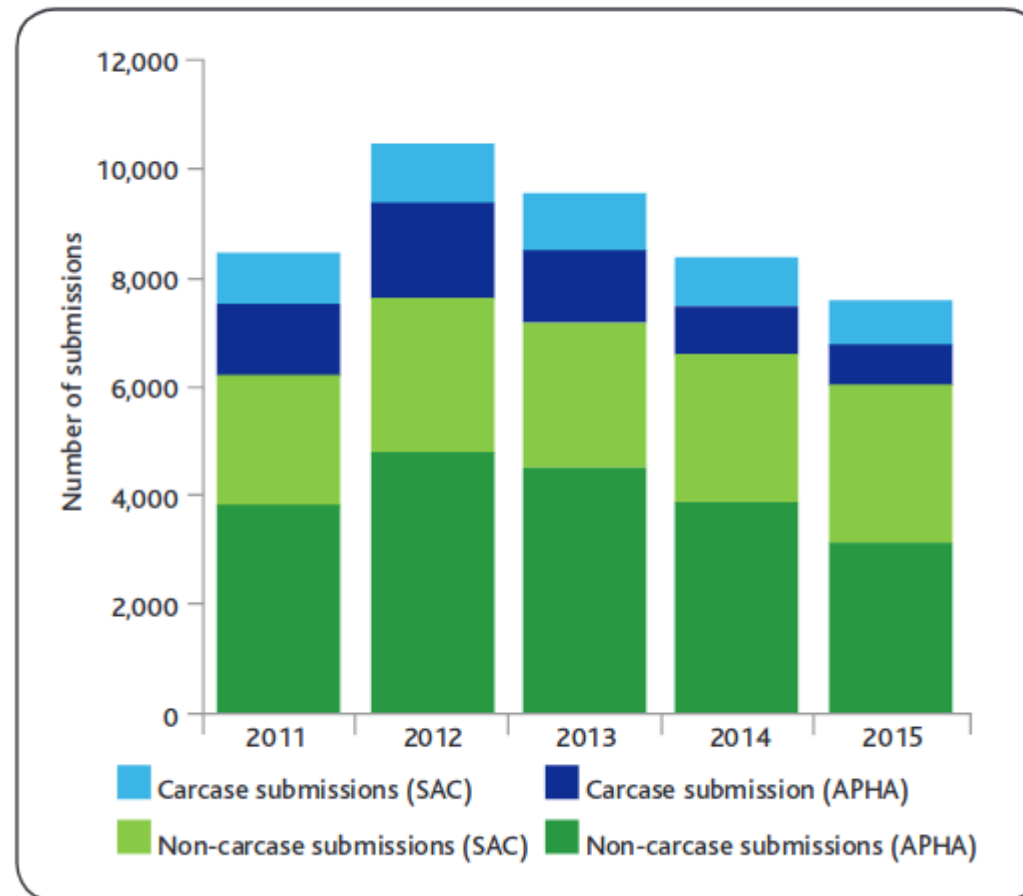
- My contention is that endemic disease is a much ignored inhibitory factor in sustainability
- This short PPT draws much from the Sheep Health and Welfare Report for Great Britain 2016/17

Major sheep health and welfare concerns identified by the Sheep Health and Welfare Group



Surveillance of Endemic disease

F . Sheep diagnostic submissions from 2011 to 2015

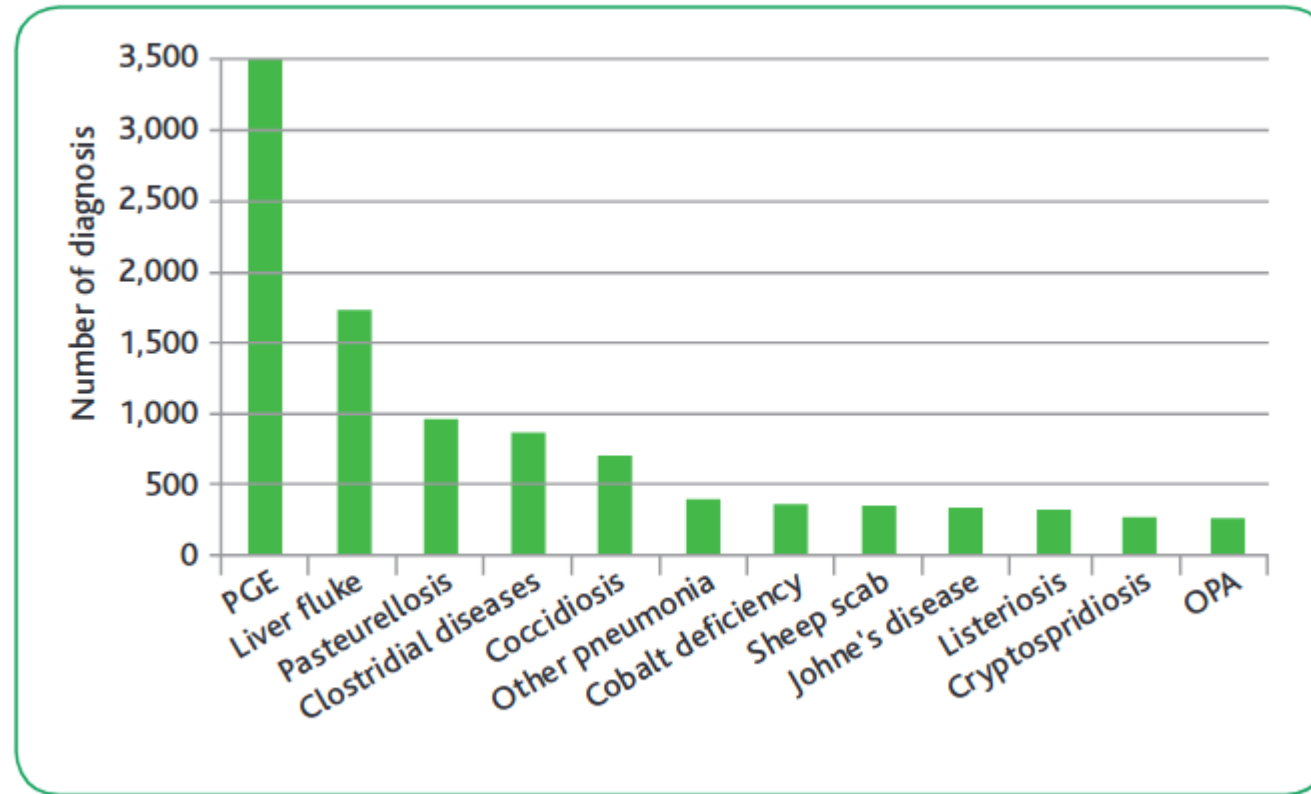


Source: Animal and Plant Health Agency, SAC Consulting Veterinary Services

At an “educated guess” this means approximately 2% of flocks are responsible for this surveillance. Is this enough?

Passive Surveillance - Results

i. The most commonly diagnosed diseases in sheep of all ages in Great Britain from 2011 to 2014



Source: Animal and Plant Health Agency

- The annual cost of gastro-intestinal parasites to the British sheep industry was estimated to be **£84 million in 2005**,
- i.e. using this estimate this spectrum of disease alone is reducing productivity by well over 5%
 - 1. Predominantly due to the effect of worms on production - let us be conservative and say 2%
 - 2. Likely to increase as the level of **anthelmintic resistance** increases.

Targeted surveillance of Parasite resistance

PGE

Anthelmintic	benzimidazoles (1-BZ)	levamisoles (2-LV)	macrocyclic lactones (3-ML) - Iv	Monepantel (4-AD)	derquantel and abamectin (5-SI)
Wales (no; flocks=47)	94%	68%	51%		
N Ireland (n= 158)	81%	14%	50%	0	

FLUKE

Mainly against TCBZ - confirmed in NI and Scotland - as yet no real idea of prevalence. No evidence of resistance to Nitroxynil and Closantel in NI study.

SCAB

Resistance to Moxidectin & Doramectin (second generation 3-ML) reported - as yet no real idea of prevalence.

All require changes in husbandry (resistant sheep?), treatments, & biosecurity practices

“Targeted Surveillance - schemes”

Membership of PSGHS by administration in August 2015

	Maedi Visna	Enzootic abortion	Scrapie monitoring
England	1,449	28	109
Scotland	810	247	61
Wales	458	1	28
GB	2,717	276	198

Approx
Penetration
By Holding

4%

0.5 %

There were no reports of classical scrapie in UK sheep 2015, -18, but 1 this year & there were 6 cases of atypical scrapie*

* Sheep with the ARR haplotype, which confers resistance to classical scrapie and is the cornerstone of genotype-based eradication programs, do not appear to be protected against developing atypical scrapie.

Abortion, (*& stillbirth and empty ewes*)

- Welsh study (2011) ~ ¼ of perinatal lamb losses due to infectious abortion, Cost to industry £24 Million ? = £1 for every ewe in country (NB I have quoted a lot of these! It's variation in outbreak & avoidable costs that have to be considered – if you like “insurance”)
- BUT.....we all know that a major determinant of productivity is weight of lambs sold/ewe mated. Storms can give rise to >20 ewes aborting
- **EAE (*C. abortus*) accounts for ~1/3 of all abortions with a diagnosis**
- Membership of EAE scheme approx., £350 for av., flock including annual tests i.e. ~ £3 /ewe.
- In Scotland some Buy in Scheme “clean replacements” and have tight biosecurity (not easy when you talk to vets!) or if not then vaccinate.
- (20 ewes at £3/ewe =£60! But can you get clean ewes? Do they cost more-not much yet)

Maedi-Visna

- In 2010, 726 GB flocks surveyed 2.8% positive (up to 15% in some areas & within-flock prevalence ranged 5% to 80% mean of 24%).
- Compared a similar survey 15 years previously, both flock & MV positive sheep up by approx x2
- Cost of scheme ~£300 to 400/av flock
- (NB Nothing is perfect – tests are never infallible but are getting better but several years ago annual breakdowns approx 5pa = 0.2%)

- There is no vaccine!

Conclusions

- 1. Management of disease is an essential part of sustainability.
- 2. It involves all aspects of husbandry not just pharmaceutical treatments and and vaccination to limit challenge.
- 3. Generally these require labour, infrastructure and so financial inputs, which are often in short supply.