



The Scottish View on Lyme Disease

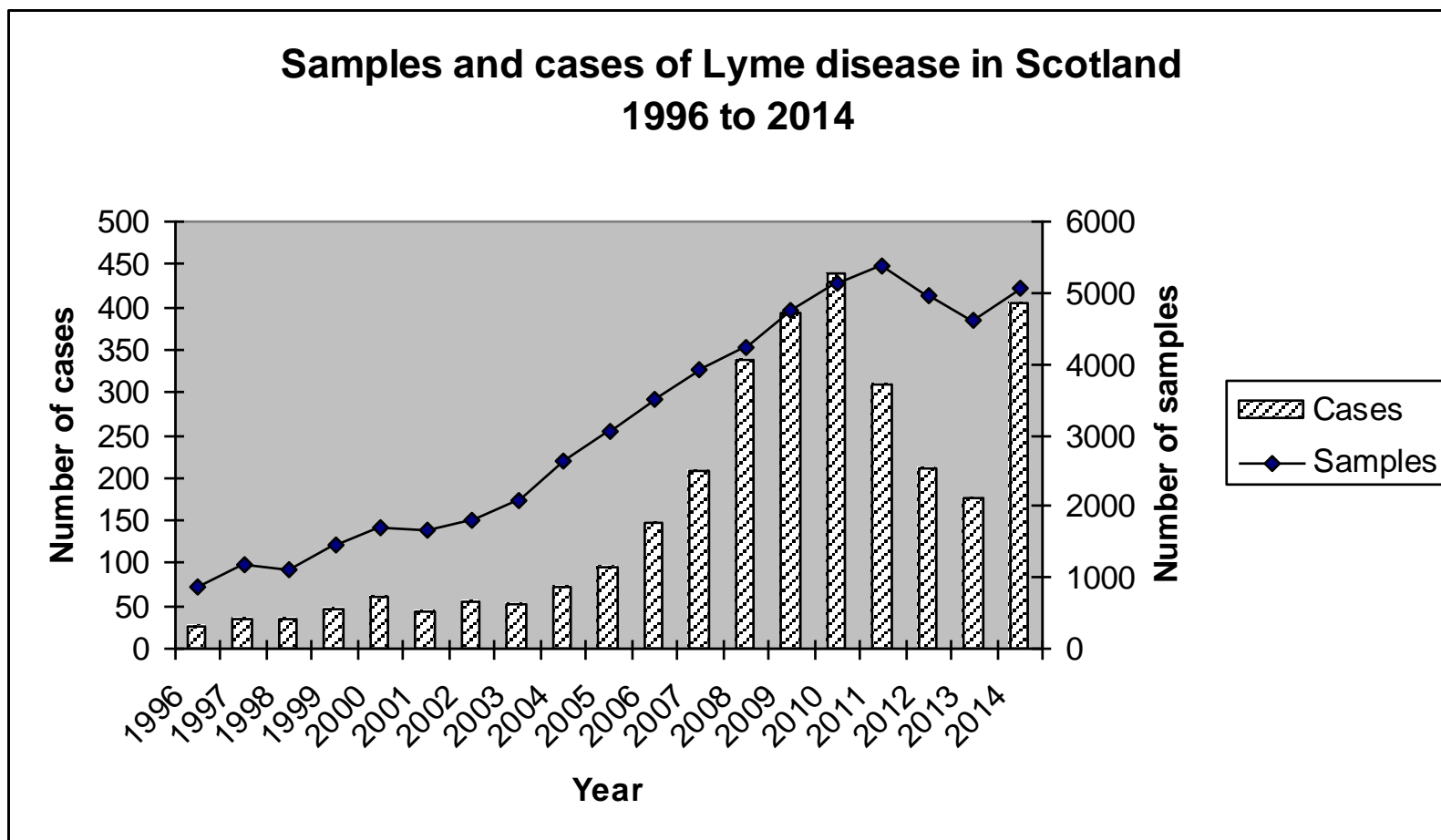
Dr Roger Evans

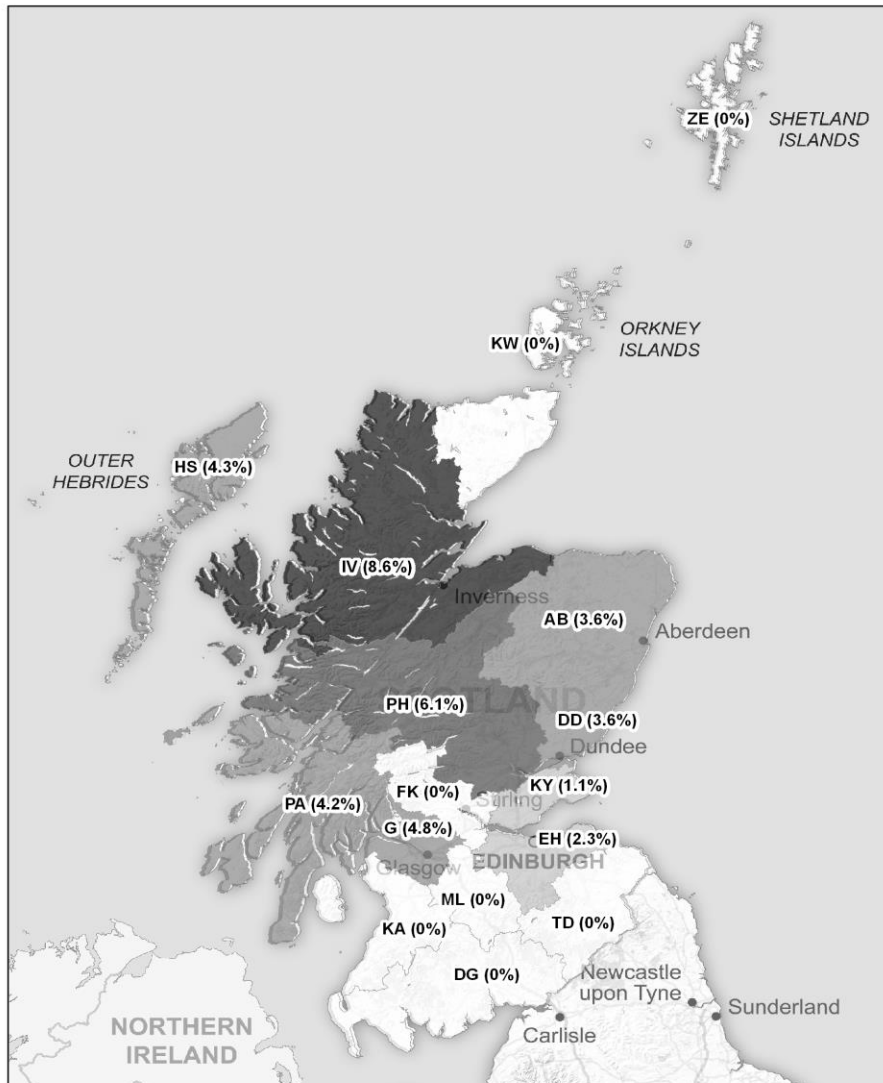
National Lyme borreliosis testing laboratory, Inverness

Highlands: 'tick heaven'



Development of Lyme disease testing at Inverness





- 2010-2011
- 1440 blood donors
- Screened by EIA
- EIA positive or equivocal samples confirmed by immunoblot (IB)
- 60/1440 (4.2%) IB positive

Munro et al (2015)
Transfusion Medicine
(in press)

Percentage of donors tested seropositive for *B. burgdorferi* antibodies by postcode area of residence

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Public health impact of Lyme disease?



- The public health impact of Lyme borreliosis in Netherlands 2010 (Hofhuis et al Parasites and Vectors (2015) 8:161)

Stage of Lyme disease	Incidence	Disability Adjusted Life Years	Cost of infection (Euros)
Erythema migrans	21 802	99	5M
Disseminated Lyme borreliosis	1 268	143	3.5M
Lyme-related persisting symptoms	905	1506	11.5M

What are we doing in Scotland?



- Cost
 - Measure accurate figures of cost of Lyme disease in Scotland
- Prevention
 - Reduce number of people who become infected
- Diagnosis
 - Improve current laboratory diagnosis

Cost of Lyme disease



- Highland GPs estimate only 20-40% of cases are referred
 - Current study examining GP records and cross referring with laboratory records to produce accurate figure of early LB
- Investigate human and financial cost of Lyme disease in patients referred to secondary care (hospitals)
- Extrapolate nationally

Prevention



- LymeMAP will be a real time map using apps and website to identify areas of risk in the Highlands and Islands for Lyme borreliosis
- Collaborative venture with NHS Highland, Vets, Epidemiologists, Geographers funded by European Space Agency
- Incorporates
 - Satellite information of temperature,

Diagnosis



- Earlier diagnosis
 - Current screening tests not sufficiently sensitive
 - Rash can present atypically
 - Some clinicians not familiar with erythema migrans
 - Developing novel EIA method to fill this gap in diagnosis

Diagnosis



- Need for markers to identify current/active infection
- Investigate the use of avidity immunoblot to determine marker(s) of past or current (early/late) Lyme borreliosis
- PhD thesis student final year

Diagnosis



- Future proposal
 - Discussions of collaborative project between Inverness and Porton Down
 - Investigate different methodologies for diagnosis of early and late Lyme borreliosis

Conclusions

- Lyme disease is an increasing problem
- No accurate figures for Lyme disease in Scotland
- Need for Lyme disease to be a notifiable disease
- Research and development should be appropriately resourced
- Common aim by all interested parties to reduce the morbidity of Lyme disease