The Foot-and-Mouth disease epidemic in Dumfries and Galloway, Scotland, in 2001

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The 2001 epidemic of foot-and-mouth disease (FMD), in the UK, caused by the PanAsia strain, a genetic ‘sublineage’ of the ME-SA topotype (Knowles and others 2001), and comprising 2030 confirmed outbreaks (Infected Premises: IPs), marked the end of the country’s longest inter-epidemic period in recent history. Several regions in Great Britain were affected, but the most severely affected were Cumbria (with 893 IPs), and the adjacent Dumfries and Galloway (D&G) (with 177 IPs).

The control of FMD in D&G initially followed the well-tried methods for ‘stamping out’ the disease, namely, slaughter and disposal of all susceptible animals on IPs and on premises considered to be at risk of being exposed to infection (so-called ‘Dangerous Contacts’), movement restrictions, veterinary inspections of livestock on premises adjacent to IPs, and veterinary epidemiological investigations to identify potential sources and spread of infection. These methods were supplemented, later, with a pre-emptive cull of all susceptible animals on premises contiguous to IPs, and culling of all small ruminants (essentially, sheep) and pigs on premises within a 3km radius of IPs, the rationale being that a pre-emptive approach would remove animals incubating disease, and also, possibly, remove sub-clinically affected animals (notably sheep, in which clinical signs can be mild) that might act as a cryptic reservoir of infection, as well as denying the virus new hosts. This policy resulted in over 18 000 cattle and 47 000 sheep being killed on the contiguous cull, and over 350 000 sheep on the 3km cull - in addition to some 61 000 cattle and 151 000 sheep slaughtered on IPs. (Pigs did not figure noticeably in the epidemic.)

The first confirmed IP in D&G was recorded on 1st March 2001 (over a week after the first confirmed case in the UK: Gibbins and others, 2001), with initial ‘seeding’ from Longtown Market, Cumbria, just over the English/Scottish Border. The epidemic peaked on 21st March, a day before the 3km, and two days before the contiguous, culls began. Preliminary studies of the Estimated Dissemination Rate (Miller, 1976) indicated that this first dropped below the value 1 around 21st March.

The response of veterinary field personnel was quick from the start, with report-of-suspect-IPs to end-of-slaughter times of less than a day being achieved within the first week of the epidemic. Responses to reported suspect cases and the necessary tracing of potential sources/spread were similarly rapid.

The last case was documented on 25th May 2001 (the last in the UK on 30th September). Post-epidemic serological surveillance with 10km zones around IPs, and

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more extensive regional surveillance in Southern Scotland, found no evidence of continued presence of FMD virus.

References

