

**An epidemiological investigation of the African horse sickness (AHS) outbreak in the AHS surveillance zone of the Republic of South Africa during 2011**

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African horse sickness (AHS) is an insect-borne (*Culicoides* spp.), highly fatal disease of horses caused by African horse sickness virus (AHSV). Four AHS control zones occur within the Republic of South Africa (RSA) and the outbreak investigated occurred within the AHS surveillance zone (AHS SZ) within the Western Cape Province of RSA. Outbreaks of AHS have occurred within the surveillance zone in the past, the most recent occurring in 1999 and 2004. The outbreak of AHS serotype 1 described here occurred between February and May 2011, which is during the late summer and autumn months and corresponds with the period of highest appropriate vector activity. The outbreak began in the small informal settlement of Mamre in the AHS SZ. The community keeps horses in communal grazing areas outside of the town with some animals roaming free within the town's confines. The initial detection was based on clinical and *post mortem* signs associated with acute AHS. The outbreak most affected Mamre but there were cases in other small settlements within a 20 km radius. In total there were 72 confirmed cases during the outbreak and a location specific incidence of the disease within Mamre itself reached 0.17 (95% conf. 0.13-0.22) as 56 of the cases occurred in this area. Total outbreak case fatality rate was 0.89 (95% conf. 0.79-0.95). Control measures implemented during the outbreak included equine owner education, movement control in the district and a ring vaccination campaign with OBP polyvalent AHS bottle 1 vaccine containing AHS serotype 1. The vaccination campaign influenced the extent and impacts of the outbreak and an estimated 95% coverage of equines was attained. The source of the outbreak was never confirmed although it is thought to be as a result of an unreported movement into the surveillance zone.