Situation Report: Lumpy Skin Disease in Bangladesh

Background

**Disease Information.** Lumpy skin disease (LSD) is a disease of cattle and water buffalo caused by a virus from the family *Poxviridae*, genus *Capripoxvirus*. Clinical signs include fever (<41°C), nodules on the skin and mucous membranes, ventral edema, depression, anorexia, rhinitis, conjunctivitis, excessive salivation and enlarged lymph nodes.¹

**Transmission and Epidemiology.** The principle means of transmission is by arthropod vector including mosquitoes, biting flies and ticks. Morbidity rates vary between 10 to 20% and mortality rates of 1-5% are expected. LSD is endemic in most African countries. Since 2012 it has spread rapidly through the Middle East and southern and eastern Europe.¹ Three countries in Asia have reported the first occurrence of the disease to OIE in 2019: Bangladesh (outbreak start date 14/07/2019), China (outbreak start date 03/08/2019), and India (outbreak start date 12/08/2019).²,³,⁴

**Initial Outbreak Investigation.** The first outbreak in Bangladesh was reported to the Department of Livestock Services (DLS) on 22/07/2019. Cases occurred in three upazilas (Anowara, Karofuli, and Patia) in Chattogram district of Chattogram division. An investigation revealed 66 cases in cattle with LSD clinical signs of 360 susceptible animals (attack rate of 18%) and no deaths. Samples were collected and tested positive for *Capripoxvirus* by real-time PCR at the DLS Central Disease Investigation Laboratory (CDIL) (Figure 1).

**Descriptive Epidemiology**

**Surveillance Methodology.** DLS has been tracking the disease spread across the country with a daily reporting system from the Upazila Livestock Offices (ULOs). Data on the number of new and total cases to date are compiled at the district and then division levels and shared with the Epidemiology Unit (Table 1). In addition, DLS is progressively introduction an electronic data reporting system called the Bangladesh Animal Health Intelligence System (BAHIS) which collects real-time data from upazilas; to date, LSD data is available from 13 upazilas in Dhaka division and 4 upazilas in Barisal division (Figures 2-3).⁵ Cattle and buffalo population are based on an agricultural census conducted in 2008.⁶

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¹OIE. Technical Disease Cards: Lumpy Skin Disease. 2017; Available from: https://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/World_Diseases/PDF/Disease_cards/LUMPY_SKIN_DISEASE_FINAL.pdf


⁵The number of upazilas reporting to BAHIS has been increasing gradually since August 2019. The cases shown in the epidemiologic curve only represent cases from those upazilas that reported into BAHIS during the specified time period and therefore the slope of the curve is affected both by an increasing number of cases in the reporting areas as well as an increasing number of upazilas submitting reports.


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Impact of the Outbreak

**Impact in Bangladesh.** LSD causes permanent hide damage, emaciation, reduced milk production, abortion, infertility, and death. The outbreak in Bangladesh is having a significant impact on the livelihoods of small-scale farmers, which make up the majority of cattle owners in the country. The cost of providing supportive treatment for 2-3 months during the recovery period is unrealistic for many of these low-income families.

**Regional Impact.** Traditional trade routes from India into Asia via Bangladesh make it likely that a significant number of cattle are entering the country daily from India and passing through Bangladesh to meet the demand for beef in Bangladesh as well as other countries in the region such as China (personal communication) (Figure 4).

**Response and Recommendations**

DLS is taking active steps to monitor and control the outbreak with messaging through posters, leaflets and awareness raising events. Other proposed initiatives include: (1) strengthening border enforcement to slow the influx of cattle from India, (2) initiating a risk assessment for determining a strategy for emergency vaccination with a goat pox vaccine that is currently available globally, (3) concurrently exploring the feasibility of expanding local goat pox vaccine production capacity, (4) providing supportive care to affected cattle with secondary infections and chronic illness, and (5) developing an extension-based herd health programme to improve awareness of prevention strategies among small-scale farmers.