**Ebola virus surveillance in pigs presenting for slaughter in Uganda**

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**Introduction**

Why Uganda?

Uganda has experienced five Ebola outbreaks with human index cases unable to account for their source of infection. Additionally, in the past 30 years the pig population in Uganda has increased by more than tenfold to meet growing consumer demand for pork. Recent media coverage has raised doubts on the safety of pork in urban markets (see below).

**Methods**

We performed repeated cross-sectional sampling of pigs presenting for slaughter during months when previous human Ebola outbreaks occurred in the country and over holiday periods when pork consumption increases. Wambizzi abattoir is the only registered pig slaughterhouse in Uganda and is a catchment location for pigs from many districts surrounding Kampala, the capital. This makes it ideal for collection of a large variety of samples, from a large geographic area. At least 157 pigs must be sampled at each of the four time periods, for a total of 628 pigs assuming:

- **Ebolavirus prevalence of at least 2%**
- **Diagnostic sensitivity of 95%**
- **Diagnostic specificity of 100% and**
- **Confidence level of 95%**

Secondly, to determine effective locations for implementation of future surveillance and mitigation measures, pig trader network analysis to map pig trade volumes and routes is being done in conjunction with slaughterhouse surveillance.

**Objectives**

- Determine if pigs in Uganda are infected with emerging and endemic zoonotic diseases – **Ebolavirus**, Henipaviruses, Hepatitis E virus, *Leptospira* spp., *Coxiella burnetii* and *Brucella* spp.
  
  1. At what levels?
  2. What are the risk factors for infection in pigs?
  3. Map pig trading routes, volumes and practices to identify possible surveillance and intervention points

**Results**

A total of 6,600 samples were collected from 667 pigs sampled between December 2015 and October 2016. Ten (10) samples were taken from each pig (blood, sera, feces, nasal swab, lung, liver, kidney, spleen, tracheobronchial lymph node, and uterus or epididymis) and collection of a nasopharyngeal flush from pigs with a temperature of 40°C or greater at time of slaughter. All samples were stored in duplicate. Biodead was collected from 658 (98.6%) of the 667 sampled pigs. Seven percent of pigs (n=46) had a fever (>39.8°C) at the time of sampling, indicating active infection at the time. Based on visual inspection, 35% of pigs sampled were exotic breeds, or improved breeds such as Landrace and Large White. Thirty-nine percent were crossbreeds and the remaining 26% were local breeds, characterized by small body size and poor growth characteristics.

**References**