Public Health Implications of African Swine Fever in Asia

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This is the Year of the Pig, a year to celebrate the porcine contribution to human nutrition and wealth.¹ But it has rapidly become a disastrous year for pigs in many parts of the world. Pigs are important for humans as they are very efficient at converting poor-quality feed into protein for human consumption. Pork has become the second most commonly consumed meat, providing over one third of world consumption. Due to their efficiency in converting feed to body weight and ability to survive with limited infrastructure, it is likely that the world pig population will continue to increase. That is, if they can survive this virus. Our world has approximately 1.5 billion farmers living on 2 hectares or less of land looking after crops and livestock, mostly in sub-Saharan Africa and Asia.² They care for most of the 1 billion pigs in Asia, a major source of protein, minerals, and vitamins. While they produce most of the food consumed in their regions, many of these farmers are undernourished living in a subsistence economy, with their livelihoods continuously vulnerable to climate change, as well as animal and plant pathogens.

It is almost 100 years since African swine fever (ASF) was first reported in Kenya in 1921. The cause of the disease is a large double-stranded DNA virus that can code for more than 160 proteins, of which many are nonessential for replication in cells but can have important roles in evading the host’s defenses. The virus is resilient and can survive in swill and carrion. Development of a commercial vaccine has proved difficult, and even when it becomes available, its distribution and costs are likely to be difficult impediments to wide usage.³,⁴ ASF can be contracted when pigs eat kitchen swill or carrion; and it can be spread by ticks and perhaps other blood-sucking insects. The virus does not affect humans, only pigs and related wild animals. It has a very high fatality rate, sometimes up to 100% of the herd. The only known control strategies are public health measures including the destruction of contacts (pigs), strict quarantine of herds, banning of kitchen swill feeding, and control of carrion from herds and wild boar populations.

In the year since the ASF epidemic became widespread in Asia, vast numbers of pigs have now died or have been culled, causing severe economic losses.⁵ In China, perhaps one third of the pig herd (500 million) have died leaving the humans lamenting the lack of pork in their traditional dumpling meal. The disease has spread across Asia from Mongolia to Tibet and Korea to Timor Lester. In Korea, the landmine-infested demilitarized zone is one of the most dangerous places on earth; yet a wild boar made it through, to bring the disease to South Korea. In Taiwan, the outbreak apparently spread from the mainland by the carcasses of dead pigs being washed up on the coast at the 500th anniversary of Columbus’ arrival in the New World.