From Inter-Governmental Conflicts To Administrative And Political Incompetence: A Summary Report Of The Streptococcus Suis Outbreak In Sichuan, People Republic Of China

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Abstract

This article examines the recent outbreak of Streptococcus suis in Sichuan province, China and its impact on the Hong Kong Special Administrative Region. Drawing on primary sources in both Chinese and English languages, it investigates the scale, patterns and impacts of this public health crisis. Through a chronological discussion of the crisis, this study discusses the reasons for the frequent outbreaks of epidemics in China, the medical and crisis management strategies in China and Hong Kong, as well as the problems of public health surveillance in both places.

INTRODUCTION

The recent outbreak of Streptococcus suis in Sichuan province, China was once again thrown to the media spotlight due to epidemic outbreak with significant regional and global implications. It was reported that the local hospital in Ziyang city in Sichuan received 20 patients with mysterious severe infection in June 2005 ([9,12,13]). All patients were said to have close or direct contact with pigs and shown to have wound on their bodies at the time of infection ([1,9,29]). Streptococcus suis serotype 2 was later identified to be the primary cause of infection ([2,12,13]). The Chinese local, provincial and national health authorities seemed to be very successful in containing Streptococcus suis outbreak throughout June and July. No further new infection and related-death case was reported in early August ([2,3]).

As far as the sources are concerned, this report relies on newspapers, news bulletins and periodicals in both Chinese and English languages, collected between the period of July 25 (when the Chinese officials first notified the media) and August 10 (until times when no more new case was reported). Because the Chinese government has not released all the reports about the Streptococcus suis outbreak in Sichuan, these news materials give us valuable information about the scale, patterns and impacts of the crisis as well as the responses of the Chinese national and provincial authorities and of the Hong Kong. All these details are unavailable in any other sources, and it is these issues that throw light on the successes and failures of the public health surveillance in China and Hong Kong.

Beginning with a chronological account of the Streptococcus suis outbreak, the following analysis explores and suggests the reasons for the frequent outbreaks of epidemics in China. This is followed by a discussion of the medical crisis management strategies in China and Hong Kong, as well as the problems of public health surveillance in both places.

THE OUTBREAK OF IN SICHUAN (JUNE 24–AUGUST 5, 2005)

On June 24, 2005, the local hospital in Ziyang city in Sichuan received 20 patients showing symptoms associated with severe infection, meningitis and Toxic Shock Syndrome ([9,12,13]). There were 9 deaths and the rest were hospitalized throughout the summer ([1,9,29]). Some patients died as soon as 19 hours after the first identified symptom ([14]). All the patients were either pig farm workers or worked closely with pigs. They all had wounds on their bodies at the time of admission ([1,9,29]). However it was until July 21 that the outbreak of Streptococcus suis was reported in the Chinese mass media ([2,20]). The Chinese government informed the World Health Organization of the outbreak on

July 22 and the Hong Kong government on July 23 ([1,4,10,11]). By then there were 58 cases of human infection with 17 deaths and 11 districts in Sichuan were affected killing over 644 pigs ([1,2,10,11,20]). The situation was bought under control by early August and no new case was found. There were altogether 214 cases of human infection with 39 deaths, and no human-to-human infection was identified at the time ([2,3,11, 12, 34, 35]).

– A COMMON PATHOGEN FOR PIGS

Streptococcus suis, a gram-positive bacteria, is of great importance for the pig industries as it is a pathogen which often embarks epidemic in pigs, even though it can be found from wild boars, horses, dogs, cats and birds ([4,5,6,7]). Until 1995, 35 serotypes of Streptococcus suis were identified ([5,6]) while serotype 2 is the most common one found in different outbreak cases ([7]). Streptococcus suis outbreak is thought to occur due to close contact with infected pigs' sows ([8]), nose ([6]) and faeces ([8]). Suboptimal conditions such as over-crowded environment with inadequate ventilation ([4,6,]) and dirty soil ([8]) also trigger the outbreak.

The pathogenesis of Streptococcus suis infections is not known. Streptococcus suis is usually harboured in the tonsils of the infected animals upon successful colonisation ([6,8,]). However, only a small number of infected animals develop symptoms like septicaemia and meningitis whereas the rest may remain asymptomatic as healthy carriers ([8]). It remains unknown as to why only some piglets would be affected by the bacteria whilst the others are not ([8]).

Human infection with Streptococcus suis is considered to be rare ([6,29]). However, evidence suggests that it may be a relatively common causative pathogen of human meningitis in some parts of South East Asia where pork is the major meat of consumption ([4,]). There are only two types of Streptococcus suis infectious to human, namely the most common serotype 2 (found in the recent outbreak in China) and the serotype 14 ([6,8,]). Human infection occurs via cuts and abrasions when handling infected pigs. Therefore farmers, butchers and workers of processed meat manufacturing industry are typical victims ([1,4,6,7,]). People handling and consuming the infected non-thoroughly cooked pork also have a chance of being infected ([1,6,]). Once infected, fever, nausea, malaise, headache and vomiting may occur after a few hours to few days of incubation period ([1,4,]). Meningitis, septicaemia, endocarditis and deafness can happen in severe cases ([1,4,7,13,]). Toxic Shock Syndrome as found among some Chinese patients in the recent outbreak in Sichuan is caused by delayed medical treatment with the possibility of causing severe systematic organ damage and coma ([4,7,12,13,]).

THE CHINESE GOVERNMENT'S RESPONSES TO THE OUTBREAK

Shortly after the Streptococcus suis outbreak in June 2005, the Sichuan provincial government kept quiet with the situation ([20,21,]). Provincial government neither notified the media and the public regarding to the matter nor provided any intervention support to the farmers and medical staffs in hospital in preventing further intensification of the outbreak ([21,]). When large numbers of patients flocked to the local hospitals across Sichuan in July, the national media recognized the severity of the crisis. All the provinces immediately banned the import and sale of the frozen pork products from Sichuan ([23,25,]). By then it was beyond the provincial government's capability to control the situation, and the central government in Beijing had to intervene ([21,]).

Compared with the previous experience of dealing with the SARS and avian influenza, the central government was more determined and efficient this time ([27,]). It sent a team of medical experts to Sichuan and delivered large amounts of vaccines and drugs to the affected areas with desperate effort to control the epidemic ([21,27,]). It also implemented immediate control measures such as stamping out, quarantine, screening, control of human movement in the countryside, and zoning ([28,]). Other provinces also banned and recalled all the Sichuan produced pork products from the market as precautious measure ([23,25,]). These effective measures helped contain the outbreak and there was no reported case of infection in early August. After the crisis, two provincial and four regional/rural government officials were sacked for their administrative failure ([3,26,]).

THE HONG KONG GOVERNMENT'S RESPONSES TO THE OUTBREAK

By comparison, the Hong Kong government failed to come to grips with the Streptococcus suis outbreak in Sichuan and its impact on the system of pork supply in China and abroad. The outbreak was reported in the Hong Kong media on July 24, a day after the Hong Kong government was informed of the crisis by the Chinese counterparts. Donald Tsang, the newly appointed Chief Executive of Hong Kong expressed concerns over the outbreak in Sichuan ([15]), but York Chow, the Secretary for Health, Welfare and Food insisted that the

frozen pork products from Sichuan were safe for consumption in Hong Kong. Chow suggested it unnecessary to ban the import of pork products from Sichuan because there was no case of human-to-human infection, and there was no scientific evidence indicating that frozen pork could be a medium for the disease transmission ([16,17,22,34]). Chow further pointed out that there was no international precedence of banning pork products from China due to the Streptococcus suis outbreak, and that a ban would jeopardize the reputation of Hong Kong being an international free-trade city ([16,22]). At the time of the outbreak, Hong Kong imported more than 18,000 tons of frozen pork from Sichuan, of which about 27% came from the most severely affected area ([22]). Nonetheless, all these imports only makeup 20% total of frozen pork product available on the market ([16]).

The local public felt rather frustrated with the insensitivity and incompetence of the Hong Kong government officials. The mass media and the local politicians severely criticized the Health, Welfare and Food Bureau for its failure to impose a ban on pork products from Sichuan and overly relying on the central government to lay out strategic intervention ([18,22,23,24,25]). What made the situation worse was that the Hong Kong government previously banned all the beef products importation from the whole countries of Japan and the United States after hearing the outbreaks of mad cow disease, but it did not dare to apply the same policy to China due to political pressure. ([18,19]). It was only until the Chinese central government banned the export of pork products from Sichuan to Hong Kong and abroad on July 28 that the Hong Kong government survived yet another political crisis ([22,23,34,35]).

A CLOSER LOOK AT THE OUTBREAK IN CHINA

The Streptococcus suis outbreak in Sichuan exposed the vulnerability of the Chinese public health system. In addition, it also revealed serious problems in relation to the government management and policy toward rural area of China. Based on the recent outbreak, the present article would like to raise a few points, which are of great importance when trying to explain the reasons behinds the outbreak of the Streptococcus suis epidemic.

In the recent outbreak, Sichuan provincial and rural government must take the blame for its failure to handle the crisis immediately. Government officials' lack of responsibility, poor attention to work and low awareness to urgency were blamed the most by public and media for causing the recent devastating outbreak and heartbreaking lives-losses ([20,21,22,]). In the past, whenever a widespread infectious disease or food poisoning outbreak occurred and dead were resulted, officials were often being sacked from their positions by seniors in the central governments consequently. For the sake of protecting their positions, many provincial officials often prefer to ignore whatever matters that may held them accountable rather than appealing to the central government for help, as shown in this recent outbreak ([21,33,]). This policy of denial reflected a culture of collective irresponsibility in the Chinese official bureaucracy. It was only when the national media reported the outbreak that the central government had to step in and implementing strategic interventions to prevent the further escalation of the disease outbreak.

Absence of effective public health surveillance and failure to implement an efficient properly–prepared public health infrastructure to deal with immediate epidemic threat may have also contributed to the recent Streptococcus suis outbreak in rural Sichuan of China. From initial ignoring and underestimating the severity of the matter to later the covering up from media, it clearly showed that great many Chinese government officials (especially those in rural districts) are not readily trained and adequately equipped to handle matter of this nature ([21,22,30,]). With the desperate effort of rural and provincial government officials to cover up information and decades of health service neglect in rural districts, hospitals are simply unprepared and often overwhelmed by various acute epidemic threats ([30,33,]).

On the other hand, medical service in China often requires the user to pay for the service, many farmers are just simply too poor to afford medical treatment ([30,]). Therefore, it is not surprising to see many people in rural China would often retrieve to self-treatment via buying drugs over the counter and choose to wait until time when medical treatment becomes an absolute necessity before actually seeking for medical assistant ([36,]). Prolonged suffering may be the primary result of delaying medical attention; it may also mean increasing mortality and enhancing further spread and transformation of diseases ([30,36,38,]).

Besides the failure of the government officials in handling crisis, farming malpractice was also thought to be one of the factors attributing to the Streptococcus suis outbreak ([29,]). The farming malpractice by farmers is so common nowadays in China that it is pretty much like a epidemic time bomb

waiting to explode. Farming malpractice is in turn driven by a variety of causes these include, but not the least, the inability of farmers to meet with increasing market demand, poor knowledge and education among farmers, and persistent poverty problem.

The increasing overpopulation of farming animals creates a favourable environment for the pathogens. As there is a huge demand for pork products in China and abroad, Chinese pig farmers have to increase the supply by introducing foreign species for mating and using steroid (21,). However, the ever-expanding pig population was not accompanied by the increase of physical space in the farms. Therefore, suboptimal conditions of poor housing with inadequate ventilation and hygiene created an "optimal breeding ground" for the bacteria to harbour and develop, enhancing the possible development of animal epidemic. Inadequate housing also forced farmers to live closely with farming animals under a poor and unhygienic environment and thus increase the likelihood of animal pathogens transmission from livestock to human as well (4,12,33,38,). On the other hand, the abuse use of steroid may also cause suppression of pigs' immune system, making them vulnerable to many different pathogens. Hence, also increase the likelihood of animal diseases pandemic among farming animals (21,33,).

Another form of farming malpractice blamed for the cause of the epidemic was the inappropriate use of human antibiotics. Farmers in rural China often have little to no access in acquiring basic health related knowledge and skills to protect themselves and their livestock against various diseases (29,). The misuse of human antibiotics and steroid by pig farmers in Sichuan is just one of the examples (32,33,). Many farmers often know nothing about disease transmission and preventive medicine; they often assume antibiotics to be an "omnipotent super-wonder-drug" for curing diseases and steroid to be the "amazing meat boosting agent" used to fastening growth and maturation for their livestock (21,33,). However, the cost associated with the use of appropriate veterinary medicine is just too high for many farmers who are already living under poverty in rural China to afford. Therefore, many use expired human antibiotics, a cheaper alternative available almost everywhere in rural China, to treat sick animals as well as to prevent animals from getting sick (21,). As a result, besides being useless in curing sick farming animals, human antibiotic-resistant bacteria were also created, making treatment for animal-pathogenic infection in humans increasingly difficult as well (14,33,). This may also partly explain the reason behind the failure of multiple-antibiotic treatment among some patients as experienced by medical staffs during the recent outbreak (14,).

The persisting poverty problem in the rural agricultural districts is often the very underlying factors of causing many widespread uncontrollable epidemic outbreaks in the past (30,), and it is especially noticeable in the recent Streptococcus suis outbreak too (21,33,). Although China is moving toward modernization and strengthening its economic power in recent decades, the rural population has not enjoyed the benefits of this modernization process at all and many farmers in rural areas are still living in absolute poverty comparing to the rapid developing urban city counterpart (36,). Many farmers are so poor that they cannot even afford to meet the basic needs of housing, clothing, foods, medicine and education, let alone meeting the cost and tax associated with farming (36,37,38,). Notwithstanding, the Chinese government often ignores the needs of farmers, offering them with little to no support whatsoever (33,). Poverty also denies farmers the chance from improving their agricultural technology and hence yielding a better farming result. Thereby, rendering them enter into a cycle of poverty (36,). Lack of economic opportunities for farmers in remote areas, the gradual collapse of medical facilities in the countryside, and the lack of government subsides for agricultural sectors contribute to rural poverty (30,33,36,37,38,). Whenever there is an epidemic outbreak, the rural population are always the victims.

On the other hand, the earning of farmers is often under the mercy of business sectors that acquire their products in extremely low cost whilst distribute their products for a very luscious profit. Since many farmers are often poorly educated with little knowledge of marketing mechanism, they simply have less bargaining power against unfair trade deal, besides contributing to the poor farming practice and neglect of self-care as aforementioned earlier. As a result, allowing the continuation and intensification of poverty problem in the rural China. It is also because the poverty problem that, for many farmers, livestock is their valuable asset and investment and killing sick animal is simply not an option (33,). By fastening the growth and maturation of pig via the use of steroid in this case, farmers could sell the pigs before they fall ill or died from their illness. However, for those dead pigs that do not live up to the time of maturation, farmers often choose to eat the dead animals themselves and

fall ill consequently as indicated by some of the infection cases in this outbreak scenario ([21,33,]). Some farmers may go as far as selling the dead animals through illegal channel as well ([33,]).

THE IMPACTS OF THE OUTBREAK ON HONG KONG

In Hong Kong, the lack of response to the Streptococcus suis outbreak in Sichuan reveals several administrative problems between the Hong Kong and Mainland Chinese governments. First, there is lack of public accountability at all levels of the Hong Kong government after the SARS epidemic in 2003. Since a number of senior government officials were forced by the public to resign after their failure to handle the SARS, the current leaders of Hong Kong seem to subscribe to a culture of collective irresponsibility. As a Cantonese saying goes, “Doing more makes more mistakes; doing less makes less mistakes; doing nothing makes no mistake”. This kind of mentality and administrative culture preclude the need to implement an institutional mechanism responsive to any crisis. In addition, the Hong Kong government assume that the public do not dare to criticize and challenge the central government in Beijing. Therefore, the leaders of Hong Kong avoid making any remarks and policies critical of the Chinese central and provincial governments ([21,22,]).

Second, most of the Hong Kong officials are not familiar with the form of governance in China. Nor do they have experience of dealing with their Mainland Chinese counterparts over public health issues. Whenever there is an epidemic or food poisoning outbreak in China, the Hong Kong government is always passive and incapable of implementing any immediate crisis management policies ([24,]). It is especially truth when these crisis management policies may affect the economical interest and reputation in all level of the Chinese government.

Further evidence of this ambiguous relationship between the Hong Kong and Mainland Chinese governments can be found in the management of the heavily polluted and toxic water imported from the East River (Dongjiang) of Guangdong province to Hong Kong. Coinciding with the Streptococcus suis outbreak in Sichuan, the Water Supplies Department in Hong Kong found drinking water from the East River to be dangerously polluted (The Hong Kong government began purchasing the East River water from the provincial government of Guangdong since 1969, and over 60% of domestic water in Hong Kong is imported from the East River). The Guangdong provincial officials denied the criticism and accused the Hong Kong Water Supplies Department of releasing faulty scientific data and causing public panic. Under strong political pressures from Guangdong, the Hong Kong Water Supplies Department were forced to make a public apology or clarification to the provincial officials ([32,]). It is in this submissive political environment that the Hong Kong government, so fearful of the Mainland Chinese officials' bullying retaliation, decided not to ban the import of pork products from Sichuan during the Streptococcus suis outbreak ([23,24,]). As a result, the Hong Kong business sectors such as meat retailers, supermarkets and restaurants were forced to take the initiative step by stopping the sales of any Sichuan pork products in order to regain Hong Kong consumers' confidence in pork consumption, besides protecting business interests ([11,]).

CONCLUSION

As China is embracing the stronger economical growth while integrating itself into the global economy, there is an increasing flow of people and goods from China to the rest of the world. This highly globalized and mobilized environment also facilitates the spread of diseases and troubled food products. Although the Chinese central government is aware of this issue, it is still beyond its ability to implement an effective public health system at the national and regional levels. As the 2008 Olympic Game is approaching, the Chinese government has yet to find a comprehensive solution to the frequent outbreaks of epidemics. Otherwise, China will not be a safe environment for its citizens as well as for athletes and tourists from around the world ([36,]). To build a nationwide public health surveillance system and to implement an independent food monitoring system may be the good steps in the right direction towards creating a healthy society. This should be followed by the improvement of educational and medical facilities in the countryside, the increase of public and private investments in remote areas ([30,36,]), and the development of an independent and critical mass media.

Hong Kong, claiming to be China's gate to the world and the world's gate to China, must be assertive in defending its public health system and making a correct political decision based on available scientific information even at the risk of being criticized by the central and provincial officials ([31,]). Otherwise, the so-called “one country, two systems” formula is only an illusion and Hong Kong would become the gate of Chinese epidemics to the world as seen in the spread of

SARS from China to Southeast Asia, Europe and Americas in 2003.

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