Swine Flu and Industrial Hygiene

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Introduction

Swine flu is the present focus of the world. It affects millions of world population and result in many social impacts. This disease is caused by the novel H1N1 influenza virus infection. The main manifestation of H1N1 influenza is the acute febrile illness with respiratory signs and symptoms. The severe infection can result in lower respiratory tract involvement, respiratory failure, or even death. So far, thousands of people die of this new emerging disease. No doubt, the disease has already entered the industrial work for months and many workers are at risk of contracting the infection. In this short essay, the author discusses the industrial hygiene concern for swine flu.

Swine Industrial Concern

The risk of the workers in the swine industry is widely mentioned. Gray, et al, noted that swine professionals, especially those who work in large confinement facilities as well as their non-swine-exposed spouses, had increased risk of zoonotic influenza virus infections. The need of pandemic surveillance and in antiviral and immunization strategies among swine worker is also confirmed by Myers, et al. Gray and Kayali underlined the importance of including swine workers in the preparedness plan for fighting with pandemic swine flu. They concluded that the best approach to this problem is use of protective gears, and establishing educational, surveillance and appropriate vaccination programs. Indeed, Gray, et al, had mentioned the possibility of the new reassortant swine influenza (H1N1) virus before the existence of the real epidemic in 2009.

Focusing on the risk of several group of swine workers, Myers, et al, reported that farmers had the strongest indication of exposure to swine H1N1 virus infection, followed by veterinarians, and meat processing workers. In fact, workers at risk are mainly those who are in close contact with infected animals (live or dead), with aerosols, and dust or surfaces contaminated by animal secretions. The specific concerns on industrial hygienic aspects for each group of swine workers are listed in Table 1.

In addition to the workers, the infrastructure setting within the industrial site should be well managed since pathogen movement among these facilities, release to the external environment, and exposure to farm workers exist at present. The “good farming system” is proved to be more biosecure and biocontained than the backyard or small holder operations. In the farm, air ventilation, brightness and light as well as humidity control must be completely designed to decrease the risk of colonization of the pathogen. There must also be a good waste management system within the farm. The control of junction area between interior and exterior of the farm, and the transitional zone, by setting a specific place for infection control purposes is suggested. An area
for cleaning, washing and bathing for everyone who passes the transitional zone should be provided. Location for animal feeding operations is another point to be concerned. It is suggested that co-location of swine and poultry concentrated animal feeding operations on the same site should be avoided.\(^1\) Saenz, et al, believed that an influenza epidemic due to an emerging virus could be locally accentuated by the presence of confined animal feeding operations in the community.\(^1\) Also, a good quality management system such as the system recommended by Hazard Analysis and Critical Control Point (HACCP) must be implemented. The system is required for proper management of the whole process, covering everyone and all activities within the pig farm.

### Non-Swine Industrial Concern

Apart from the swine industry, the pandemic swine flu also affects other industries. It should be noted that there are numerous workers working in the same place in an industrial site. This can be a good place for dissemination of the germ. Indeed, it is confirmed that many industrial workers live in crowded conditions and do not have access to medical care and this is the main factor leading to the possible outbreak of respiratory tract infection.\(^1\) This is also true for the case of swine flu. Indeed, there are many outbreaks of classical influenza in industrial factories.\(^13\)\(^14\) Therefore, the industrial factory is an important focus in disease surveillance and control in the present pandemic swine flu. Besides the standard industrial hygienic principle,\(^15\) the special implementation of infection control system must be done. The hygienic education to all workers is the very first but useful thing. The explanation of the correct pathogenesis and self-prevention practice to the workers can help decrease the rate of infection. The preparedness of a place for hand washing, mask wearing and decontamination will be helpful. In case that there is an emerging index case, the patient must be isolated and skipped from work. The factory should be closed for decontamination.\(^1\)

### References

2. Gray GC, Kayali G. Facing pandemic influenza

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**Table 1:** Important aspects for swine industrial hygiene for various groups of swine workers.

<table>
<thead>
<tr>
<th>Group</th>
<th>Details and Comments</th>
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<tr>
<td>Farmers</td>
<td>All farmers in the farm have to be well trained before farming work. The training course must cover the hygienic practice to decrease the risk for getting zoonosis. A regular health checking program should be provided to all workers. It is suggested that the ill farmers have to skip from farming work.</td>
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<tr>
<td>Veterinarians</td>
<td>Although veterinarians are considered to be a high educated and skilled swine worker, they pose a similar risk to other groups of swine workers. During veterinarian practice, the veterinarian has to strictly follow the guidelines for infection control and universal precautions. Hand washing is the basic rule before and after practice.</td>
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<tr>
<td>Meat processing workers</td>
<td>The hygienic education for the meat processing workers is very important. These groups of workers have to directly contact with several secretions from swine. Self-protective devices such as mask and cap during work are required. Hand washing before and after meat processing is the important thing to be repeatedly educated.</td>
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