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The lessons of SARS

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Severe acute respiratory syndrome (SARS) has caused an unprecedented havoc throughout the entire island. At the time of writing, there is still no sign that the disease has been brought under control. Watching its spread is like reading a textbook of epidemiology, showing all the elements of a host-parasite relationship when a pathogenic agent with a strong ability to transmit invades a virgin soil, that is, a population lacking effective herd immunity. It is a great lesson conducted by Nature. Although not entirely identical, the SARS situation looks like a re-enactment of the invasion of Faeroe Islands by the measles virus in 1846, only this time, the etiology probably has come not from a human host but is the result of a virus jumping species. In the historical Faeroe event, however, the measles virus brought to the island by a carpenter from Copenhagen, Denmark caused 6000 cases among the 7782 inhabitants aged below 65 years. The clear-cut age distribution of the patient became one of the classical examples of how herd immunity works in the face of an infectious disease outbreak. It also provided the evidence that the Faeroe Islands had an outbreak of measles in 1781.

Suddenly with SARS, infectious disease specialists are pushed to the first combat line against this unknown etiology, and the entire infrastructure of our medical crisis management capacity is placed under scrutiny. The crisis requires clinicians, epidemiologists, and researchers to join together to identify the agent, study its nature, elucidate its chain of transmission, and to delineate its pathogenesis. And all these efforts have to be speedily accomplished. This organized effort is what is generally known as "crisis management." The essential elements of this organization is a clearly defined chain of command, absolute authority to mobilize whatever is needed to keep the damage arising from the crisis to a minimum. Meanwhile, the public has to be kept informed on the scope of the crisis, and effective measures taken so that an uncontrollable panic is prevented, and the normalcy of living is restored and maintained. Having attended the Year 2001 Annual Meeting of the World Medical Association held in November, the major agenda of which was bioterrorism, I published an article in a newspaper, warning the government that we had to quickly increase the preparedness for such an event.

That warning has, as often is the case, fallen on deaf ears. Severe acute respiratory syndrome, after all, is an act of bioterrorism by Mother Nature. I feel the situation that I dreaded has hit us too early. As Dr. Rose of the World Health Organization said: "Taiwan enjoyed a brief initial honeymoon period while SARS was already rampaging across the water in Hong Kong, mistakenly interpreting the situation as the evidence of effective containment and excellent clinical care." People in Taiwan in essence enjoyed a false sense of safety and became lax. When the real storm hit the island, and the government's crisis management capability is sternly challenged, we suddenly realized that the systematic procedures of containment were not there to be followed, and medical professionals had to fight SARS almost empty-handed. To put it bluntly, an effective organ of crisis management was nonexistent at any level of the health authority hierarchy. The public and health care workers alike were in total confusion because there was no clearly discernible chain of command. Even after the government has hastily established a crisis management special task force, different information is still flowing from different governmental agencies to the public. It includes information regarding the supply, quality, and proper usage of masks, the classification of isolation and its regulations and implementation. The disorganization causes tremendous waste of health care manpower, straining it to an extreme, and misdistributions of medical materiel and supplies.

The fact that nosocomial spread of SARS is repeated in major hospitals, beginning in the northern cities and then spreading to the south is a heart-breaking story. The lack of alertness and the habit of finding the easy way out seem to be an inherent nature of our people. I am amazed at an article in a Chinese language newspaper claiming the theory that temperature is so hostile to SARS that the chance for SARS to invade the southern cities of Taiwan is very small if not nil, and the author of that article is a physician. If medical professionals of the major hospitals in Taiwan had a similar attitude, they are doomed. The disease almost forced some of southern hospitals to close down, due

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mainly to the spread of the disease within the hospital itself.

We have to learn, and learn quickly, from the SARS experience. At the top of the lesson is that Taiwan's rapid commercialization of health care system has already gone too far, and the trend has to be stalled somehow. Hospital administrators are concerned more than ever about the profit their hospitals are making. It is widely known that in many hospitals, nosocomial infection control committee, for example, which should be the core of the force directing the hospital staff to fight against an outbreak of diseases like SARS, has only a low position or is altogether sidetracked. The fact of the matter is that in most if not all hospitals, the nosocomial infection control unit is a unit without proper authority, merely established as "window dressing" in order to meet the hospital accreditation standards. If such a unit is to function properly, it will require extra costs of the hospital. A senior member of the Nurses Society who appeared in a TV talk show indicated that many hospitals are not hiring nurses as regular employees, working without contract and are in no position to develop their careers in nursing. These nurses are generally paid lower wages as part of the hospital strategy to lower costs. The same is often true with medical technologists. Hospitals can do this without any difficulty because basically there is a surplus of paramedical manpower graduating in Taiwan each year. On the other hand, newly built hospitals are becoming larger and larger, because drugs, consumables, and equipment and instruments, if purchased in large quantities, can bring the cost down further. An interesting idea was entertained in my mind. Some hospital management decision leaders have long suggested that the most manageable size of a hospital lies somewhere between 800 to 1000 beds. If a hospital with 25 000 beds, for example, mishandles a crisis like SARS and has to be closed down, its impact on the population the hospital is serving would be enormous. For this reason alone, hospital developers and our health authority should rethink judiciously whether building such huge hospitals should be permitted. A new strategy may have to be developed.

To put it crudely, Taiwan's current system of hospital accreditation is not working properly. Falsification of data and concealment of information are rampant. That hospital staff including medical personnel is often asked to fabricate false information on the eve of accreditation is a common knowledge in the medical circle. The same kind of accusation has often been heard directly from the hospital staff. It is also widely known that licenses of specialists required by hospital accreditation can be rented at a price and the name of the doctor renting out the license, who may never appear in the hospital for work, is listed as an employee. There are also too many so-called teaching hospitals. The real quality of teaching and training conducted by the hospital varies widely and usually escapes the cursory scrutiny of the accreditation process. This writer is not at all surprised, therefore, that several major hospitals became the foci of spread of SARS rather than its terminal.This is much like African hospitals becoming the center of spread of Ebola hemorrhagic fever so that one of the control measures is to close down hospitals as soon as an Ebola outbreak emerges. Certainly, the situation with Ebola in Africa is not identical with SARS in Taiwan. However, the analogy is ominous. Nosocomial spread of SARS also happened at the Prince of Wales Hospital in Hong Kong at the beginning of the outbreak. But they responded quickly to the crisis and organized a group called the Dirty Group to deal with the situation. To me their ability to respond to crisis and to learn from experience is very strong. This is not the case in Taiwan.

Therefore, current methods of hospital accreditation need a complete overhaul. The accreditation body has to be able to see the true quality of the hospital. Mechanisms have to be developed that enable the accreditation process to focus on the core problems. What are the problems? I am talking about those problems that have surfaced in the SARS crisis. I strongly suggest that the health care community sit down when the crisis is over to define these problems one by one, in their order of urgency. The hospital assessment members should then follow this conclusion to conduct the new round of evaluation. Most importantly, the accreditation teams should be able to unravel the deficiencies of the hospital and empower or urge the hospital to correct them immediately.

The mass resignation and exodus of health care workers from the profession is very disturbing. Yet, I am not in the mood of blaming them. The incidence of their contracting the disease is very high, being several fold higher than what our counterparts are experiencing in Hong Kong, let alone the mortality. Anyone not equipped with strong moral values is easily scared off by this danger. In a true sense, they are victims of inadequate education and training. We have to reexamine and restructure the educational program as needed, aiming primarily at strengthening students' moral courage and ethics, sense of discipline and responsibility, and training of their clinical skills. Whatever the cause of this mass exodus, its impact on the public impression on our profession is

unfathomable. Some historians believe that the plague of the 14th Century accelerated the coming of the Renaissance. This school of thought has a very logical ground. During medieval times, etiologies of many diseases were interpreted in the western world in religious terms. The plague, for example, was considered to be a scourge. In the eyes of the populace, however, church and physicians who were often associated with church, were utterly unable to help the diseased, let alone stem the spread of the disease. People began to realize that what the church had been preaching was merely spiritual; when it came to physical problems, priests are utterly helpless. They were forced to believe only in what they had seen, felt and thought. That is the central theme of the Renaissance. Whatever has caused this high incidence and mortality of SARS among health care workers in Taiwan, the image of mass resignation is damaging to the profession.

This should alert our education authority, because it is a sign that our medical and nursing students are not choosing their careers with deep conviction of altruism, and schools have failed to equip them with it. Any clear-minded person can easily see that Taiwan's higher education is overly vocation-oriented. It must not escape our attention that our students go through long years of spoon-fed education all the way up through to colleges and universities. Since there is an over-emphasis on transmission of knowledge, no room is left for liberal arts and sciences. Perhaps the worst victims of this educational philosophy are medicine, nursing, and other allied health subjects; all the fields require a rich background in humanities. The Taiwan Medical Accreditation Council (TMAC) has emphatically related this fundamental deficiency in medical education in its reports sent over to the Ministry of Education (MOE). TMAC was deeply disappointed that MOE failed to take appropriate remedial steps immediately according to TMAC's recommendations. In order to make the job easier for MOE, we compiled individual reports, 7 of them all together, into one White Paper on Medical Education and submitted it to MOE in January 2003. It is only after the SARS outbreak that TMAC's findings are catching the attention of MOE. Our medical schools should enroll students with carefully conducted interviews, giving it the same weight as the written test scores. Liberal education has to precede medical scientific education, thereby allowing the foundation of moral character to be firmly laid first. Educational reform has been a hot topic ever since the late 1980s. It is ironical that SARS has unearthed more effectively than TMAC the failure of educational reform, which has been a big event in our recent history. For example, why was the fact that a student of a famous high school, who was officially notified to live in isolation at home for a defined period of time, unable to resist the urge to attend the cram course, Busiban? Is it not the primary goal of educational reform to relieve high school students of this sort of pressure? And what about his classmates at the Busiban? They are all from generally recognized good schools. It is obvious that the pressure of scoring well in the entrance exam remains unchanged and pervasive in society.

The ability to think creatively and logically is more important than intellectual knowledge. Lacking it, a person will have no capability to make a correct judgment. Our doctor who took a vacation to Japan is a good example. Regardless of what the truth about his contact with a SARS patient is, for a doctor who might have had an indirect encounter with a SARS patient to visit another country at the peak of the epidemic is a matter of questionable judgment. His behavior should also be taken seriously as a sign of failure in our education system.

Many of my friends in Singapore and Hong Kong were puzzled by the protests, demonstrations, and violation of isolation rules in Taiwan during the SARS crisis. The entire society has to undergo reeducation and restructuring. We have to accept the fact that Chinese are, to my great regret, innately not a law-abiding people. The government has to be resolute and redouble the effort to educate and discipline the people. The government has to set the example of what transparency means and be firm in enforcing the law. Beijing's behavior to the initial phase of SARS is totally unacceptable to the civilized world, considering that China is on its way to globalization. I can only wonder what benefit there is for WHO to have a member who governs 1.2 billion people and can nonchalantly place the health of people in jeopardy. My admiration goes to Lee Kuan Yew who has obviously grasped the Chinese human nature very well. He knows how to handle Chinese people and has done it very well. Even though I do not totally subscribe to his so-called guided democracy, I am convinced that he knows what he is doing. People in Taiwan are simply too free and the government too ready to accommodate the popular feelings. We have to realize that what a group of people wants may not always be consistent with the interests of the masses.

Above all, we learn from the emergence and the spread of SARS that microbes not to be ignored. The lesson is abundantly clear: the fundamental and universal goal of a species is the perpetuation of that species. All of us have to become a bit of an

environmentalist and to respect other species' right to exist. Lack of consideration to ecology and unnecessary pressure to a microbe's existence will elicit disastrous consequence for us. Louis Thomas called Homo sapiens as a fragile species in his book with this title. He prophetically warned that human beings are increasingly behaving like a special creature preordained to exist indefinitely. Our disregard to the environment has reached a point where the survival of this earth has to be rethought in terms of one body. Otherwise, we are committing suicide and marching to sure extinction. Concerns over the environment have become the real engine pushing for globalization. Severe acute respiratory syndrome is also undeniably an environmental problem because a virus that has jumped species is involved. Its cause lies either in the age-long habit of Chinese living in proximity to domestic animals or simply a price we have to pay when humans invade animals living sphere. Reasonable changes have to be brought about.

Fortunately, we are in the 21st century, a proclaimed century of biotechnology. We can rest assured that scientists all over the world will converge in search of solutions to all unanswered questions about SARS. Vaccines will surely become available before too long. Chemotherapeutic agents may see their light. The mystery of SARS transmission will be firmly established, so that its path can be cut off. If we are lucky, we may even be able to identify the origin of the SARS virus in the near future. But we should never forget that our new enemy might be an entirely heretofore-unknown agent capable to hit us where we are least well prepared to defend. It surely will not be SARS, even if SARS is going to stay with us. Over-confidence in our biotechnology may prove to be the detriment of us. Let us be alert.