# *From Chairman's Desk*

## Swine Flu Research

Swine flu known as A (H1N1), has spread almost worldwide. A total of 94,512 laboratory-confirmed cases of swine flu, resulting in 429 deaths, were reported till July 6. The necessity of a safe and effective vaccine is the only way out to stop this pandemic. Development, clinical trial, manufacture, marketing and enhanced post marketing surveillance of the vaccine must attract special attention. Major players in pharmaceutical and biotechnology products, Governments and academic/research organizations need to consolidate their efforts on successful development of the vaccine so that compulsory mass immunization programme can be undertaken, which could not be successful in past.

Let us be aware that a swine flu vaccination campaign in 1976 was abruptly stopped after hundreds of people reported developing a brain disorder called Guillain-Barre syndrome(GBS), a paralyzing disorder, which attacks the lining of the nerves, causing paralysis and inability to breathe, and can be fatal. That time more people died from the vaccination than from swine flu and 500 cases of GBS were detected. The vaccine was withdrawn after just ten weeks when the link with GBS became clear and the US Government was forced to pay out millions of dollars to those affected. Health Protection Agency of US has alerted neurologists to be prepared for a likely spurt in (GBS), which could be triggered by the vaccine. Thus it is necessary for agencies responsible for public health all over the world to adequately fund research in this direction before the vaccination of millions of people, including children, elderly and pregnant women begins. An important sign of concern is that the vaccine itself may cause serious complications; hence more stress should be given on research and enhanced surveillance.

The principle involved in developing the vaccine include work on a strain isolated from a patient in the US, using a technique called reverse genetics. The researchers took the genes that make the outer coating of the swine flu virus and then attached them to a harmless human virus known as PR8. This reconstructed virus is considered safe for humans and supposed to trigger an immune response that protects people against the swine flu strain. The next step involves developing the virus and grow it inside chicken eggs, to produce it in vast quantities. The production involves refining it further and once the experimental phase is finished, conducting clinical trials of the vaccine.

The first human trials of a swine-flu vaccine are already planned to begin in Adelaide(Australia) to test on 240 healthy volunteers, aged between 18 and 64, for seven weeks by injecting with the experimental vaccine. The trial will determine how much antigen (the key substance in vaccine) is necessary to prevent people from getting infected as also how many shots will be sufficient for protection.

Moreover, researchers must also plan organised authentic data collection mechanism in the post vaccination phase regarding any untoward effects of vaccine on various populations, races and ethnic groups etc. It is also emerging from research that the H1N1 swine flu virus seems to be closely related to the viruses responsible for the deadly 1918-1919 Spanish flu pandemic, which killed half a million Americans and 20million people worldwide. Antibodies taken from patients born before 1920 can recognize the H1N1 swine flu virus, but not so for people born after 1920.

Another imersent danger is that the H1N1 virus could mutate, becoming more virulent and dangerous. What makes the H1N1 strain different from the typical seasonal flu is that about half of the people killed worldwide were young and previously healthy. In contrast, regular forms of the seasonal flu typically prove most lethal to the very young and the elderly. Gear up researchers, save the world from swine flu. We need a vaccine but only a safe one.

***Prof. Suresh Nagpal***