Guest Editorial

# Infectious disease outbreak management: Lessons learnt from the H1N1 outbreak

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As we go to press there are 16820 cases reported to have tested positive for H1N1 with 555 deaths. (http://www.mustseeindia.com/swine-flu-h1n1, Nov 30th 2009). What are the lessons learnt from this outbreak?

Following an almost exponential rise in reported cases of influenza, there were several challenges faced by governments and healthcare systems to:

- respond to the outbreak in the community and institutions
- manage cases and contacts
- build capacity of hospitals and laboratories to meet the challenge
- provide education programs for health care professionals
- raise awareness among public

Laboratories played a major role in the management of the present outbreak investigations. Some laboratories within the country geared their capacity by training manpower to carry out confirmation of index cases and test large number of samples. This activity may have helped build capacity of several state level laboratories to tackle similar emergencies. Challenges were posed from the stage of specimen transportation to communicating the results within a minimum turnaround time by working round the clock to meet the demand for confirmation. This facilitated rational treatment of cases and helped implement contact management policies within a short span of the initial outbreak.

As the infection spread, it marked panic, confusion and a sense of urgency in the public. One of the important components of outbreak management is communication. The World Health Organization (WHO) acknowledges the fact that in addition to laboratory analysis and epidemiological evidence communication has become an essential part of management strategy. "Guidelines for outbreak communication will result in greater public resilience and guide appropriate public participation to support rapid containment of an outbreak, thus limiting morbidity and mortality." (WHO Outbreak Communication Guidelines - WHO/CDS/2005.28**,** WHO 2005)

What remains to be seen is the sustained effort of the system to respond in a similar manner in future outbreaks. Lessons from the past outbreaks of plague, threat of SARS, and periodic encounter with outbreak-prone pathogens, including bacteria (e.g., cholera, leptospirosis, anthrax), viruses (measles, hepatitis ,dengue, chikungunya), parasites (e.g., malaria, kala-azar) have in some ways helped to create awareness, implement policies and upgrade laboratories. This in addition to natural disasters resulting in infectious disease outbreaks have steadily helped to put in place health care strategies to respond to the challenges. A beginning has been made with the establishment of appropriate bio safety level laboratories in some parts of the country to handle potentially harmful infectious agents. However, there is a need to gear up the system further to enable rapid responses to contain the outbreaks. Laboratory systems in the country need to be capacitated with adequate infrastructure and trained manpower and make operational outbreak management system(OMS) through public health information network (PHIN) to effectively capture data including laboratory data, analyze and manage outbreaks (2009: The Global Health Information Network).

Lessons learnt from managing one outbreak may not always suffice for another, as the agent, transmission and susceptible population may be different. Two main factors for containment of an outbreak are isolation and contact tracing. Laboratories need to adapt to respond to the changing scenario at the shortest possible time. There is a need to move from conventional time consuming laboratory techniques to rapid molecular diagnosis for clinical and epidemiological use. There is also a need to create awareness among clinical microbiologists of existing outbreak reporting systems, notified laboratories for handling and processing samples for outbreak management and centers designated for training and development of skills for testing and identifying new and emerging pathogens.

Every time the dust settles after an epidemic or an outbreak, there is complacency at various levels in the system. With the establishment of nodal agencies, departments, international collaboration and multiple resources, it is hoped that healthcare set ups are prepared adequately for rapid response in outbreak management.

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