

## LETTER TO THE EDITOR

### VARICELLA EMERGENCY VACCINATION SEEMED INSTRUMENTAL IN DECLINING CHICKENPOX INCIDENCE IN GUANGZHOU, SOUTHERN CHINA

March 19, 2013

Dear Editor

Chickenpox (Varicella zoster) is an acute common disease caused by the varicella zoster virus (VZV)<sup>9</sup>. It is highly communicable with an infection rate of 90% in close contacts<sup>3</sup>. As the largest trading city in southern China with over 7.94 million registered inhabitants and 4.76 million floating population, Guangzhou is located in the southern subtropical. Chickenpox is becoming an extremely common airborne and contact transmission disease, and public health authorities are concerned about its increased incidence.

Chickenpox is not a national reportable disease in China, so it is impossible to correctly evaluate incidence rate of population. However, since 1995, Guangzhou local government has legislated and included chickenpox into local reportable disease inventory. That means like the other national reportable disease, physicians who diagnose suspected or confirmed cases must report these cases to Guangzhou Centers for Disease Control and Prevention (GZCDC) through the National Notifiable Disease Report System (NNDRS). For a patient's illness to meet the case definition for chickenpox the clinical signs (characteristic rash, fever, nausea, hyporexia, aching muscles, and headache) must be present and samples should be taken for laboratory confirmation (4-fold rise in antibody titer, antigen detected in blood, or genetic material detected by PCR).

Different from the immunization strategy of measles, polio, *et al.*, chickenpox is not incorporated into Expanded Program on Immunization (EPI) in China; it is administered as part of the voluntary vaccination program. Although routine childhood varicella vaccination has been strongly recommended by the government, the incidence of chickenpox in Guangzhou is increasing annually. From 2006 to 2011, the average incidence of chickenpox was 132.89, 143.68, 149.22, 168.26, 179.73, and 182.35 per 100,000 inhabitants respectively. A much higher incidence rate was shown than that of Japan<sup>8</sup>, Korea<sup>1</sup> and the other Asian regions<sup>2,4,10</sup>.

In 2012, Guangzhou conducted a varicella emergency vaccination program (VEVP): once the chickenpox outbreak was detected, a free dose varicella vaccination was used immediately to immunize all contacts exposed to the same grade, room, family, office, building and other probable risk areas for the patients. The injection work was required to be completed in three days. As result, the one-year implementation of VEVP seemed to play a positive and effective role in the mitigation of chickenpox. According to the NNDRS data, statistics showed that the incidence rate of chickenpox reported in 2012 showed the first declining trend. Compared to the average incidence rate of the past six years, the incidence rate in 2012 decreased by 30.19% (159.35 per 100000 VS. 111.45 per 100000) (Fig. 1).

The emergency vaccination has been proved effective in many diseases. For example, LI *et al.* reported that emergency vaccination could effectively alleviate highly pathogenic porcine reproductive and respiratory syndrome virus (HPPRRSV) infection during experimental contact exposure<sup>5</sup>. In England, this strategy was also evaluated for efficacy and feasibility to control rabies in hypothetical rural areas immediately after a disease outbreak<sup>7</sup>.

Taken together, Universal varicella vaccination program is unavailable to public in previous China. A major obstacle is the high cost of this vaccine, which is 10 times more expensive than the rubella vaccine and 75 times more expensive than the measles vaccine in China<sup>6</sup>. We

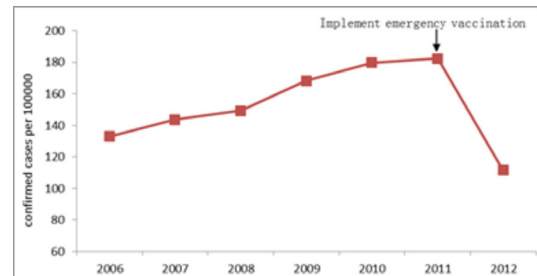


Fig. 1 - Annually incidence rate of chickenpox in Guangzhou, South China, 2006-2012.

reported varicella emergency vaccination as useful and an instrumental measure to decline chickenpox incidence in Guangzhou, southern China. This information will be used to establish strategies for the prevention of the increasing chickenpox in other regions or countries where the financial backing is not big enough to support a universal varicella vaccination and where the varicella vaccination remained of low coverage.

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