Vaccine Watch

ONE JAB PROTECTS FROM SWINE FLU

Eagerly anticipated early results from vaccine trials provide hope that millions of people could be protected against the pandemic H1N1 strain of influenza virus before infection rates are expected to peak later this year. The two studies, published in *The New England Journal of Medicine*, indicate that a single dose of vaccine (containing haemagglutinin from 2009 pandemic influenza A (H1N1) virus) might be sufficient for protection, rather than the two doses that were thought to be required owing to little evidence of pre-existing, cross-reactive immunity. "If you only need one shot instead of two, the vaccine will go twice as far. Twice as many people will be able to get the vaccine", said World Health Organization spokesman Gregory Hartl (*The Washington Post*, 11 Sep 2009).

The clinical trial carried out by scientists based at the Australian drug company CSL showed that, within 3 weeks of receiving one 15 mg dose of vaccine, 97% of the 120 vaccinated adults generated levels of neutralizing antibodies that are considered to be protective. Adults receiving a 30 mg vaccine dose did not generate any higher antibody levels. In the other study, led by Iain Stephenson at the University of Leicester, UK, 7.5 mg or 15 mg doses of the vaccine were administered together with an adjuvant; 80% of vaccinated individuals showed "strong, potentially protective" responses after either dose, suggesting that the use of adjuvant might make the vaccine go even further (*TimesOnline*, 11 Sep 2009). These results are also in line with trials underway at the US National Institutes of Health (NIH). Reporting at a recent news conference, Antony Fauci of the NIH said that strong immune responses to a single dose of unadjuvanted vaccine have been observed by NIH researchers just 8–10 days after immunization (*nytimes.com*, 11 Sep 2009).

However, more tests will be needed to determine whether one shot will be sufficient in children, who have less natural immunity developed from previous exposures to seasonal flu viruses, said Fauci (*Bloomberg.com*, 11 Sep 2009). Immune responses to the vaccine in adults aged 65 and over were "slightly less robust" than in younger adults, although this is also the case with seasonal flu vaccines (*Bloomberg.com*). So far, no side effects of the vaccines have been noted beyond those occurring with seasonal flu vaccines, such as sore arms and headaches.

The need to act quickly in response to these encouraging results is highlighted by calculations made by biostatisticians at the University of Washington, USA, and published in *Science*. They predict that the epidemic in the United States could peak in mid to late October, meaning that, to stifle the spread of H1N1 virus, vaccination (first of children and then of adults) should have started in mid September (*Time*, 10 Sep 2009).

ORIGINAL RESEARCH PAPERS Greenberg, M. E. *et al.* Response after one dose of a monovalent influenza A (H1N1) 2009 vaccine — preliminary report. *N. Engl. J. Med.* 10 Sep 2009 (doi:10.1056/NEJMoa0907413) | Clark, T. W. *et al.* Trial of influenza A (H1N1) 2009 monovalent MF59-adjuvanted vaccine — preliminary report. *N. Engl. J. Med.* 10 Sep 2009 (doi:10.1056/NEJMoa0907650) | Yang, Y. *et al.* The transmissibility and control of pandemic influenza A (H1N1) virus. *Science* 10 Sep 2009 (doi:10.1126/science.1177373)