World Health Organization

FREQUENTLY ASKED QUESTIONS

Recommended viruses for influenza vaccines for use in the 2010-2011 northern hemisphere influenza season

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1. What viruses does the World Health Organization (WHO) recommend for influenza vaccines for 2010-2011 in the northern hemisphere?

It is recommended that the following viruses be used for human influenza vaccines in the 2010-2011 influenza season (northern hemisphere):

- An A/California/7/2009 (H1N1)-like virus
- An A/Perth/16/2009 (H3N2)-like virus
- A B/Brisbane/60/2008-like virus

2. What is the purpose of the WHO influenza vaccine recommendations?

The WHO recommendations provide a guide to national public health authorities and vaccine manufacturers on the viruses to be included in influenza vaccines for the next northern hemisphere season. Regulatory agencies make the final decision about which influenza strains may be used in influenza vaccines to be licensed in their country. In contrast to many other vaccines, influenza vaccines are updated frequently to contain representative circulating viruses because human influenza viruses continuously evolve.

3. How was this recommendation made?

On an ongoing basis year round, representatives of the WHO Collaborating Centres for Reference and Research on Influenza (WHO CCs) and the Essential Regulatory

Laboratories (ERLs) and Cambridge University communicate regularly by telephone conference to review the antigenic and genetic analyses of recent influenza viruses provided to WHO through the Global Influenza Surveillance Network (GISN).

From 14 to 17 February 2010, a technical consultation was held with the participation of 8 Advisers who represented each of the WHO CCs and ERLs. In addition, 21 Observers were present from National Influenza Centres (NICs), WHO H5 Reference Laboratories, WHO CCs, ERLs, Cambridge University, the European Centre for Disease Prevention and Control (ECDC), the National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) Egypt, the OIE/FAO Network of Expertise on Animal Influenza (OFFLU), and the Strategic Advisory Group of Experts (SAGE) on Immunization.

The consultation was conducted to complete analyses of the antigenic and genetic characteristics of recent influenza viruses that have been shared with WHO through GISN, complemented with results of antiviral resistance testing and serological studies and with available epidemiological and clinical information. The consultation considered pandemic A(H1N1) 2009 and seasonal A and B influenza viruses, as well as animal viruses with pandemic potential e.g. A(H5N1) and A(H9N2) viruses. Based on all relevant considerations, the Advisers provided a recommendation to WHO on the viruses to be included in influenza vaccines.

4. What viruses are contained in influenza vaccines?

Usually, influenza vaccines for seasonal influenza vaccines contain three different viruses (i.e., are trivalent) and include influenza A(H1N1), A(H3N2) and B viruses considered representative of those that are in circulation.

In 2009, because of the influenza A(H1N1) pandemic, many vaccine manufacturers worldwide have also produced monovalent pandemic vaccines (i.e. they contain one virus) comprising A/California/7/2009 (H1N1).

For the 2010 influenza season in the southern hemisphere, trivalent vaccines are being produced that contain an A/California/7/2009 (H1N1)-like virus (a representative pandemic virus), as well as an A/Perth/16/2009 (H3N2)-like virus and a B/Brisbane/60/2008-like virus.[1]

For the 2010-11 influenza season in the northern hemisphere, influenza vaccines are expected to contain an A/California/7/2009 (H1N1)-like virus (a representative pandemic virus), as well as an A/Perth/16/2009 (H3N2)-like virus and a B/Brisbane/60/2008-like virus. The decisions of whether to make trivalent and monovalent vaccines containing these viruses will be made by national and regional regulatory authorities. WHO will also ask its SAGE Committee to provide recommendations.

5. Will this group of recommended influenza vaccine viruses protect against both pandemic and seasonal influenza?

It is expected that vaccines containing the A/California/7/2009 (H1N1)-like virus will protect against the current pandemic influenza viruses. Vaccines that contain the other two recommended viruses (H3N2 and B viruses) are expected to protect against seasonal influenza viruses likely to be in circulation in 2010-2011 in the northern hemisphere.

[1] http://www.who.int/csr/disease/influenza/recommendations2010south/en/index.html

6. Does the addition of the H1N1 virus mean the pandemic is over?

No, the pandemic is not over.

Almost all countries have experienced outbreaks of the pandemic virus. Most countries have passed the peak of transmission. Other countries are still experiencing high level of transmission especially in north Africa, east and south Europe and south and south east Asia. However, the overall transmission at global level is declining.

From past pandemics we know that influenza pandemic can have more than one wave. WHO is monitoring the current evolution of the pandemic to assess when the world will be entering a post peak period. A post-peak period is a time of transition when pandemic activity is declining globally but may be continuing at various levels in different parts of the world or in different countries.

The H1N1 vaccine is an excellent tool to protect people from getting the disease and related severe outcomes. It will be considered as an important public health tool as long as the pandemic H1N1 is circulating and causing illness. High-risk groups are particularly vulnerable and should be vaccinated as a priority.

WHO will continue to work very closely with countries to monitor the pandemic and will provide recommendations on what to do when we enter a post-peak, transition period.

The WHO 2009 Pandemic Preparedness Guidelines - developed between 2007 and 2009 and involving About 138 scientists from 45 countries - defines the post-peak period.

7. Does WHO expect the current seasonal influenza viruses to disappear?

During the 1957 (H2N2) and 1968 (H3N2) pandemics, the pandemic influenza A viruses rapidly replaced the previously circulating seasonal influenza A virus subtype.

The available data show that seasonal influenza A(H1N1) viruses have circulated at very low levels since the onset of the 2009 pandemic and that the pandemic influenza A(H1N1) 2009 viruses are currently the predominant circulating influenza viruses infecting humans in most countries of the world. Although it is impossible to know whether the seasonal influenza A(H1N1) viruses will be completely replaced by the pandemic influenza A(H1N1) 2009 viruses, the group of experts convened by WHO for this consultation considers it likely that seasonal influenza A(H1N1) will not pose a major public health risk in 2010-2011 in the northern hemisphere.

A(H3N2) viruses have continued to circulate at somewhat higher levels than seasonal A(H1N1) viruses in many parts of the world. For this reason and because a new variant group of A(H3N2) viruses (A/Perth/16/2009-like) emerged in 2009, the group of experts considers it likely that A(H3N2) viruses will pose a public health risk in 2010-2011 in the northern hemisphere.

Previous pandemic influenza A viruses did not displace the circulating influenza B viruses. In 2009, influenza B viruses continued to circulate at low levels in all regions of the world and, in January 2010, they predominated over influenza A viruses in China. It is therefore considered highly likely that influenza B viruses will persist in 2010-2011.

8. What is the Global Influenza Surveillance Network (GISN)?

GISN is a global public health laboratory network coordinated by WHO, currently consisting of 131 NICs in 102 countries, 5 WHO CCs, 4 ERLs and 11 WHO H5 Reference Laboratories.

This network conducts numerous public health activities including warning and assessment about influenza viruses of concern, such as potential pandemic viruses, and the collection and testing by the NICs of clinical specimens from patients as well as the further testing and characterization of representative influenza viruses by WHO CCs and the ERLs. This network also provides countries with guidance and support for activities such as training, outbreak response, development of tests, testing for antiviral drug resistance and scientific interpretation of important findings.

9. What other actions are taken by WHO beyond the vaccine virus recommendations to facilitate development of influenza vaccines?

To support the development and production of influenza vaccines, candidate vaccine viruses are provided to influenza vaccine manufacturers by the WHO CCs, ERLs and other participating laboratories. These vaccine viruses are used as the starting material by manufacturers for the production of influenza vaccines and to prepare specific reagents for vaccine standardization and quality control.