

Questions and Answers

Recommended composition of influenza virus vaccines for use in the southern hemisphere 2014 influenza season

September 2013

- 1. What is the WHO Global Influenza Surveillance and Response System (GISRS)?**
- 2. What is the purpose of the WHO recommendations on the composition of influenza virus vaccines?**
- 3. What viruses are recommended by WHO to be included in influenza vaccines for use in the 2014 southern hemisphere influenza season?**
- 4. Is this recommendation different from the last recommendation?**
- 5. Could a B/Victoria lineage virus still be considered for use as a vaccine component?**
- 6. Have the antigenic characteristics of the circulating A(H3N2) viruses changed since the last recommendation?**
- 7. What candidate vaccine viruses (high-growth reassortants) are available for use in influenza vaccines?**
- 8. How was the WHO recommendation made for the composition of influenza virus vaccines for the 2014 southern hemisphere influenza season?**

1. What is the WHO Global Influenza Surveillance and Response System(GISRS)?

GISRS is a global public health laboratory network coordinated by WHO, currently consisting of 141 National Influenza Centres (NICs) in 111 Member States, 6 WHO Collaborating Centers for Influenza (CCs), 4 WHO Essential Regulatory Laboratories (ERLs) and 12 WHO H5 Reference Laboratories.

This network conducts numerous public health activities including warning and assessment relating to influenza viruses of concern, such as viruses with pandemic potential. NICs collect and test clinical specimens from patients and share representative influenza virus isolates with the WHO CCs and WHO ERLs for detailed testing and characterisation. This network also provides guidance to countries and support for activities such as training, outbreak response, development of diagnostic tests, testing for antiviral drug resistance and scientific interpretation of important findings.

2. What is the purpose of the WHO's recommendations on the composition of influenza virus vaccines?

These WHO recommendations provide a guide to national public health authorities and vaccine manufacturers for the development and production of influenza vaccines for the next influenza season. In contrast to many other vaccines, the viruses in influenza vaccines have to

be updated frequently because circulating influenza viruses continuously evolve. As it takes approximately 6-8 months to produce influenza vaccines, recommendations are made in September for the following influenza season in the southern hemisphere and in February for the following influenza season in the northern hemisphere.

3. What viruses are recommended by WHO to be included in influenza vaccines for use in the 2014 southern hemisphere influenza season?

WHO recommends that influenza vaccines for use in the 2014 southern hemisphere influenza season contain the following viruses:

- an A/California/7/2009 (H1N1)pdm09-like virus^a;
- an A/Texas/50/2012 (H3N2)-like virus^b;
- a B/Massachusetts/2/2012-like virus.

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

^a A/Christchurch/16/2010 is an A/California/7/2009-like virus.

^b A/Texas/50/2012 is an A(H3N2) virus that following adaptation to growth in eggs has maintained antigenic properties similar to the majority of recently circulating cell-propagated A(H3N2) viruses including A/Victoria/361/2011.

4. Is this recommendation different from the last recommendation?

The vaccine viruses recommended for the 2014 southern hemisphere influenza season are the same as those recommended for the 2013-2014 northern hemisphere influenza season. The present recommendation gives clearer guidance to manufacturers and regulators as to the A(H3N2) virus component of the vaccine.

5. Could a B/Victoria lineage virus still be considered for use as a vaccine component?

For those considering the use of both a B/Yamagata and a B/Victoria lineage vaccine virus, e.g. for quadrivalent vaccines containing two influenza B viruses, B/Brisbane/60/2008-like viruses continue to be the most appropriate 4th component. In addition, countries or regions of the world that expect B/Victoria lineage viruses to predominate in the southern hemisphere 2014 may continue to use a B/Brisbane/60/2008-like virus in their influenza virus vaccines.

National or regional authorities approve the composition and formulation of vaccines that will be used in each country.

6. Have the antigenic characteristics of the circulating A(H3N2) viruses changed since the last recommendation?

No, most of the circulating viruses have remained antigenically like the cell-propagated A/Victoria/361/2011 and A/Texas/50/2012 viruses.

7. What candidate vaccine viruses (high-growth reassortants) are available for use in influenza vaccines?

The availability of high-growth reassortants by type/subtype and corresponding potency test reagents is posted and updated on the WHO GISRS website:

<http://www.who.int/influenza/vaccines/virus/en/>

The WHO recommended candidate vaccine viruses for vaccine development and production for the 2014 southern hemisphere influenza season are listed at:

http://www.who.int/influenza/vaccines/virus/candidates_reagents/home .

8. How was the WHO recommendation made for the composition of influenza virus vaccines for the 2014 southern hemisphere influenza season?

The recommendation was made based on continuous surveillance conducted by the WHO GISRS and the virus characterization data generated in WHO CCs and WHO ERLs along with surveillance information from NICs and antigenic cartography analysis by the University of Cambridge.

From 23 to 25 September 2013 a WHO Consultation took place with 9 Advisers from WHO CCs and WHO ERLs. The Consultation was observed by 20 other experts from WHO CCs, WHO ERLs, WHO H5 Reference Laboratories, NICs, the University of Cambridge and the OIE/FAO Network of expertise on animal influenza (OFFLU)¹.

The consultation was conducted to discuss analyses of the characterization of seasonal influenza viruses that have been shared with WHO through GISRS, complemented by results from vaccine serological studies and available epidemiological and clinical information, as well as vaccine effectiveness estimates. In addition the consultation covered avian influenza viruses, including A(H5N1), A(H7N9), A(H7N7), A(H9N2), and variant influenza viruses, e.g. A(H3N2)v, causing zoonotic infections, for which developmental or commercial vaccines are being made. Based on relevant considerations the Advisers provided a recommendation to WHO.

For more information, please contact gisrs-whohq@who.int.

¹ www.offlu.net/