

Influenza Vaccination for the Southern Hemisphere

Raymond A. Strikas, M.D.
National Vaccine Program Office
Department of Health and Human Services



Outline

- Current sources of Southern Hemisphere influenza vaccine
- Options for use of Southern Hemisphere vaccine in the United States, with licensed vaccine not available:
 - IND
 - Emergency Use Authorization
- Other options
 - Utility of Northern Hemisphere vaccine for the following Southern Hemisphere season
 - Vaccination upon arrival in the Southern Hemisphere



Current sources of Southern Hemisphere influenza vaccine

- Sanofi pasteur (France)
- CSL (Australia)



Options for use of Southern Hemisphere vaccine in the United States

- Licensed vaccine
- IND vaccine
- Emergency Use Authorization (done for anthrax vaccine, protocol developed for smallpox diluted vaccine)



Other Options

- Utility of Northern Hemisphere vaccine for the following Southern Hemisphere season
 - Is the virus match acceptable?
 - Expiration date 06/30 each year;
 - extension requires license supplement, or
 - IND
 - EUA?
 - Document extended vaccine stability
- Vaccination upon arrival in the Southern Hemisphere
 - Challenges include
 - Vaccine availability
 - Two weeks before protection is assured



Relationship between Northern and Southern Hemisphere Influenza Vaccines, 1998-2006



Year	Northern hemisphere	Southern hemisphere	Difference
1998-99	A/Sydney/5/97(H3N2) A/Beijing/262/95(H1N1) B/Beijing/184/93	A/Sydney/5/97 (H3N2) A/Beijing/262/95 (H1N1) B/Beijing/184/93	0
1999-2000	A/Sydney/5/97 (H3N2) A/Beijing/262/95(H1N1) B/Beijing/184/93	A/Moscow/10/99 (H3N2) A/New Caledonia/20/99 (H1N1) B/Beijing/184/93	2
2000-01	A/Moscow/10/99 (H3N2) A/New Caledonia/20/99 (H1N1) B/Beijing/184/93	A/Moscow/10/99 (H3N2) A/New Caledonia/20/99 (H1N1) B/Sichuan/379/99	1
2001-02	A/New Caledonia /20/99 (H1N1) A/Moscow/10/99(H3N2) B/Sichuan/379/99	A/New Caledonia/20/99(H1N1) A/Moscow/10/99(H3N2) B/Sichuan/379/99	0
2002-03	A/New Caledonia/20/99(H1N1) A/Moscow/10/99(H3N2) B/Hong Kong/330/2001	A/New Caledonia/20/99(H1N1) A/Moscow/10/99(H3N2) B/Hong Kong/330/2001	0
2003-04	A/New Caledonia/20/99(H1N1) A/Moscow/10/99(H3N2) B/Hong Kong/330/2001	A/New Caledonia/20/99(H1N1) A/Fujian/411/2002(H3N2) B/Hong Kong/330/2001	1
2004-05	A/New Caledonia/20/99(H1N1) A/Fujian/411/2002(H3N2) B/Shanghai/361/2002	A/New Caledonia/20/99(H1N1) A/Wellington/1/2004(H3N2) B/Shanghai/361/2002	1
2005-06	A/New Caledonia/20/99(H1N1) A/California/7/2004(H3N2) B/Shanghai/361/2002	A/New Caledonia/20/99(H1N1) A/California/7/2004(H3N2) B/Malaysia/2506/2004	1
2006-07	A/New Caledonia/20/99(H1N1) A/Wisconsin/67/2005 (H3N2) B/Malaysia/2506/2004	A/New Caledonia/20/99(H1N1) A/Wisconsin/67/2005 (H3N2) B/Malaysia/2506/2004	0



Summary of Vaccine Strain Variations, Northern vs. Southern Hemisphere

- 9 years of data available
- Vaccine strains the same in 4/9 years
- One strain difference in 4/5 years with differences, 2 in the other (6 strain-year differences)
- Antigenic similarity of Northern Hemisphere vaccine strains to majority of circulating strains 1/6 year-strain, but
- Note that despite antigenic mismatch, well vaccinated (NH vaccine) U.S. forces had much lower influenza-like illness attack rate in 2005 Talisman Saber outbreak



Outline and Summary

- Current sources of Southern Hemisphere influenza vaccine – **two vaccines, not licensed in U.S.; possible for 2007, with So Hem vaccine available in 2008?**
- Options for use of Southern Hemisphere vaccine in the United States with licensed vaccine not available
 - IND: **cumbersome**
 - Emergency Use Authorization: **may be simpler**
- Other options
 - Utility of Northern Hemisphere vaccine for the following Southern Hemisphere season: **appropriate option for 2007 given no strain differences**
 - Vaccination upon arrival in the Southern Hemisphere: **logistics to be assessed**





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