

Navy Public Health Experts Provide Details on Flu Vaccine Production

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PORTSMOUTH, Va. (NNS) -- Navy and Marine Corps Public Health Center (NMCPHC) experts underscored the importance of mandatory influenza vaccination Sept. 9 and explained how and why a new vaccine is developed and produced annually.

"Early annual immunization is the best method to help combat the effects of influenza as no two influenza strains are exactly alike," said Cmdr. Chris Clagett, Navy physician and head of NMCPHC preventive medicine.

The Navy's 2010/2011 season's vaccine formulation includes three strains - the H1N1 strain and two seasonal flu strains - and is available in injected and nasal mist versions.

Unlike last year, this year's immunization consists of one vaccine, Clagett said. Two vaccinations were required to immunize against the H1N1 virus and the annual influenza strain in 2009.

Like last year, compliance with Department of Defense (DoD) policy on influenza vaccination is a vital component of force health protection and operational readiness.

"The influenza virus changes in smaller or larger ways that make it appear new to the immune system each season," said Clagett.

These changes mean that a person can be infected with influenza repeatedly, and also a vaccine developed one season is unlikely to be effective the next, given a significant enough change in the virus.

This is different than with most viruses for which a successful immune response to infection or vaccination confers longer lasting immunity. This difference means that influenza vaccines must be manufactured annually to match the major circulating viruses for a particular year.

To determine the best influenza vaccine formulation each season, the World Health Organization (WHO) operates the Global Influenza Surveillance Network (GISN).

Laboratories participating in the GISN routinely take throat and nasal samples from people with influenza symptoms around the world to determine what strains are circulating each year and are most likely to cause disease. WHO evaluates this information to make a recommendation for the upcoming season's flu vaccine.

The influenza vaccine always contains the three virus strains considered by the WHO to be most significant in terms of illness caused or numbers of people likely to be infected.

Influenza viruses are divided into A and B types, with influenza A viruses typically causing more severe illness. Two of this year's vaccine strains are influenza A viruses and the third is an influenza B virus. One of the A strains comes from the H1N1 subtype.

Despite its best efforts, WHO recommendations are not always 100 percent guarantee.

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"Sometimes, as occurred in 2007, there is not a good match between the WHO's recommendations for the vaccine strains and the important circulating viruses," said Clagett. "That mismatch causes that year's vaccine to be less protective than in other years with the consequence that fewer cases of flu are prevented."

As the Navy's leader in disease surveillance, this information is critical for NMCPHC, whose epidemiologic staff spends a considerable amount of time tracking and monitoring the severity of outbreaks throughout the Department of the Navy.

DoD policy states that influenza vaccination is mandatory for uniformed and health care personnel who provide direct patient care. It is highly encouraged for all others. Furthermore, DoD requires the services to ensure vaccination of no less than 90 percent of uniformed service members no later than Dec. 1, 2010.

For more information on influenza, visit the Navy and Marine Corps Public Health Center website at www.nmcphc.med.navy.mil.

For more information about Navy Medicine, visit www.med.navy.mil.

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