



*Crossing a Channel in Venice*

## PIC QUESTION OF THE WEEK: 8/08/11

Q: What are the advantages of the newly approved *intradermal* influenza vaccine?

A: The FDA recently announced the list of influenza vaccines licensed for the upcoming season. It includes the new Fluzone *Intradermal* (ID) product distributed by Sanofi Pasteur. This vaccine has been approved for individuals between 18 and 64 years of age and is supplied as a pre-filled, 0.1 mL dose syringe that utilizes a new microinjection system with an ultra-thin needle. Patients with needle phobias or those who find the intramuscular (IM) influenza vaccine too painful may find this route more desirable as the smaller needle has been shown to decrease the “pinch” experienced by those receiving an IM injection. ID influenza vaccine contains only 6 micrograms of hemagglutinin (antigen) per dose as compared to the 15 microgram quantity available in each dose of traditional IM vaccine. Administration of a lower dose is possible because the ID route utilizes two synergistic mechanisms to enhance immunity. Like all vaccines, the antigen is captured by localized dendritic cells which present the antigen via the major histocompatibility complex (MHC). The MHC expresses the antigen on its surface, thus stimulating activation of memory T cells and subsequent recognition of the specific virus strains. The ID route also utilizes a second mechanism for increasing immune response. Due to the highly dense micro-vascular system in the dermis, the antigen can directly migrate through lymph ducts and activate dendritic cells in the lymph nodes. Several studies have shown that the ID route produces a similar immune response with a smaller dose of antigen as compared to traditional IM administration of larger doses of antigen. When vaccine is in short supply, this smaller antigen dose permits immunization of more individuals. ID vaccine administration is currently being evaluated for rabies, polio, measles, hepatitis A, and hepatitis B. The adverse effects of IM and ID influenza vaccines are similar; however, local injection site reactions (swelling, redness, itching) appear to be more frequent with the ID vaccine. Influenza strains present in each of the licensed products approved for the 2011-2012 influenza season include:

- A/California/7/09 (H1N1)-like virus (pandemic (H1N1) 2009 influenza virus)
- A/Perth/16/2009 (H3N2)-like virus
- B/Brisbane/60/2008-like virus

The CDC's Advisory Council on Immunization Practices (ACIP) typically releases its annual recommendations on prevention of influenza with vaccines during the months of July or August. This year's guidelines have yet to be published. Further information regarding the new intradermal influenza vaccine can be found on the CDC website at [http://www.cdc.gov/flu/protect/vaccine/qa\\_intradermal-vaccine.htm](http://www.cdc.gov/flu/protect/vaccine/qa_intradermal-vaccine.htm).

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