Sanofi Pasteur believes in a world in which no one suffers or dies from a vaccine-preventable disease.
It Has Been a Rough Season ‘In the News’…

*This Flu Season Is the Worst in Nearly a Decade*

The New York Times

Flu vaccines just 25% effective against worst strain this year, CDC says

USA TODAY

…but We Know the Current Vaccines Have a Major Impact

CID: Modeling Effect of VE on Preventing Hospitalizations in 65+

40% VE would prevent 60,000 hospitalizations

PNAS: Optimizing the Impact of Low-efficacy Influenza Vaccines

20% VE projected to avert 130,000 hospitalizations and 62,000 deaths
And We Know there is Much More to Influenza than Influenza

**The risk of having a heart attack is 6-10X greater after an influenza infection**

Kwong, et al. *NEJM*

**Influenza vaccination is similarly effective in preventing heart attacks as statins, antihypertensive therapy, and smoking cessation**

Meta-analysis - MacIntyre, et al. *Heart*

**Adults with type 2 diabetes are less likely to be hospitalized for multiple conditions (30% reduction in stroke, 22% reduction in heart failure) or die (24% reduction in all-cause death) if they are vaccinated against influenza**

Vamos et al. *CMAJ*

Sanofi Pasteur Committed to *Do More and Do Better* in the Fight Against Influenza

**Sanofi Pasteur Products**

- *Fluzone* Pediatirc Dose
- *Fluzone High-Dose* Quadrivalent Vaccine licensed
- *Fluzone Quadrivalent* Vaccine licensed
- Efficacy for *Fluzone High-Dose Vaccine* published in *NEJM*
- *Flublok* Quadrivalent Influenza Vaccine
- 0.5mL *Fluzone Quadrivalent* for children 6-35 months accepted for FDA review

*Sanofi Pasteur* acquires Protein Sciences

**Timeline**

- 2002: *Fluzone Vaccine* Pediatric Dose licensed
- 2009: *Fluzone High-Dose Vaccine* licensed
- 2013: *Fluzone Quadrivalent Vaccine* licensed
- 2014: Efficacy for *Fluzone High-Dose Vaccine* published in *NEJM*
- 2017: Efficacy for *Flublok Quadrivalent Vaccine* published in *NEJM*
- 2018: *Sanofi Pasteur* acquires Protein Sciences
- On-going: Active in development of broadly protective vaccines
Flublok Quadrivalent Vaccine is Demonstrated to Prevent More Influenza in Adults 50+

According to a study published in the New England Journal of Medicine in June 2017, Flublok Quadrivalent Vaccine Provided:

- First and only vaccine with demonstrated better protection for 50-64 population vs. standard-dose inactivated quadrivalent comparator
- Only recombinant hemagglutinin vaccine – replicates the wild-type HA exactly
- 3X the HA antigen of a standard-dose inactivated quadrivalent vaccine
- Comparable safety profile to standard-dose inactivated quadrivalent comparator

According to a recently published meta-analysis of 7 studies in Expert Review of Vaccines, Fluzone High-Dose demonstrated higher relative efficacy/effectiveness than standard-dose comparator vaccines:

<table>
<thead>
<tr>
<th>Clinical Outcome</th>
<th>Pooled Relative Vaccine Efficacy/Effectiveness (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Studies (7 Observational + Randomized Studies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza-like Illness</td>
<td>16.3% (7.0%, 28.3%)</td>
<td>0.002</td>
</tr>
<tr>
<td>Influenza Hospitalization</td>
<td>17.8% (8.1%, 26.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pneumonia Hospitalization</td>
<td>25.1% (10.5%, 37.3%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Cardiorespiratory Hospitalization</td>
<td>18.2% (6.8%, 28.1%)</td>
<td>0.002</td>
</tr>
<tr>
<td>All-cause Hospitalization</td>
<td>9.9% (1.3%, 17.7%)</td>
<td>0.025</td>
</tr>
<tr>
<td>Post-Influenza Mortality</td>
<td>22.2% (-10.2%, 48.8%)</td>
<td>0.240</td>
</tr>
<tr>
<td>All-cause Mortality</td>
<td>2.5% (-5.2%, 9.5%)</td>
<td>0.514</td>
</tr>
<tr>
<td>Randomized Studies Only (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza-like Illness</td>
<td>24.1% (10.0%, 36.1%)</td>
<td>0.002</td>
</tr>
<tr>
<td>Pneumonia Hospitalization</td>
<td>27.3% (15.3%, 37.6%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>All-cause Hospitalization</td>
<td>11.9% (2.0%, 20.7%)</td>
<td>0.019</td>
</tr>
<tr>
<td>All-cause Mortality</td>
<td>4.9% (-6.5%, 15.1%)</td>
<td>0.381</td>
</tr>
</tbody>
</table>

Fluzone High-Dose Vaccine is Demonstrated to Prevent More Influenza and Reduce Serious Outcomes in Adults 65+

According to a head-to-head study published in the New England Journal of Medicine in August 2014 that spanned 2 flu seasons, Fluzone High-Dose Vaccine Provided:

- 24.2% BETTER PROTECTION from influenza disease compared with Fluzone vaccine, when caused by viral strains regardless of their antigenic similarity to vaccine components.
- 51.1% BETTER PROTECTION from influenza disease compared with Fluzone vaccine, when caused by viral strains similar to vaccine components.

Study population: 11,303 adults ranging from 65 to 85 years of age (with a median age of 70 years) - the protocol was set for efficacy assessments.
Sanofi Pasteur’s Commitment for the 2018-19 Season

Do More
Producing nearly 70 million doses of Fluzone vaccines + Flublok Quadrivalent vaccine

Expanding / enhancing healthcare provider and patient education
• Senior Flu Shot campaign
• Disease and vaccine education initiatives focused on children and adults 50+

Do Better
Expanding availability and use of vaccines that help prevent more flu for adults 50+
• Flublok Quadrivalent vaccine: 12-15X increase in availability
• Fluzone High-Dose vaccine: 2/3 of immunized seniors in 2017 and continuing to grow

IMPORTANT SAFETY INFORMATION FOR FLUBLOK QUADRIVALENT, FLUZONE QUADRIVALENT, AND FLUZONE HIGH-DOSE VACCINES

Flublok Quadrivalent, Fluzone Quadrivalent, and Fluzone High-Dose vaccines should not be administered to anyone who has had a severe allergic reaction (eg, anaphylaxis) to any component (including egg protein for Fluzone Quadrivalent and Fluzone High-Dose vaccines) or previous dose of the respective vaccine. In addition, Fluzone Quadrivalent and Fluzone High-Dose vaccines should not be administered to anyone who has had a severe allergic reaction to a previous dose of any influenza vaccine.

If Guillain-Barré syndrome has occurred within 6 weeks following previous influenza vaccination, the decision to give Flublok Quadrivalent, Fluzone Quadrivalent, or Fluzone High-Dose vaccine should be based on careful consideration of the potential benefits and risks.

In adults, the most common local and systemic adverse reactions to Flublok Quadrivalent, Fluzone Quadrivalent, and Fluzone High-Dose vaccines include pain at the injection site; headache and myalgia. In children, the most common reactions to Fluzone Quadrivalent vaccine include pain, erythema, and swelling at the injection site; myalgia, malaise, and headache (irritability, abnormal crying, drowsiness, appetite loss, vomiting, and fever in young children). Other adverse reactions to these vaccines may occur. Vaccination with Flublok Quadrivalent, Fluzone Quadrivalent, or Fluzone High-Dose vaccine may not protect all individuals.
INDICATION FOR FLUBLOK QUADRIVALENT, FLUZONE QUADRIVALENT, AND FLUZONE HIGH-DOSE VACCINES

Flublok Quadrivalent, Fluzone Quadrivalent, and Fluzone High-Dose vaccines are indicated for active immunization for the prevention of influenza disease caused by influenza A subtype viruses and type B virus(es) contained in each vaccine. Flublok Quadrivalent vaccine is approved for use in persons 18 years of age and older. Fluzone Quadrivalent vaccine is approved for use in persons 6 months of age and older. Fluzone High-Dose vaccine is approved for use in persons 65 years of age and older.

Before administering Flublok Quadrivalent, Fluzone Quadrivalent, or Fluzone High-Dose vaccine, please see accompanying full Prescribing Information.