



## LOS ANGELES COUNTY INFLUENZA SUMMARY 2004–2005: PROBLEMATIC VACCINE SHORTAGES TEMPERED BY MILD FLU SEASON

### OVERVIEW

The topic of influenza generated significant media attention and public anxiety during the fall of 2004. While a routine season was initially expected, this dramatically changed in early October when a major manufacturer of influenza vaccine, Chiron, was forced to halt production due to contamination at their factory. The result, in effect, cut the supply of influenza vaccine to the nation in half. The impact of Chiron's closure was not uniform—some medical centers in the United States that did not order their vaccine from Chiron had received some or even all of their vaccine supply for the season; however, many who relied on Chiron were left with none. To protect the health of those most at risk for complications due to influenza infection, the CDC quickly enacted eligibility restrictions for vaccination (see Table 1). These restrictions were also supported and further enforced by California State mandate. The CDC obtained the remaining shipments of influenza vaccine that had not yet been distributed. Vaccine was redirected to local health departments, which were then responsible for ensuring proper distribution and vaccination of the priority groups. In LAC, the Department of Health Services Emergency Command Center was convened to manage this situation and to establish and implement emergency vaccination clinics (see below).

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**Table 1. Influenza Vaccine Eligibility Priority Groups—2004\***

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- Anyone 65 years of age and over
- Infants 6-23 months of age
- Anyone with chronic health problems (e.g., lung disease, diabetes, immunocompromised)
- All pregnant women
- Healthcare workers who provide direct patient care
- People who care for babies younger than 6 months of age

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\* These eligibility restrictions were enacted October 2004, and expanded to include anyone 55 years of age and older in December 2004. All restrictions on vaccine eligibility were lifted in February 2005.

While the impact of Chiron's closure and the subsequent vaccine shortage was potentially catastrophic, ultimately, the 2004–05 season proved to be quite mild and the extent of influenza illness was minimal both locally and nationwide. In addition, the public interest and demand for vaccination subsided in early 2005—by December, restrictions for vaccination were partially lifted, and by February 2005, all restrictions for vaccination were eliminated.<sup>1</sup>

### EMERGENCY INFLUENZA VACCINE DISTRIBUTION ACTIVITIES

In response to the influenza vaccine shortage, and to ensure that vaccine reached priority groups most in need of vaccination, in October 2004 the CDC redirected vaccine to local health departments for vaccination activities. The Los Angeles Department of Health Services (LACDHS) received an initial allocation of approximately 60,000 doses of vaccine; through this mechanism 20,000 doses were immediately distributed to local long-term care facilities in order to supplement local vaccine that had already been provided to these agencies. An Emergency Command Center was implemented by LACDHS Public Health in order to monitor the vaccine shortage and develop plans for vaccinating members of the other priority groups approved by CDC for vaccination. Special clinics were planned and implemented on the second and third Saturdays of November to allow for vaccination of large numbers of

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<sup>1</sup> Influenza vaccine delays and shortages are not a new phenomenon—in fact, similar circumstances occurred most recently in the fall of 2000. For a full description of the 2000–01 season and for more information about influenza in LAC, see [www.lapublichealth.org/acd/flu.htm](http://www.lapublichealth.org/acd/flu.htm).



persons in as short a period of time as possible across all regions of the our county. Approximately 34,491 persons received flu vaccine during these special clinics. A significant amount of the remaining vaccine was distributed at the local LACDHS public health clinics for use during their normal and expanded clinic hours.

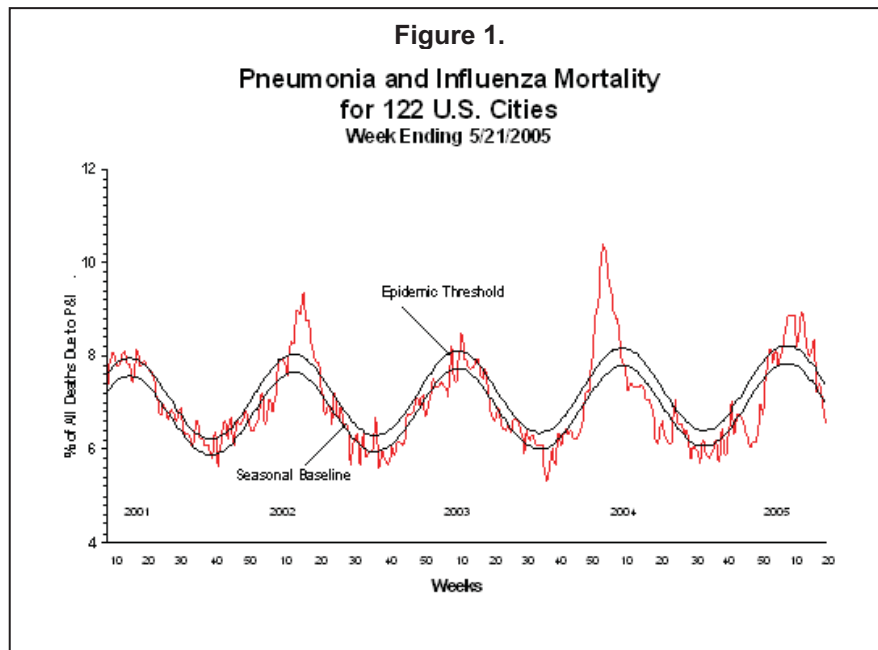
In addition, LACDHS received a second allocation of vaccine through CDC's Phase II redistribution program during November 2004. This vaccine, totaling more than 80,000 doses, was offered to health care providers, including all major hospitals in LAC, in an effort to expand the number of high-risk persons that could be vaccinated against influenza. Specialty clinics and subspecialty clinics that provided care to high-risk persons were special targets for receipt of this vaccine.

As more vaccine became available to CDC, CDC set it aside on a regional basis for ordering by private physicians through local vaccine distributors. LACDHS Public Health facilitated this process by creating a web-based procedure to allow local physicians to order vaccine from these regional CDC/distributor partnerships. This web site, which was operational from the last week of November 2004 through January 31, 2005, received and transmitted request for 157,470 doses of vaccine from private LAC health care providers.

## SEASON OVERVIEW

Despite the shortages and delay in vaccination, influenza incidence was fairly mild during 2004–05 both locally and nationwide. Across the United States, influenza peaked slightly later than usual, in late February 2005, and occurred at low levels overall—especially as compared to the previous season (Figure 1).

Events in LAC were similar; overall levels of influenza were low, did not peak until mid-February and lingered until late April. However, in LAC, fewer type A viral strains were identified (Table 2). During 2004–05, the majority (74%) of isolates reported by our sentinel physicians were type B. In contrast, only 24% of the reported isolates from California and only 21% of isolates nationwide were type B. Since type A viral strains often produce more intense symptoms than type B strains, it is likely that the influenza season in LAC was milder than both across California and the nation.





**Table 2. Los Angeles County Influenza Isolate Summary**

	Season					
	04-05	03-04	02-03	01-02	00-01	00-99
Total number of isolates reported	91	235	89	92	114	142
Number of type B isolates	67	0	20	45	67	0
Percent of type B isolates	74%	0%	22%	49%	59%	0%

While the season was mild in LAC, two novel type A (H3N2) viral strains could have potentially caused much more morbidity and mortality—as evidenced by the low proportion of type A virus identified during 2004–05, LAC escaped major impact from both. The first novel viral strain (A/Wellington/1/2004) emerged in New Zealand in the summer of 2004—too late to be included in the 2004–05 vaccine. While this viral strain caused substantial illness across Europe, it failed to impact the United States including LAC. In early 2005, another novel type A (H3N2) strain was identified in Northern California (A/California/7/2004). Again, this strain failed to cause substantial illness in LAC. The 2005–06 vaccine composition includes the California strain. The Wellington strain will not be included since it is believed that a past and prevalent viral strain (A/Fujian/411/2002) affords immunity to that strain.

### CONCLUSION

Despite the vaccine shortage, subsequent eligibility restrictions and vaccine redistribution, the 2004–05 influenza seasons was especially mild. Similar events occurred during the 2000–01 season, which was also a comparatively mild season. As this demonstrates, vaccine shortages and delays alone do not determine the severity of an influenza season—other factors are perhaps more important such as which viral strains in circulation. During both the 2004–05 and 2000–01 seasons the prevalent viral strains were identical to what circulated during their previous seasons—and during those preceding seasons there were very high levels of influenza. As such during the following seasons, there was likely sufficient natural immunity in the community to ward off illness even without immunization. A second factor that likely accounted for both mild seasons was the relatively low levels of type A versus type B strains in circulation. As shown on Table 2, LAC’s most severe recent seasons (2003–04 and 1999–2000) were type A seasons. In contrast, the remaining seasons were notably mild and predominantly type B.

