



**COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES**  
**IMMUNIZATION PROGRAM**  
**2004-2005 INFLUENZA CAMPAIGN REPORT**  
**AUGUST 2005**

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## **Background**

During the winter months of 1990-1999, influenza caused an average of 36,000 deaths in the United States each year.<sup>1</sup> During influenza epidemics there is a twofold to fivefold increase in hospitalization rates in the elderly and persons with chronic medical conditions.<sup>2</sup> To lessen the impact of influenza, the Advisory Committee on Immunization Practices (ACIP) recommends that persons at risk for complications due to influenza be vaccinated each year.<sup>1</sup> The California Health and Safety Code Section 104900 mandates that publicly funded vaccine be made available to these high-risk persons, with priority given to all persons 60 years of age and older.

### Vaccination Recommendations for the 2004-2005 Influenza Season

- ACIP recommendations<sup>1</sup>
  - Adults aged 50 years and older.
  - All children aged 6-23 months.
  - Residents of nursing homes and other chronic care facilities.
  - All persons with chronic health conditions (e.g. cardiovascular disease, asthma, pulmonary disease).
  - All persons who required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases, renal dysfunction, hemoglobinopathies, or immunosuppression.
  - Children and adolescents receiving long-term aspirin therapy.
  - Pregnant women in their second or third trimester.
  - Health-care workers.
  - Household contacts of persons in high risk groups.
  - Close contacts of children aged 0-23 months.
  
- Los Angeles County (LAC) Department of Health Services (DHS) recommendations
  - All LAC-DHS recommendations for the 2004-2005 Influenza Campaign were the same as ACIP recommendations.

Due to a national vaccine shortage, the recommendations for who should receive the vaccine were modified for the first three months of the 2004-2005 influenza season. The recommendations indicated that only persons at high risk for serious illness or death due to influenza should receive the vaccine. These high risk individuals included all children aged 6-23 months; adults aged 65 years and older; persons aged 2-64 years with underlying chronic medical conditions; all women who will be pregnant during the influenza season; residents of nursing homes and long-term care facilities; children aged 6 months to 18 years on chronic aspirin therapy; health care workers involved in direct patient care; and out-of-home caregivers and household contacts of children aged <6 months.

### Influenza Campaign

- Publicly funded influenza vaccine from the California Department of Health Services is distributed by the Los Angeles County Immunization Program (LACIP) to public clinics,

community and free clinics, skilled nursing facilities, and private providers who agree to hold public clinics. All other healthcare providers must purchase vaccine directly from the vaccine manufacturer for their patients and these data are not available.

- Participating healthcare providers immunize high-risk persons either in their clinic or during outreach programs (i.e., non-healthcare settings).
- Vaccine availability, the number of high-risk patients served by the provider, and the number of doses of vaccine used by the provider in previous years determine the amount of influenza vaccine each healthcare provider receives from LACIP.

## **Methods**

### Collected Data

- Vaccine accountability forms are distributed to each healthcare provider administering publicly funded vaccine in order to collect the following information:
  - Healthcare provider name and locating information.
  - Whether vaccine was administered at the in-house clinic or as an outreach activity.
  - Date of vaccine administration.
  - Age and ethnicity of vaccine recipient for every dose administered.
- Accountability forms have the healthcare provider's name pre-printed on them before distribution.
- Accountability forms are submitted weekly by in-house clinics; outreach clinics submit accountability forms at the conclusion of the clinic.

### Exclusion criteria

- The 2004-2005 Influenza Campaign began October 18, 2004. Providers continued to administer the influenza vaccine until the supply was depleted or the vaccine expired.
- Data for this report were collected through June 17, 2005.
- Accountability forms submitted by providers not directly supplied with vaccine by LACIP were excluded.

### Data Analysis

- Number of doses administered at the influenza clinics, by race/ethnicity and age of the recipients.
- Number of doses administered by type of provider: Community Health Provider (community and free clinics and other private providers who agree to hold public vaccine clinics), DHS-Personal Health Center, DHS-Public Health Center, and Skilled Nursing Facility.
- Number of doses administered in each Service Planning Area (SPA).

## **Results**

The results are grouped into three categories:

- I. Vaccine Administration – Overall Summary & Trends by Provider Type.
- II. Vaccine Administration – Demographic Stratified Summary & Trends.
- III. 2004-2005 Influenza Campaign Results.

I. Vaccine Administration – Overall Summary & Trends by Provider Type.

**Table 1. Influenza Vaccine Doses Administered, by Provider Type, Los Angeles County, 2000-2004 Influenza Campaigns.**

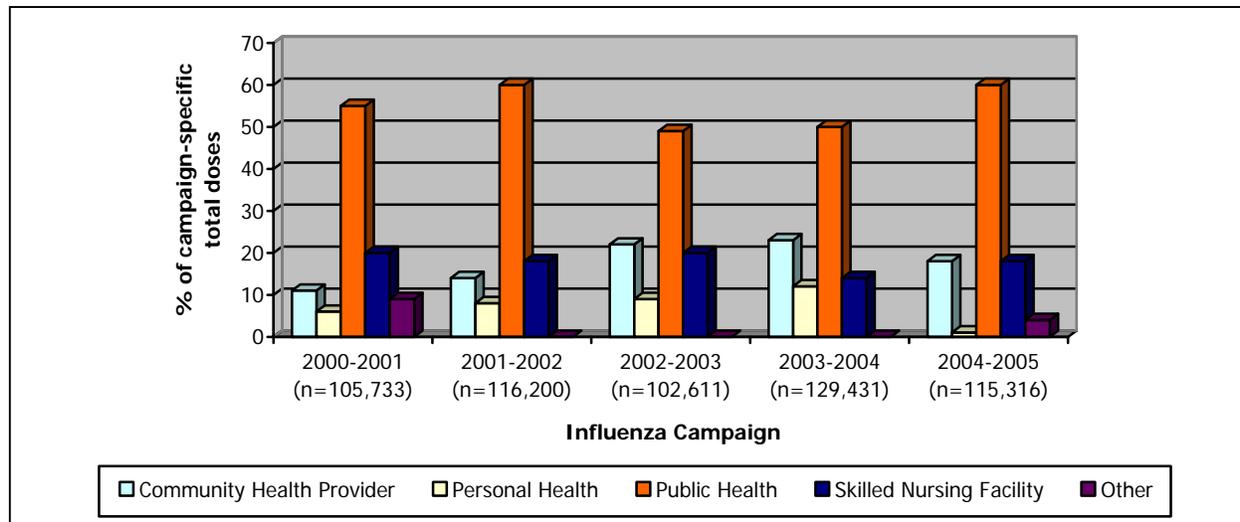
Provider Type	Influenza Campaign Years									
	2000-2001		2001-2002		2002-2003		2003-2004		2004-2005	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Community Health Provider	12,040	(11.4)	16,049	(13.8)	22,698	(22.1)	30,331	(23.4)	20,199	(17.5)
DHS-Personal Health Center	5,944	(5.6)	8,974	(7.7)	9,480	(9.2)	15,555	(12.0)	1,698	(1.5)
DHS-Public Health Center <sup>†</sup>	57,860	(54.7)	70,019	(60.3)	49,806	(48.5)	65,260	(50.4)	68,685	(59.6)
Skilled Nursing Facility	20,626	(19.5)	20,958	(18.0)	20,627	(20.1)	18,285	(14.1)	20,499	(17.8)
Other <sup>§</sup>	9,263	(8.8)	200	(0.2)	0	(0)	0	(0)	4,235	(3.7)
<b>Total</b>	<b>105,733</b>	<b>(100)*</b>	<b>116,200</b>	<b>(100)*</b>	<b>102,611</b>	<b>(100)*</b>	<b>129,431</b>	<b>(100)*</b>	<b>115,316</b>	<b>(100)*</b>

<sup>†</sup> Includes outreach clinics.

<sup>§</sup> Includes prisons, fire departments, rehabilitation centers, churches, hospitals and other non-Los Angeles County Health agencies.

\*Percentages may not add up to 100 due to rounding approximation.

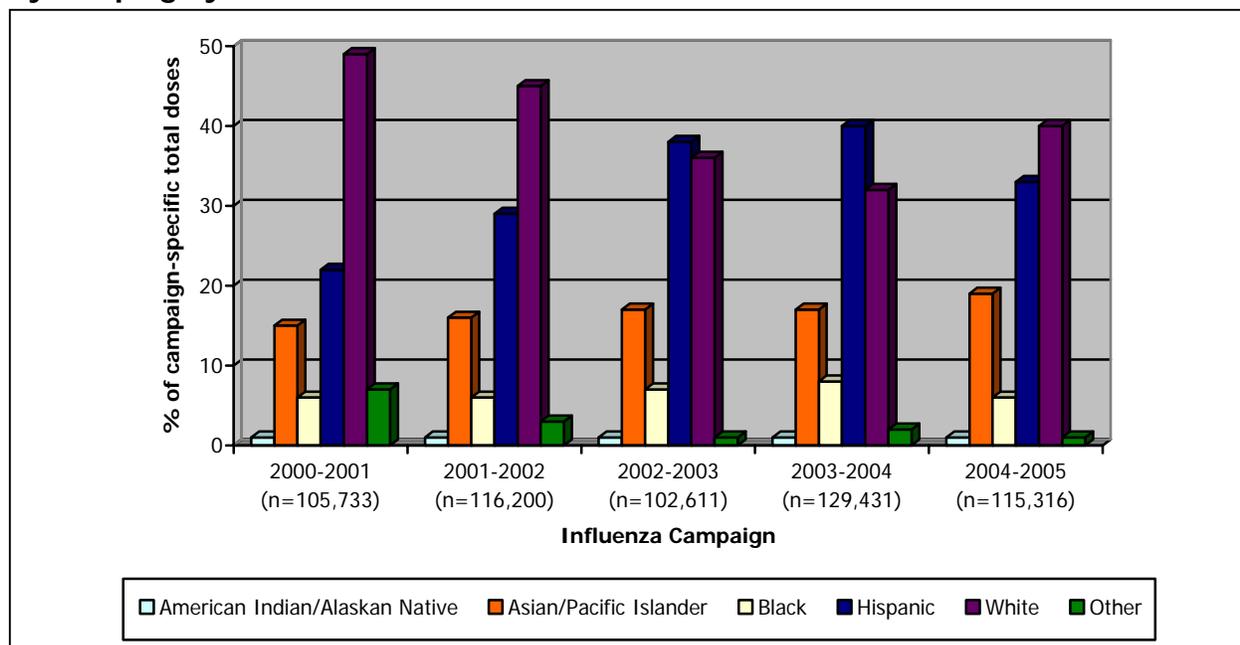
**Figure 1. Administration of influenza vaccine, by provider type and campaign year.**



The 11% decrease (14,115 doses) in total doses administered during the 2004-2005 Influenza Campaign, compared to the 2003-2004 Influenza Campaign, was primarily due to the vaccine shortage. In all five campaigns Public Health providers administered the largest proportion of the vaccine (49%-60%). There was a dramatic decrease in the proportion administered by Personal Health clinics when comparing the 2003-2004 Campaign (12%) to the 2004-2005 Campaign (1%).

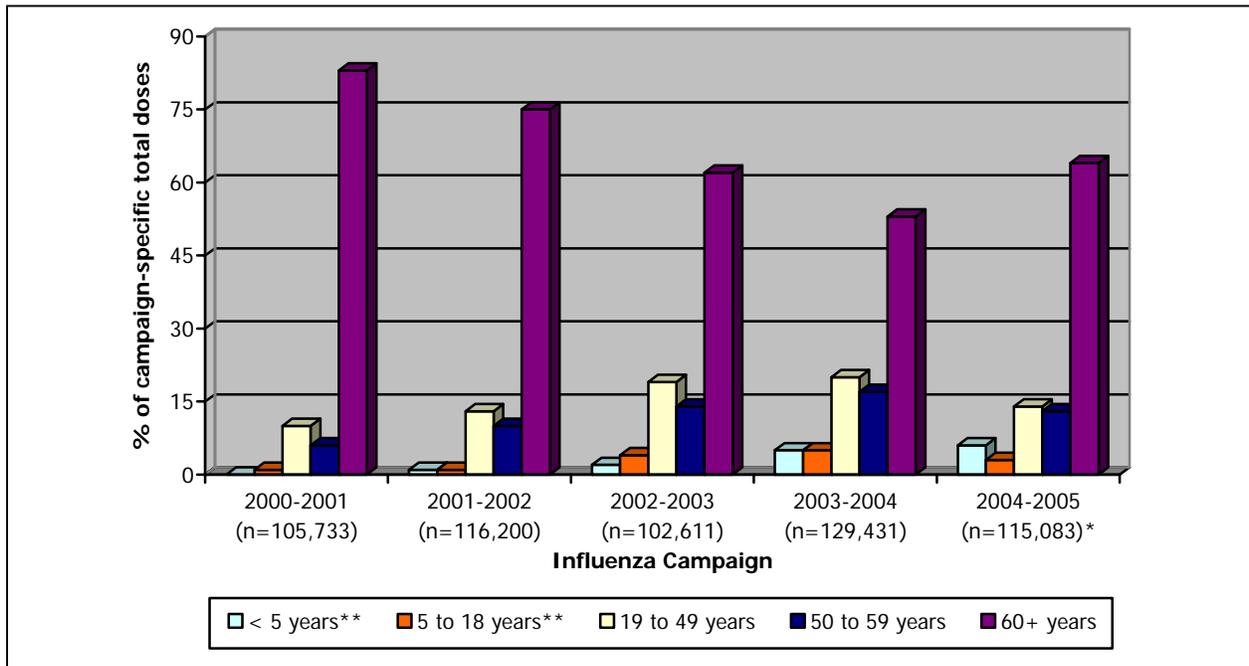
II. Vaccine Administration – Demographic Stratified Summary & Trends.

**Figure 2. Ethnic distribution of persons receiving publicly funded influenza vaccine, by campaign year.**



During the 2000-2001 and 2001-2002 Influenza Campaigns, the largest proportion of the vaccine was administered to White clinic/outreach attendees (2000-2001: 51,613 doses [49%]; 2001-2002: 51,984 doses [45%]). During the 2002-2003 and 2003-2004 Campaigns, a larger proportion of the vaccine was administered to Hispanics (39,313 doses [38%] and 52,181 doses [40%], respectively), compared to Whites (37,270 doses [36%] and 41,039 doses [32%], respectively). However, during the 2004-2005 Campaign the largest proportion of vaccine was again administered to Whites (45,782 doses [40%]). Approximately the same proportions of influenza vaccine have been administered to Asian/Pacific Islanders (APIs) and Blacks in each campaign (15%-19%; 6%-8%, respectively).

**Figure 3. Age distribution of persons receiving publicly funded influenza vaccine, by campaign year.**

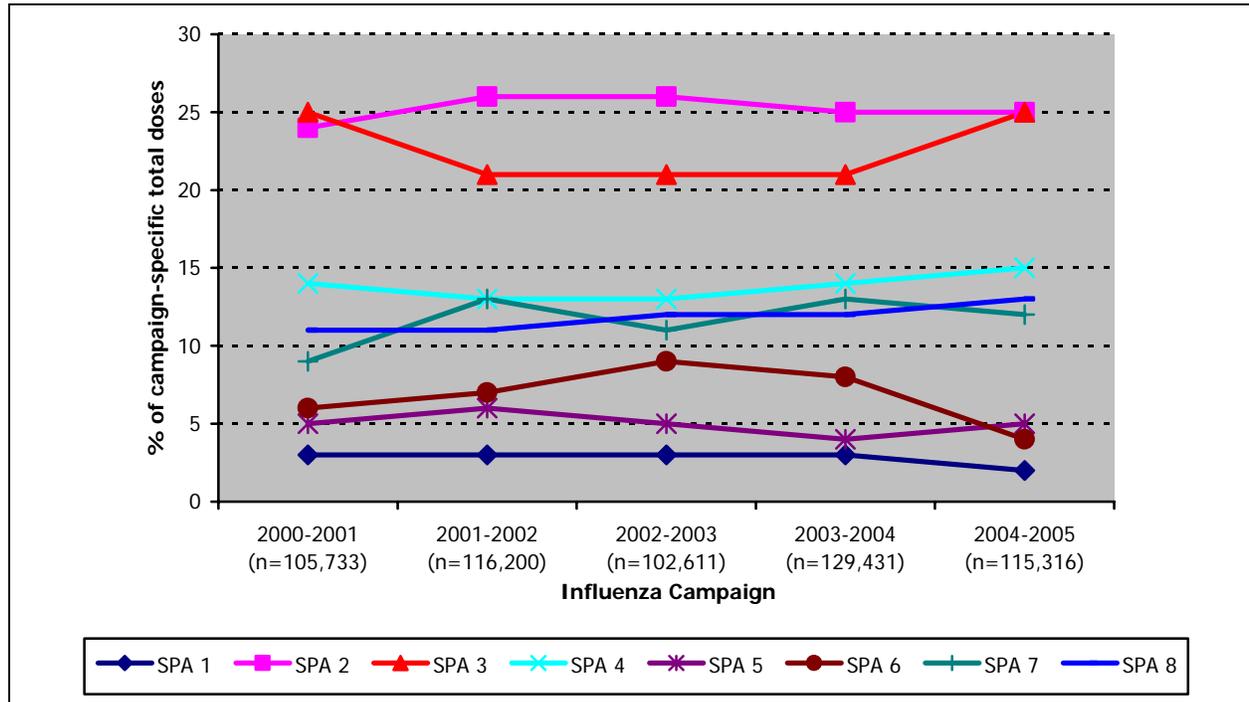


\*Due to the use of a previous campaign year's accountability form by 6 providers, the vaccine usage in persons aged 2-18 years for these providers cannot be separated into the appropriate age categories and were not included in this table. These providers administered 233 doses of influenza vaccine to persons aged 2-18 years.

\*\*For the 2004-2005 Influenza Campaign the "<5 years" category was changed to "<6 years" and the "5 to 18 year" category was changed to "6 to 18 years."

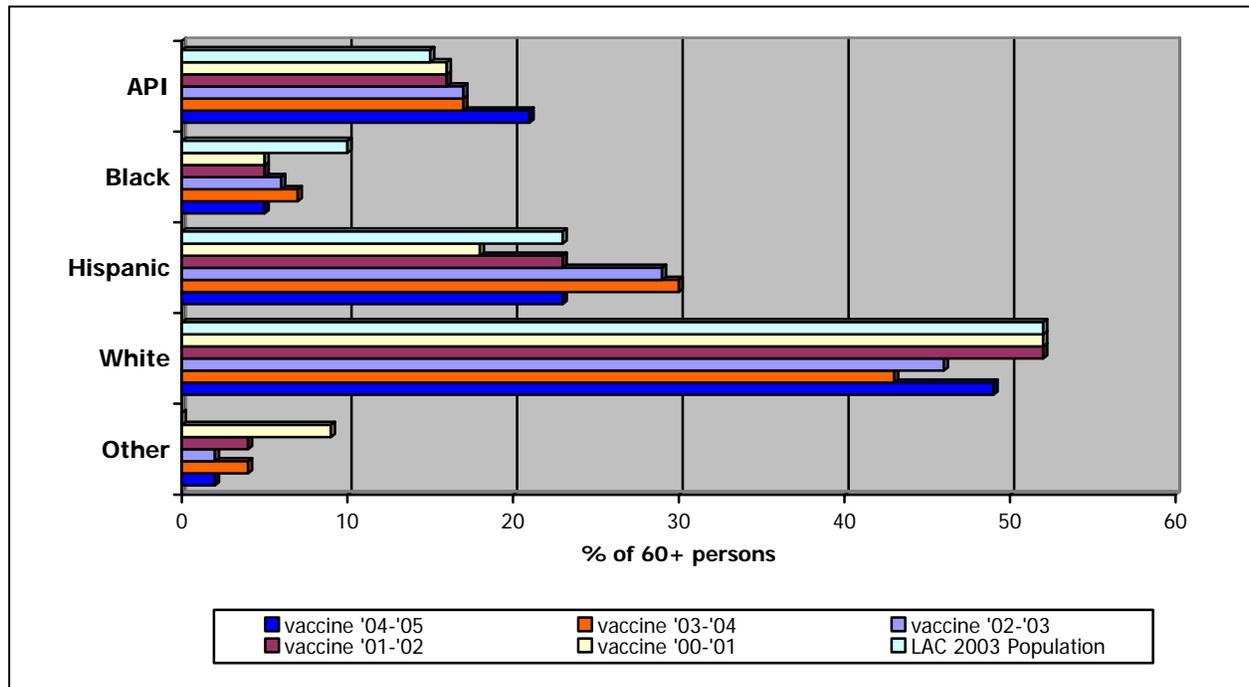
In all five campaigns, the majority of the vaccine was administered to persons 50 years of age and older, as recommended by ACIP. However, the proportion administered to persons 60 years of age and older has decreased each year, from 83% (87,515 doses) in the 2000-2001 Campaign to 53% (68,553 doses) in the 2003-2004 Campaign. Because of the modified ACIP recommendations, the proportion of influenza vaccine administered to persons 60 years of age and older increased to 64% (73,688 doses) during the 2004-2005 Campaign.

**Figure 4. Proportion of total influenza vaccine administered in each SPA, by campaign year.**



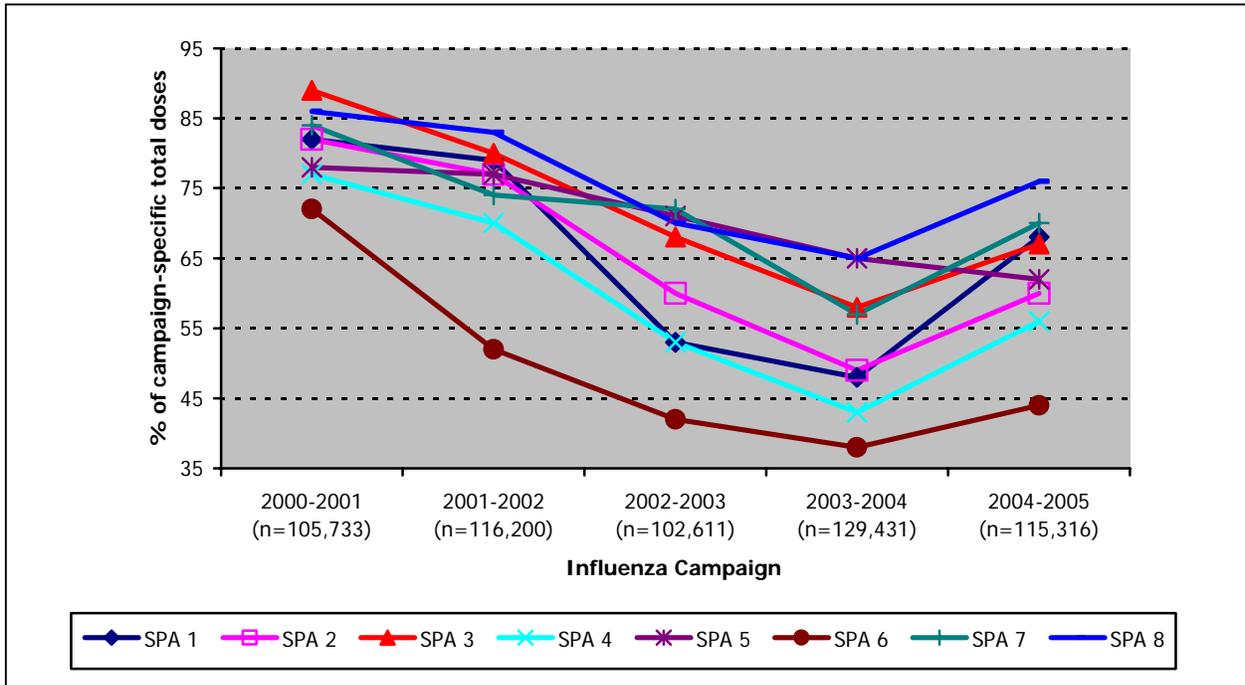
The amount of vaccine administered in each SPA is determined by the location of the provider administering the vaccine, not the residence of the vaccine recipients. For over half of the SPAs (1, 2, 4, 5, 8), their proportion of the total influenza vaccine administered has remained approximately the same for each campaign year. SPAs 3 and 7 experienced dramatic changes in their proportion of the total administered vaccine when comparing the 2000-2001 and 2001-2002 Campaigns (25% to 21% and 9% to 13%, respectively). SPA 3 experienced another dramatic change in the 2004-2005 Campaign as compared to the 2003-2004 Campaign (increase from 21% to 25%). Although SPA 7 has not experienced another dramatic change, the proportion of vaccine administered by SPA 7 fluctuated with each campaign since the 2000-2001 Campaign. In previous campaigns, SPA 6 had been steadily increasing in the proportion of the total vaccine administered by its providers, but decreased slightly in the 2003-2004 Influenza Campaign and then decreased by 50% more in the 2004-2005 Campaign.

**Figure 5. Los Angeles County 60+ population and vaccine administered in persons 60 years and older, by race and campaign year.**



For the 2000-2001 and 2001-2002 Campaigns, similar proportions of administered vaccine were evidenced for APIs, Blacks, and Whites in those persons 60 years of age and older. The proportion administered to Whites decreased to 46% (29,527 doses) during the 2002-2003 Campaign and to 43% (29,021 doses) during the 2003-2004 Campaign, but increased to 49% (36,094 doses) during the 2004-2005 Campaign. Compared to the 2002-2003 Campaign, the proportion administered to APIs remained the same (17% [11,665 doses]) in the 2003-2004 Campaign and then increased to 21% (15,350 doses) during the 2004-2005 Campaign. The proportion administered to Blacks increased to 7% (4,432 doses) during the 2003-2004 Campaign but decreased to 5% (3,808 doses) during the 2004-2005 Campaign. The proportion of influenza vaccine administered to Hispanics has increased each campaign since the 2000-2001 Campaign except for the 2004-2005 Campaign where there was a drop to 23% (16,963 doses). In the past three campaigns, the racial distribution of vaccine administered to persons 60 years of age and older differed slightly from the racial distribution of the 2003 LAC population.

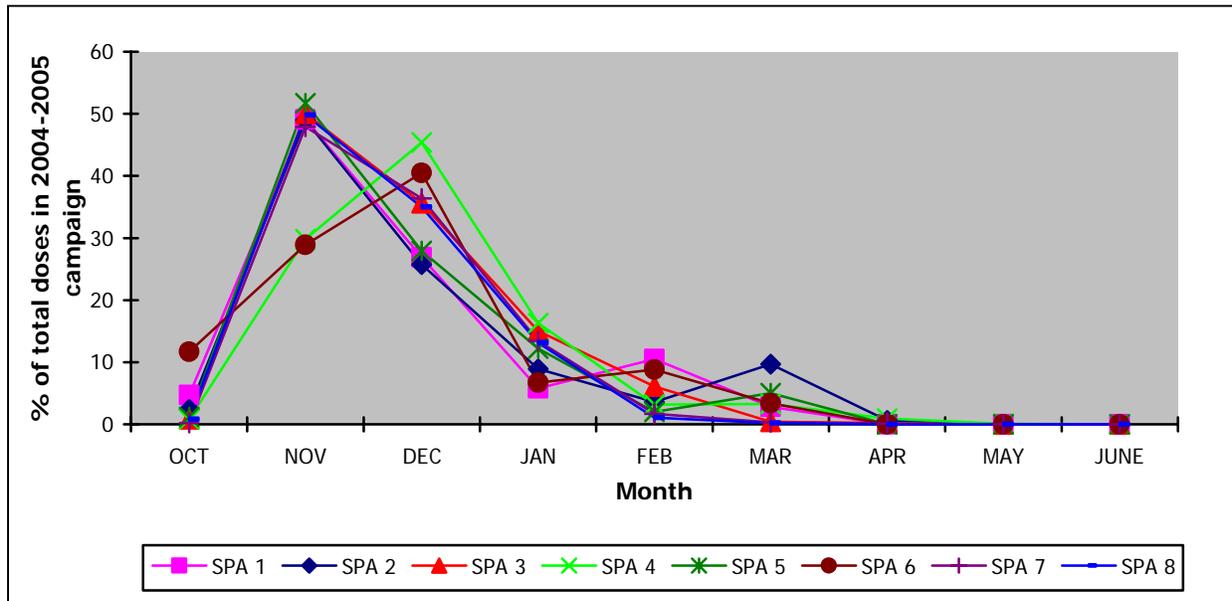
**Figure 6. Percentage of total influenza vaccine administered to persons 60+ years, by SPA and campaign year.**



Within each SPA, the proportion of influenza vaccine distributed to persons 60+ has decreased each successive campaign up to the 2003-2004 Campaign. The largest decrease during the 2003-2004 Campaign occurred in SPA 7 (72% [8,500 doses] in the 2002-2003 Campaign to 57% [11,547 doses] in the 2003-2004 Campaign). During the 2004-2005 Campaign there was an increase in all SPAs except SPA 5. The largest increase occurred in SPA 1 (48% [1,619 doses] in the 2003-2004 Campaign to 68% [1,539 doses] in the 2004-2005 Campaign).

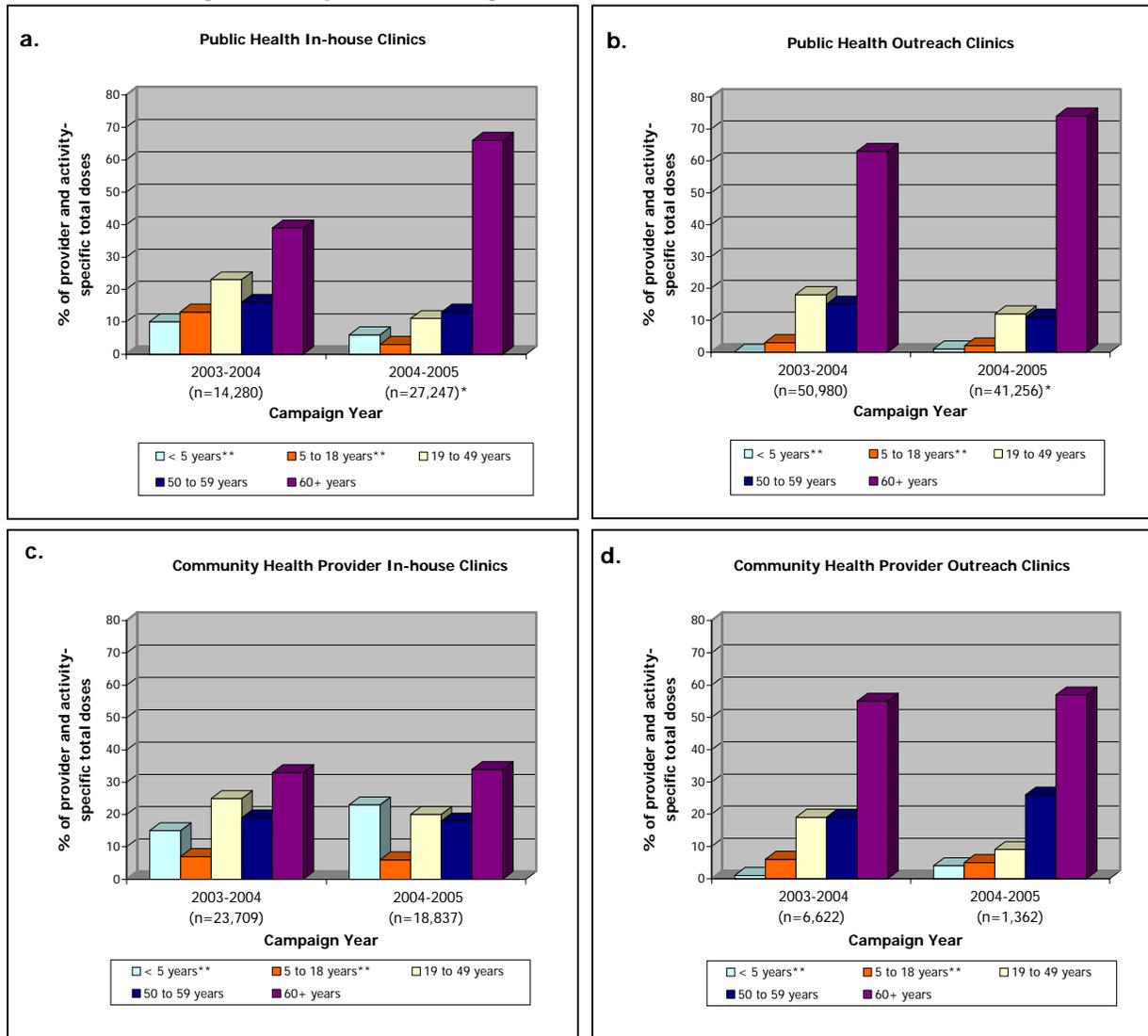
### III. 2004-2005 Influenza Campaign Results

**Figure 7. Influenza vaccine administration each month, by SPA.**



During the 2004-2005 Campaign, the majority of the SPAs (1-3, 5, 7, 8) administered the largest proportion of vaccine doses in November. SPAs 4 and 6 administered the largest proportion of their vaccine during December. All SPAs administered the majority of vaccine doses in November and December combined.

**Figure 8. Age distribution of persons receiving influenza vaccine from public health and community health providers, by outreach and in-house clinics.**



\*Due to the use of a previous campaign year's accountability form by 4 providers, the vaccine usage in persons aged 2-18 years for these providers cannot be separated into the appropriate age categories and were not included in this table. These providers administered 182 doses of influenza vaccine to persons aged 2-18 years. Of these 182 doses, 115 doses were administered during in-house clinics and 67 doses were administered during outreach clinics.

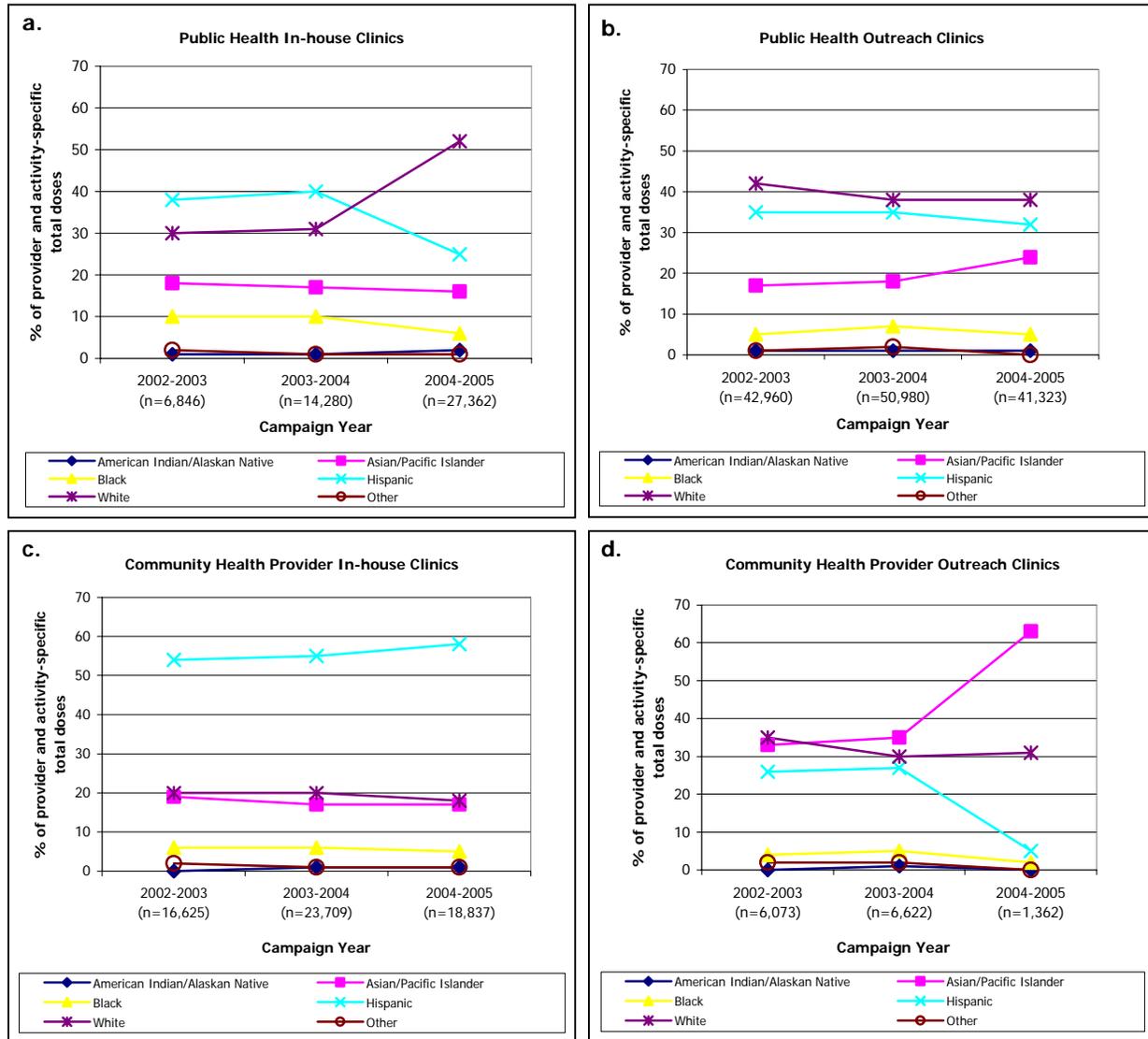
\*\*For the 2004-2005 Influenza Campaign the "<5 years" category was changed to "<6 years" and the "5 to 18 year" category was changed to "6 to 18 years."

Public Health and Community Health outreach clinics administered 37% (42,618 doses) of the influenza vaccine provided during the 2004-2005 Campaign. Public Health in-house and outreach clinics (Figures 8a and 8b) and Community Health outreach clinics (Figure 8d) administered the largest proportion of their vaccine to persons 60 years of age or older (18,079 doses [66%], 30,713 doses [74%], and 775 doses [57%], respectively).

When comparing the 2003-2004 and 2004-2005 Campaigns, the age distribution of persons receiving vaccine in Public Health outreach clinics (Figure 8b) and Community Health in-house clinics (Figure 8c) remained the same. The age distribution of persons receiving vaccine in

Public Health in-house clinics (Figure 8a) and Community Health outreach clinics (Figure 8d) changed slightly from the 2003-2004 Campaign to the 2004-2005 Campaign. There was an increase in the proportion of vaccine administered to persons 60+ in both Public Health in-house and outreach clinics (to 66% and 74%, respectively).

**Figure 9. Ethnic distribution of persons receiving influenza vaccine from public health and community health providers, by outreach and in-house clinics.**



Comparing the 2003-2004 and 2004-2005 Campaigns, there was not much change in the ethnic distribution of persons receiving vaccine in Public Health outreach clinics (Figure 9b) and Community Health in-house clinics (Figure 9c). The most noticeable change in Public Health outreach was a 33% increase (to 24% [9,900 doses]) in the proportion of vaccine administered to APIs. The largest changes in ethnic distribution occurred in Public Health in-house clinics (Figure 9a) and Community Health outreach clinics (Figure 9d). There was a decrease in the proportion of Hispanics receiving influenza vaccine at Public Health in-house and Community Provider outreach clinics (38% and 81%, respectively). In Public Health in-house clinics Whites

experienced a 68% increase (to 52% [14,122 doses]) in influenza doses received. APIs experienced an 80% increase (to 63% [859 doses]) in Community Health outreach clinics.

During the 2004-2005 Campaign, Hispanic vaccine recipients made up a much larger proportion of the population receiving influenza vaccine at Community Health in-house clinics (58% [3,151 doses], Figure 9c) than the population receiving influenza vaccine at Public Health in-house clinics (25% [4,254 doses], Figure 9a). The ethnic distribution of persons receiving influenza vaccine at Public Health outreach clinics (Figure 9b) was very different from the ethnic distribution of persons receiving influenza vaccine at Community Health Provider outreach clinics (Figure 9d) during the 2004-2005 Campaign. Predominantly Whites and Hispanics received influenza vaccine at Public Health outreach clinics (15,759 doses [38%] and 13,297 doses [32%], respectively), which was also the case in the Public Health in-house clinics (14,122 doses [52%] and 6,831 doses [25%], respectively). The majority of persons receiving influenza vaccine at outreach clinics conducted by Community Health Providers were API (859 doses [63%]) and White (416 doses [31%]). Blacks received a smaller proportion of vaccine administered during Public Health outreaches compared to Public Health in-house clinics (5% and 6%, respectively).

Overall, Public Health Providers seemed to reach the same ethnic/racial groups in their outreach clinics as in their in-house clinics while Community Health Providers seemed to use their outreach clinics to target the ethnic/racial populations that do not attend their in-house clinics.

## **Discussion**

### Summary

- Public Health outreach clinics administered the largest proportion of influenza vaccine to the LAC population over the last five campaigns.
- Due to the strict recommendations in which only persons at high risk of complications due to influenza be vaccinated during the 2004-2005 Campaign, most SPAs demonstrated an increase in the proportion of influenza vaccine administered to persons 60 years of age and older.
- Community Health outreach clinics continue in every influenza campaign to provide influenza vaccine to a population that has a very different ethnic distribution than their in-house clinics.
- Over the past five influenza seasons, the age distributions of persons receiving publicly funded vaccine through the influenza campaign has been consistent. Although the proportion of influenza vaccine administered to persons 60 years of age and older steadily decreased between the 2000-2001 and the 2003-2004 Campaigns, the majority of the vaccine was administered to persons in this age group.
- The racial distributions of persons receiving publicly funded vaccine through the influenza campaign has also been consistent over the past five influenza seasons. In each campaign, the majority of the influenza vaccine was administered to Whites and Hispanics and the smallest proportion to Blacks and American Indian/Alaskan Natives. Although this is

partially due to the ethnic distribution in LAC, special efforts to reach the American Indian/Alaskan Native and Black communities are needed. For the past five influenza campaigns APIs have been the third largest group to receive vaccine. However, in Community Provider outreach clinics APIs receive the largest proportion of the vaccine.

### Limitations

- It is difficult to assess to what extent the annual influenza campaign reached its target population.
  - Age and race information is not maintained in the same manner at all clinic sites.
  - Information on chronic conditions is not currently collected. This makes it impossible to know whether the persons under 60 years of age receiving publicly-funded vaccine actually have a chronic condition listed in the ACIP recommendations.
- Information on vaccine usage during the influenza campaigns cannot be used to determine influenza vaccine coverage levels for LAC.
  - Currently, there are no reliable means for determining how many seniors or persons with chronic conditions receive non-publicly funded influenza vaccine from their primary medical doctor.

### **References**

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<sup>1</sup> Centers for Disease Control and Prevention. *Prevention and Control of Influenza. Recommendations From the Advisory Committee on Immunization Practices (ACIP)*. MMWR 2004; 53(No. RR-6).

<sup>2</sup> Centers for Disease Control and Prevention. *Surveillance for Influenza - United States, 1994-95, 1995-96, and 1996-97 Seasons*. MMWR 2000; 49(No. SS-3): 13-28.