



**COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES
IMMUNIZATION PROGRAM
2005-2006 INFLUENZA CAMPAIGN REPORT
NOVEMBER 2006**

Background

During the winter months of 1990-1999, influenza caused an average of 36,000 deaths in the United States each year.¹ During influenza epidemics there is a twofold to fivefold increase in hospitalization rates in the elderly and persons with chronic medical conditions.² 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.¹ 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 2005-2006 Influenza Season

- ACIP recommendations¹
 - 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 2005-2006 Influenza Campaign were the same as ACIP recommendations.

Influenza Campaign

- Publicly funded influenza vaccine from the California Department of Health Services and vaccine purchased by Los Angeles County are 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.

- Publicly-funded influenza vaccine was no longer provided to skilled nursing facilities starting in the 2005-2006 Influenza Campaign.

- 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 2005-2006 Influenza Campaign began October 24, 2005. Providers continued to administer the influenza vaccine until the supply was depleted or the vaccine expired.
- Data for this report were collected through June 30, 2006.
- 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, and DHS-Public Health Center.
- 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. 2005-2006 Influenza Campaign Results.

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

Table 1. Influenza Vaccine Doses Administered, by Provider Type, Los Angeles County, 2000-2005 Influenza Campaigns.

Provider Type	Influenza Campaign Years									
	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Community Health Provider	16,049	(13.8)	22,698	(22.1)	30,331	(23.4)	20,199	(17.5)	43,215	(32.8)
DHS-Personal Health Center	8,974	(7.7)	9,480	(9.2)	15,555	(12.0)	1,698	(1.5)	8,496	(6.5)
DHS-Public Health Center [⊥]	70,019	(60.3)	49,806	(48.5)	65,260	(50.4)	68,685	(59.6)	75,659	(57.5)
Skilled Nursing Facility	20,958	(18.0)	20,627	(20.1)	18,285	(14.1)	20,499	(17.8)	0 [#]	(0)
Other [§]	200	(0.2)	0	(0)	0	(0)	4,235	(3.7)	4,260	(3.2)
Total	116,200	(100)*	102,611	(100)*	129,431	(100)*	115,316	(100)*	131,630	(100)*

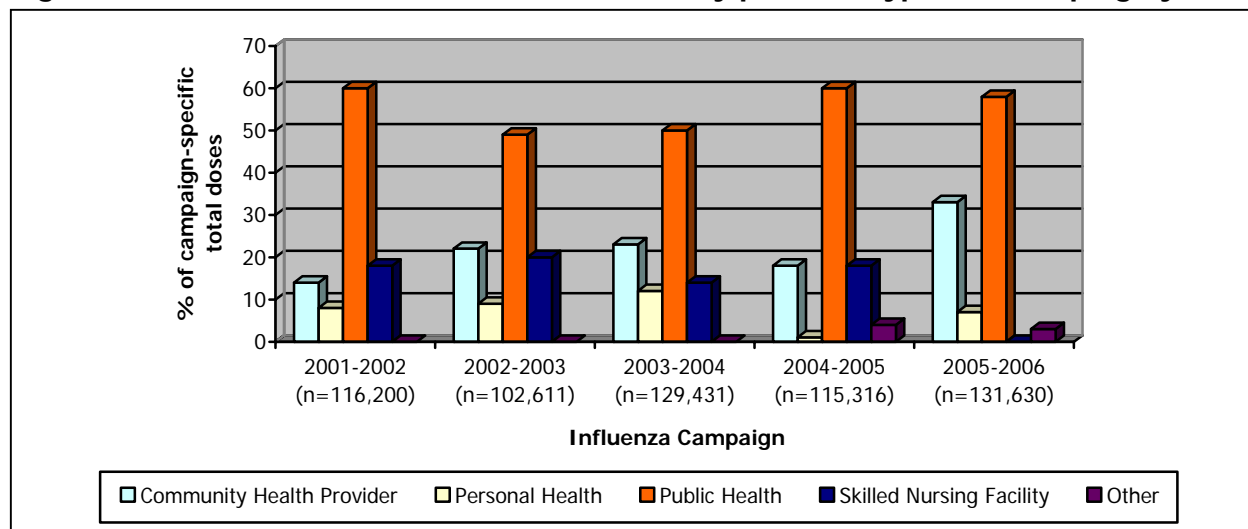
⊥ Includes outreach clinics.

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

#Publicly-funded vaccine was no longer provided to skilled nursing facilities starting the 2005-2006 Influenza Campaign.

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

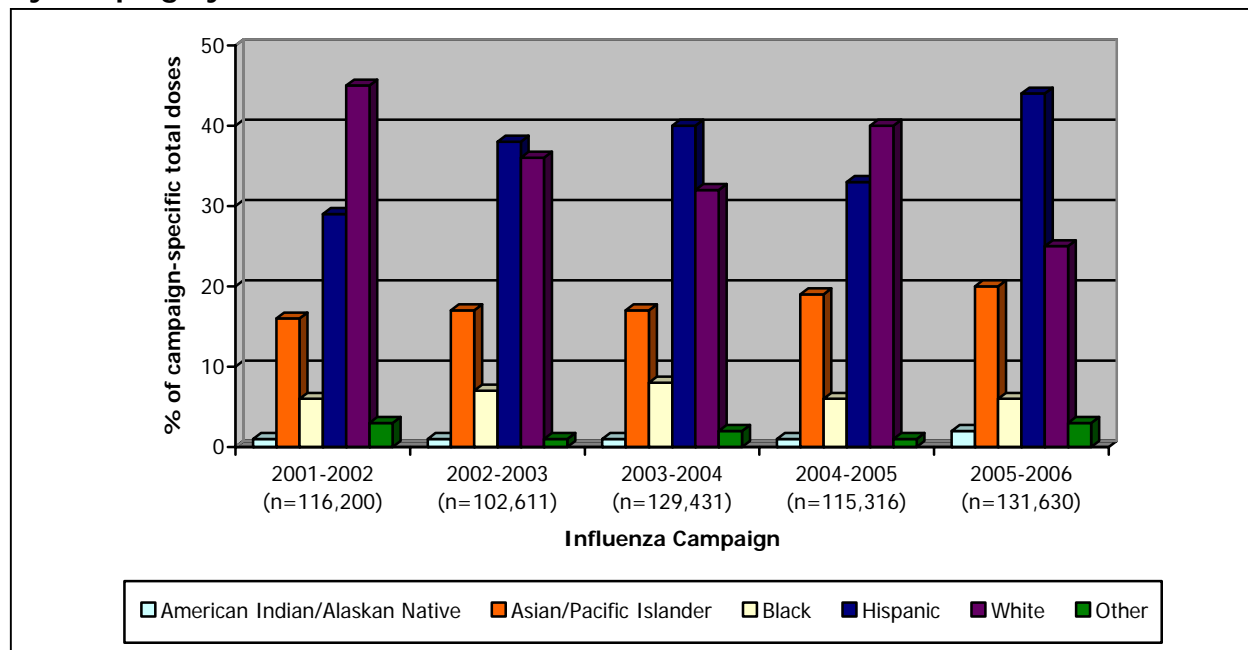
Figure 1. Administration of influenza vaccine, by provider type and campaign year.



There was a 14% increase (16,314 doses) in total doses administered during the 2005-2006 Influenza Campaign, compared to the 2004-2005 Influenza Campaign. In all five campaigns Public Health providers administered the largest proportion of the vaccine (49%-60%). There were dramatic increases in the proportion administered by Personal Health clinics and Community Health Providers when comparing the 2004-2005 campaign (1.5% and 17.5%, respectively) to the 2005-2006 campaign (6.5% and 32.8%, respectively).

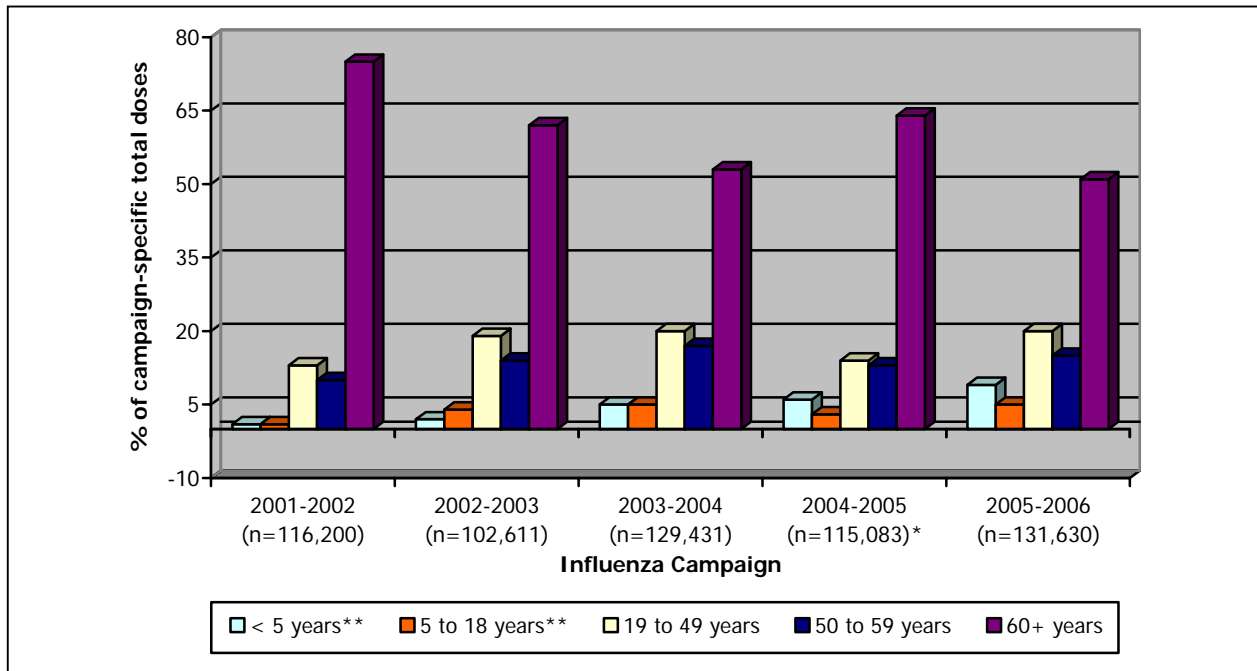
II. Vaccine Administration – Demographic Stratified Summary & Trends.

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



During the 2001-2002 and 2004-2005 influenza campaigns, the largest proportion of the vaccine was administered to White clinic/outreach attendees (2001-2002: 51,984 doses [45%]; 2004-2005: 45,782 doses[40%]). During the 2002-2003, 2003-2004, and 2005-2006 Campaigns, a larger proportion of the vaccine was administered to Hispanics (39,313 doses [38%], 52,181 doses [40%], and 58,528 doses [44%], respectively), compared to Whites (37,270 doses [36%], 41,039 doses [32%], and 32,802 doses [25%], respectively). Approximately the same proportions of influenza vaccine have been administered to Asian/Pacific Islanders (APIs) and Blacks in each campaign (16%-20% and 6%-8%, respectively).

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

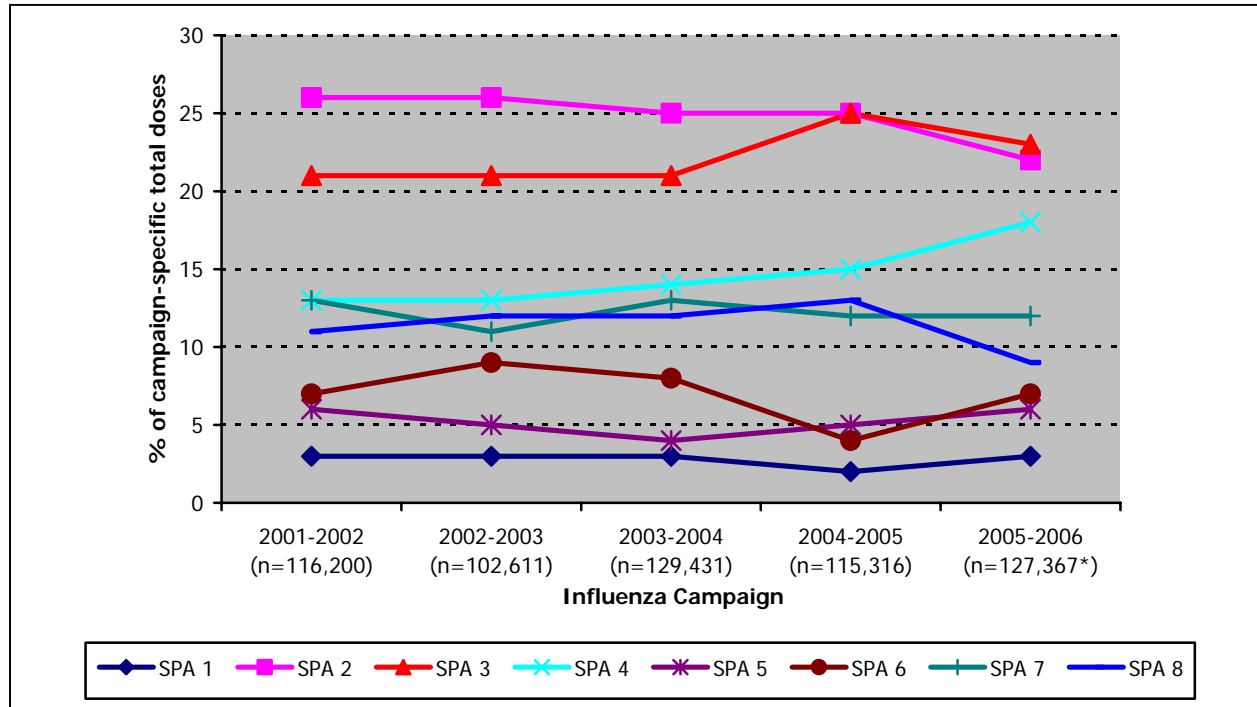


*Due to the use of a previous campaign year's vaccine accountability form by 6 providers, the vaccine usage in persons aged 2-18 years for these providers cannot be separated into the appropriate age categories and were not included in this table. These providers administered 233 doses of influenza vaccine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

**For the 2004-2005 and 2005-2006 Influenza Campaigns 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 75% (87,150 doses) in the 2001-2002 Campaign to 51% (67,187 doses) in the 2005-2006 Campaign. The increase seen during the 2004-2005 Campaign in the proportion of influenza vaccine administered to persons 60+ resulted from the modification of ACIP recommendations in response to a vaccine shortage. There was also a 63% increase in the proportion administered to children < 6 years of age from the 2004-2005 Campaign (7,321 doses [6%]) to the 2005-2006 Campaign (11,947 [9%]). The 65+ population received 47.4% (62,411 doses) of the total vaccine administered during the 2005-2006 Campaign.

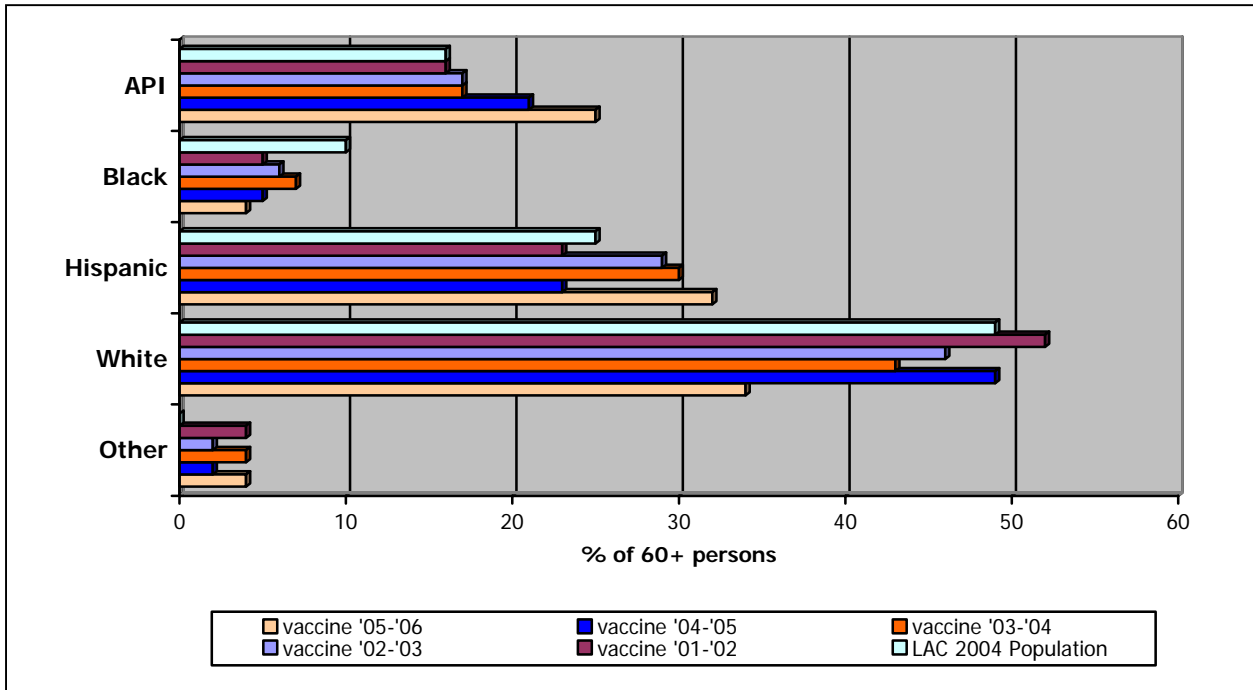
Figure 4. Proportion of total influenza vaccine administered in each SPA, by campaign year.



*Total doses for 2005-2006 do not include non-Los Angeles County Health Departments.

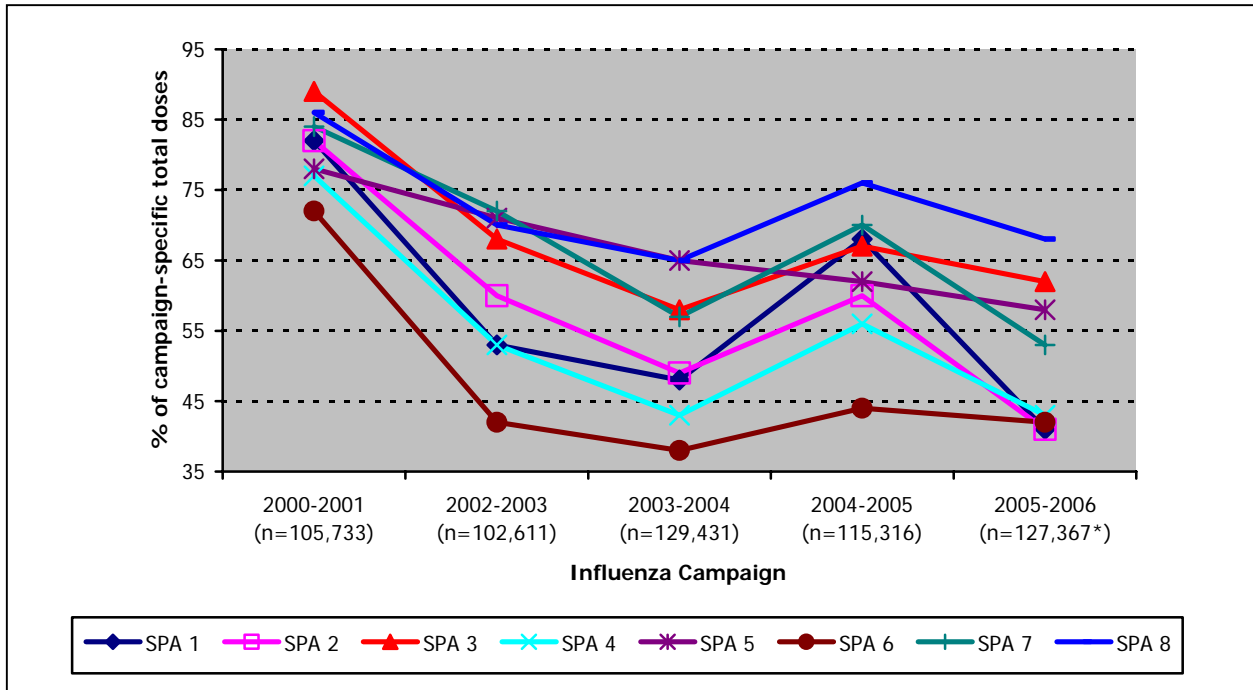
The amount of vaccine administered in each SPA is determined by the location of the provider administering the vaccine, not the residence of the vaccine recipients. For SPAs 1, 5, and 7 the proportion of the total influenza vaccine administered by each SPA has remained approximately the same for each campaign year. SPAs 2, 3, and 8 experienced decreases in their proportion of the total influenza vaccine administered during the 2005-2006 Campaign compared to the 2004-2005 Campaign (25% to 22%, 25% to 23%, and 13% to 9%, respectively). SPAs 4 and 6 experienced increases in their proportion of the total influenza vaccine administered during the 2005-2006 Campaign compared to the 2004-2005 Campaign (15% to 18% and 4% to 7%, respectively).

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



Compared to the 2004-2005 Campaign, there was a decrease in the proportion of vaccine administered to Blacks (to 5% [3,099 doses]) and Whites (to 34% [23,053 doses]) in the 2005-2006 Campaign, but increases were seen in APIs (to 24% [16,443 doses]) and Hispanics (to 32% [21,521 doses]). The racial distribution of vaccine administered to persons 60 years of age and older differed from the racial distribution of the 2004 LAC population.

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

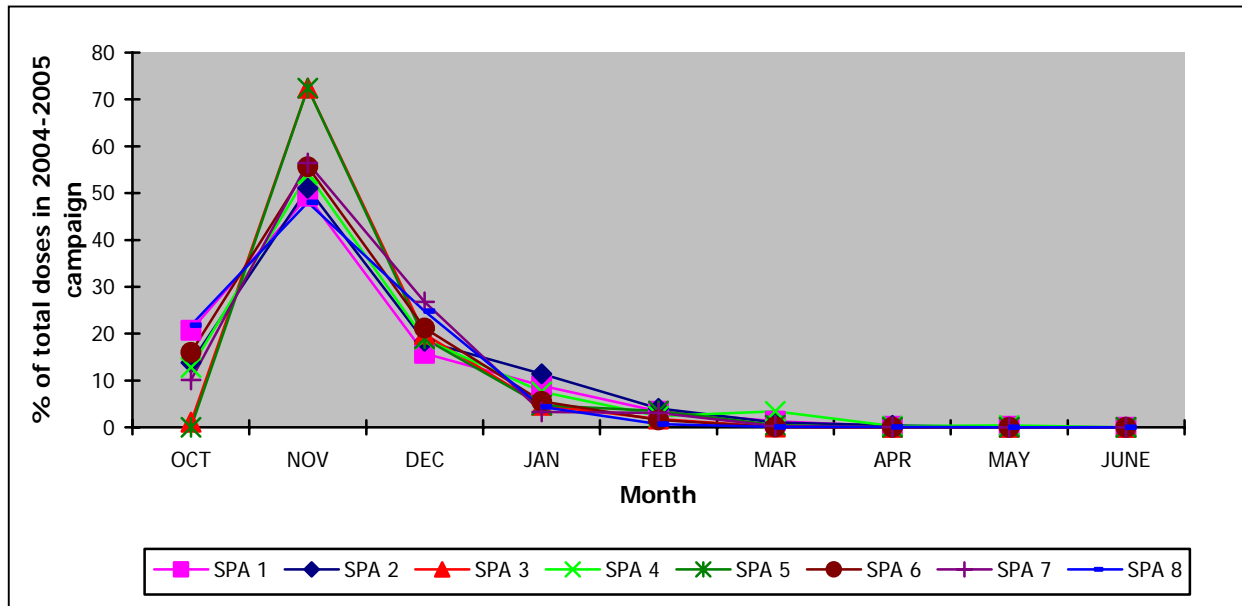


*Total doses for 2005-2006 do not include non-Los Angeles County Health Departments.

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 2005-2006 Campaign there was a decrease in all SPAs. The largest decrease occurred in SPA 1 (68% [1,539 doses] in the 2004-2005 Campaign to 41% [1,355 doses] in the 2005-2006 Campaign).

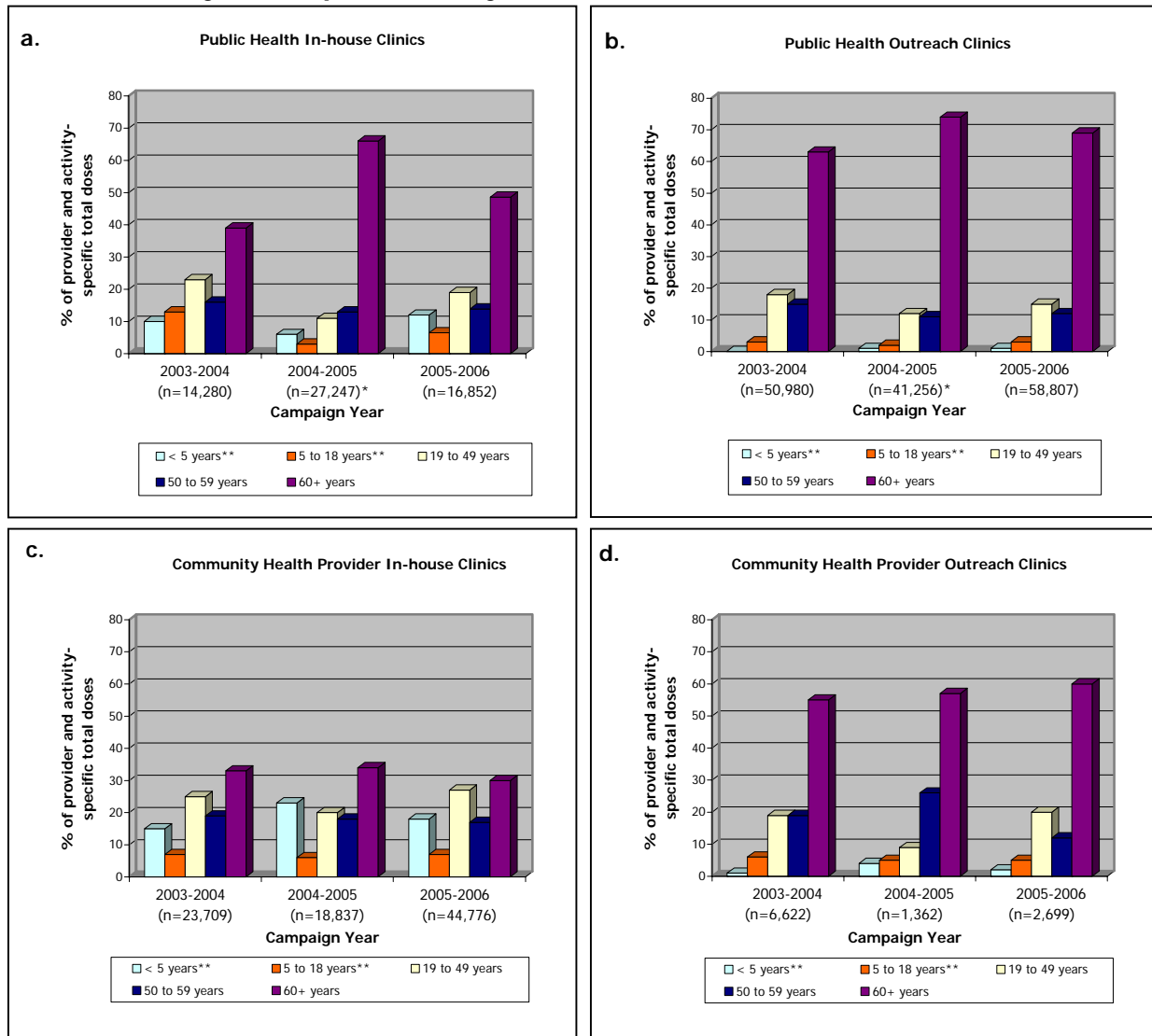
III. 2005-2006 Influenza Campaign Results

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



During the 2005-2006 Campaign, all of the SPAs administered the largest proportion of vaccine doses in November. The majority of vaccine doses were administered during the first three months of the campaign.

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



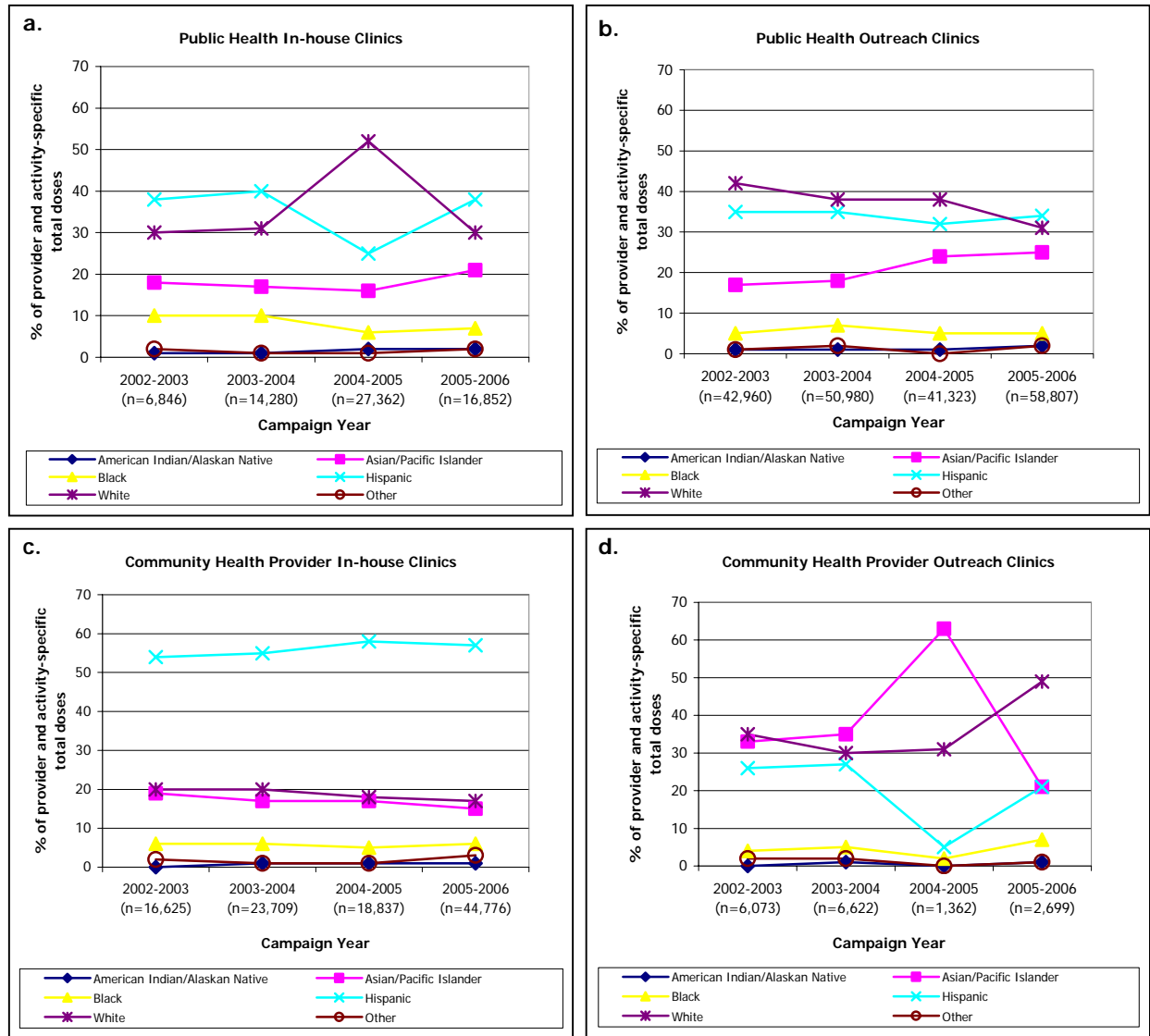
*Due to the use of a previous campaign year's vaccine accountability form by 4 providers, the vaccine usage in persons aged 2-18 years for these providers cannot be separated into the appropriate age categories and were not included in this table. These providers administered 182 doses of influenza vaccine 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 and 2005-2006 Influenza Campaigns 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 47% (61,506 doses) of the influenza vaccine provided during the 2005-2006 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 (8,183 doses [49%], 40,858 doses [69%], and 1,618 doses [60%], respectively). Although Community Health in-house clinics also administered the largest proportion of their vaccine to persons 60 years of age or older, it made up only 30% (13,392 doses) of their total.

When comparing the 2004-2005 and 2005-2006 Campaigns, the age distribution of persons receiving vaccine in Public Health outreach clinics (Figure 8b) remained the same. The age distribution of persons receiving vaccine in Public Health in-house clinics (Figure 8a), Community Health in-house clinics (Figure 8c), and Community Health outreach clinics (Figure 8d) changed slightly from the 2004-2005 Campaign to the 2005-2006 Campaign. There was a decrease in the proportion of vaccine administered to persons 60+ in both Public Health in-house and outreach clinics (to 49% and 69%, 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 2004-2005 and 2005-2006 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 18% decrease (to 31% [18,301 doses]) in the proportion of vaccine administered to Whites. The largest changes in ethnic distribution occurred in Public Health in-

house clinics (Figure 9a) and Community Health outreach clinics (Figure 9d). There was an increase in the proportion of Hispanics receiving influenza vaccine at Public Health in-house and Community Provider outreach clinics (52% and 320%, respectively). Whites experienced a 42% decrease (to 30% [5,119 doses]) in vaccine received during Public Health in-house clinics and a 58% increase (to 49% [1,334 doses]) in vaccine received during Community Health outreach clinics. APIs experienced a 67% decrease (to 21% [567 doses]) in Community Health outreach clinics.

During the 2005-2006 Campaign, Hispanic vaccine recipients made up a much larger proportion of the population receiving influenza vaccine at Community Health in-house clinics (57% [25,648 doses], Figure 9c) than the population receiving influenza vaccine at Public Health in-house clinics (38% [6,481 doses], Figure 9a). Predominantly Whites and Hispanics received influenza vaccine at Public Health outreach clinics (18,301 doses [31%] and 20,271 doses [34%], respectively), which was also the case in the Public Health in-house clinics (5,119 doses [30%] and 6,481 doses [38%], respectively). The majority of persons receiving influenza vaccine at outreach clinics conducted by Community Health Providers were White (1,334 doses [49%]), a shift from the trend of APIs receiving the most vaccine in previous years. Blacks and American Indians/Alaskan natives received the smallest proportions of vaccine administered during all outreach and in-house clinics.

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 publicly-funded influenza vaccine to the LAC population over the last five campaigns.
- Community Health outreach clinics continue in every influenza campaign to provide influenza vaccine to a population that has a somewhat 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. The majority of the vaccine was administered to persons 60 years of age and older.
- According to recent LA Health Survey data 61.6% of persons 65 years of age or older reported receiving the influenza vaccine during the 2004-2005 influenza season. Approximately 6.4% of these persons were vaccinated with publicly-funded vaccine.
- 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. Part of the reason Blacks and American Indian/Alaskan Natives receive a smaller proportion of the vaccine is that they make up the smallest proportions of the total LAC population (9.3% and 0.3%, respectively). However, special efforts to reach the American Indian/Alaskan Native and Black communities are still needed. For the past five influenza campaigns APIs

have been the third largest group to receive vaccine. The racial distributions of persons receiving publicly funded vaccine through the influenza campaign has been consistent over the past five influenza seasons.

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

¹ Centers for Disease Control and Prevention. *Prevention and Control of Influenza. Recommendations From the Advisory Committee on Immunization Practices (ACIP)*. MMWR 2005; 54(No. RR-8).

² 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.