Immunization Policies and Funding in Los Angeles and San Diego Counties

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OVERVIEW

In order to develop a sharper picture of immunization service delivery and surveillance activities than would be possible in a statewide report, this case study focuses on the two largest counties in California and presents federal, state, and local policies and expenditures at the county level for Los Angeles and San Diego. As elsewhere, California experienced substantial increases in its federal Section 317 grants through 1996. Capacity and activities in county-level immunization programs increased through that year and were maintained in the next, with program cutbacks at the county level first felt in substantial part in state fiscal year 1998. Representatives of both counties we interviewed noted that fluctuations in funding adversely affect their ability to chart new strategies and to establish and maintain programs that will address the immunization needs their communities face in the changing immunization environment. Although the state is able to roll over funds unspent in a particular funding year, the counties cannot. Therefore, there is no assurance of stability for funding any particular program.

Both Los Angeles and San Diego Counties have used Section 317 dollars for direct services as well as outreach and education, grass-roots community-based assessment and referral, assessment and referral in Women, Infants, and Children (WIC) centers, and provider-based AFIX assessments (Assessment, Feedback, Incentives, eXchange) based on Clinical Assessment Software Applications (CASA) methodology. They have reduced the scope of direct services, mass education, community outreach activities, and WIC assessment and referral as a consequence of reductions in 317 funding. Direct services are no longer funded in Los Angeles County, and WIC assessment and referral activities are scheduled to be eliminated after June 2000.

Because 75–80% of the vaccinations are delivered in the private sector (and the remainder in a combination of public health department clinics and federally qualified health centers [FQHCs]), both counties would like to continue assessment and referral at a variety of public program sites, because these activities are believed to be successful in prompting families to bring children to their own provider.

Managed care is mandatory for children in Medi-Cal and Healthy Families (the State Children's Health Insurance Program [SCHIP]). Low capitation rates, especially in the Healthy Families program, are reported as a problem by participating providers. Physicians participating in commercial managed care plans also report that monthly capitation payments for routine primary care services are too low to cover the cost of immunizing young children, a cost that capitated providers are at risk for.

San Diego County is notable for the extent to which it has made the transition to an assurance model of public health, from one that emphasizes direct service delivery.

BACKGROUND

Los Angeles County (LA County) is almost four times the size of San Diego County (SD County) with birth cohorts of approximately 175,000 and 45,000, respectively[1,2]. LA County has a larger population than all but eight of the nation's states and is the largest county in the United States.[3,4,5] Los Angeles dwarfs San Diego, but the latter county is actually fairly large in its own right. San Diego is the fifth largest county in the nation and is larger than 20 of the nation's states. As shown in Table 1, LA County has higher rates of poverty, more uninsured children, and more children on Medicaid than SD County. Los Angeles also has higher Hispanic (58% vs. 33%) and lower white (22% vs. 50%) populations than SD County.

San Diego abuts the international boundary with Mexico to the south, and 120 miles to the north is Los Angeles. With more than 57 million legal crossings in 1995, more people legally entered the country at San Diego than through any other port of entry in the nation.[6] There is also significant illegal border crossing traffic. Both SD and LA Counties have significant numbers of new immigrants as a result.

TABLE 1. Los Angeles and San Diego Counties by Selected Demographic Characteristics of Children

Characteristic	Los Angeles(%)[a]	San Diego (%)[b]
Ethnicity		
Asian or Pacific Islander	10.4	10.0
Black	10.3	7.6
Hispanic	57.5	32.9
White	21.5	49.5
Income		
Children below poverty level	30.4	24.3
Children up to 200% of poverty	59.8	NA
Insurance coverage		
Commercial		
Medicaid	25	11.4
Uninsured	31	13

NOTE: NA = not available.

[a]SOURCE: Children's Profile—Professional LA County Service Planning Area Resources for Child Use and Families, December 1998, Estimated Number and Percent of Children, Under 18, Who Are Uninsured and Covered by Medi-Cal, 1997, LA County Health Survey, 1997.

[b]SOURCE: Population and Economic Characteristics, San Diego Region, Population Estimates by Age and Ethnicity, January 1, 1997, SANDAG/Sourcepoint, January 15, 1998, UCLA Center for Health Policy Research, 1995.

Despite some differences, the health departments in the two counties have similar organizations and face many of the same problems. In both counties, the immunization program is in the division responsible for communicable disease control, and both have a strong orientation toward public health and disease surveillance. The Maternal and Child Health (MCH) Divisions in both counties have most of the liaison functions with managed care plans and the heaviest involvement in quality assurance issues (including assurance of immunization delivery) in managed care.

In both LA and SD Counties, the vast majority of immunizations are delivered by private sector providers. In both counties, fewer than 10% of all immunizations are delivered in county health department (CHD) clinics. A little over 10% of immunizations are delivered in community health centers (CHCs) that are FQHCs or FQHC look-alikes. In both counties the remaining 80% of immunizations are delivered in the private sector or, in San Diego, the private sector and the military. In this respect the counties are like the state as a whole, which reports that 75 to 80% of the immunizations given statewide are delivered in the private sector.[7]

There are notable exceptions to this generalization, however. The San Diego program reports a recent increase in public sector immunizations, which had been steadily decreasing since 1994. The LA Unified School District was responsible for immunizing about half of all seventh graders in order to comply with a new school entrance requirement for hepatitis B this past school year.

Still, the degree to which vulnerable populations are immunized depends, in large measure, upon the incentive structure faced by providers in the private sector, who deliver most of the primary care. Since virtually all Medicaid and SCHIP (Medi-Cal and Healthy Families, respectively), enrollees are in managed care organizations (MCOs), the management, oversight, payment, and incentive structure for primary care service delivery generally—and for immunizations specifically—is the responsibility of these capitated plans.

Both counties benefited from California's policy on the use of Medicaid program savings of $20 million when Vaccines for Children (VFC) was instituted. Half of the savings ($10 million) was used statewide to increase the vaccine administration fee from approximately $4 to $8.30. The remaining $10 million was allocated equally to three different uses: county immunization registries, CHCs for service delivery, and collaborative initiatives. Collaborative initiatives cover a variety of projects, including WIC linkage and FQHC registries in LA County; immunization management consultancy (i.e., provider feedback and education) and a case management outreach project in SD County; and other outreach campaigns in both counties.

It is important to note that these Medicaid savings became available at approximately the same time as the state's Section 317 grant was being cut. As a consequence, the impact of Section 317 funding reductions was offset to some degree with these state funds. Health centers receive a single allocation from the county that includes federal 317 funds as well as state dollars and, thus, are not able to determine when one goes up and the other down. The health centers we visited reported no drop in funding when Section 317 dollars were reduced. We were told that state funds did not completely offset the drop in Section 317 dollars and that other health centers, which we did not visit, experienced a pronounced drop.

Both counties are affected by another statewide policy that involves the CalWorks program instituted as part of welfare reform. CalWorks staff are required to seek assurance that children under age 6 are up-to-date on immunizations (and assurance of school attendance for children over 6) for all applicants with appropriately aged children. If a child is not up-to-date, the parent is given 45 days, and after that time the parent's portion of CalWorks financial assistance is reduced by 40%.

Immunization rates for 4:3:1 were 8% lower in LA County than in SD County in 1994, but have risen in both counties and now are comparable to each other and to the state and nation as a whole, according to the National Immunization Survey (NIS); see Table 2. In 1998, the coverage rates of 77% (∀5.9) for LA County, 80% (∀5.1) for SD County, and 77% (∀5.6) for the state were within the confidence intervals of the 81% (∀0.9) for the nation. Despite its larger poor and minority populations, these factors are not reflected in LA County's immunization coverage rates.

TABLE 2. Immunization Coverage for 4:3:1 in the Nation, California, and Los Angeles and San Diego Counties Among Children Aged 19–35 Months

	1994	1995	1996	1997	1998
Nation	75	76	78	78	81
California	72	71	78	76	77
Los Angeles	68	73	81	73	77
San Diego	76	75	78	80	80

NOTE: 1994 data are for July 1, 1994–June 30, 1995. All other data are based on calendar year reporting.

SOURCE: National Immunization Survey.

It should be noted, however, that retrospective data from school entrance reports produce estimates of up-to-date rates for 2-year-olds that are significantly lower than NIS rates in LA County for the same year. The retrospective kindergarten survey produces a 60% up-to-date rate for children 2 years of age in 1995, compared with the 73% rate estimated by NIS that same year.[8]

This report is divided into five additional sections. The first section describes the activities of the immunization division in Los Angeles, including the uses and effect of Section 317 funding and the VFC program. The second section presents the same information for San Diego and also describes the Academic Medical Center project at the University of California at San Diego (UCSD). The third section covers immunization issues in Medi-Cal and Healthy Families, the fourth quality discusses assurance efforts, and the final section describes immunization registry development in each county.

LOS ANGELES COUNTY HEALTH DEPARTMENT— IMMUNIZATION PROGRAM

The mission of the Los Angeles County Immunization Program (Table 3) is to ensure that residents of the county are appropriately vaccinated, thereby reducing vaccine-preventable disease morbidity and mortality. The Los Angeles Immunization Program is located in the communicable disease division of the county health department. Its traditional emphasis has been on quality assurance activities, school assessment, vaccine delivery, disease surveillance, and some direct delivery of immunization services. LA County health department clinics include

- 10 public health clinics that offer walk-in immunization services only;

- 22 personal health clinics that offer primary care, including immunizations (some offer walk-in immunization services as well);
- 5 comprehensive clinics that offer both primary care and walk-in immunization services; and
- 5 hospitals that offer primary care (some have walk-in immunization services as well).

Fewer than 10% of the immunizations from the county and state VFC program are delivered in these health department clinics. The remaining 90% are delivered by the 106 CHCs, which are FQHCs or FQHC look-alikes; 28 schools; and almost 1,200 private providers. The county health department delivers vaccines to health department clinics, CHCs, and schools, while the state delivers vaccines to private providers. (There are more CHCs and private providers in LA County—almost 5,000 of the latter, but they purchase their own vaccine.) The county performs a full quality assurance review (QAR) and CASA assessment annually for the county health department clinics and CHCs. State representatives perform "Casita" assessments (looking at only 50 charts) in 1,187 private provider site every 2 years.

TABLE 3. Los Angeles County Immunization Program

Provider Type	No. of Providers	Source of Vaccine	Quality Assurance
Private providers enrolled in VFC (state responsible)	1,187	State supplied	CASITA, state representative visit every 2 years, modified QAR
County health department clinics			
Public (immunization only)	10	County supplied	Full QAR and CASA by county annually
Personal (primary care)	22		
Comprehensive	5		Monthly accountability and inventory reports
Hospitals	5		
Community health centers—FQHCs and look-alikes	106	County supplied	Same as above
Schools and other	28	County supplied	CASA for eligible sites; either full or modified QAR

Los Angeles Program to Strengthen the Infrastructure

With the influx of federal 317 funds, LA County was able to expand activities including monitoring coverage in provider sites, education and outreach, and linkages with WIC. The Immunization Program's activities include surveillance for vaccine-preventable diseases; responding to disease outbreaks; immunization coverage assessments, including state-mandated assessments, CASA, and QAR; informing and educating the public; outreach and education; professional education and training; WIC assessment and referral; hepatitis B case management; adolescent programs; funding immunization services; health services research; vaccine management; immunization registry development; and other special projects.

As part of its core functions, Immunization Program activities include the following:

- Surveillance—The Immunization Program coordinates the investigation of selected reportable suspected and confirmed vaccine-preventable disease cases, analyzes surveillance data to monitor vaccine-preventable disease trends, and conducts active surveillance for perinatal hepatitis B and provides management for cases and their contacts.
- Responding to disease outbreaks—The Immunization Program monitors vaccine-preventable disease incidence to identify increases above threshold levels and coordinates the investigation of selected vaccine-preventable disease outbreaks and recommends control measures.
- Conducting Fall Assessment—These are state-mandated assessments of immunization of all children entering public or private kindergartens and preschools to estimate aggregate vaccine coverage levels at the time of school entry. This effort involves collecting information from approximately 4,400 schools. Recently, a new requirement similar to the Fall Assessment has been added. The program will also conduct assessments at Licensed Family Child Care Homes, of which the county has approximately 8,000. Additionally, the program conducts assessment of seventh grade entry immunization requirement, CASAs for Department of Health Services (DHS) facilities and contract agencies, and special surveys including cluster surveys to provide timely estimates of vaccine coverage in selected geographic regions.
- Informing and educating the public—The program has a multipronged approach. Staff develop culturally and linguistically diverse material to distribute to providers and new parents, conduct focused promotional campaigns using posters, billboards, bus posters, wall displays, radio, and television, highlighting activities during National Infant Immunization Week, Toddler Immunization Month, Back to School, and others. Additional activities include focused outreach to and education of communities with the lowest immunization coverage levels and establishing or maintaining partnerships with child health advocates and organizations. Much of the effort in this area is particularly susceptible to fluctuations in funding. When funds are cut, the program is reluctant to cut needed personnel and looks to this area in response to cuts.

As part of its outreach efforts the Immunization Program is involved in some programs that merit special attention.

- The “Promotora” program (promoters of health)—This program seeks to perform case management at the grass-roots level. Lay people from the community are trained to do assessment and education. Individuals work in their own neighborhoods assessing immunization status and educating families on the importance of immunizations.
- Public and nonprofit clinic assessment and education—The unit is staffed by four public health nurses who assess clinic practices and provide education for Los Angeles County DHS facilities and for nonprofit clinics that receive vaccine from the Immunization Program. QARs and CASA are conducted yearly to assess immunization practices and immunization coverage rate. Problems identified are addressed at in-services training programs. Besides in-services conducted at provider offices, monthly classes are given in each of the three Immunization Program area offices to assist providers in training new staff. Updates and training on immunization are also provided to other health center staff and school nurses. In-services are provided throughout the county before the introduction of new vaccines.

- Private provider education—The private provider education program was developed for private practice providers, with emphasis on office immunization management. The program was developed in 1998 in response to estimates indicating that in LA County, the vast majority of children were being immunized in the private sector and immunization rates for young children were far below the 90% goal established by the Centers for Disease Control and Prevention (CDC) for the year 2000. The unit consists of two public health nurses. Sixty educational programs were given in 1999 to interested health care providers covering childhood immunizations and office immunization management practices, including reminder-recall systems. Nearly 1300 people attended these educational programs in 1999. Similar programs were presented at grand rounds at local public hospitals by the Medical director of the Immunization Program and unit staff.
- Assessment and referral activities in WIC centers—This is another area emphasized, since 70% of the young children in LA County are recipients of WIC services. The WIC immunization project involves the assessment of immunization records of WIC clientele ages 0–24 months during normal counseling and referral to health care providers for needed immunizations. Three WIC agencies participate in this program, representing 64 of the 69 sites. Of these, the Immunization Program funded assessment and referral at 32 sites. At the remaining 32 sites, assessment and referral are funded by a state collaborative grant. WIC staff whom we interviewed reported that they believed in the importance of assessment and referral and were willing to add them to their repertoire of services to clients, but needed to receive funding to do so. Staff stressed that immunization activities were not their main function and pointed out that assessment and referral activities added a substantial amount of time—1 or 2 minutes—to the approximately 15-minute visit. Recent funding reductions in Section 317 dollars have resulted in elimination of WIC linkage funded by the Immunization Program. Some WIC clinics, including the one we visited, have been successful in securing other grant funding to continue these efforts.
- Perinatal hepatitis B program—LA County has one of the largest perinatal hepatitis B programs in the nation. The program's mission is, through case management, to prevent illness and death due to transmission of the hepatitis B virus (HBV) to infants whose mothers are chronically infected with HBV. The program follows HBV carrier pregnant women, their infants, and families. Follow-up of 600 infants exposed to hepatitis B perinatally was completed in 1999.
- Asian and Pacific Islander (API) hepatitis B outreach—HBV affects Asian and Pacific Islanders disproportionately, particularly during infancy and early childhood. There are approximately 187,000 children aged 5–18 years of this group living in LA County. While national hepatitis B vaccination recommendations and school entry requirements ensure that most children born after 1993 are protected, many older children remain susceptible. Through school-based vaccination coverage surveys in elementary schools, the program is identifying communities with low HBV vaccine coverage among school-aged children. Health care providers and families in the communities identified will receive education targeted at increasing immunization coverage levels.
- Adolescent program—Currently this program provides continuous technical assistance including materials to nurses in public and private schools regarding clinical referrals and implementation guidelines, vaccine safety and exemptions, monitoring of and assistance with adolescent vaccination requirements, and consultation for parents.
- Immunization Round Table Coalition—This is a volunteer-based public–private partnership of government health agencies, medical providers, community clinics, and private businesses, With a total of 282 members, the goal is to protect the community against vaccine-

preventable diseases through information sharing, coordinating activities, and collaborating on immunization efforts. Emphasis is placed on using provider education, community awareness, and research and planning to achieve the coalition's goals.

Federal, State, and County Funding for Infrastructure

Los Angeles immunization programs continue to fund activities in all of CDC's 18 priority areas, but they have had to deemphasize some. Table 4 shows the immunization funding summary for infrastructure from county, state, and federal sources. As shown in this table, the largest share of funds is federal (note that these are funds awarded, not funds spent), followed by state and then county. In 1999 the relative proportions were 62.8% federal, 30.9% state, and 6.3% county. Table 5 shows all immunization-related county and state source spending. This table shows county infrastructure spending for personnel and operating expenses as well as state source spending for infrastructure support.

Vaccine Purchase and Distribution

Table 6 gives the expenditures for publicly purchased vaccines. As shown in this table, the largest source of funds for vaccine purchase comes from the VFC program followed by Section 317. State source funds were used for adult vaccine purchases: flu, pneumococcal and adult tetanus and diphtheria toxoids (Td) vaccines. Table 7 gives the number of public and private VFC sites in LA county. In 1999 there were 226 public nonprofit and 1,184 private sites. As stated earlier, the LA County Health Department distributes vaccines to the 226 nonprofit sites, while the state distributes to the private sites. Figure 1 shows children in the 226 public sites that receive publicly purchased vaccines by eligibility category. This breakdown is not available for children served in the 1,184 private sites. As shown in Figure 1, the largest fraction (60%) are Medi-Cal children, followed by underinsured children served in FQHC sites (30%), and uninsured children (6 %); non-VFC and Native American children account for the remaining 4%.

Adult Immunizations

LA County's involvement in adult immunizations is minimal. The county receives state-purchased flu and pneumonia vaccines, and the field staff coordinate with county nursing and health education staff to distribute vaccine to more than 700 sites, including LA County immunization project and outreach sites, some nonprofit CHCs, skilled nursing facilities, and dialysis centers. Because state funding for flu and pneumococcal vaccines has remained level while actual costs have increased, the county has experienced a drop in purchasing power and will be forced to cut distribution to skilled nursing facilities and dialysis centers. LA County also works to develop the annual flu delivery schedule and coordinates this information with the flu hotline. The California Health Department spends approximately $3.1 million annually on vaccines, $1 million of which is for pneumococcal and influenza vaccines for adults.

Section 317 Financial Assistance (FA) Funds Spent and Carried Over

Table 8 shows federal 317 FA funds spent and carried over for the State of California as a whole, since numbers are not meaningful at the county level. In 1992, more than three times as

Table 4. Immunization Funding Summary for Infrastructure, Los Angeles County (dollars)

	1992	1993	1994	1995	1996	1997	1998	1999
Section 317 infrastructure	888,945	3,038,265	4,375,794	4,931,002	12,374,465	6,534,195	4,608,620	3,526,035
State-funded infrastructure				420,030	716,836	1,362,834	1,786,836	1,734,022
County-funded infrastruct-ure	19,789	5,489	5,007	5,712	4,098	2,617	521,261	351,961
Total	908,734	3,043,734	4,380,801	5,356,744	13,095,399	7,899,646	6,916,717	5,612,018

Table 5. County and State Source Spending, Los Angeles County (dollars)

Source Spending	1992	1993	1994	1995	1996	1997	1998	1999
Vaccine purchases (county contribution)								640,715
Personnel expenses	903	745		2,131			517,581	350,273
Other contracts or grants (state source spending)				420,030	716,836	1,362,834	1,786,836	1,734,022
Other operating expenses	3,951	4,724	5,077	3,581	4,098	2,617	3,680	1,688
Equipment and capital outlay	14,935							
Total	908,734	3,034,734	4,380,871	5,356,764	13,238,574	7,994,218	7,015,836	5,621,018

Table 6. County and State Expenditures for Publicly Purchased Vaccines, 1995–1999, Los Angeles County (dollars)

Source of Funds for Vaccine	1996	1997	1998	1999
State source funds	98,175	97,189	99,119	
County source funds				640,715
Section 317	1,086,355	1,116,540	1,089,654	
VFC	3,807,207	3,895,200	3,911,009	
Total	4,991,737	5,108,929	5,099,782	

Table 7. Number of Public and Provider Sites, 1995–1999, Los Angeles County

Number of VFC Provider Sites	1995	1996	1997	1998	1999
Public	194	209	236	210	226
Private					1,184

Table 8. Comparison of Funds Spent and Carried Over, California (million dollars)

Section 317 Funds	1992	1993	1994	1995	1996	1997	1998 (est.)
FA funds spent	2.594	10.050	15.699	23.427	31.194	24.670	18.311
FA funds carried over	8.541	8.565	9.977	11.578	12.048	2.679	2.400

NOTE: FA = financial assistance.

much was carried over as spent ($2.59 million spent vs. $8.54 million carried over). Spending rose dramatically from $2.59 million in 1992 to $31.19 million in 1996, the peak year for spending, but increasing amounts of funds were also carried over during 1992 through 1996. By 1997 and 1998, programs were fully implemented and funding reductions were being felt. In these years, FA funds carried over were only $2.68 million and $2.40 million, respectively, in contrast to $24.67 million and $18.31 million spent.

SAN DIEGO COUNTY HEALTH DEPARTMENT—IMMUNIZATION PROGRAM

The San Diego County Immunization Program, like its neighbor in Los Angeles County, is located within the Division of Community Disease Control and has similar emphasis on disease surveillance. Like Los Angeles, approximately 80% of all of the immunizations given county-wide are delivered in the private sector, and the Immunization Program focuses primarily on the safety net institutions that serve the remaining 20%. An overview of the county providers, source of vaccine, and quality assurance is given in Table 9.

TABLE 9. San Diego County Immunization Program

Provider Type	No. of Providers	Source of Vaccine	Quality Assurance
State VFC	148	State supplied	State representative visit every 3 years to perform QAR and Casita (50 charts)
County health department clinics Public (immunization only) Personal (primary care) Comprehensive Hospitals	7	County supplied	Full QAR and CASA by county annually—quarterly account-ability and inventory reports
Community health centers, FQHCs, and look-alikes	44	County supplied	Same as above
Schools and other	20	County supplied	None

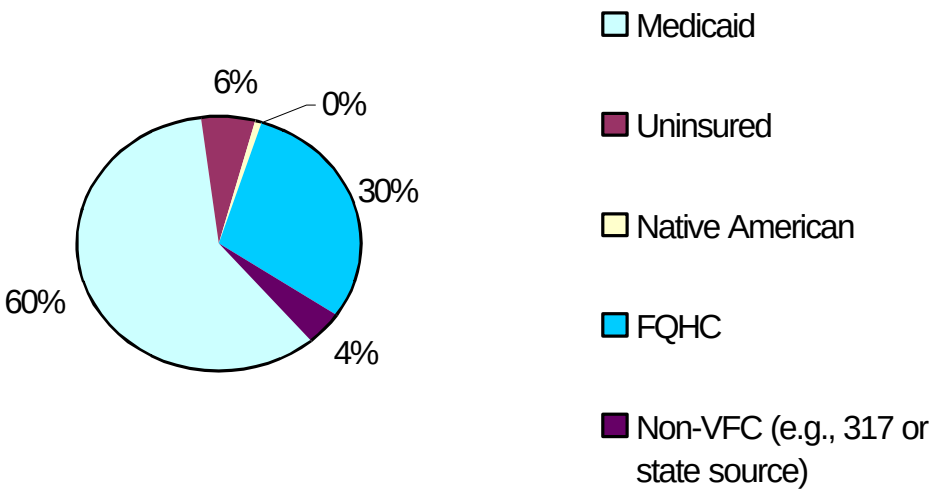

FIGURE 1. Percentage of children less than 18 Years of age who receive publicly purchased vaccine, by VFC eligibility category, 1999, Los Angeles County.

San Diego County Program to Strengthen the Infrastructure

San Diego County's program to strengthen the infrastructure has evolved since Section 317 funds were introduced. The program currently includes the Immunization Management Consultancy Program; targeted case management; record checking and referral in many social service agencies; expanding walk-in immunization clinic hours; and connecting public health centers, CHCs, and selected private providers to the registry.

- The Immunization Management Consultancy Program is a service offered to private physicians to help improve rates in individual practices. Health Department staff go to private practices, assess practice-wide coverage using CASA methodology, and offer training on ways to improve practice, including avoiding missed opportunities and implementing a manual tickler system (using a shoe box) so that providers can do reminder-recall even without access to a registry. Providers can request the consultancy service, or managed care plans can refer a practice that seems to need assistance. This program has been in place since 1996. For fiscal year 1998, funding for this program came from county, state, and federal sources.
- Targeted case management is offered by the county for children who seem to have dropped out of the system. Providers are encouraged to refer such children to the county for follow-up. The program was implemented in 1996. In that year, the program received 1,263 referrals. Since then, the number of referrals has increased to approximately 1,100 each quarter. Approximately 52% of these children are actually up-to-date when located because they use a different provider, 24% are lost to follow-up, and the remaining 26% are assisted in being brought up-to-date.
- Record checking and referral in community settings and social service agencies are important components of the immunization infrastructure because many of the vulnerable children are served in these settings. SD County encourages record checking and referral in community-based settings such as Head Start or day care centers and churches. It also encourages these activities in all social service settings, such as Medi-Cal, Food Stamps, CalWorks, and especially WIC. As noted previously, approximately 70% of the infants are eligible for WIC services alone. Until 1999 when Section 317 funds were reduced, assessment and referral in WIC centers served as the lynchpin of these activities, and the reductions were implemented with reluctance. The need to show up-to-date immunization records to receive full CalWorks payment became a California-wide requirement June 1, 1998, but existed in San Diego one year earlier as a pilot project. Records are assessed when clients apply and recertify, and benefits reduced if the child is not up-to-date within 45 days. Not surprisingly, given the heavy financial sanction, most parents can show that the child is up-to-date. Of approximately 3,000 records assessed in December 1999, there were 18 sanctions.
- With the increased funding that Section 317 (the Immunization Act Plan) provided in 1995 and 1996, additional nurses were hired in public health centers to expand hours. They assisted with data entry, gave shots, and used the reminder-recall system from the computer. When the program was at its peak in 1996, each center was staffed with a full-time nurse. As funding was cut, staff time was cut initially by half and then entirely. Public health centers have, in most cases, been able to continue the expanded walk-in immunization hours using the administration charges of $7.00 per shot applied to immunizations given to adults and children over 2 years of age to fund staff.

In 1993, when Section 317 Immunization Action Plan (IAP) funds were initially received by the county, a mobile immunization van service was initiated, at the suggestion of an advisory

group who believed that immunizations needed to be in the community "where the children are." However, after two years of providing and monitoring the van service, the same advisory group decided to eliminate it, because as it turned out, families preferred taking children to their own physicians. As a consequence, the van service was found to be inefficient (at a cost of $20 per shot), and in 1996, it was discontinued. Coverage rates were not adversely affected by the elimination of this program because of the growth in private sector providers as a result of VFC and other more effective outreach efforts.

Monitoring Coverage

Since 1994, San Diego has conducted its own countywide random digit dial immunization survey, using the same methodology as the National Immunization Survey. From 1996 to 1998, this survey was comparable to the NIS (SD County random digit dial rates 74, 80, and 77%, respectively), for children 19–35 months of age. In 1999, rates were 87% for children (1999 NIS figure is unavailable). In addition to asking about immunizations given, interviewers ask about a variety of attitudes and preferences and use the answers to shape the program. For example, the survey found that the majority of parents whose children were not up-to-date mistakenly believed that they were. The county concluded that parents needed to be encouraged to check, and it is focusing efforts in this direction.

Federal, State, and County Funding to Strengthen the Infrastructure

Table 10 shows a summary of funding for the infrastructure activities described above. As shown in this table, the federal government contributed the largest share of the funding, followed closely by the state, with a relatively small contribution made by the county. In 1999, the relative proportions were 51% federal, 44% state, and 5% county. (Note that unlike the state, counties have no ability to carry funds into the next year. Rather, counties must "use or lose" their annual awards.) Federal funds awarded peaked in 1996 and have declined since that year; in contrast, state funding has continued to increase.

Table 11 shows total county and state source spending from 1992 to 1999. As shown in the first row of this table, the county began purchasing vaccines in 1999. The relatively small amount ($4,000) is used to purchase adult Td vaccines. Personnel expenses ($105,600) are used to support 1.6 people at the county health department. Contracted expenses of $500,000 in 1998 were used for registry development, while the $900,000 in 1999 was used to continue this activity ($500,000) and to extend outreach to children in placement. The largest portion of the spending is from the state (82%). This was used for general support of the infrastructure as well as for a perinatal hepatitis B program.

Vaccine Purchase and Distribution

Table 12 gives the expenditures for publicly purchased vaccines. As shown in this table, the largest source of funds for vaccine purchase comes from the VFC program followed by Section 317. State source funds were used for flu and pneumococcal vaccines. The county contributed a small amount of funding ($4,000) for adult Td in 1999. Table 13 gives the number of public and private vaccine agencies in San Diego County. In 1999, SD County distributed to 50 public agencies, and the state to another 15 miscellaneous public sites, including a site serving a Native American population. The state distributes to all 148 private sites. The 50 public agencies in-

clude many more sites. For example, the CHC that we visited—North County Health Services—is one of the 50 agencies, but has five sites.

Figure 2 shows the percentage of children served in county public health department centers by eligibility category. More than half of the children served (52%) are uninsured; two-fifths (40%) are Medi-Cal and Child Health and Disability Program (CHDP), followed by a small fraction (7.5%) of non-VFC children. The predominance of uninsured children reflects the fact that county clinics serve many children who rely on the safety net.

Adult Immunizations

The immunization program receives no funding for adult immunization activities. Instead, it works collaboratively with the Community Health Improvement Partners, a group of health plan representatives, hospital associates, medical societies, and community agencies to promote immunizations. For the past three flu seasons, the San Diego Immunization Department has promoted influenza and pneumococcal vaccines. In 1997, volunteers fielded calls to a hotline that directed callers to places offering flu shots. Since state influenza and pneumococcal vaccines can be used only for the high-risk population, the hotline determined need and referred callers accordingly. In 1998, the emphasis of this outreach program was focused on high-risk adults through targeted mailings and public service announcements.

As part of the county's effort to monitor coverage rates, adults over age 65 were included in the random digit dial survey to assess influenza, pneumococcal, and tetanus immunization coverage. They found the rates to be 77, 67, and 60%, respectively.

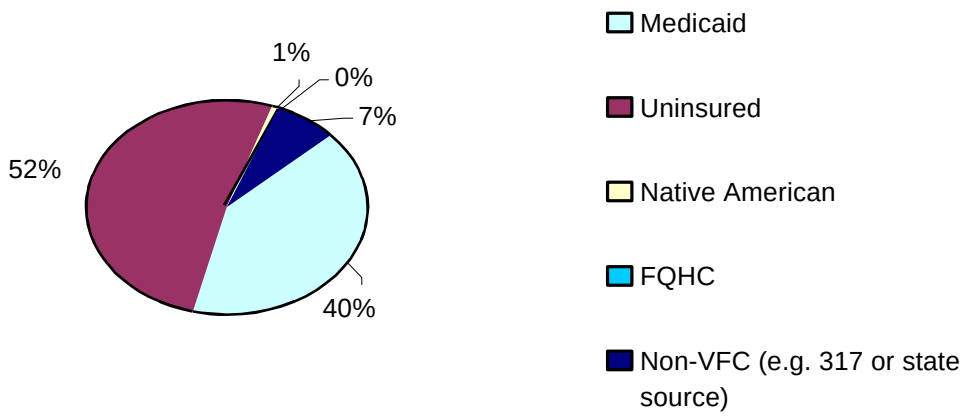

FIGURE 2. Percentage of children less than 18 years of age who receive publicly purchased vaccine, by VFC eligibility category, 1999, San Diego County.

Academic Medical Center Project at the University of California at San Diego—Partnership of Immunization Providers (PIP)

The USCD has received a CDC-funded Academic Medical Center grant whose objective is to coordinate and focus efforts in a pocket of need by changing provider immunizing behavior. The rationale for this approach is that provider behavior is a large part of the set of factors that lead to high coverage rates. Specifically, coverage rates will not be optimal unless providers im-

munize at every opportunity. The approach in San Diego is to train residents in cultural competence and immunization practices, and then have them work with individual provider groups offering care to the target population. North County Health Services, the CHC we visited in San Diego, participated in this project. Physicians at this health center received intensive training from UCSD physicians. Charts at the CHC were audited and results fed back to the staff. Over a three-year period the up-to-date rate climbed from 52% to 75–80%, and missed opportunities to immunize fell from 50 to 14%.

Funds Spent and Carried Over

Funds spent and carried over are statewide numbers and not meaningful at the county level. Funds spent and carried over statewide are described earlier in the section on LA County.

MEDICAID AND CHIP IN CALIFORNIA—MEDI-CAL AND HEALTHY FAMILIES

California's most vulnerable children are covered through the Medi-Cal, Healthy Families, and AIM (Access for Infants and Mothers) programs. Medi-Cal is the name of California's Medicaid program, Healthy Families is for California CHIP. AIM is a special program that provides perinatal services for the mother and also covers the infant for one year after birth. Medi-Cal covers children in families earning roughly up to 100% of the federal poverty level (FPL), Healthy Families covers up to 200–225% FPL, and AIM up to 300% of the FPL. California's CHDP finances well-child care for eligible children who are uninsured. We were told that it is typical for an infant to be covered for well care under CHDP for the first year of life. Immunizations, as a part of well care, are covered by CHDP, but sick care is not covered and, if needed, must come from public safety net institutions.

The state Medicaid program authorizes three alternative mandatory managed care models for counties: the geographic model, the two-contract model, and the county-operated model. San Diego County has elected the geographic model, while Los Angeles has chosen the two-contract model. Under the geographic model, the state issues a request for announcements for managed care companies to bid on offering services in a particular county. In San Diego, seven managed care companies were awarded contracts, and San Diego Medi-Cal members have a choice among these seven.

Los Angeles has developed the two-contract model, in which one contract goes to a commercial health maintenance organization (HMO), usually with several subsidiary partners. The other contract goes to a "local initiative," which is organized differently in each county that has chosen this two-contract approach. In Los Angeles, the HMO is HealthNet, which in turn has subcontracted with two other HMOs to extend the provider network available to members. The local initiative in LA consists of one oversight entity, called LACare, which oversees seven MCOs, including Kaiser Permanente, Blue Cross, and five local MCOs.

Both of the contracting entities have safety net institutions and private providers in their networks, although HealthNet has the larger private provider network. Many providers belong to both main contracting entities and several subsidiary MCOs as well. In fact, the overlap of private providers participating in both of the contracting entities is extensive; estimates given to us ranged from one-third to two-thirds overlap.

The third model is the county-operated delivery system, in which the county itself contracts with public clinics, staff offices, and private physicians and the county receives capitated payments from the state and distributes them.

Providers reported that they contracted with many (possibly most) of the MCOs. In addition, private office-based physicians may contract with several different IPAs (independent provider associations) as well. Private practice physicians with whom we spoke in Los Angeles reported that they contracted with six to eight IPAs and most of the MCOs. This multiple contracting—done to ensure a broad patient base—creates layers of plan administration, each of which absorbs a share of the capitation payment and has separate management functions.

At the last stop—the individual provider—capitation payments for primary care are so small that providers argue it is difficult to stay in business. Providers reported receiving monthly capitation payments of less than $20 for primary care (some reported payments as low as $15). A private practice in south central Los Angeles reported that the number of physicians practicing in its inner-city building had decreased from 6 to 3.5 in the last several years.

This problem of reduced capitation payments is not limited to Medi-Cal MCOs. A private practitioner in SD County with a largely privately insured patient population reported that his IPA had recently declared bankruptcy because of inadequate payments.

There is a further disincentive to immunize in Healthy Families, California's SCHIP. The capitation rate was calculated by assuming that there would be a VFC-type program to supply vaccines free of charge to plan providers. (Freestanding SCHIP enrollees are not eligible for VFC. However, states are permitted to purchase vaccines under the federal VFC contract, using their federal SCHIP allocation.) Although California did not develop such a program, the state did not adjust the captitation rate to reflect the costs of pediatric vaccine purchases for enrollees. Thus, providers now have a capitation rate that does not include the purchase of vaccines and lose money when they serve a child of immunization age.

This is a major disincentive to enroll and serve the youngest Healthy Families children. LA Care, one of the two major plans in LA County, reported that it had only three Healthy Families children enrolled. Other factors beyond immunization policies undoubtedly play a role in low enrollment, but immunization policies are part of the issue. We heard strong and uniform complaints about this policy in both counties and from most of the individuals whom we interviewed.

QUALITY ASSURANCE MONITORING AND MANAGED CARE ORGANIZATIONS

MCOs ensure quality primarily through facilities reviews. These reviews consist of the examination of facilities for proper temperature and storage procedures and involve the review of 5 to 10 charts as well. Chart reviewers examine immunizations, but the review is limited to such items as whether immunizations are properly documented in the chart, because the sample is too small for meaningful feedback on immunization coverage.

The multiple layers mean that providers receive oversight from multiple entities. One two-physician practice with a large proportion of Medi-Cal patients in LA reported that it had received eight distinct facilities reviews in the past year, which included examining 5 to 10 charts, from either an MCO or an IPA. Despite the duplicative and overlapping facilities reviews, providers receive little quality assurance monitoring such as calculation of practice-based immunization rates, number of well care visits, and so forth.

MCOs document immunization coverage primarily through their Health Plan Employer Data and Information Set (HEDIS) surveys, which are MCO-wide and are not likely to include a large

enough sample from any provider to make feedback at the provider level meaningful. The immunization program staff in San Diego reported that providers complain they do not get feedback from MCOs and that providers do not know their rates when they are CASA audited. MCOs are attempting to get better reporting of encounter forms, which include immunizations given at the encounter. Currently, the encounter forms are reporting documents only and do not generate a payment. Both LA Care and HealthNet said that reporting of encounter data has been "spotty." However, they are taking steps to encourage better reporting. HealthNet is giving an incentive payment of $1 per member per month (a substantial fraction of the primary care cap) for timely reporting of encounter data. LACare is considering similar action. Both MCOs said that reporting has improved. They expect that in the future, they will be able to use the encounter forms for HEDIS summaries and for oversight of care at the provider level as well.

Possibly because of the HEDIS requirement to report immunization coverage for 2-year-olds and because of the lack of centralized data on child-specific immunizations, both MCOs strongly endorsed the concept of an immunization registry. Neither is participating currently, but both expressed interest in doing so.

The Immunization Program in San Diego County views quality assurance, rather than service delivery, as its primary programmatic function. Immunization Program Director Sandy Ross observed, "While we need to be best in class in immunization delivery, we are no longer primarily in immunization service delivery. We are the quality assurance and data people and hope to assist other service delivery providers to be the best in class in the community." The San Diego Immunization Program had proposed to the state Medicaid agency that it be delegated the task of immunization monitoring and quality assurance for Medi-Cal MCOs within SD County. The state Medicaid agency declined to contract with the program for this function.

IMMUNIZATION REGISTRY DEVELOPMENT IN LOS ANGELES AND SAN DIEGO

In California, the state has placed responsibility for registry development at the county level, with little direction or oversight from the state. As a result, registry development is proceeding unevenly across counties, with no standardization of systems, although the state has issued some technical specifications for local registries. There are 23 local registries statewide. Since 1996, the state has awarded $3.3 million annually to local registry efforts.[9] The state is exploring the feasibility of two policy changes: first, creating a state-level hub that would link the local registries, and second encouraging the development of regional registries, most of which would be larger than a single county. These changes are still in the its early stages.

San Diego and Los Angeles are at different stages of registry development. Development of the San Diego Registry took place under the private All Kids Count umbrella initiative and is now being run by the county. The San Diego Registry is operating in more than 59 locations, including all 15 public health centers, 29 CHCs, and 15 private providers. The Immunization Program reports that many more providers have expressed an interest in being on-line. The registry consists of a registry database with connections to provider sites. Providers communicate with the registry through terminal emulation software on their PCs. The screens that users see enable them to enter and retrieve immunizations, give up-to-date status, and tell which immunizations are due that day. San Diego County has spent considerable effort in building the registry, including purchasing computers and printers for sites, paying for some connectivity, helping sites enter back data, providing training and quality review, and providing user support.

We saw the registry in use in the North County Health Services site. Immunization cards are requested when a patient registers for a visit; if the card shows that the child needs an immunization, the registry is checked and reconciled with the card. The registry screen indicates what immunizations are due that day; this information is printed and affixed to the chart to alert the provider to the child's immunization status. Immunizations given that day are entered into the registry so that the electronic record will show the latest status. The registry appeared to work well, though the response was slow, and the staff with whom we spoke liked it and believed it to be a useful tool. Use of the registry, including data entry, appears to be integrated into the daily routine, although data entry can get backlogged. San Diego appears to have cleared many of the developmental hurdles; the task now is to build the database and install the front end in more sites. The private sector has been slow in implementing the registry because it is reluctant to shoulder the reporting burden. Most providers have computers, but these are used for billing by the administrative staff. Clinically oriented practice management software is not common in practices that serve poor children.

The Los Angeles Immunization Registry has a different development history. CHAIN (Child Health and Immunization Network), a private organization associated with the University of California at Los Angeles (UCLA), has developed a stand-alone front end through state and private funding. The county has focused on developing the central repository that would be populated from the birth certificate database to eventually combine immunization data from all provider sources. In contrast to the terminal emulation front end in the San Diego Registry, the Los Angeles front end consists of a PC-based access application that can be used as stand-alone immunization management software for the practice. It has at least two versions: one version, designed for use in WIC centers, is immunization management and allows for entry and retrieval of immunizations, up-to-date calculations and calculations of immunizations due, and reminder-recall and report generation capabilities; a second version, used in four clinic sites has these immunization management functions and also has additional practice management capabilities. These stand-alone front ends are being used now in eight WIC centers and four clinic sites. Data from the WIC centers are linked together, and the clinic sites are linked as well, but they are not linked to each other or to other entities.

Development of the central repository registry database itself has been set back because the software vendor with which the county was contracting went bankrupt. The county is in the process of deciding on a new vendor, and funding for the endeavor is uncertain. Meanwhile, state policy changes mean that all future state funding for registry development in LA County will flow through the LA County Health Department. Because of its size, LA County is considered its own "region" for purposes of registry development. Although LA County's plans for the future are not definite, it hopes to purchase software through a new vendor consisting of both a front end and a central repository and it will not support any of the current applications. The county does plan, however, to develop an interface through which an outside immunization database can communicate with the Los Angeles Registry. The current CHAIN applications could communicate through this interface, as could three pilot sites that implemented the county system before the vendor went bankrupt.

Tables 14 and 15 show funding for the registries in Los Angeles and San Diego, respectively. Between 1995 and 1999 an average of $372,000 was spent annually on the CHAIN front end and an average of $180,000 on the full county registry database. Both endeavors were supported with state funds generated by savings in the Medicaid program due to VFC. The registry in San Diego

Table 10. Immunization Funding Summary for Infrastructure, San Diego County (dollars)

	1992	1993	1994	1995	1996	1997	1998	1999
Section 317 infrastructure (IAP)	110,520	448,545	834,656	1,649,338	2,343,469	2,026,067	1,827,460	1,224,222
State-funded infrastructure	105,550	104,550	304,636	236,876	985,656	966,012	941,184	1,063,016
County-funded infrastructure	105,600	105,600	105,600	105,600	105,600	105,600	105,600	105,600
Total	321,670	658,645	1,244,892	1,991,814	3,434,725	3,097,679	2,874,244	2,392,838

Table 11. County and State Source Spending, San Diego County (dollars)

Source Spending	1992	1993	1994	1995	1996	1997	1998	1999
Vaccine purchases								4,000
Personnel expenses	105,600	105,600	105,600	105,600	105,600	105,600	105,600	105,600
Contracted expenses (county support of registry)							500,000	900,000
Aid to county funding								
Other contracts or grants (State General IAP)	215,070	553,095	1,139,292	1,886,219	3,329,125	2,992,072	2,768,644	2,287,238
Total	320,670	658,695	1,244,892	1,991,819	3,434,725	3,097,672	3,374,244	3,296,838

Table 12. County and State Expenditures for Publicly Purchased Vaccines, 1995–1999, San Diego County (dollars)

Source of Funds for Vaccine	1996	1997	1998	1999
State source funds	47,411	48,019	49,577	
County source funds				4,000
Section 317	472,619	489,169	491,610	
VFC	1,849,010	1,999,310	1,997,410	
Total	2,369,040	2,536,498	2,538,597	4,000

Table 13. Number of Public and Provider Sites, 1995–1999, San Diego County

Number of VFC Provider Sites	1995	1996	1997	1998	1999
Public	40	40	40	40	65
Private					148

Table 14. Registry Expenditures, Los Angeles County (dollars)

	1995	1996	1997	1998	1999
State funds (from Medicaid savings due to VFC for county registry development)	260,000	260,000	195,000	220,000	198,000
State funds (from Medicaid savings due to VFC for CHAIN registry development)	320,000	320,000	437,000	392,000	392,000
Total	580,000	580,000	632,000	612,000	590,000

Table 15. Registry Expenditures, San Diego County (dollars)

	1993	1994	1995	1996	1997	1998	1999
Foundation grant to county	150,000	125,000	125,000	150,000			
State funds (from Medicaid savings due to VFC)					354,000	316,000	316,000
County funds						500,000	500,000
Total	150,000	125,000	125,000	150,000	354,000	816,000	816,000

was funded from 1993 to 1996 with foundation support and from 1997 to 1999 with state funds generated by savings in the Medicaid program and county dollars. In 1999, the registry was funded at a level of $816,000, most of which was county funding ($500,000) and the remaining state ($316,000).

We saw a demonstration of the front-end, PC-based CHAIN software; observed it being used in a WIC clinic; and heard about its use in the five Northeast Valley health centers. The health centers began the effort by entering back-immunizations for all children 5 and under. They installed a PC in the clinic areas and trained staff. A clerk checks the immunization status for each child who has an appointment that day, and if the registry shows that immunizations are due, this information is printed as a label and affixed to the chart. Immunizations that are administered are entered into the computer. The director of public health programs at the Northeast Valley health clinics reported that after the initial training and data entry phase, the staff have given positive feedback about using the software, and its use seems to have been integrated into clinic routine. WIC clinics assess immunization records and refer children who are not up-to-date to providers. The software prints out an attractive page that the parent can take to the child's provider indicating which immunizations are due.

In addition to these registries in San Diego and Los Angeles, two other registries deserve mention. One is the Kaiser Registry, which has immunization histories for all children enrolled in Kaiser Permanente and is reported to be larger than most county registries. A Kaiser immunization coordinator reported that the Kaiser Registry has been integrated into routine clinic practice in the clinics for which this coordinator is responsible, much the same way as described for the health centers. The other registry is the WIC Registry (called ISIS-IZ), which holds records for children seen in WIC clinics. The WIC Registry is an enormous repository of data for a large segment of the population but is not connected with any of the other registries, although the same children are involved in each. The WIC Registry would be useful as a source of immunization histories; it is limited in function because it is able to show immunization history only for a specified child. It is not able to produce reports, for example, of all children who are not up-to-date, nor can it be used for reminder-recall or for quality assurance at the provider level.

Neither of these registries communicates with the California county registries, despite the fact that many of the same children are in each of them. Kaiser is interested in exchanging information between its own registry and a public registry, but it is unwilling to pursue this with multiple and mutually incompatible local systems. The Kaiser representative told us that Kaiser would make the financial commitment necessary to link with one or two large registries (for example, a state hub with a northern and southern database), but not with each county separately. Furthermore, Kaiser would regard a public registry as a business partner and, as with any business partner, Kaiser would want to see funding commitment, technical and managerial competence, and adherence to standard technical conventions (such as HL7 transfer protocols). Data exchange between the WIC and other registries would reduce provider burden and greatly increase the store of information in the county registries, but to date this has not happened.

CONCLUSIONS

With approximately 80% of the vaccinations delivered in the private sector, coverage levels in both LA and SD Counties depend heavily on policies in the private sector. Further, with managed care mandatory for children in state-supported child health insurance programs, vaccination activities are greatly influenced by managed care plan policies for immunization.

Activities in both counties involve some direct provision of services (reduced in both cases because of funding cuts) and oversight, mainly through CASA audits in county facilities and FQHCs. They seek to influence the immunization coverage levels of children seen by private sector physicians in a variety of ways, for example, by record checking and referral in WIC sites and by supporting grass-roots, neighborhood promotoras to check at the neighborhood level. These interventions result in notifying the parent that the child needs an immunization. Whether the notification prompts an immunization depends on factors such as parental motivation and access to services. The adequacy of the provider base, whether or not children are insured, and whether providers lose money when they immunize—all factors beyond the control of the health departments—are major determinants of immunization coverage levels.

Immunization program leaders were unanimous as to the federal and state policies that needed to be changed to promote higher immunization coverage. First, they stated emphatically that they needed stable, predictable funding. The unpredictability of funding and the major swings from year to year mean that they hire and train individuals only to lose them in funding cuts. It also means that they avoid personnel costs and are cautious about implementing programs to avoid having them cut. The second policy that needs changing is a state financial policy. The low capitation rate for the Healthy Families program results in providers losing money on children of immunization age. This state policy has profound negative implications for program enrollment and children's access to immunizations.

ATTACHMENT I

Descriptions of San Diego and Los Angeles Counties

San Diego County, with a population of 2.8 million residents and an area of 4,200 square miles, is the fifth largest county in the United States and home to the sixth largest city. It is geographically and ethnically diverse, with 65 miles of coastline, mountains rising above 6,000 feet, and one of the nation's deserts. It includes urban, suburban, and rural communities, with population densities ranging from extremely high in some areas near the coast, to less than one person per square mile in large portions of the eastern county. To the south, the county abuts the international boundary with Mexico. With 57 million crossings in 1995, more people legally entered the United States at this crossing than at any other. There is also significant illegal border-crossing traffic.[10]

San Diego has a mobile and diverse growing population. In addition to immigrants from Mexico and from Central and South America (40% of population), there are significant populations of Vietnamese, Cambodian, Laotian, and other Asian and Southeast Asian immigrants, including a large Filipino community. The black population (8%) includes both African Americans and refugee populations who have recently arrived from Somalia, Sudan, Ethiopia, and other places. Eastern Europeans and ethnic populations from various Near Eastern countries also live in the county. The San Diego City Unified School District lists more than 100 languages spoken at home by its students. From 1987 to 1997 the percentage of limited English proficient children rose 141% countywide.

Adding to its diversity, San Diego has 18 American Indian reservations with a Native American population of more than 35,000. There are several large military installations in the county, adding approximately 242,000 mobile, transient, and predominantly lower-income uniformed personnel and their dependants to the complex immunization picture.[11]

The county's population is young, with approximately 29.7% under the age of 20. It has the second-largest birth cohort among California counties, with approximately 45,000 births each year. Hispanic children are the largest growing minority population; however the growth of the Asian and Pacific Islander population has made an equally significant proportional increase (20%) in the past decade. Current demographic categorization schemes do not reflect the impact of the various populations characterized as "other," which presents challenges to the immunization program.

Los Angeles County, which encompasses 4,750 square miles, has a population of 9.5 million with a birth cohort of 175,000. Los Angeles has an economically and culturally diverse population. Ethnic and racial minorities comprise 66% of the total population and 78% of the children 0–17 years of age (see Table 16). More than 30% of the county's children 0–17 years of age live below the poverty level. There are approximately 21 health plans in the county and 5,000 providers of childhood immunizations.

ATTACHMENT II

List of Interviewees

Nancy Bowen, M.D.
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Ana Clark, Ph.N.
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Chief Medical Officer
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Phyllis Elkind, M.P.H.
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Stephen Feig, M.D.

Nancy Fink
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County of San Diego Health and Human Services Agency

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County of San Diego Health and Human Services Agency

John Fontanesi, Ph.D.
Kaiser Permanente

Michele Ginsberg, M.D.
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Division of Community Epidemiology and Division of Community Disease Control
County of San Diego Health and Human Services Agency

Kathleen Gustafson
Promotion Specialist
Immunization Program
Division of Community Disease Control
County of San Diego Health and Human Services Agency

Larry Hansley
Administrator
North County Health Center
Lloyd Hunter, M.D.

Martha Jazo Bajet, M.D.
Preventive Services Manager
Community Health Group

Mickey Keil, R.N.
North County Health Center

Marlene Lugg
Immunization Coordinator
Kaiser Permanente

Lorraine Mascola, M.D.
Chief, Acute Medical Disease
Los Angeles County Department of Health

Mitch Mellman
Financial Director, Immunization Program
Los Angeles County Department of Health Services
Sylvia Micik, M.D.
Medical Director
San Diego All Kids County Immunization Registry

Vicki Mizel
Council of Community Clinics of San Diego and Imperial Counties

Kenneth Morris, M.D.
Medical Director
North County Health Center

Paula Packwood, R.N., M.H.A
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LA Care

Nathan Rendler, M.D.

Lizz Romo
ISIS Project Coordinator
South LA Health Immunization Project
Research and Education Institute WIC
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Director of Public Health Programs
Northeast Valley Health Corporation

Robert K. Ross, M.D.
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