

Immunization Policies and Funding in Michigan

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OVERVIEW

Between 1994 and 1998, Michigan made more progress than any other state in improving immunization coverage among young children. This report presents the state's characteristics, programs, and initiatives that relate to this result. It also looks at Detroit in detail. In 1994, Detroit had the lowest coverage levels of any city included in the National Immunization Survey (NIS); although it is no longer last, it continues to lag the state overall.

Over the past decade the state government's role in immunization has changed dramatically. At the beginning of the decade, vaccine production was its largest immunization-related activity. At the close, the state has no production role. Besides vaccine purchase, Michigan's single largest use of Section 317 funds is support for immunization activities of local health departments, a new use of federal funds since the beginning of the decade. The largest commitment of the state's own funds goes to a function that did not exist at the beginning of the decade, a statewide immunization registry.

ABOUT MICHIGAN

Michigan is the eighth most populous state, with a 1998 population estimated at 9.817 million. The birth cohort fell by 13% over the 1990s, from 153,080 in 1990 to 133,714 for the 12-month period ending June 30, 1998 (NCHS, 1994, 1999).

Michigan's population can be understood in three parts: Detroit and its metropolitan area, the six smaller metropolitan areas, and rural Michigan. The state's population is concentrated in southeast Michigan, with a core at Detroit, the eighth largest metropolitan area in the United States. The Detroit metropolitan area is home to more than half the state's population. After Detroit, the next largest metropolitan area is Grand Rapids, the nation's 46th largest (Bureau of the Census, 1998). Seventeen percent of the population lives outside the state's seven metropolitan areas. The remote Upper Peninsula is home to more than a quarter of the state's landmass but less than 5% of its population.

Detroit has been losing population since 1960. The share of population lost between 1970 and 1992 was the second largest share among the nation's largest cities. While the city lost 33% of its population over that period, the metropolitan area as a whole lost only 4%. Detroit has lost material resources as well as people. Real per capita income in Detroit fell by 13% between 1969

and 1989, making Detroit the only large U.S. city (besides Cleveland) in which real per capita income fell over that period (Mark, et al., 1998).

Blacks account for 13.9% of the state's population, close to the 12.7% share of the nation as a whole. Hispanics are less represented in Michigan than in the nation, accounting for 2.2% of Michigan's population compared to 11.0% for the nation as a whole. Blacks in Michigan are concentrated in Detroit, where they make up 76% of the population (Hispanics are less concentrated, comprising 2.8% of the city's population). Outside Detroit, blacks are 6.2% of the state's population. Southeast Michigan is also home to the nation's largest Arab immigrant community.

In most measures of material well being, Michigan's residents are slightly better off than the nation as a whole. The overall poverty rate in 1994–1995 was 14.0%, compared to 15.4% of the nation. The child poverty rate was 21.3%, compared to 22.9% (Kaiser Family Foundation, n.d.). The median income of families with children was \$43,800 in 1996, compared to \$39,700 for the nation as a whole (Annie E. Casey Foundation, 1999).

Michigan has lower rates of uninsurance than the nation as a whole. The higher share of employment in manufacturing and higher level of unionism than in the nation as a whole are sources of higher levels of employer-provided coverage. In Michigan, 10.4% of the non elderly were uninsured in 1994–1995, compared to 15.5% for the nation as a whole; 6% of Michigan's children were uninsured in 1994–1995, compared to 10.4% nationwide (Kaiser Foundation, n.d.).

In measures of health outcomes, Michigan does less well than the nation as a whole. Its 1996 infant mortality rate stood at 8.1 deaths per 1,000 live births, compared to 7.3 for the nation. Its 1996 low-birth-weight rate was 7.7 per 100 births, compared to 7.4 per 100 births for the nation (Casey Foundation, 1999).

Michigan had the worst results in the 1994 National Immunization Survey. Statewide, 63% of children between 19 and 35 months of age had received the 4:3:1 series (national range: 63 to 86%) and 59% had completed the 4:3:1:3 series (national range: 59 to 86%). Detroit reported the worst results among the 17 cities where the NIS sample size allowed for city-specific estimates: 52% in the 4:3:1 series and 46% in the 4:3:1:3 series (range: 52 to 87% for 4:3:1; 46 to 87% for 4:3:1:3 series).

Between the 1994 and 1997 NIS, Michigan made the most progress among the states and Detroit the most among metropolitan areas. For the 4:3:1 series, Michigan had reached 77% coverage (range among states: 71 to 87%) and Detroit 70% (range among urban areas: 66 to 88%). For the 4:3:1:3 series, Michigan reached 75% (national range: 69 to 86%) and Detroit 65% (national range: 64 to 86%). Detroit's absolute improvement did not allow it to move much in the relative rankings. The state also conducted its own survey in 1997, using the NIS methodology, to obtain more substrate estimates. Among the six substrate areas for which statistically reliable estimates could be made, the state found that no other area was as far from the statewide overall level as Detroit.

HEALTH CARE ENVIRONMENT

Private Coverage of Immunization. The 1994 NIS results showed Michigan's high rate of health insurance coverage had not ensured timely and complete immunization coverage. At the outset of the decade, many fee-for-service insurance plans did not cover immunization. In the wake of the state's last-place performance in the 1994 NIS, labor and business groups have pushed for coverage under private insurance contracts. Increasing managed care penetration has also improved private coverage; while there is no state mandate that insurance contracts cover

immunization, the state's health maintenance organization (HMO) licensure law requires HMOs to cover immunization services.

Medicaid and CHIP (Children's Health Insurance Program) Eligibility. Along with implementation for Michigan's CHIP program, the state legislature increased Medicaid coverage to 16:17- and 18-year-olds in households with incomes up to 150% of the federal poverty level (FPL). The result is Medicaid (termed "Healthy Kids" in Michigan) eligibility for all children under the age of 18 in households with incomes below 150% of the FPL, and infants in households with incomes up to 185% of the FPL. Children from families with incomes between the "Healthy Kids" level and 200% of the FPL are eligible for MICHild, the state's CHIP program (State of Michigan, 1999 a).

Children's Health Insurance Program. Michigan chose to develop a private, managed care model program, contracting with HMOs and insurers with preferred provider insurance products. At the beginning of 1999, 13 providers had signed contracts to provide health benefits and four to provide dental benefits. Michigan uses the benefit package for children of state workers as its benchmark.

A single application form applies to MICHild and Healthy Kids. A state contractor reviews applications, referring to the state immediately applications that are likely to be Medicaid eligible (no income); handles plan enrollment; and collects the \$5 per month premium. State workers make eligibility determinations.

After one year of operation, MICHild applications had resulted in 55,000 newly insured children. Review of the applications lead to 43,000 applicants becoming Medicaid recipients and 11,800 being enrolled in MICHild, a ratio that is something of an annoyance to the state because it receives a higher match rate for CHIP than for Medicaid.

Medicaid Managed Care. The state has moved aggressively toward enrolling Medicaid recipients into capitated contracts. Most non-disabled adults and children in Medicaid now receive services under capitated contracts. This is the most substantial recent structural change affecting childhood immunization delivery in Michigan. Many children previously immunized in local health departments have the ability to remain in their "medical home" for immunization services.

The state has moved to competitive bidding in setting contract rates. The 1996 rate for Wayne County (Detroit), arrived at by negotiation, averaged \$170.61 per enrollee. With competitive bidding, the Wayne County rate averaged \$161.85 for 1999 (State of, 1999 b). At the time, the plans' strategic priority was enrollment; more recently, it has turned to profitability. Plans appear to have some regret about the prices they bid. The plan affiliated with the largest private hospital in Detroit has tried to limit losses by freezing Medicaid enrollment.

The state's Medicaid contracts with managed care organizations (MCOs) provide incentives both to participate in the Vaccines for Children (VFC) program and to immunize in the medical home. If a provider in an MCO's network does not participate in VFC, then either the provider or the plan must pay the cost of vaccines, a cost that can be avoided through participation in VFC. Also, the state's capitation contracts provide potential incentives. The local health departments (LHDs) can bill plans the Medicaid fee-for-service rate for vaccine delivery (\$7 per dose for injected vaccines; \$3 per dose for orally administered vaccines). However, for plans to feel the incentive, the LHDs must bill, and some, including Detroit, have not developed the administrative structures to do so.

PUBLIC HEALTH STRUCTURE AND IMMUNIZATION

The basic operational unit in Michigan is the county health department. The state has 43 local health departments. Seven serve multi-county jurisdictions, and one is a city health department (Detroit).

The relationship between the state health department and LHDs is set out in the state's public health code adopted in 1978. They are organizationally part of county government (except in the city of Detroit). They receive a substantial share of their funds from the state, both state revenues and Center for Disease Control and Prevention (CDC) funds provided initially to the state. LHDs are responsible for eight enumerated public health functions, including providing immunization to all who present. The 1978 code committed the state to providing 50% of the cost of the eight enumerated core functions. The weak national economy and still weaker state fiscal situation in the early 1980s kept the state from keeping its commitment to 50:50 for many years. In 1994, the state contribution for local public health operations surged upward by 88.5%. Recent increases have been more modest, increasing by 3% to a \$39.9 million level for fiscal year 2000 (Senate Fiscal Agency, 1993, 1999).

The contracts between the state and the LHDs are a financial management tool. The CDC program year for Section 317 (the calendar year) does not match the state's fiscal year. The state fiscal year ends on September 30. Section 317 funds reach counties through contracts that follow the state fiscal year. Each contract is funded with funds that come across two CDC program years. The first quarter (covering October 1 through December 31) is funded with funds made as part of the CDC award for the current year. The subsequent three-quarters are funded from the next CDC award. So, for example, when Michigan began its fiscal year on October 1, 1999, it knew the amount of its 317 award for the 1999 program year but did not know its 2000 program year award. The state makes a provisional award of Section 317 funds at the beginning of its fiscal year, subject to change when CDC makes its award of program year funds.

The impact of making an award to the local health departments that is subject to revision depends on the size of the revision and the point in the year at which it is made. Larger and later revisions are more disruptive.

LHD contracts also provide a mechanism that allowed Michigan both to avoid substantial carryovers and to absorb additional funds that CDC has awarded late in the fiscal year. Michigan's carry-forward peaked with its calendar year 1994 award, when \$3,419,720 carried forward. Since calendar year 1997, there has been no carry-forward.

The state immunization program is part of the Department of Community Health. This organizational form took effect in 1996, with the new department created by taking Medicaid out of the Department of Social Services and merging it with the Department of Public Health and the Department of Mental Health. The old Department of Public Health is largely intact as the Community Public Health component in the new department (Lipson et al., 1997). Medicaid is by far the largest component and funding source of the department. Public health accounts for 5% of the department's budget (State of Michigan; 1999 b). Within this 5%, Section 317 funds for "infrastructure" represent less than 3%, or 0.15% of the department's budget.

IMMUNIZATION AS A FISCAL AND POLICY QUESTION FOR THE STATE

The state government's role changed considerably over the 1990s. At the beginning of the decade, the state's largest immunization activity was vaccine production. The state produced all

of the diphtheria tetanus pertusis (DPT) vaccine required in the state and distributed doses to all immunization providers at no cost. By the middle of the decade, the state had privatized its production capacity. The privatized entity, today a firm called BioPort, has largely exited the market for childhood vaccines and focuses on work as the Department of Defense's sole source provider of anthrax vaccine. At the end of the decade, publicly supported vaccines in Michigan were almost all purchased using federal dollars, either Section 317 or VFC (see Table 1).

TABLE 1 Expenditures for Publicly Purchased Vaccines, 1995–1999 (dollars)

Source of Funds	1995	1996	1997	1998	1999
State source funds	3,910,503	2,417,400	814,130	100,863	353,903
Section 317	4,988,722	4,683,022	9,028,568	10,478,215	7,303,042
VFC	9,082,263	12,041,691	12,170,148	12,742,441	8,628,065
Total	17,981,488	19,142,113	21,323,126	23,228,218	16,285,010

SOURCE: Michigan Department of Community Health.

A change in tax policy also reduced dependence on state general revenue for immunization. A 1996 ballot initiative imposed an additional 25-cent per pack tax on cigarettes and dedicated 6% of tobacco tax revenue to a “Healthy Michigan” fund to improve the health of Michigan residents. The \$35 million generated in 2000 by the tax supports a variety of prevention activities, including \$2.5 million for immunization, the largest portion of which supports the state’s immunization registry costs. The Healthy Michigan fund stands to become a victim of its own success in reducing tobacco use. Tobacco sales, and thus tax revenues, are down. As a result, some projects supported by the fund, including a hepatitis B initiative, have been termed one-time initiatives and their funding has ended.

“Healthy Michigan” money made it possible for the state to absorb support for the immunization registry without turning to general revenue. In the mid-1990s, the state made a commitment to what has become the Michigan Childhood Immunization Registry (MCIR pronounced “mick-ur”). The state began work with registries in 1995 with Section 317 financial Assistance (FA) funds. Its ongoing \$2.1 million annual cost is the largest single commitment to immunization infrastructure by the state.

Public immunization funding sources are diverse (Table 2). The Department of Community Health’s immunization division funds come from Section 317, VFC, Medicaid administrative match, maternal and child health (MCH) block grant (Title V), private foundation support, and state funds—both general revenue and “Healthy Michigan” funds.

TABLE 2 Immunization Infrastructure Funding Summary (dollars)

	1994	1995	1996	1997	1998	1999
Section 317 infrastructure	3,183,767	7,306,022	3,227,366	5,439,712	5,700,230	4,952,780
State-source infrastructure		647,037	1,867,728	3,051,520	4,045,556	2,163,747
VFC infrastructure (FA)		2,250,257	756,804	1,533,101	1,434,925	722,446
Other						
Other federal (e.g., Title V, Medicaid)		862,123	587,173	610,200	952,924	1,855,334
Foundation support		23,939	50,000		200,000	273,497
National Vaccine Injury Comp Fund				139,872	107,794	

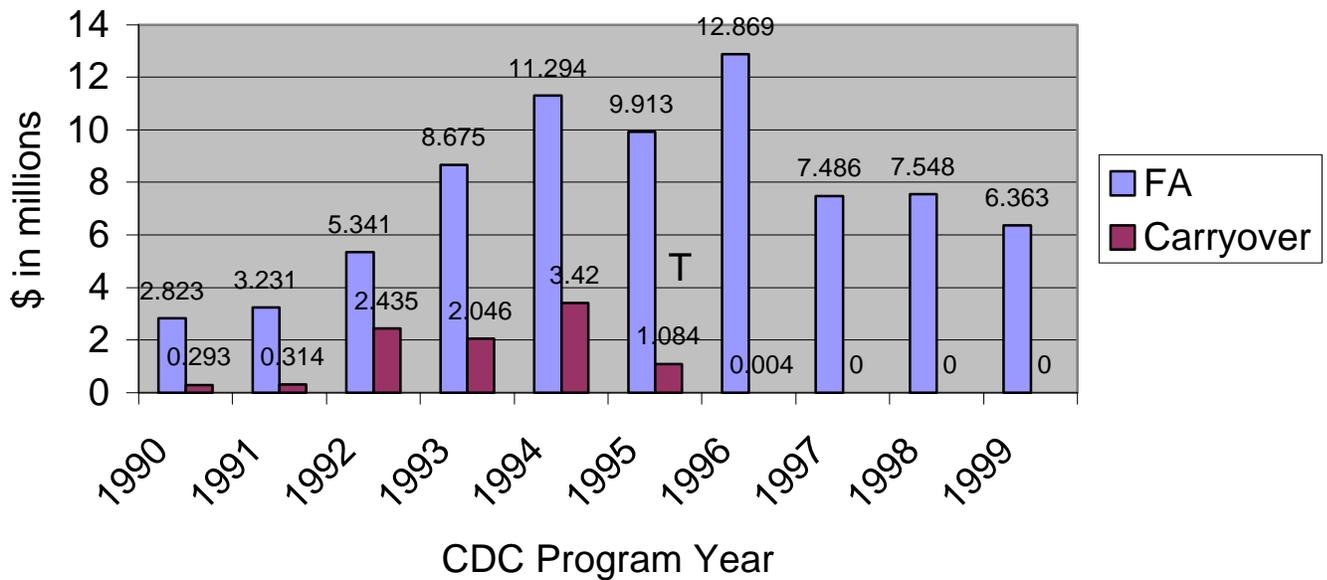
SOURCE: Michigan Department of Community Health.

One response to declining federal immunization-specific funds has been to use funds from other federal programs for immunization. As part of its effort to pursue more opportunities for claiming federal funds through Medicaid, the state now allocates to Medicaid MCIR costs proportional to Medicaid recipients' presence on the registry, generating a claim for \$400,000 in additional Medicaid costs and \$200,000 additional resources for the health department immunization program. (The healthcare Financing Administration [HCFA] has disallowed the claim. The state is preparing documentation to meet HCFA's objections.) Tapping the state's MCH (Title V) block grant is also new in the last 2 years. The Family Independence Agency, the state agency administering Temporary Assistance for Needy Families (TANF, formerly Aid to Families with Dependent Children [AFDC]), has provided TANF funds that supported a contract to do immunization outreach to day care providers in Detroit. In adult immunization, the largest effort now comes from the Medicare Peer Review Organization (PRO), which has identified increasing pneumococcal coverage rates among the Medicare population as one of its performance measures in its current scope of work.

Still, immunization-specific federal dollars remain the most important funding source. The state requested \$11.8 in Section 317 and VFC financial assistance for 2000. Of this amount, \$1.6 million would pay for personnel and related costs in the state health department, \$1.75 million would fund vaccine purchases, and \$5.9 million would go to contracts, largely with local health departments for IAP awards. The vaccine purchase amount would be almost all for hepatitis B and tetanus and diphtheria/tifoids (Td), antigens that were not available under federal contracts (and thus constitute direct assistance [DA] rather than FA) at the time the state prepared its proposal to CDC.

Not all-public sector immunization effort appears in the health department's immunization budget. Michigan's most important immunization policy innovation of the early 1990s related to school entry. Beginning in 1994, school districts that did not have at least 90% of school entrants in compliance with state immunization requirements were subject to having 5% of their state

Figure 1 Michigan FA award.



SOURCE: Michigan Department of Community Health.

education aid withheld until they reached 90%. Since 1995, the requirement has been 95% in compliance. At the time of the first assessment in February 1994, 160 out of 534 school districts were out of compliance. Within a few weeks of the end of the 1994 school year, through a combination of finding records and catch up immunization, all districts reached the 90% level. Since then, the 95% level for new entrants has consistently been met by all school districts.

RISE AND DECLINE OF FINANCIAL ASSISTANCE AWARDS

The first allocation to Michigan of additional federal funds in the wake of the 1989–1991 measles outbreaks went directly to the city of Detroit. Detroit was one of the large cities awarded funds in 1992 to increase services in large cities. Detroit used the funds to extend clinic hours, institute clinic hours on the weekend, and provide immunization services at Women, Infants, and Children (WIC) clinics.

Higher levels of Section 317 FA funds allowed the state to begin providing LHDs with immunization-specific funds (see Figure 1). Since 1994, all of the LHDs, along with community and migrant health centers, have received these awards, termed “Immunization Action Plan” (IAP) awards, after the name of the CDC initiative under which they began. For the LHDs, IAP funds are awarded through the state’s comprehensive contracts with each local health department. The state allocated IAP awards among LHDs proportional to the number of children between 0 and 3 in the area served by the health department, reasoning that local health departments were responsible for all children in the area they served, whether immunized in local health departments or not. These funds are block grant-like, awarded for a particular purpose, but with details left largely to the local health department. In addition, the state provides each local health department with a per-dose administered payment. The pass-through of Section 317 funds

to LHDs for IAP and vaccine handling accounted for half of Michigan's 317 FA request for the 1999 program year (Michigan Department of Community Health, 1998). From the LHD's perspective, the IAP add-on was about one-eighth of the amount received from the state for basic operating support.

Larger Section 317 awards also meant more staff and programs carried out by the state health department's immunization program. Staff expanded, taking on more specialized functions. Outreach expanded to both professional and lay audiences, and technical assistance to improve immunization delivery expanded.

The state's immunization division in 1992 had three professionals with statewide responsibility. One was a manager who provided general direction; a second coordinated surveillance and outbreak control activity with local health departments, as well as working with professional and community groups; and a third oversaw vaccine supply management. Others on the professional staff were an individual assigned solely to Detroit, a field staff of four, and a hepatitis B project group of four persons (Michigan Department of Public Health, 1991).

Higher levels of 317 awards made possible a larger staff with a more refined division of labor than when the decade began. The number of professionals with statewide responsibilities has expanded from three to nine. Instead of one person responsible for coordinating surveillance, assessment, and outreach, there is one person for each area. Other staff carry out functions that were not part of the state's agenda in the early 1990s, such as the immunization registry.

Growth in federal funds also allowed more education and outreach efforts. Professional education efforts included peer outreach and conducting an annual immunization conference in six sites, attracting a total of more than 600 (State of Michigan, 1999 a). Broader outreach and awareness efforts included a media campaign and "earned media" from the triplets born to Gov. John Engler and his wife in 1996 staying up to date with their immunization schedule. As federal funds have declined, the public awareness and outreach effort have seen the greatest reductions.

A new activity made possible by greater 317 funding is on-site technical assistance and evaluation. State officials believe it is one of their most valuable education activities. Each local health department is required to use the CDC's CASA (Clinical Assessment Software Application) software and protocol for determining coverage levels in the population it serves. CDC's AFIX (Assessment, Feedback, Incentive, and exchange of information) methodology is required for community and migrant health centers receiving Section 330 grants and made available in physician offices. Some 280 assessments have been conducted in private physician offices since 1995, and second assessments, recommended after 12 months, show an average of 10% increase in completion of the 4:3:1:3:3 series among 2-year-olds.

VACCINES FOR CHILDREN

Vaccines for Children (VFC) have had widespread impact on immunization, both on the number of providers providing publicly funded vaccines and on how immunization happens. In 1999, the state projected that 71% of publicly financed vaccines administered in Michigan would come from VFC and 29% from Section 317 funds (with none coming from state funds) (State of Michigan 1999 b). However, as Table 3 shows, VFC appears not to have attenuated the use of Section 317-funded vaccines.

TABLE 3 Number of Children <18 Years of Age Who Received Publicly Purchased Vaccine, by VFC Eligibility Category

Eligibility Category	1995	1996	1997	1998	1999
Medicaid	N/A	717,735	761,651	740,091	828,582
Uninsured	N/A	302,869	213,214	36,004	15,000
Native American	N/A	20,112	11,496	22,548	19,305
FQHC	N/A	54,530	55,780	82,618	53,808
Non-VFC (Section 317)	N/A	1,256,742	816,184	1,217,085	1,153,864

NOTE: FQHC = federally qualified health center; N/A = not available.

SOURCE: Michigan Department of Community Health .

The state estimates that 78% of the 0 to 18-year-old population is eligible for publicly funded vaccine (Michigan, 1999). Of all vaccines administered in Michigan, 37% are administered by the public sector. Among vaccine purchased with VFC and 317 funds, 45% are administered in public clinics and 55% within a child’s medical home.

Prior to VFC, the state had tried to implement vaccine replacement for Medicaid recipients in the late 1980s, with LHDs serving as intermediaries in the supply chain for other providers. Mandatory vaccine replacement proved infeasible since the two primary immunization channels—the immunization-specific clinics run by local health departments and private providers of primary care—had no experience interacting. Nearly one-half of the local health departments declined to supply other providers. This experience caused mandatory replacement to collapse.

The state’s decision to supply vaccines to VFC providers via local health departments forced the two channels to find each other and develop a working relationship. The state has not retained historical data on the number of VFC providers. Most recently, there were 1,449 VFC providers. Of this number, 170 were public and 1,279 were private. All public providers participate in VFC, as do all providers in the vestigial Medicaid fee-for-service program. The share of private providers who participate in VFC is difficult to characterize. The private provider number represents 85% of providers reporting to the immunization registry, but both a large group pediatrics practice and a solo practitioner are counted by the registry as a single “provider,” so the share of immunizations provided by non-VFC providers cannot be ascertained.

VFC reduced the state Medicaid program’s vaccine costs. The state estimated its share of Medicaid savings as \$10 million had the state paid market prices for vaccines delivered to Medicaid recipients. However, dose replacement for Medicaid recipients using 317-funded doses made the actual state savings closer to \$5 million. The state dedicated its VFC savings to two provider fee increases. First, it increased the administration fee from \$4 to \$7 for injections and from \$1 to \$3 for oral administration. Second, it increased the amount paid to providers for Early Periodic Screening, Diagnosis, and Treatment (EPSDT)-related visits, from \$31 to \$40 for the most common service. (These changes are largely irrelevant today since administration fees and office visits were folded into capitation rates for Medicaid managed care.)

The fiscal implications of federal immunization policy have been contradictory. As Table 4 shows, VFC along with continued Section 317 funds for vaccine purchase has allowed Michigan to reduce its financial commitment to vaccine purchase. Lower levels of support for infrastruc-

ture have required the state to increase its contribution to infrastructure, particularly for vaccine registry activity.

TABLE 4 State Source Spending (dollars)

	1995	1996	1997	1998	1999
Vaccine purchase	3,910,503	2,417,000	124,410	100,863	353,903
Operating expenses, total	1,585,495	3,252,843	3,827,435	5,364,552	5,260,595
Net of other federal dollars (e.g., block grants, Medicaid)	670,977	1,914,699	3,217,235	4,441,628	3,405,261

SOURCE: Michigan Department of Community Health.

DETROIT

Looking at Section 317 as a means to achieve high immunization rates among young children in Michigan requires careful examination of Detroit. Detroit had either the lowest or next-lowest rate of children being up-to date in each NIS from 1994 to 1998 among the 17 urban areas covered by the survey. It also had the greatest increase between 1994 and 1998 of any of the NIS cities.

Having the lowest rate “blew my mind,” said one city health department worker involved in immunization. The state had long followed a generous supply policy using “Made in Michigan” vaccine. Detroit providers who wanted to get doses through public health channels could get them, nominally taking the price of vaccine off the list of barriers to immunization. Expectations were that Detroit would be at the high end of results, closer to Boston, a large city in a universal purchase state rather than behind Newark, where there was no similar state supply mechanism.

Factors that contribute to low NIS results include Detroit’s basic background: declining population and the characteristics of the population that remains, including significant numbers in extreme poverty, substance abuse, and chaotic living circumstances.

Even before the first NIS results were available, Detroit had been targeted for help. CDC first used supplemental funding following the 1989–1990 measles epidemic to make awards for additional services in six large cities as an Infant Immunization Initiative (I-3). The city asked for \$1.8 million. CDC’s award funded additional public health nurses and contract services for city health department primary care sites, the largest WIC clinic, and outreach to populations such as children in day care and younger siblings of children enrolled in Head Start. The second largest cost was printing and promotion incentives such as T-shirts and coloring books (City of Detroit Health Department, 1992).

Detroit’s last-place result may also have to do with the capability, relative to the challenge, of its public immunization effort. As the city’s population fell and its property tax base contracted, the city’s health department was not protected from the fiscal retrenchment that followed. Even additional federal resources were sometimes thwarted by local constraints. At the time Detroit received additional funds as part of CDC’s effort to increase services in large cities with low in-

fant coverage rates, the city was in a fiscal crisis. This meant that some health department workers were furloughed. When they returned, these workers and more were among the city workers subject to "DOWOP," 1 day off without pay every 2-week pay period (City of Detroit Health Department, 1995). Fewer staff hours meant fewer clinic hours despite additional federal funds. The state of administrative capacity in the health department meant, for example, that the city did not bill the state Medicaid program for administering immunizations to Medicaid recipients. Administrative capacity issues gave rise, in part, to an alternative mechanism for dollars flowing through the state to reach Detroit: the Southeast Michigan Health Association, a separately incorporated organization run by the local public health directors of Detroit and surrounding jurisdictions.

During the 1990s, as Section 317 FA funds increased and then waned, Detroit's support for immunization infrastructure went from being a separate award to the city health department, to an additional award for the city made to the State of Michigan, to no Detroit-specific funds allocated at the CDC level and Detroit receiving its share under the state's population-based awards. The state anticipated providing Detroit \$549,950 under this mechanism in 1999 (State of Michigan, 1999 a). While Detroit's challenge is large, the state's per-young-child formula provides a higher level of funds to Oakland County, the suburban county north of Detroit, where incomes are significantly higher.

Other Section 317 FA funds reached Detroit as VFC vaccine handling fees (approximately \$200,000) and a contract to provide outreach staff at WIC sites funded at approximately \$250,000.

The city has had limited success in using volunteers. Two VISTA (Volunteers in Service to America) volunteers were assigned to seek out children who were known to be not up-to date. The effort was deemed not successful by the volunteers' overseers, who cited a lack of cultural competence of VISTA workers as limiting their success (Michigan Department of Community Health, 1998).

The city health department now receives less infrastructure support than another Detroit project funded directly by CDC. CDC funds the Child Health Network Immunization Project (CHNIP), now in its 4th year of 5 years of funding, as part of awards to five academic health center-based projects to improve immunization results. CHNIP was awarded \$7.3 million over 5 years to support work in 18 of the 27 Detroit zip codes and seeks to increase the immunization rate by 25% in patients served by a network of clinics with which it is working and 15% in the overall service area. (The funding level is twice what the state provides for the entire city through IAP money, although some city clinics are included in the network of CHNIP clinics.)

If the city health department's efforts have been about expanding immunization-specific services, CHNIP has been about making sites that deliver broader services more effective at accomplishing immunization. A second CHNIP focus is community outreach. Some activities are targeted to improving clinic function so that children served by the clinic are more likely to be up-to date. For example, the coming year will fund continuity coordinators in several clinics, individuals who greet new families at the time of their first contact and follow up if a child falls behind on his or her immunization schedule. Special emphasis will go to children who have not received the fourth in the DTP series, an omission the project's analyses show as the most common reason for children not being complete.

Other activities involve community outreach. The project has organized a block-to-block campaign through churches and other community-based organizations. The unexpectedly low performance the first year led to changes for the second effort in August 1999. Rather than do

everything, each community organization was asked to specialize: recruitment, training, turnout. Small stipends went to each volunteer.

One challenge faced by the project has been the volatility in Detroit's health care delivery system. Eight clinics are the subject of intensive focus by CHNIP. Earlier, three clinics that had been involved closed as part of the convulsions that rocked a large voluntary hospital system. Another was lost when a Section 330-funded community health center changed control.

Detroit's success stories come more from military-like mobilization immunization to provide catch-up immunization than from the careful coordination between parents and services required to keep young children up-to date. In 1994, the first year with potential penalties for school districts not documenting compliance with immunization rules for new entrants, Detroit had documented only 60% of students being compliant by the state's February deadline. Detroit's response included "Guard Care," mass immunization clinics run by the National Guard on Saturdays and Sundays. Motivated school officials saw to it that children who were new school entrants were up-to date. Detroit reached 90% series completion for school entrants in June, 4 month's after the state's deadline (City of Detroit Health Department, 1995).

The decline in infrastructure funding has meant discontinued services. At the largest WIC clinic, Section 317 FA dollars had provided the staff to handle the administrative burden of requiring monthly (rather than bimonthly) coupon pickup for children who were not up-to-date with immunizations. Without support from Section 317 FA funds, monthly voucher pickup is no longer possible.

The more important challenge to the city's role in immunization delivery comes from the state Medicaid program. The state's movement to enroll all non-disabled children in managed care contracts creates the ideal of every child having a medical home where he or she can be immunized. Seeing the vision the state seeks to realize, the city's health director, new within the last year, is said to question whether the city health department should continue to see immunization delivery as one of its missions.

Today, the city believes it delivers 20% of the doses provided in Detroit. Its priorities are far from expanding direct delivery as it did with federal funds in the early 1990. Its first priority is entering vaccine administration data into the immunization registry so that the day when the registry can be used to generate recall and reminder notices, and analytic reports that allow identifying children who are not up-to-date, comes sooner rather than later.

One can imagine the spectrum of possible future results for Detroit. At the most hopeful end, the vision of important stakeholders is realized. More and more young children are kept up-to-date in their medical homes, thanks to more effective clinic practices in those clinical homes, supported by use of registry data that is near universal. More children kept up-to-date in their medical home allows the city health department to reduce its commitment to direct service delivery and redeploy staff using registry data to identify providers, neighborhoods, and individual children who are not up-to-date and then targeting these providers, neighborhoods, and children for follow-up. At the other end of the range of outcomes, Detroit could stumble. Cost pressures on Medicaid managed care providers could cause immunization to decline as a priority, and the careful work of CHNIP in improving clinic practices in a limited set of clinics could be forgotten. More Detroit children would find themselves arriving at school not up to date. The school entry requirement would continue demand for catch-up immunization at public health clinics, keeping public health department resources focused on service delivery rather than system improvement.

IMMUNIZATION REGISTRY

The state has made an extensive investment in a vaccine registry program and hopes that the time when it is a useful tool is just around the corner.

The registry effort began at the peak of the FA funding in the mid-1990s. An early vision saw a series of regional registries, and the state provided Section 317 funds to local health departments to get regional registries going. As this concept proved infeasible and FA dollars fell, the registry became a single statewide registry. As part of the state’s effort to be aggressive in pursuing Medicaid dollars, it has begun to allocate registry costs to Medicaid in proportion to Medicaid’s share of the persons represented in the registry; \$400,000 of registry costs can be attributed to Medicaid, and the additional federal payment (about \$200,000) is allocated to the immunization program. Table 5 shows sources of funds for the registry.

TABLE 5 Registry Expenditures (dollars)

Source	1996	1997	1998	1999	
Section 317 FA funds		0	818,811	521,400	0
State source funds	1,900,000	1,651,618	1,375,000	1,750,000	
Other funds		0	64,483	200,000	1,038,300

SOURCE: Michigan Department of Community Health.

The registry is currently populated with birth certificate data provided biweekly by the state registrar. The registry also includes legacy data created before the registry began operation in 1997, largely from local health departments. State law requires every immunization provider to supply data to the registry. All public providers currently provide do supply data; the compliance of private providers is less clear. The state is currently doing quality assurance work, pulling a sample of registry records to be compared with patient charts in provider offices.

A review of 1,312 children scheduled to be seen in two large clinics in Detroit in early 1999 found that 695 children were present in the registry, and of these, 335 had vaccine history information. The effort required to obtain each vaccine history from the registry amounted to one half-time slot. While resources dedicated to entering immunization administration data in Detroit are provided through CHNIP, the level of reporting by private providers is unknown.

At present, the registry has the capability of providing immunization status to providers electronically or through an interactive voice request that generates a FAX response. The registry also plays a role in supply management for VFC providers, using providers’ electronic submissions to track inventories and generate orders for replenishment as supplies diminish.

The registry is at the cusp of being available as an analytic tool. Reports can be generated both by geographic regim, showing immunization rates down to the census tract level, and by provider, allowing providers to assess immunization levels on their patient rosters. This capacity will allow the state to know with great precision what its “pockets of need” are. Another function planned but not yet functional is generating recall and reminder notices using the registry.

The challenges relating to realizing the MICR’s potential go to the heart of the careful coordination that will be required to increase the number of young children who are up to date. The MICR is not yet able to exchange information with organizations (large group practices, health plans) that have their own clinical information systems, meaning that physicians who rely on

their organizations' information system are unable to learn about doses provided in other settings (e.g., health department clinics) that have been reported to the MICR. While the MICR can generate notices to parents of children who are not up to date, outreach efforts to non-responsive parents depend on initiatives taken by local health departments or the child's medical home.

ADULT IMMUNIZATION

The CDC has asked the state to designate at least 0.5 FTE (full-time equivalent) for adult immunization in its year 2000 Section 317 proposal. The state's response was to designate the person who spent the greatest share of time as the required 0.5 FTE, although the actual amount of time will likely be the residual of managing other outreach activities. State immunization staff view adult immunization as a priority that cannot be met when resources are constant or declining and past resource commitments are extensive, making reallocation difficult if not infeasible.

Medicare claims data suggest that 45% of adults were immunized against influenza in 1997. Among adults, 27.7% were immunized with the pneumomoccal vaccine (Michigan Department of Community Health, 1999).

The state has no requirement for immunization of nursing home residents.

HARD-TO-REACH POPULATIONS

There are a number of Indian tribes and bands. The state's involvement is limited to education efforts addressed to a statewide Indian health coordinating committee organized by the Indian community. Direct service matters are viewed as being the province of local health departments.

Migrant children are one group likely to appear to be not up to date as measured by the MICR.

There are 10,000 Amish in the state, clustered in four communities. While the Amish generally do not immunize their children, local health officials have found Amish communities willing to participate in immunization campaigns at the time of outbreaks.

ACKNOWLEDGMENTS

This case study relied heavily on the resources of the Michigan Department of Community Health, including the annual state applications for Section 317 funds; tables prepared in response to an Institute of Medicine Request request; and interviews with Gillian Stoltman, Ph.D., director of the Division of Immunization, and Nancy Fasano, outreach and education manager in the division. The Detroit section drew on interviews with those involved with the Child Health Network Immunization Project in Detroit, including Sheryl Weir, project manager, and Ronald Davis, M.D., co-principal investigator. Their cooperation is gratefully acknowledged.

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