



## Report to the Legislature

### Strategy to Improve Immunization Rates in Washington

#### **Completed to fulfill 2008 Supplemental Budget (ESHB 2687) Sec. 209(26)**

As part of the five-year plan on state purchasing to improve health care quality under chapter 259, Laws of 2007, the department, in collaboration with the department of health, shall provide a report to the appropriate committees of the legislature outlining a strategy to improve immunization rates for all children in the state, including but not limited to vaccine administration fee increases and pay-for-performance incentives. The department shall submit the report to the governor and the health policy and fiscal committees of the legislature by November 1, 2008. Extension received; new deadline December 1, 2008.

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## **Executive Summary**

This report was written to fulfill the requirements in the 2008 Supplemental Budget (ESHB 2687) Sec. 209(26). The Department of Social and Health Services in collaboration with the Department of Health was charged to write a report to the appropriate committees of the legislature outlining a strategy to improve immunization rates for all children in the state, including but not limited to vaccine administration fee increases and pay-for-performance incentives.

### **Background**

Childhood immunizations show significant health benefits. These include: reductions in child morbidity and mortality, cost-savings to the health care system, and benefits to society. Yet, Washington State lags behind the nation in immunizing its young children. This finding is in contrast to Washington's strong health policy support of: universal coverage of immunizations, children's health care through historical and recent health care expansions as exemplified in both S-CHIP and the Children's Health Program, and an expressed Legislative goal that all children have a medical home. Factors contributing to low immunization rates are complex and multifaceted. Contributors to low immunization rates can be encapsulated into three domains. These are:

- **Parent Domain**
  - Parental fears of untoward outcomes from immunizations
  - Widespread publicity of the alleged association but no verified causation of immunizations to autism
  - Washington immunization law which makes it easy for parents to exempt from childhood immunizations
- **Health Care Provider Domain**
  - Administrative fees that do not cover the costs of providing the immunization service
  - Health care providers challenged to:
    - serve a more diverse parent/child community
    - maintain knowledge on an increasingly complex immunization schedule
    - implement best practices in a quality-focused, pay for performance environment
    - increasingly spend more time with hesitant parents on the importance of immunizing their children
- **Government or Delivery System Domain**
  - Limited state investment in:
    - public education campaigns to counter negative publicity about vaccines and offer a more balanced view of the benefits of immunizations

- the routine collection of immunization data which could help drive quality improvement efforts
- education of health care providers on
  - current immunization information, including best practices related to culturally competent care
  - routines that enhance office systems to ensure families are provided the highest quality, consumer oriented care
  - strong quality assurance and oversight activities of primary care practices who deliver immunization care

### Recommendations

Recommendations for improving immunization rates fall into six main categories. Together, these recommendations both promote immunization coverage and address key causes of low immunization rates in Washington State.

Implementation of these recommendations may require additional funding. These are:

#### **1. Enhance Public Health Activities to Support Immunizations**

Public health needs continued support to develop and implement ongoing education programs for parents and health care providers. A system of training to maintain provider knowledge of current immunization care and best practice systems of care delivery will strengthen immunization practices. Enhancements to the state Assessment, Feedback, Information, and Exchange (AFIX) immunization quality assurance system are needed, including providing technical assistance to immunization providers and their office staff. Balanced educational information for parents on the importance of vaccines is critically necessary.

#### **2. Improve Current Immunization Law on Immunization Requirements for School and Child Care**

It is easier for a parent to exempt their child from required immunizations than to submit information about the immunizations their child had or get the required immunizations. Exemptions from required immunizations are an indicator of parents refusing to immunize their children. Outbreaks are also an indicator of lower immunization coverage and in 2008 Washington has experienced outbreaks of 4 vaccine preventable diseases including: pertussis, varicella (chickenpox), mumps, and measles. Washington is one of about 20 states that allow personal or philosophical exemptions in addition to medical and religious exemptions. Children exempted for non-medical reasons are more likely to become infected with measles and pertussis<sup>1</sup>.

#### **3. Gather State and County Data on Washington State Immunization Performance**

Critical to understanding immunization performance and developing informed improvement strategies is gathering more specific data on immunization coverage

rates. Monitoring of statewide data has not identified demographic populations to target for improvement efforts. There are significant limitations to relying on national data or Medicaid health plan data to calculate performance at either the county or zip code level. These two sources of data do not reliably provide actionable performance data at the county or zip code level because of inadequate sample size.

#### **4. Enhance Medicaid Payment for Immunizations**

The Washington Medicaid program has one of the lowest vaccine administration rates in the country. Payment is necessary to support providers' additional effort and time spent educating parents on the value of vaccines to prevent child morbidity and death.

#### **5. Implement Pay for Performance Mechanism**

As required in the 2007 Washington State legislation regarding children's health care, performance measures and an incentive model were drafted in late 2007. The Children's Healthcare Improvement System report identified a number of clinic-based characteristics indicative of a medical home and recommended a pay for performance program be implemented for a number of child health care indicators, including immunizations.

## The Problem

Washington State lags behind the nation as a whole in childhood immunization levels. According to the latest data from the CDC, Washington's immunization rate is 69%. Washington remains behind the national average of 77 percent and the national *Healthy People 2010* goal of 80 percent coverage for children 19-35 months of age. The table below describes the current rates for the individual vaccines that make up the overall vaccine rate for Washington and the nation. The goals of 90% coverage for each vaccine and 80% coverage for the vaccination series are also indicated. For each of the individual vaccines, Washington's rates are within 10% of the goal.

Vaccine	Washington	U.S.	Healthy People 2010 Goal
DTaP $\geq$ 4 doses	80.9 $\pm$ 5.4	84.5 $\pm$ 0.9	90%
Polio $\geq$ 3 doses	85.1 $\pm$ 5.1	92.6 $\pm$ 0.7	90%
MMR $\geq$ 1 dose	90.5 $\pm$ 3.9	92.3 $\pm$ 0.7	90%
Hib $\geq$ 3 doses	90.1 $\pm$ 4.0	92.6 $\pm$ 0.7	90%
Hep B $\geq$ 3 doses	85.0 $\pm$ 4.7	92.7 $\pm$ 0.7	90%
Varicella >1 dose	84.0 $\pm$ 4.9	90.0 $\pm$ 0.7	90%
4:3:1:3:3:1 Vaccine Series	69.0 + 6.2	77.4 + 1.1	80%

Similar performance is found in the Washington Medicaid managed care population. The 2007 Medicaid coverage rate for the 4:3:1:3:3:1 series was 70.3%. Additional data analyses demonstrates that children in Medicaid Region 6 (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Klickitat, Lewis, Mason, Pacific, Skamania, Thurston and Wahkiakum counties) are statistically less likely to be fully immunized<sup>2</sup>. As well, African American children and parents of children whose primary language is Russian have statistically lower coverage rates than other racial and non-English speaking groups<sup>3</sup>.

## Why Immunize Children?

Immunizations are among medical science and public health's most significant achievements and the most effective tools for disease prevention. The widespread use of vaccines has resulted in dramatic declines in the United States in the morbidity, disability and mortality caused by a variety of infectious diseases, including: diphtheria, tetanus, pertussis, Haemophilus influenza type b (Hib) bacteria that causes a variety of diseases, polio, measles, mumps, rubella, hepatitis B virus (HBV) and varicella (chicken pox)<sup>4</sup>.

The health benefits and health care and societal savings associated with immunizations are well-documented. A study comparing the health impact and cost-effectiveness of preventive care services ranked immunizations, along with two other activities (aspirin use in high risk adults and smoking cessation counseling) greater than any other preventive care service that can be provided in a medical practice<sup>5</sup>. A 92% decline in cases and a 99% decline in deaths due to diseases prevented by vaccines recommended before 1980 have been demonstrated for diphtheria, mumps, pertussis, and tetanus<sup>6</sup>. Since 1980, cases and deaths have declined 80% or greater for several vaccine-preventable diseases, including hepatitis A, Hib bacterial diseases, and varicella<sup>7</sup>.

Routine childhood vaccinations results in cost savings from a direct and societal cost perspective of 9.9 billion and 43.3 billion, respectively<sup>8</sup>. In the calculations, direct health care costs included those associated with the treatment, complications, and sequelae of disease (e.g., out patient and inpatient costs). Societal costs were based on productivity losses due to premature child mortality and the indirect costs from a child's permanent disability as well as costs associated with caregivers who missed work to care for their sick child or who became patients themselves from the disease<sup>9</sup>. Without routine vaccinations, direct and societal costs of preventable diseases would be 12.3 billion and 46.6 billion<sup>10</sup>.

Vaccines reduce the incidence of both preventable disease and hospitalization. For children younger than five in Washington:

- Hospitalizations for chicken pox decreased 47% between 2001 and 2005 from 45 to 24, respectively
- Pneumococcal vaccine decreased from 80 cases per 100,000 in 1999 to 4.6 in 2003, a 94% decline in this age group
- Hospitalizations associated with pneumococcal disease decreased 20% from 2,200 in 1999 to 1,752 in 2005 and
- Hospitalizations for H. influenzae-caused meningitis decreased 93% from 83 in 1990 to 6 in 2005

Vaccine administration in young children substantially benefits older adults, as well. For example, the incidence of pneumococcal disease among adults aged 50 years or older declined 28% soon after children began being immunized for the disease<sup>11</sup>. The overall rate of invasive disease among persons aged 65 years or older (41.7 cases/100,000) surpassed the Healthy People 2010 goal of 42 cases/100,000<sup>12</sup>.

## **History of Vaccine Programs**

Until the mid-1950s, child immunization was fairly simple - only smallpox and DTP (diphtheria-tetanus-pertussis) were administered to children. Most vaccines were administered by private practitioners. Some children received free

immunizations from local health departments, with costs borne by local/state taxes or coming from the federal Maternal and Child Health Block Grant<sup>13</sup>.

The introduction of the polio vaccine in 1955 created greater public awareness and interest in assuring that all children received the vaccine. Federal funds were appropriated in 1955 and 1956 to help states and local communities buy and administer polio vaccine<sup>14</sup>. Incomplete and unequal coverage of vaccines led to the 1965 introduction of the *Vaccine Assistance Act*, now commonly referred to as 317 Funds. The central focus of this legislation was to provide grants to state and local health departments to support mass immunization campaigns, rather than to provide a continuing program of support for childhood immunizations. The Federal Government negotiated vaccine prices with manufacturers at significant savings, compared with private sector cost. Though federal funding levels have been inconsistent over time, this legislation is the mainstay of public sector support for immunization in the U.S.<sup>15</sup>.

At the time of the 1965 legislation, several states committed to “universal purchase”, in which states using a combination of federal and state funding purchase and distribute vaccines recommended for children to all immunization providers both public and private. States may adopt different vaccine purchasing policies. Presently, there are five policy categories. These are:

- **Universal:** All children, regardless of insurance status, receive all recommended vaccines free of charge via the immunization program.
- **Universal Select:** All children, regardless of insurance status, receive all ACIP-recommended vaccines for free via the immunization program, except for one or more of the newer, more expensive vaccines such as PCV7, Varicella, MCV4, and Tdap.
- **Vaccines for Children (VFC) & Underinsured:** All children who are underinsured are treated like VFC-eligible children.
- **VFC & Underinsured Select:** All children who are underinsured are served by the immunization program, but not all vaccines are covered.
- **VFC Only:** The immunization program provides all vaccines to private providers only for VFC-eligible children.

Following a 1989 to 1991 measles epidemic and the recognition of economic barriers to vaccination, additional legislation resulted in the federal VFC program. Begun in October 1994, the VFC provides states with free vaccines for children who are Medicaid-eligible, have no health insurance or are Native Americans or Alaskan natives<sup>16</sup>. In addition, children whose insurance does not cover vaccines are eligible for VFC if they are vaccinated at a federally qualified health center or rural health clinic. The Child Health insurance Program (CHIP) enacted in 1997 as part of the Balanced Budget Act expanded insurance coverage for children and improved access to care<sup>17</sup>.

## **Advantages of VFC and Universal Coverage to Providers and Parents**

Washington State is a universal purchase state, adding state funds to the federal VFC funding to purchase and distribute all routinely recommended vaccines to all Washington children under 19 years of age. The universal purchase of vaccines has advantages for Washington's health care providers and citizens. Universal purchase streamlines the delivery of vaccine services by a state-funded purchase and distribution system. This centralized system alleviates the need for health care providers to:

- Track eligibility for state-supplied vaccine versus private insurance vaccine benefits
- Maintain separate vaccine inventories of state vaccine versus non-state covered vaccines and
- Determine the vaccine coverage related to the insurance status of a child<sup>18</sup>.

VFC and universal coverage helps us achieve our state goal of ensuring all children have a medical home. VFC within a medical home benefits children in several ways. Data from a 2001-2002 National Immunization Survey revealed that VFC-eligible children who had a medical home had significantly higher vaccination coverage rates than did VFC-eligible children who did not have a medical home even with adjustment of variables known to influence coverage<sup>19</sup>. Second, universal coverage reduces parent-burden, particularly for low-income parents of children who receive care in one setting, reducing the aggravation and cost of having to go to two locations (private provider and public health department) for immunization administration services.

A number of research papers have touted the advantages of universal purchase of vaccines, particularly for Medicaid-insured or uninsured children. Prior to 1993-94, about half the immunizations in the country were provided by public health departments. The VFC program substantially changed patterns of childhood immunization in the US by shifting immunization care from public health to the private physician sector<sup>20</sup>. As a result of the VFC, more physicians chose to provide immunizations in their offices and made less referrals to public health departments for services<sup>21</sup>.

Physicians who use free vaccine supplies were much more likely to vaccinate children in their offices; this effect was most apparent for uninsured and Medicaid-insured children<sup>22</sup>. In a survey of Minnesota and Pennsylvania physicians, 45% of physician respondents reported that the VFC decreased the number of referrals from their practice to public vaccine clinics<sup>23</sup>. A study of implementation of North Carolina's VFC and universal purchase program showed that both were associated with improved immunization rates, especially for children with inadequate insurance for well-child (preventive) care<sup>24</sup>. The largest immunization coverage increases occurred among privately insured children with no well-child coverage,

children who had periods of being uninsured, and children enrolled in Medicaid exclusively or with private insurance<sup>25</sup>.

## **Threats to Immunization Coverage**

There are four key threats to immunization coverage. These are: parent concern about the safety of vaccines, low payment rates for vaccine administration, increasing costs for vaccines, particularly newer vaccines, and nearly continuous vaccine shortages.

**Parent Concerns:** Public health experts often warn that the standard of routine childhood immunization in the United States rests on a tenuous foundation of public support<sup>26</sup>. Parents who have concerns about vaccine safety may be reluctant to have their children vaccinated. In fact, our state's increasing exemption rate for required vaccines is an indicator that more parents in Washington are choosing not to immunize their children. The number of counties where greater than 5% of parents have documented philosophical exemptions has risen exponentially in the last 9 years. In the 1999-2000 school year, 7 counties had immunization exemption rates of 5% or greater, in the 2007-2008 school year 20 counties have exemption rates in excess of 5%<sup>27</sup>.

**Low Payment Rates for Vaccine Administration:** The American Academy of Pediatrics has long held that the reimbursement rate for vaccine administration is inadequate. The 2008 AMA-AAP Immunization Congress reported at least five studies underway on the disparities and challenges associated with the administration and reimbursement of vaccines. The studies, soon to be published will include data on actual per practice vaccination costs including non-reimbursed administrative and equipment costs. As a result of these and other financial challenges, the Immunization Congress report stated that some pediatric decision-makers and many family practice physicians are seriously considering ending their vaccination services<sup>28</sup>.

Washington Medicaid payment for vaccine administration is one of the lowest in the country. Pediatric and Family Practitioner providers are increasingly raising this as an issue with the Washington Medicaid program and Legislature. The estimated cost to a primary care provider to administer a vaccine is \$25.00 and the Washington Medicaid payment rate is \$5.96. An approximate \$10.00 increase in administrative fees would be necessary to achieve the regional maximum rate allowed by the Centers for Medicare and Medicaid Services. This reimbursement is paid 50% by the federal government and the other 50% is the state's responsibility. This translates to roughly 5 to 9 million dollars in additional annual state costs to increase the administration rate, dependent on the increased payment amount, i.e., \$11.90 or \$15.60.

Increasing Cost of Vaccines: The cost of purchasing vaccines has gone up dramatically due to both the increase in number of vaccinations available against preventable disease and the cost of producing the vaccines. Newer vaccines often debut with prices well over \$50 per dose. For example, as of September 2000 the prices for Hib were \$5.20 to \$7.75 a dose compared to the pneumococcal conjugate vaccine cost of \$44.25 per dose<sup>29</sup>. The new HPV vaccine costs are \$100 to \$125 per dose, dependent on purchase through the public sector contract or on the private market<sup>30</sup>. Combination vaccines may hold the promise of reducing the number of shots and associated vaccine administration costs, but the cost per dose is higher for combination vaccines<sup>31</sup>.

Increasing costs of vaccines has challenged many state budgets. As a result of increasing number of vaccines and associated costs, some states have elected to eliminate their universal coverage status, instead selecting the vaccines that the state will purchase. While possibly saving state dollars, this change can shift burden and costs to the primary care provider, insurers, and parents. It creates problems for the primary care provider who must maintain separate allotments and accounting procedures for vaccines covered and not covered by the state. As well, parents of young children must pay for expensive vaccines if they want their child fully immunized. Universal coverage promotes the development of a medical home and minimizes the need for Public Health immunization clinics. These clinics would likely need to be expanded should universal purchase be changed.

Washington should be very cautious in disbanding universal coverage, given historical studies which clearly demonstrate positive impacts of universal coverage on immunization rates. A change in vaccine purchasing policy could result in deleterious effects to the state's current tenuous immunization coverage rate and may contribute to increase risk of outbreaks (and associated costs) of preventable disease.

Vaccine Shortages: Vaccine shortages are a problem in the immunization of young children. Only four FDA-licensed pharmaceutical companies supply all nine routinely recommended childhood vaccines<sup>32</sup>. Reasons for shortages vary, but a major contributing factor is the small number of manufacturers. Supply disruption occurs when a vaccine has only one or just a few manufacturers. If one manufacturer has challenges meeting supply, the remaining production capacity or inventory often cannot quickly make up for the shortage<sup>33</sup>.

## **Why are Childhood Immunization Rates below Expectations?**

In the spring of 2008, a subcommittee of the Children's Health Care Improvement System Committee formed by the Department of Social and Health Services met to answer this question: *Why are childhood immunization rates below expectations in the state of Washington?* Experts from the Department of Health, advocacy organizations, Washington State Board of Health, Department of Social and Health

Services and the provider community offered their observations and input in this process. The findings from this session are detailed below. The causes of low immunization rates in Washington State boiled down to 7 issues. The causes are:

<b>Causes of Low Immunization Rates</b>	<b>Examples</b>
Office Procedures and Methods	<ul style="list-style-type: none"> <li>- Lack of reminder calls or recall systems if children miss appointments</li> <li>- Lack of expanded office hours for low income/working poor</li> <li>- Time pressures in office settings</li> <li>- Limited open access office scheduling</li> </ul>
Missed Opportunities	<ul style="list-style-type: none"> <li>- Providers hesitant to immunize when child is mildly ill – which is not a contraindication for immunizations</li> <li>- Easy immunization exemptions at child care centers and schools</li> <li>- Insufficient RN staff to support provider practice</li> </ul>
Access	<ul style="list-style-type: none"> <li>- Office access to vaccination product due to vaccine shortages</li> <li>- Children's access to providers through open access scheduling</li> <li>- Lack of access to primary care</li> <li>- Provider availability, particularly in rural communities</li> </ul>
Provider/Parent Communication	<ul style="list-style-type: none"> <li>- Inadequate office time to address parent hesitancy about immunizations, e.g., lack of familiarity with vaccines and the diseases they prevent, number of injections, pain of injections.</li> </ul>
Actionable Data	<ul style="list-style-type: none"> <li>- Limited knowledge of vaccination coverage rates at county, zip code, and provider level</li> <li>- Not using immunization tools, such as Child Profile to capacity</li> <li>- Lack of systems to inform providers about their immunization coverage rates (no or ineffective electronic medical records/insufficient [or costly] statewide data to inform providers regarding their performance)</li> </ul>
Education	<ul style="list-style-type: none"> <li>- Parental lack of knowledge of disease states that can result from lack of immunizations</li> <li>- Misinformation about the value of immunizations</li> <li>- Media influence on immunizations (positive and negative)</li> <li>- Lack of knowledge on the cost of delivering immunizations in a practice</li> </ul>
Reimbursement and Incentives	<ul style="list-style-type: none"> <li>- Low payment for immunization care – current Medicaid reimbursement doesn't cover the cost of providing service</li> <li>- Incentive payments funded by Medicaid to managed care plans are not: sufficient enough and many plans do not routinely transfer payments to primary care practices achieving high immunization coverage rates</li> </ul>

## **Actions to Address Immunization Coverage Rates**

The immunization subcommittee conducted a survey of states achieving high rates of immunization coverage in fall 2008. Four states were surveyed: California, Colorado, Massachusetts, and North Carolina. Each state was asked a series of questions related to the structure and process of immunization care delivery which promoted immunization coverage. Characteristics of states which differentiated themselves from Washington and had higher immunization coverage rates include:

- More comprehensive funding sources to include federal, state, local funding, and other dollars
- Less permissive laws for exemption, e.g., Massachusetts laws do not allow philosophical exemptions
- Public education campaigns aimed at providing balanced information to parents regarding the importance of vaccination such as found in California
- Funding for provider education programs on the latest immunization information and the dissemination of office-based best practices to ensure children are fully immunized (California and Massachusetts)
- Strong quality assurance mechanisms through existing AFIX program, including ongoing quality oversight, technical assistance as evidenced in Massachusetts

No research identifies one specific way to increase immunization rates. Best practice guidance from states that have sustained high rates, indicate a set of activities that contribute to improved immunization rates.<sup>34</sup> The CDC conducted a survey of states achieving high immunization rates in 2007<sup>35</sup>. Eleven themes or best practices were identified as a result of these meetings. Combined Best Practices are described below.

- Health promotion and education that gets information to parents and providers to help with decision-making about giving children the right immunizations on time
- Communication and social marketing to make the right immunizations at the right time a cultural norm
- Strong quality assurance programs, such as AFIX which provide clinic and community assessments to measure rates, provide feedback, and promote best practices
- Strong leadership and senior management support
- Sustained competent program staff
- Building and sustaining community trust and involvement of community stakeholders
- Use of immunization registry to give providers a ready tool to support clinical-decision making for individual patients and to provide both community and statewide coverage data to drive interventions and support outbreak response
- Reminder/recall office practices to encourage full immunization coverage

- Strong immunization laws for school and child care entry

AFIX is a quality improvement strategy to raise immunization coverage levels and improve standards of practice at the provider level. The U.S. Centers for Disease Control and Prevention Standards of Pediatric Immunization Practices and the Advisory Committee on Immunization Practices recommends this approach. CDC requires AFIX visits as a condition of federal vaccine funding and provides Immunization grant funding for these visits.

Washington's Department of Health and local public health conduct AFIX visits on approximately 30% of Washington's VFC primary care practices each year. Thus, all Washington providers receive about one visit every 3 years. An AFIX visit to a health care clinic includes a review of vaccine storage and handling and the clinic practices that promote immunization coverage and assure children receive the right vaccinations at the right time.

Best practice states have more robust AFIX programs than Washington. These quality assurance/quality improvement visits have been shown to improve immunization rates in health care clinics. A survey conducted by Washington's Department of Health reveal a number of opportunities for improving AFIX visits to provider offices<sup>36</sup>.

- Establish criteria using vaccine ordering data to determine which providers should receive an AFIX visit each year, such as the largest providers and those with largest orders or providers who had issues during their last assessment
- Establish an objective rating system for local health and providers to use in conducting assessments, including the type of follow-up needed
- Expand the quality oversight team to increase the number of assessments conducted annually
- Conduct more education and outreach in the various state regions annually
- Develop standardized training curriculum for local public health to use in conducting any training
- Expand the on site assessment tool to include lifespan questions and additional data, e.g., a focus on exemptions

## **Discussion**

The primary care system assumed greater responsibility for immunization service delivery starting in the mid-1990s. This change resulted from both the implementation of the federal VFC program and the decision to implement a universal purchase program. VFC enhancements and universal coverage, along with Medicaid expansion efforts in the 90's and more recently resulted in a change in both how immunization care was delivered, but also on the range of children served by the private provider community. Primary care became the mainstay of

immunization care of services which were often historically delivered in a public health setting.

This change resulted in greater training needs for the provider community. The type of patient served by some primary care practices changed to a more diverse population. Children from a range of socioeconomic backgrounds and cultural experiences were now being served by private health care providers. Greater needs for training and education on the delivery of culturally competent care and patient outreach activities were needed to ensure complete immunization coverage.

Education or training to assist with this care transition, such as additional private or state resources were limited or absent. A promising practice, which could assist providers with patient care, is the use of patient navigators. Currently being tested at the Department of Social and Health Services, it involves the use of lay persons trained to help patients find their way in the health care system, coordinate services and resolve problems that delay care.

The change in immunization practice persists and is amplified by an even more complex immunization schedule and greater knowledge of the need to improve the system of health care. Much has been written, starting with the 2001 Institute of Medicine report *Crossing the Quality Chasm* about the shortcomings of our healthcare system. Organizations such as the Institute for Healthcare Improvement and the National Initiative for Children's Healthcare Quality have formed and have had some success in achieving the common societal goal of improving quality in health care by changing how health care is delivered.

Office practice change is one area that influences the completeness of immunization coverage. Quality oriented organizations place a high value on the consumer of health care. These organizations develop and encourage numerous changes to support improved quality of health care. Many of these changes affect the organization of care in the primary care practice. Examples of activities with an immunization perspective are:

- Recall/reminder systems to encourage parents to keep immunization appointments for their children
- Open access scheduling which give the parent more control over the scheduling of their health care
- After hours care which better serve the working parent and working poor community
- Open access to the primary care provider through email communication to discuss health care issues or concerns
- Effective provider communication to encourage parents to immunize their children
- Using data from patient registries and electronic medical records to proactively plan health care services and to ensure the standard of care for immunizations are met

While these efforts are laudable, office based changes can be costly and difficult to implement, particularly for the small provider practices that may not have the extra time or dollars to support such efforts.

Washington State leads the nation in its efforts to train provider offices committed to improving office-based practices through the Washington State Collaborative focused on Medical Home. The challenge with supporting these activities is the ongoing impact of unstable public and child health funding that impact sustained efforts to strengthen public health infrastructure and provider office systems. The subcommittee voiced many concerns about inadequate funding to meet the needs of parents in a 21<sup>st</sup> century health care practice. The cost of improving immunization delivery practices, including additional time necessary to educate parents on the importance of immunizations was a consistent theme in the brainstorm session.

Public dollars for educational initiatives which could provide parents with more balanced information and providers with greater knowledge on immunization best practices and how best to serve diverse populations are limited in Washington State. Washington's allocation for media related activities is federally funded and approximately \$150,000/year of the federal grant is currently used for media-related activities, as compared to North Carolina's allocation of upwards of \$350,000/year and California's allocation of \$800,000/year. Best practice states have more robust quality assurance and improvement systems and the resources to deliver on this service.

States with high vaccine performance rates have promising practices for educating both the public and health care providers. In a survey of high performing states the immunization subcommittee found that Massachusetts funds two staff at the Massachusetts American Academy of Pediatrics Chapter to develop and disseminate educational materials for providers and promote immunizations in both the provider and parent communities. Massachusetts was described as 'joined at the hip' with their practice community in their efforts to immunize young children. California has a strong social marketing campaign that has capitalized on technology. California created 'bus wraps' using a *Killer Tomatoes* theme which promotes flu vaccines. A telephone text number located on the wrap can be used to find the nearest location of a flu administration site. They have created an '*Izzy the Bear*' page for young parents and teens and plugged into *Café Mom* to educate young people and parents about the importance of immunizations. California is developing an on-line training system for Medical Assistant staff responsible for delivering immunization care.

Data on immunization performance, such as that conducted by the Department of Social and Health Services, begins to provide information about geographical areas and populations that are not receiving the standard of immunization care. Additional data, including a statewide immunization survey is needed to provide actionable information about the geographic areas and populations where interventions are needed to promote immunization coverage.

Pay for performance mechanisms are a required activity resulting from the Child Health Act passed by the Washington State Legislature in 2007. The bill requires DSHS-HRSA to link (1) rate increases for medical providers to quality improvement measures related to the provision of a medical home, and (2) to develop parameters for determining criteria for increased payment or other incentives for practices and health plans, incorporating evidence-based practice. An incentive-based implementation model creates explicit incentives to foster or reward improvements in provider performance. The ultimate goal of such a model is to improve the quality of care provided and control costs downstream with better outcomes, less errors, and a reduction in inappropriate utilization. The adoption of these types of models to drive quality improvement is growing rapidly, as is the body of research supporting their value and success.

The workgroup formed as a result of the legislation recommended childhood immunizations as a component of the pay for performance model. As described in the report, a pay for performance mechanism would become operational in 2011.

## **Recommendations**

Low immunization coverage rates in Washington State results from a number of factors. A scan of best practice literature and interviews with high performing states on key success factors reveal a number of actions the state could take to address performance challenges. Many of these recommendations address the seven key causes of low immunization rates. The key recommendations are:

### **Enhance Public Health Activities to Support Immunization Services**

Public Health needs continued support to promote immunization coverage in Washington State. A system of training for parents and health care providers is needed to encourage implementation office procedures and methods that promote immunization coverage. Ongoing provider education to maintain and update knowledge of current immunization care and best practice systems of care delivery for providers will strengthen immunization practices. Balanced educational information for parents on the importance of vaccines is critically necessary. Enhancements to the AFIX immunization quality assurance system are needed, including resources to provide technical assistance to immunization providers and their office staff.

### **Improve Current Immunization Law on Immunization Requirements for School and Child Care**

It is easier for a parent to exempt their child from required immunizations than it is to submit immunization information they have or get the required immunizations. The exemption rate in Washington State has skyrocketed and Washington is experiencing more outbreaks of vaccine preventable diseases. In the 1997 – 1998 school year, 2.2% of children in Kindergarten through 12<sup>th</sup> grade were exempt from one or more required immunizations; 86.5% of those exemptions were

philosophical. In the 2007 – 2008 school year, 5.2% of children in Kindergarten through 12<sup>th</sup> grade were exempt for one or more required immunizations; 90.3% of those exemptions were philosophical. Washington is one of about 20 states that allow personal or philosophical exemptions in addition to medical and religious exemptions<sup>37</sup>. Children exempted are more likely to become infected with measles and pertussis.

### **Maintain Washington State VFC and Universal Coverage Status**

Universal coverage makes the job of immunizing children easier. Many research studies demonstrate the benefits of universal coverage in removing barriers to receipt of immunizations for both parents and providers.

### **Gather More Data on Washington State Immunization Performance**

Critical to understanding immunization performance and developing informed quality improvement strategies is gathering more specific data on immunization coverage rates. A statewide immunization study, including county-level analysis should be funded to identify gaps in immunization care. Over-sampling of population sub-groups is necessary to examine characteristics known to influence outcomes, such as county-level public funding, access to primary care, and patient characteristics such as by race, ethnicity, language, and socioeconomic status, some of which are known to be related to poor health care and health outcomes. This assessment could lead to more targeted interventions to improve care such as improved public health funding in critical need areas of the state, particularly where primary care access is weak; addition of patient navigators to facilitate the delivery of culturally sensitive care; and more targeted focus of rural health dollars.

### **Enhanced Medicaid Payment for Immunizations**

The Washington Medicaid program has one of the lowest vaccine administration payment rates in the country. Payment is necessary to support providers' additional effort and time spent educating parents on the value of vaccines to prevent child morbidity and death.

### **Pay for Performance**

As described in the Children's Healthcare Improvement System report, childhood immunizations is one of several clinical measures earmarked for a pay for performance incentive in the Medicaid program. The plan calls for implementation of this incentive program in 2011.

## **Conclusion**

Washington State has lagged behind the nation in childhood immunization levels. Washington's immunization rate is 69%. Washington remains behind the national average of 77 percent and the national Healthy People 2010 goal of 80 percent coverage for children two years of age. Similar performance is found in the

Washington Medicaid managed care population. The 2007 coverage rate for Medicaid children was 70.3%.

The health benefits and health care and societal savings associated with immunizations are well-documented in the literature. Routine childhood vaccinations achieve cost savings from a direct and societal cost perspective. Vaccinations have reduced infant morbidity and mortality.

Key recommendations focus on:

- Expansion of provider and parent education and strengthening quality assurance oversight activities with an enhanced AFIX program
- Addressing the ease by which parents can exempt from immunizations
- Maintaining the state's universal coverage status
- Conducting a research study on immunization performance to help target quality improvement efforts
- Improving the vaccine administration fee for Medicaid providers and
- Implementing the planned Medicaid pay for performance mechanism for childhood immunizations.

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<sup>1</sup> Washington State Department of Health, (2007) The Health of Washington State. Available on line at: <http://www.doh.wa.gov/HWS/HWS2007.htm>. Accessed November 1, 2008.

<sup>2</sup> Medicaid Region 6 includes the following Washington counties: Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Klickitat, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum.

<sup>3</sup> Washington State Department of Social and Health Services (2007-2008). Unpublished data.

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<sup>6</sup> Ibid.

<sup>7</sup> Ibid, 5.

<sup>8</sup> Rousch, S.W., Murphy, T.V., and the Vaccine-Preventable Disease Table Workgroup, (2007). Historical comparisons of morbidity and mortality for vaccine-preventable diseases in the United States. *Journal of the American Medical Association*, 298(18), 2155-2163.

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- <sup>21</sup> Ibid.
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