

**How to Achieve and Sustain
High Vaccination Rates Among
Kansas Children:
An Action Plan**

March 2008

A Report from the
Steering Committee of the
Immunize Kansas Kids Project

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The Immunize Kansas Kids project is a unique partnership among the Kansas Department of Health and Environment, the Kansas Health Institute and dozens of stakeholder organizations. The goal is simple: to protect every Kansas child from vaccine-preventable diseases.

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TABLE OF CONTENTS

Acknowledgments	iv
Executive Summary	v
The Starting Point	v
The Discoveries	v
The Path to Improvement	vii
Summary	ix
Background	1
History of the Problem	1
The 90 Percent Solution	1
Making — and Sustaining — Gains	1
Known and Unknown	1
Known	1
Unknown	4
The Discovery Process	4
The Catalyst	4
The Work	5
The Discoveries	5
Overview	5
Key Findings	7
The Path to Improvement	10
Overview	10
Goals and Strategies	11
Discussion of Goals and Strategies	15
Contexts for Enactment of Strategies	27
Strategies of Particular Significance	28
Budget Considerations	29
Summary	30
Appendix A: List of Organizations that Participated in the Immunize Kansas Kids Steering Committee	A-1
Appendix B: Action Items Recommended by the Immunize Kansas Kids Working Groups	B-1
Appendix C: Summary of Strategies and Their Relations to Goals	C-1
Appendix D: Number of Children Age 0 to 5 Years Old Resident in Each County	D-1
Appendix E: Strategies and Their Context of Impact	E-1
Appendix F: Resource Requirements for the Implementation of the Action Items	F-1

ACKNOWLEDGMENTS

Many people contributed to this report. Dr. Harry Hall and Paul Stehr-Green assisted the work groups in their discussions and in the production of recommendations, many of which form the basis of the strategies included in this report. Dr. Candace Ayars, a community health sciences specialist and interim director of public health studies at the Kansas Health Institute, along with John Rule, KHI research analyst, provided important support to the research activities and the overall management of this project. The staff in the immunization program and in the office of the secretary at the Kansas Department of Health and Environment was actively engaged in the discussions that led to the development of this report. Roger Martin reviewed this report and contributed substantially to its improvement. Most of all, we are indebted to those from many organizations who served on the project's steering committee. Without their support and work this report would not have been possible.

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Chair, Immunize Kansas Kids Steering Committee

EXECUTIVE SUMMARY

THE STARTING POINT

In March 2006, a steering committee for a project called Immunize Kansas Kids (IKK), met for the first time. The steering committee comprised representatives from 22 organizations, both governmental and non-governmental, with a role in assuring that Kansas children receive the full complement of immunizations at the correct intervals. The aspiration of those on the committee was a sustained high rate — 90 percent or above — of on-time immunization among Kansas children. In Kansas, the rate has been less than that and marked by fluctuations.

The committee as a whole gathered 10 times between March 2006 and December 2007. There were additional conference calls and meetings involving four workgroups. Staff from the Kansas Health Institute performed several research studies to fill holes in our knowledge of why our children are or aren't immunized on time. Kansas Department of Health and Environment (KDHE) staff provided critical information that allowed an in-depth analysis of current challenges and barriers. Funding for this work came from the Kansas Health Foundation.

The state of our knowledge, and ignorance, about immunization before IKK — in Kansas, in other states and in the nation — is summarized in the section of this report entitled “Known and Unknown.”

THE DISCOVERIES

The “Discoveries” section of this report summarizes the IKK project's research findings. As of this writing, three of five research studies had been completed. Their focus is: who delivers immunizations in Kansas, the costs and reimbursements to the providers and how states with the highest immunization rates achieve success.

Data from a fourth study — of parent and provider perceptions that may lower immunization rates — are still being analyzed. The fifth study — of the impact on immunization rates of a child receiving vaccinations at the same office as other primary care — is ongoing.

Here is a partial list of the research findings, those with the greatest impact on the goals and strategies for raising and sustaining immunization rates in Kansas.

- **Location of Kansas Immunization Providers**

- Kansas is among the bottom seven states in terms of vaccination activities by private providers.
- In 49 counties no private provider offering immunizations to children could be identified.
- Of private providers who vaccinate children, only 51 percent use free vaccine available under the Vaccines for Children (VFC) program. (Nationally, of private providers who vaccinate children, 81 percent use the free vaccine.)
- Among clinics that offer immunizations services to their patients, those in urban areas are about half as likely to enroll in the VFC program as clinics in rural counties.
- Less than 60 percent of private clinics that provide immunizations accept Medicaid or State Children’s Health Insurance Program (SCHIP) clients.

- **Cost Recovery**

- When the direct cost of vaccines is weighed against the reimbursement received from private and government payers, most practices that vaccinate insured children seem to come out ahead. However, payments for vaccine administration are usually below actual costs.

- **Immunization Financing and Practices in 11 Exemplary States**

- Half of the 14 states that have some form of universal purchase program ranked in the top quartile for immunization coverage during a five-year period, while fewer than 30 percent of states with the lowest availability of free vaccine programs ranked in the same group.
- The vaccine purchasing mechanism a state employs, therefore, may be one of several components that support the achievement of higher immunization rates in some states.

- **Barriers to Parents and Providers**

- Both parents and providers recognize the pivotal role of reminders, educational information and other forms of contact addressing timely and complete immunization of children.
- Insurance problems were mentioned by parents as important barriers. Parents who cannot have a child immunized at the child's medical home say they find it inconvenient to go elsewhere. Their children may not be immunized on time.
- Providers cited expenses related to vaccine supply and storage and unclear messages from state and local public health agencies as important barriers to immunization access.

- **Impact of a Medical Home**

- Preliminary data in this study suggest that there is a delay in immunizing children when they receive primary care in one place (i.e., private physician's office) and immunizations in another (i.e., local health department).

These and other findings were pondered by the steering committee and subcommittees as they began to deliberate about goals and strategies to achieve and sustain high vaccination rates among Kansas children.

THE PATH TO IMPROVEMENT

The section of this report entitled "The Path to Improvement" discusses goals and strategies recommended for raising immunization rates. The goals focus on access to immunization, technology, policy, parental demand, and assessment and modification of strategies deployed to raise rates. Specifically, the IKK steering committee recommended the following five goals:

1. Increase children's access to timely immunization in every possible venue, whether at the physician's office, the local public health department or elsewhere.
2. Accelerate implementation of the statewide immunization registry.
3. Promote policies, regulations and environmental changes to increase immunization rates.
4. Stimulate community and parental demand for, and provider involvement in, immunization services.

5. Continue to research factors likely to affect the success of the strategies described in this document. With stakeholder input, perform ongoing assessment and evaluation of the strategies and their success, and modify them based on the results.

Thirty-one strategies are listed in this report under the five goals. Ten of the 31 are considered of particular significance, either because of the impact they'll have on their own or because their implementation will aid the execution of other strategies.

Access

Eleven strategies are proposed to improve access to timely immunizations. Five are considered particularly significant. Some strategies under this heading seek to increase access by engaging more providers in immunization and in the federal Vaccine for Children program, which provides free vaccine to children who need it. Stimulating provider engagement would be accomplished primarily through economic incentives — increasing the reimbursement to providers for vaccines and raising reimbursement for administration. Other strategies involve providing continuing education and feedback to Kansas providers and clinics about their immunization activities.

Immunization Registry

Ten strategies are proposed to accelerate the implementation of the immunization registry, one of which is considered of particular significance — prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them.

Several other strategies also address electronic interface issues that prevent data sharing among private providers, local health departments and KDHE.

Policies and Regulations

Four strategies are proposed to promote policies and regulations to support immunization activities, one of which is considered of particular significance — a provision that stresses the importance that different groups of providers have different levels of access to the registry. Other

strategies in this category focus on developing policies and regulations that would strengthen the registry and broaden access to immunizations in general.

Parental Demand and Provider Involvement

Three strategies are proposed to stimulate parental and provider involvement, one of which is considered of particular significance — the continuation of a well-regarded KDHE program (*Immunize and Win a Prize*) to motivate parents to have their children immunized. Other strategies aim to supply educational and promotional information that targets primarily providers and, through them, parents.

Assessment and Research

Three strategies are proposed to stimulate research, assessment and evaluation activities, two of which are considered of particular significance — the formation of an administrative oversight group to monitor the success of strategies after they are implemented, and the conduct of research to fill remaining gaps in knowledge.

SUMMARY

The immunization challenges Kansas faces will not be simple to overcome. Critical to improvement are a deeper involvement by the state's private providers in immunization; the full implementation of the state's immunization registry so that providers of every kind, in every part of Kansas, can use it; the continued leveraging of interest among parents; and the convening of an oversight committee.

This report is only a blueprint. The organizations whose representatives teamed to conduct this project and draft this report need to incorporate what they've learned into their institutional planning. The circle of those involved in the effort must enlarge, and their effort be sustained and disciplined, to accomplish a goal that has so far eluded us.

BACKGROUND

HISTORY OF THE PROBLEM

A low immunization rate in the early 1990s in Kansas, coupled with a measles outbreak locally and nationally, led to a corrective response by the state called Operation Immunize. Other programmatic efforts have been attempted since then. As a follow-up to work initiated in 2004 by the Governor's Blue Ribbon Task Force on Immunization, a steering committee of representatives from 22 Kansas organizations (see Appendix A) was convened in March 2006 to address the state's difficulty in sustaining high rates of timely immunization of its children. The project they embarked on was called Immunize Kansas Kids, or IKK. The committee's goal was to conduct the research and analysis necessary to discover barriers to immunization and to formulate action steps that raise the proportion of Kansas children who are fully immunized by age 2. Ideally, as you will read below, immunization would be completed even sooner.

THE 90 PERCENT SOLUTION

Infectious disease has been reduced worldwide, in part thanks to the development of new, effective vaccines. A goal articulated in Healthy People 2010, a federal project of the U.S. Department of Health and Human Services, is to achieve a 90 percent rate of vaccination to protect children from 11 diseases. The goal for Kansas is the same.

MAKING — AND SUSTAINING — GAINS

Although Kansas has achieved a higher level of immunization in the past 15 years, annual fluctuations in the proportion of immunized children in our state have persisted. The IKK committee is proposing actions at many levels, from family to physician's office, from public health department to statehouse, that result in sustained success.

KNOWN AND UNKNOWN

KNOWN

We know the ideal immunization schedule. Children should, by the age of 18 months, receive at least 19 vaccinations to protect them from 11 diseases. In practice, we fall short of the ideal: Twenty percent or more of our children will not receive one or more vaccinations at the time they need it.

We know that while the incidence of most (but not all) childhood diseases preventable through immunizations is at a historical low, the presence of a pool of unvaccinated children puts entire communities at risk of a sudden resurgence of these diseases.

We know that Kansas historically has struggled to sustain high rates of immunization coverage for its children. In some years those rates have been higher than the national average, in others lower.

We know that where a child lives in Kansas makes a difference in the likelihood that he or she will be immunized. Children who live in less populated areas of the state tend to receive vaccines on time more often than those who live in urban areas.

We know what vaccination shots a child in Kansas will most likely miss. And we know that children in their first year of life are more likely to receive timely immunizations than those in their second year.

We know there are advantages in having children immunized in a “medical home” — a single site where they receive all their medical care. Receiving vaccinations at a medical home increases the probability that children will be vaccinated on time. At the same time that the vaccines are administered, medical homes can provide other services such counseling about health maintenance, checking developmental milestones and monitoring height and weight gain. In an ideal system, newborn babies would be linked soon after birth to a primary care provider who would provide the baby with well-child care, including immunizations.

We know that in Kansas, a higher proportion of children receive their immunizations in public clinics (usually local health departments) than do children elsewhere. In 2002 it was reported that 81 percent of vaccine provider sites nationally were private; in Kansas, the figure was just 59 percent. Five years earlier, the comparable figures had been 57 percent and 40 percent. Also, a 2005 Centers for Disease Control and Prevention (CDC) study found that in Kansas, 85 percent of a group of children from low-income backgrounds had a medical home.

Just 50 percent of them received all of their vaccine doses at the medical home. The 50 percent rate placed Kansas 47th in the nation. With so few private providers engaged in delivering immunizations, many Kansas children are forced to receive their vaccinations outside the medical home, increasing their likelihood of falling behind the recommended schedule.

We know some of the financial disincentives to the provision of immunizations by private providers. Vaccines are expensive and reimbursement to immunization providers by insurance companies varies considerably. In addition to the cost of the vaccine, providers also must cover costs related to vaccine administration. Not all of these costs are recoverable.

We know that certain strategies have raised immunizations in other states and that experts agree that successful immunization programs integrate multiple strategies.

We know from studies in other states that some factors raise the probability that children will not receive their immunizations on time. These factors include:

- Lack of parental knowledge about immunizations and their timing
- A mother's being less than 21 years old when she gives birth
- A mother's education ending at high school graduation or before
- Caregivers moving twice or more between a child's birth and second birthday
- A child's participating in the Women, Infants and Children (WIC) program
- A child's having two or more older siblings
- A child's failing to receive the first vaccination shot until after the third month of life

We know that computerized recordkeeping and better data sharing among immunization providers likely would help raise the numbers of children immunized on time. (Most private providers still rely on paper records.)

And we know that while vaccines have a good cost-benefit ratio, state and federal investment in vaccines hasn't paralleled their rising cost. Although the price of some vaccines increased as much as 89 percent between 2001 and 2005, and several new and expensive vaccines have been

added to the list of those now recommended, federal funding for vaccine purchases increased by less than 40 percent and state funding by less than 17 percent.

UNKNOWN

At the project's outset, we lacked data about vaccination providers, their costs and the recovery of those costs. In addition, we did not fully understand why so many private providers in Kansas are so reluctant to offer immunization services to their clients, and what barriers providers and parents perceive as deterring the delivery of timely immunizations to children. We also didn't know whether children immunized by doctors during office visits had significantly different immunization rates than children referred elsewhere for vaccination. We also lacked clear, integrated strategies about where and how to apply leverage relative to the various agents and agencies that ultimately control how many children are immunized: parents, doctors, public health agencies, state agencies, and state and federal policymakers. Finally, we did not have a clear understanding of who the unvaccinated children are and where they live.

THE DISCOVERY PROCESS

THE CATALYST

In 2004, the governor's task force made some recommendations for immediate interventions, but found itself unable to answer certain fundamental questions about immunization in Kansas. The task force raised those questions in its final report and recommended that further research be conducted before deciding additional strategies.

With support from the Kansas Health Foundation (KHF), the Immunize Kansas Kids project was begun in January 2006. A project management team was created, including representatives from KHF, the Kansas Health Institute (KHI) and the Kansas Department of Health and Environment (KDHE). In March 2006 the IKK steering committee held its first meeting. The steering committee included representatives from governmental and non-governmental entities that have a role in assuring the timely immunization of Kansas children.

In March 2006, a report commissioned by the IKK project management team was released: *The 90 Percent Solution: Raising Vaccination Rates for Kansas Children*. It described the scope

of the immunization problem in Kansas, past efforts to address it and preliminary recommendations, but noted that “increasing vaccination rates will require a deeper knowledge of influences operating at community, consumer and provider levels.” The IKK steering committee, working with staff from KDHE and KHI, as well as with meeting facilitators and other consultants, has, after nearly two years of study, shed additional light over these issues.

THE WORK

The IKK steering committee met 10 times in 2006 and 2007. There were additional meetings and conference calls involving the members of four workgroups who focused on issues related to policy, community education and awareness, access to immunization, and computerized records. Staff from KHI conducted five research projects. The results of those studies are summarized in the “Discoveries” section of this report. Work also proceeded on defining barriers to interface development between immunization providers and KSWebIZ, the state’s electronic repository for Kansas immunization records.

The last two meetings of the steering committee were spent discussing the relative value of the strategies recommended under the heading “The Path to Improvement.”

THE DISCOVERIES

OVERVIEW

Suggestions and directions from the project management team and the steering committee helped project staff focus research in five areas.

Location of Kansas Immunization Providers

Research into who provides immunizations in Kansas was meant to expand our knowledge about the relatively low proportion of private practitioners who provide immunization. Project staff first linked individual primary care practitioners to clinics, then contacted the clinics. Staff posed questions about clinic procedures related to immunizations or to client referrals to local health departments. The result was a census of immunization points of service in Kansas that can be used to monitor gaps in access to immunization and to assess the results of interventions

aimed at increasing the number of practitioners who immunize their patients. The full study is available at <http://www.immunizekansaskids.org/reports/ClinicsSurveyReport.pdf>.

Cost Recovery

Research into the cost and financing of immunization relative to provider reimbursement examined the costs to providers of administering some childhood vaccinations relative to reimbursement for the services. The study calculated an approximate total cost for delivering immunizations to children in the state. The report is available at <http://www.immunizekansaskids.org/reports/FinancingReport.pdf>.

Immunization Financing in 11 Exemplary States

Research on immunization financing across the nation reviewed financing mechanisms in 11 states with consistently high immunization rates. It also looked for common policies or practices that would explain why some states have been consistently more successful than others in maintaining high immunization rates. The report is available at http://www.immunizekansaskids.org/reports/Financial_Part_2.pdf.

Barriers to Parents and Providers

A study of real and perceived barriers to getting children immunized on time (conducted through in-depth interviews) focused on the perceptions of parents and immunization providers. Analysis of the data is being completed.

Impact of a Medical Home

A fifth study sought to compare immunization rates among children in private clinics that provide immunizations on site with rates in similar clinics that refer their patients elsewhere, typically to local health departments. The study concerned the effect of a child's having a medical home on the timeliness of vaccination delivery. This study is ongoing.

KEY FINDINGS

Here are the key findings of each completed study.

Location of Kansas Immunization Providers

- In every county, at least one local health department provides immunizations.
- In 12 counties no private clinic offering primary care to children could be identified.
- Of 424 primary care clinics, 65 percent (277) offer pediatric immunizations.
- In 49 counties no private provider offering immunizations to children could be identified.
- Private clinics in counties with 600 or more children ages birth to 5 are more likely to offer immunizations. The odds of being a clinic that offers immunization services are 12.1 times greater in counties with 600 or more children than in counties with fewer than 600 children. Private providers may require a minimum “critical mass” of potential immunization recipients to justify the necessary investment in infrastructure, training and supplies.
- Clinics in urban or semi-urban counties, and medium-sized or large clinics are more likely than those in less densely settled areas, or smaller clinics, to provide immunizations.
- Of private providers who vaccinate children, only 51 percent use free vaccine available under the Vaccines for Children (VFC) program. Nationally, of private providers who vaccinate children, 81 percent use the free vaccine. Clinics in urban areas are about half as likely to enroll in the VFC program as clinics in rural counties.
- Less than 60 percent of private clinics that provide immunizations accept Medicaid or State Children’s Health Insurance Program (SCHIP) clients.
- This study and others indicate that Kansas ranks among the lowest seven states in terms of vaccination activities by private providers.

Cost Recovery

- Information on the cost of childhood vaccination activities is incomplete, fragmented and scattered across agencies, which is a barrier to analysis and planning.
- Spending on the series of immunizations recommended for Kansas children from birth through age 3 was at least \$16.5 million in 2006.

- When the direct cost of vaccines is weighed against the reimbursement received from private and government payers for the vaccines, most physician practices that vaccinate insured children appear to come out ahead.
- Payments for vaccine administration, however, are usually below projected costs.
- Among insurance carriers, there exist wide variations in reimbursement for administering immunizations. Medicaid payments for vaccine administration are higher than payments from many private carriers.
- Reimbursement rates by insurers for the same vaccines sometimes vary widely.

Immunization Financing in 11 Exemplary States

- Given the many factors that play a role in determining whether children are vaccinated on time, determining the effect of any single factor is extremely difficult.
- High immunization rates are not associated with a particular program, specific practice or financial arrangement.
- States that purchase and provide vaccine for every child, even those with private insurance — called “universal purchase” states — do not necessarily have higher rates of vaccination than others.
- Nevertheless, half of the 14 states that have some form of universal purchasing program ranked in the top quartile for immunization coverage during a five-year period, while fewer than 30 percent of states with the lowest availability of free vaccine programs ranked in the same group. The vaccine purchasing mechanism a state employs, therefore, may be one of several components that support the achievement of higher immunization rates in some states.
- Several of the 11 exemplary states in the study — those with consistently high immunization rates — try to incentivize providers, not parents.
- Immunization registries are at different points of development across exemplary states. Therefore, the effect of immunization registries on immunization rates in these states could not be gauged.
- The Kansas statewide immunization plan employs many of the same practices that exemplary states follow, but the scope of those practices or the relative emphasis given to each is often different.

Barriers to Parents and Providers (Preliminary Results)

- Both parents and providers recognize the pivotal role of reminders, educational information and other forms of contact to timely and complete immunization of children. Electronic patient management systems, including an immunization registry can help with reminders.
- Conversely, insufficient follow-up was identified by parents as one of the most significant barriers to timely immunization. Many parents reported that they were not getting enough or any reminder information or educational information related to immunizations. They also indicated that they wanted more direct contact from providers.
- Providers preferred less interactive methods of follow-up, such as reminder postcards and public campaigns, while parents preferred more personalized approaches.
- Insurance problems were mentioned by parents as important barriers. Sometimes insurance doesn't cover the full amount charged by a provider for immunizations. Sometimes, the lack of acceptance by a provider's office of a health insurance plan forces them to take their children elsewhere, usually the local health department. Parents who cannot have a child immunized at the child's medical home say they find it inconvenient to go elsewhere.
- Providers mentioned expenses related to vaccine supply and storage and unclear messages from state and local agencies as important barriers to immunization access.

Impact of a Medical Home (Preliminary Results)

- Immunization rates in private clinics that provide immunizations are slightly higher than rates at local health departments at 3, 7 and 13 months of age. Many of the children who are vaccinated in local health departments have a medical home, but for various reasons receive their immunizations in a local health department instead. This suggests that there is a delay in immunization when children receive primary care in one place (i.e., private physician's office) and their immunizations in another (i.e., local health department).
- Large clinics tend to have higher rates than small ones. This suggests that clinics that do a large volume of immunizations are more successful at immunizing children on time.

THE PATH TO IMPROVEMENT

OVERVIEW

This section discusses a series of goals and strategies to achieve and sustain high immunization rates among children in Kansas. The goals and strategies have been formulated after taking into consideration

- best practices and standards published by national organizations like the Task Force on Community Preventive Services, the Institute of Medicine and the Centers for Disease Control;
- evidence published in peer-reviewed literature;
- information gathered earlier about childhood immunization in Kansas by such programs and groups as the KDHE immunization program and the Governor’s Blue Ribbon Task Force on Immunization and in such documents as the *The 90 Percent Solution: Raising Vaccination Rates for Kansas Children*;
- research information generated during the IKK project;
- recommendations from IKK workgroups submitted in a standardized form as “action items” (Appendix B contains a complete list of the items); and
- discussions by the steering committee and project management team.

To become operational, these strategies will have to be endorsed by the stakeholders from 22 organizations who were involved (through the IKK steering committee) in their development, incorporated into their organizations’ strategic plans and then turned into implementation plans. Strategies have been grouped under the umbrella of several overarching goals, listed below.

- Increase children’s access to timely immunization in every possible venue, whether at the physician’s office, the local public health department or elsewhere.
- Accelerate implementation of the statewide immunization registry.
- Promote policies, regulations and environmental changes to increase immunization rates.
- Stimulate community and parental demand for, and provider involvement in, immunization services.
- Continue research activities to clarify factors likely to impact the success of the strategies described in this document; perform ongoing assessment and evaluation of the strategies

adopted and their success; and modify the interventions based on the results achieved, with input from all stakeholders.

GOALS AND STRATEGIES

The strategies discussed in this report are listed below. Some strategies support multiple goals. Appendix C summarizes how each strategy relates to one or more goal statements.

Goal 1: Increase children’s access to timely immunization in every possible venue, whether at the physician’s office, the local public health department or elsewhere.

Strategies

- 1.1 — Work to increase the number of private primary care providers offering immunizations. These efforts should focus primarily on urban counties and on other counties with more than 600 children from birth to 5 years old.
- 1.2 — Explore centralized, high-volume vaccine purchase and distribution, through a voluntary public-private partnership of provider organizations, health insurance companies and KDHE. This should be a voluntary partnership funded primarily with private resources rather than state tax revenues.
- 1.3 — Establish uniform and higher reimbursement rates from private insurance for vaccine administration.
- 1.4 — Raise Medicaid reimbursement for vaccine administration in the VFC program to the maximum allowed by the federal Medicaid program. Work to persuade the federal government to review the actual costs of administering vaccines and raise allowable Medicaid reimbursement rates for vaccine administration to reflect those costs, including the expense of administering multiantigen vaccines.
- 1.5 — Raise the number of VFC providers in the state, particularly in urban and semi-urban areas with a higher concentration of uninsured and underinsured children.
- 1.6 — Encourage the federal government to simplify vaccine product management for providers enrolled in the VFC program.
- 1.7 — Explore ways to expand the provision of free vaccine to underinsured children beyond the scope of the VFC program.

- 1.8 — Increase the opportunities for newborn babies to start their immunizations on time by strengthening the referral system to a medical home at the time of discharge from the hospital.
- 1.9 — Educate, inform and motivate parents when their newborns are discharged from the hospital, or soon after, to assure that the first immunizations to their baby are on time.
- 1.10 — Support and expand assessment and feedback initiatives for private providers such as the Maximize Office Based Immunizations (MOBI) project. These initiatives are more likely to have a positive impact if they target clinics and providers statistically most in need of improving their immunization rates, such as large practices in urban areas and counties with lower rates of coverage.
- 1.11 — Increase activities that provide assessment and feedback to public and private clinics offering immunization services, in order to minimize missed opportunities for vaccine administration and maximize the adoption of best practices effective in sustaining high rates of timely immunizations.

Goal 2: Accelerate implementation of the statewide immunization registry.

Strategies

- 2.1 — Gather input from private and public stakeholders to maintain a long-term KSWebIZ business plan (with yearly updates) that meets CDC standards.
- 2.2 — Prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them.
- 2.3 — Prepare a reasonable, accelerated timeline for implementing the electronic data interfaces with local health department data management systems in every county.
- 2.4 — Rapidly gather information about the types and characteristics of electronic information systems used in private clinics in Kansas through a survey of clinics that offer immunizations.
- 2.5 — Facilitate the development of electronic data interfaces with selected data management systems used by immunization providers to store electronic information about immunizations. This should involve both providers and vendors of the systems used by providers. Criteria should be developed to set priorities related to the transfer of

information from existing data management systems into the registry. The criteria should maximize the impact of the interfaces on the number of immunization records added to the registry.

- 2.6 — Determine the degree of support given to transferring into the registry historical data from clinics without electronic data management systems, particularly in the case of small practices. Develop criteria, including the cost-benefit ratio, for establishing priorities among such transfers.
- 2.7 — Provide basic equipment and technical support to selected private clinics as an incentive to enroll in the immunization registry. Criteria for prioritizing clinics should be developed. The expense of this activity, particularly in the case of small practices, requires that consideration be given to the benefits to the registry of such an investment.
- 2.8 — Educate providers about the benefits of joining the registry and obtain provider feedback about the program once they participate in it.
- 2.9 — Build features into the registry that simplify administrative processes and workflow in private practices when they are immunizing children.
- 2.10 — Expand efforts to strengthen the linkage of WIC to immunization programs at the local and state levels, including the development of an electronic interface between the WIC information system and KSWebIZ.

Goal 3: Promote policies, regulations and environmental changes to increase immunization rates.

Strategies

- 3.1 — Develop consistent immunization-schedule regulations for all child-education programs, including Head Start, child care, preschool and grade school programs.
- 3.2 — Review and amend (if necessary) statewide immunization mandates for schools, day care centers and other educational facilities for young children within a specified period following the release of national recommendations.
- 3.3 — Review laws and regulations pertaining to the immunization registry in Kansas. Consider updating state laws so as to remove legal barriers and ensure statewide uniformity in the process of collecting, storing and sharing information on immunizations.

- 3.4 — Review the groups of users that should be allowed to access registry information. Develop data-user agreements and policies consistent with state laws and regulations to clarify the extent to which each group of users can access registry information to perform the functions that they are responsible for. Particular attention should be given to the need of local health departments for access to registry data.

Goal 4: Stimulate community and parental demand for, and provider involvement in, immunization services.

Strategies

- 4.1 — Develop a campaign that involves all stakeholders and targets providers with messages about their importance in assuring timely immunizations, as well as about the importance of participating in the immunization registry.
- 4.2 — Identify existing educational material about immunization, or develop new material as needed, that targets parents of newborns. These materials should stress the importance of timely immunizations, preferably obtained in a medical home, and offer parents immunization alternatives for children for whom the medical home is not a viable option.
- 4.3 — Continue the KDHE *Immunize and Win a Prize* initiative.

Goal 5: Continue to research factors likely to affect the success of the strategies described in this document. With stakeholder input, perform ongoing assessment and evaluation of the strategies and their success, and modify them based on the results.

Strategies:

- 5.1 — Assure that agencies and organizations with primary responsibility for the implementation of the strategies recommended in this report develop and execute implementation plans and conduct post-implementation evaluation using measurable indicators of success.
- 5.2 — Create an immunization advisory panel. A panel of representatives from organizations with a role in implementing or supporting the strategies in this report should be convened by the secretary of KDHE and should receive the administrative support necessary to perform its activities.

5.3 — Conduct research to identify and describe the groups of children in Kansas that are at higher risk of missing some or all of their immunizations. The research should be designed to allow the aggregation of data at the county level, should be updated regularly and should produce information timely enough to be used for course corrections.

DISCUSSION OF GOALS AND STRATEGIES

The five goals and their supportive strategies are discussed below. The facts and arguments that support each strategy precede the strategy's enunciation.

Goal 1: Increase children's access to timely immunization in every possible venue, whether at the physician's office, the local health department or elsewhere.

Many factors hinder timely immunizations in Kansas. We are a predominantly rural state with a few populous urban areas. About half of the state's residents live in five urban counties: Douglas, Johnson, Sedgwick, Shawnee and Wyandotte. Barriers to access may differ in rural and urban counties with results that may seem, at first, counterintuitive. For example, there are rural communities in sparsely populated counties where no immunization services are available, and no primary care providers are present to immunize children or offer other medical services — and yet the immunization rates of these towns and counties exceed the state average. Local health departments in those communities bear most of the burden of providing immunizations, and do so effectively.

Conversely, there are more private providers in urban counties offering immunizations. Our research shows that the likelihood that a private clinic will decide to offer immunizations is much higher in counties with more than 600 children from birth to 5 years old (see Appendix D for a list of these counties) than in counties with fewer young children. The challenge to physicians and local health departments in urban counties is administering immunizations to a larger number of children than in semi-urban and rural areas. Because of that challenge and others, the immunization rates in more populated counties tend to be lower.

Strategy # 1.1 — Work to increase the number of private primary care providers offering immunizations. These efforts should focus primarily on urban counties and on other counties with more than 600 children from birth to 5 years old.

Several barriers prevent private providers from administering vaccines to clients. The numbers and cost of vaccinations recommended in the first years of life are increasing. This requires clinics to maintain complex inventory and ordering systems. Providers must invest large sums to stock adequate amounts of vaccines; these must be stored under carefully controlled conditions with expiration dates closely monitored; these factors, combined, mean that costs related to immunization may not be fully recovered. Improper storage or expiration of vaccine may result in significant financial loss for providers. Financial issues have been mentioned by many providers interviewed for this project as an important deterrent to their participation in immunization programs.

Some states have instituted what is often referred to as a universal purchase system. Variations exist but, in general, state government purchases all or some vaccines (usually at a negotiated discount) and distributes them free to all private and public clinics that provide immunizations to children. The fact that a clinic deals with only one supplier — the state agency — reduces providers' financial risk and simplifies both vaccine acquisition and inventory management. Some federal rules make it unclear whether states that now lack a universal purchase program may legally start one. Even if a universal purchase system were determined not to be a viable alternative, other centralized purchasing options are available that would simplify the issue of managing a vaccine inventory. Such options would help reduce vaccine costs for both third-party payers and providers, reinforcing the ability of private health providers to initiate, or continue offering, office-based immunizations.

Strategy # 1.2 — Explore centralized, high-volume vaccine purchase and distribution, through a voluntary public-private partnership of provider organizations, health insurance companies and KDHE. This should be a voluntary partnership funded primarily with private resources rather than state tax revenues.

Physicians who immunize pay for both the vaccine and its administration. Costs include, but are not limited to, refrigerators; medical supplies (such as syringes); insurance for vaccine loss due to power failure; staff training focused on each vaccine's characteristics, indications and contraindications; and staff time for vaccine administration. Insurance companies vary widely in their reimbursement for administration costs, and even the highest reimbursement levels fall short of the providers' actual costs. The low reimbursement for vaccine administration also represents a major barrier for providers' participation in Medicaid-administered programs such as VFC or SCHIP.

Strategy # 1.3 — Establish uniform and higher reimbursement rates from private insurance for vaccine administration.

Strategy # 1.4 — Raise Medicaid reimbursement for vaccine administration in the VFC program to the maximum allowed by the federal Medicaid program. Work to persuade the federal government to review the actual costs of administering vaccines and raise allowable Medicaid reimbursement rates for vaccine administration to reflect those costs, including the expense of administering multiantigen vaccines.

Vaccination affordability is crucial to some families. Many parents interviewed for this project indicated that the lack of full insurance coverage for immunizations represents an important barrier to getting their children vaccinated on time. The federal VFC program addresses that issue by making vaccines available at no cost in private providers' offices and local health departments. Yet the number of VFC providers in Kansas is considerably smaller, particularly in urban counties, than in other states. Low reimbursement for administration fees to those who take part in the program and convoluted administrative requirements inhibit private provider participation in the VFC program. Currently, physicians and health agencies in the program are expected to store VFC vaccines separately from other vaccine inventory. The inability to merge products leads to storage and management problems. In addition, the program provides coverage to underinsured children only through a subset of VFC providers (the Federally Qualified Health Centers), and parents of these children may face difficulty obtaining

immunizations at an affordable price. Some states use discretionary funds to enhance the coverage of underinsured children beyond what VFC does, such as by offering free vaccines for them at any provider's office. Another possible barrier is that some private providers and local health departments accept reimbursement only from major insurance carriers.

Strategy # 1.5 — Raise the number of VFC providers in the state, particularly in urban and semi-urban areas with a higher concentration of uninsured and underinsured children.

Strategy # 1.6 — Encourage the federal government to simplify vaccine product management for providers enrolled in the VFC program.

Strategy # 1.7 — Explore ways to expand the provision of free vaccine to underinsured children beyond the scope of the VFC program.

Many children in Kansas receive all the recommended immunizations, but later than recommended. Those children are at higher risk than children immunized on time of contracting vaccine-preventable diseases. They put their communities at risk of experiencing disease outbreaks.

Several interventions improve immunization timeliness. Children late to receive their first vaccination also tend to be late receiving subsequent shots. Kansas parents have stated that they wish to receive more clear and thorough instructions about the need and timing of immunizations for their children, as well as who should provide them, soon after birth. Reminders to parents by providers that a vaccination is due or past due (features that immunization registries usually handle well) improve immunization timeliness.

Strategy # 1.8 — Increase the opportunities for newborn babies to start their immunizations on time by strengthening the referral system to a medical home at the time of discharge from the hospital.

Strategy # 1.9 — Educate, inform and motivate parents when their newborns are discharged from the hospital, or soon after, to assure that the first immunizations to their baby are on time.

KDHE personnel conduct assessment and feedback sessions with providers who offer immunizations in their offices. They review immunization records and clinic practices. This reduces the number of children who visit a clinic and leave without receiving the age-appropriate vaccines. The review and feedback conform to a standardized process called AFIX and employ a computer tool called CoCASA, both developed by the CDC. But the assessment reaches only a limited number of providers every year, targeting each VFC provider every two years. In addition, the Maximize Office Based Immunizations (MOBI), project, a continuing education program for Kansas medical offices and clinics that provide vaccines to children, educates providers on administration of immunizations and measurement of immunization rates to improve timeliness. The project is sponsored by the Kansas Chapter of the American Academy of Pediatrics and has been funded this year, its first, by KDHE.

Strategy # 1.10 — Support and expand assessment and feedback initiatives for private providers such as the Maximize Office Based Immunizations (MOBI) project. These initiatives are more likely to have a positive impact if they target clinics and providers statistically most in need of improving their immunization rates, such as large practices in urban areas and counties with lower rates of coverage.

Strategy # 1.11 — Increase activities that provide assessment and feedback to public and private clinics offering immunization services, in order to minimize missed opportunities for vaccine administration and maximize the adoption of best practices effective in sustaining high rates of timely immunizations.

Goal 2: Accelerate implementation of the statewide immunization registry.

Although the research conducted as part of the IKK effort made no definitive finding about immunization registries in states with high immunization rates, the improvement of

immunization timeliness through use of registries is generally undisputed. The Kansas immunization registry — KSWebIZ — was launched in 2005 by KDHE and gradually is being implemented in public and private clinics statewide.

According to the CDC, an immunization registry should have a two-year business plan that includes a vision statement, goals, objectives, needs assessment, management and staffing plan, implementation plan, timelines with action steps, milestones and assigned responsibilities, project monitoring and evaluation plan, and budget. The CDC recommends that the plan, updated annually, should accomplish the following:

- Achievement and maintenance of CDC-defined National Functional Standards for immunization registries
- Increases in the proportion of children from birth to 5 who are enrolled in the registry and for whom two or more immunizations have been recorded
- Progressive increases in the proportion of active immunization provider sites using registries (i.e., public and private provider sites both enrolled in and submitting immunization data to the registry)

KSWebIZ has a business and marketing plan due for review and update.

Strategy # 2.1 — Gather input from private and public stakeholders to maintain a long-term KSWebIZ business plan (with yearly updates) that meets CDC standards.

An immunization registry will increase timely immunizations only if it involves many providers. Yet some barriers to provider participation — both real and perceived — currently exist. One issue is recordkeeping; its burden can be reduced if immunization information is transferable from other electronic systems into KSWebIZ.

Electronic data exchange between the registry and other clinic-based data management systems can result in substantial expansion of records in the registry. Some technical and policy

issues still represent a barrier. A number of electronic systems are used in public and private clinics to store information that could be transferred into KSWebIZ.

Strategy # 2.2 — Prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them.

More than half of all Kansas immunizations are delivered by local health departments, and virtually all health departments consider immunization a key activity. The vast majority of local health departments use a clinic management product called PHClinic; a few health departments (including some large ones) use the Netsmart Insight (QS) System. An electronic interface has been built with KSWebIZ for each of these systems and is currently being tested and adjusted.

Strategy # 2.3 — Prepare a reasonable, accelerated timeline for implementing the electronic data interfaces with local health department data management systems in every county.

The distribution and use of electronic data systems in private clinics in Kansas is undetermined. More detailed knowledge about the systems used in private clinics is essential to involving those clinics in the registry. The development of customized electronic interfaces between KSWebIZ and certain data management systems could convince multiple providers (or some providers who deliver a large volume of immunizations) to join the registry.

Strategy # 2.4 — Rapidly gather information about the types and characteristics of electronic information systems used in private clinics in Kansas through a survey of clinics that offer immunizations.

Strategy # 2.5 — Facilitate the development of electronic data interfaces with selected data management systems used by immunization providers to store electronic information about immunizations. This should involve both providers and vendors of the systems used by providers. Criteria should be developed to

set priorities related to the transfer of information from existing data management systems into the registry. The criteria should maximize the impact of the interfaces on the number of immunization records added to the registry.

In some private clinics, electronic information that could be transferred to the registry is not available, or is stored in proprietary systems unable to exchange information with other systems. Some of these providers may want to participate in the registry but are deterred by their inability to move historical information on immunizations. Still other providers may lack basic equipment, including computers, printers or Internet access.

Strategy # 2.6 — Determine the degree of support given to transferring into the registry historical data from clinics without electronic data management systems, particularly in the case of small practices. Develop criteria, including the cost-benefit ratio, for establishing priorities among such transfers.

Strategy # 2.7 — Provide basic equipment and technical support to selected private clinics as an incentive to enroll in the immunization registry. Criteria for prioritizing clinics should be developed. The expense of this activity, particularly in the case of small practices, requires that consideration be given to the benefits to the registry of such an investment.

Private providers who are considering joining the registry may decide to do so if they benefit. In fact, the registry may simplify some immunization-related activities. One such activity is documentation of immunizations required for entry to school or child care. This process, which occurs at the beginning of the school year, can be costly to providers. Another example is the management of the vaccine inventory for each clinic. Understanding the cost benefit related to registry use can increase provider acceptance and participation.

Strategy #2.8 — Educate providers about the benefits of joining the registry and obtain provider feedback about the program once they participate in it.

Strategy # 2.9 — Build features into the registry that simplify administrative processes and workflow in private practices when they are immunizing children.

The WIC program routinely serves children at risk of missing immunizations. National experts recommend a strong linkage between WIC and immunization programs to assure high immunization rates. KDHE has funded projects linking WIC to immunization activities in a limited number of counties, with promising results. The WIC program in Kansas utilizes a centralized data management system that all WIC clinics can access remotely.

Strategy # 2.10 — Expand efforts to strengthen the linkage of WIC to immunization programs at the local and state levels, including the development of an electronic interface between the WIC information system and KSWebIZ.

Goal 3: Promote policies, regulations and environmental changes to increase immunization rates.

Policy can profoundly affect access to and utilization of immunization services. Many of the strategies discussed in this report have policy components that have already been mentioned. In this section we describe additional policies not included elsewhere in the document.

Immunization mandates are effective in boosting vaccination rates. Typically, they apply to children when they enter school or licensed day care centers. Kansas requirements for school entry are in line with the recommendations of national organizations such as the Advisory Committee on Immunization Practices. Requirements for children in day care are contained in separate regulations that sometimes are not updated as regularly as those for school admission.

Strategy # 3.1 — Develop consistent immunization-schedule regulations for all child-education programs, including Head Start, child care, preschool and grade school programs.

Strategy # 3.2 — Review and amend (if necessary) statewide immunization mandates for schools, day care centers and other educational facilities for young

children within a specified period following the release of national recommendations.

KWebIZ has been a high priority for KDHE in recent years. To implement the registry, KDHE has relied so far on existing statutes and regulations dealing with public health surveillance systems, complemented by policies included in a user agreement that all registry participants must sign. KDHE is implementing the program under the KDHE secretary's generic statutory authority to collect information necessary to protect the health of the public. One Kansas statute (K.S.A. 65-531) allows the exchange of immunization information among certain groups of people without parental permission. That statute does not refer directly to an immunization registry.

The CDC recommends that clear legal definitions be established in regard to collecting and storing immunization information. Some states have adopted legislation and regulations specifically defining the authority to establish an immunization registry; requirements for data confidentiality; and protection for providers who share with other providers, through a registry, immunization information about specific clients. Such legal and regulatory clarification can prevent intentional or unintentional release of protected information; assure consistency in collection, storage and release of information; and alleviate provider concerns about liability.

Strategy # 3.3 — Review laws and regulations pertaining to the immunization registry in Kansas. Consider updating state laws so as to remove legal barriers and ensure statewide uniformity in the process of collecting, storing and sharing information on immunizations.

Currently access to KWebIZ is limited primarily to immunization providers. It is important that other categories of users who need to utilize information from the registry for legitimate purposes be allowed to do so. These may include school nurses, health plans, insurance companies, child care providers, universities and parents. KDHE has already recognized the importance of expanding the access to the registry and is working to address technical, privacy and policy issues.

An important group for which data access is particularly critical is local health departments. Local health departments resemble private clinics when they provide immunizations, but they carry out also additional public health functions that are solely their responsibility. The immunization registry contains information essential to enable local health departments to carry out their public health functions. Several states (but not Kansas) have included in their laws, regulations and policies specific provisions to allow local health department access to immunization records beyond what other registry users are granted. KDHE and local health departments are discussing policies and procedures to assure adequate and appropriate access to registry information to support public health functions.

Strategy # 3.4 — Review the groups of users that should be allowed to access registry information. Develop data-user agreements and policies consistent with state laws and regulations to clarify the extent to which each group of users can access registry information to perform the functions that they are responsible for. Particular attention should be given to the need of local health departments for access to registry data.

Goal 4: Stimulate community and parental demand for, and provider involvement in, immunization services.

Educational campaigns targeting providers, parents or both to promote the benefits of timely immunizations for children have been conducted repeatedly in Kansas and other states. Published studies show that such campaigns work best within a comprehensive approach to improving immunization rates. IKK research shows that parents place the highest value on education and information received from their health care providers soon after their child's birth.

States with consistently high immunization rates tend to focus their educational activities on providers, while also making available (often on their Web sites) information to interested parents. KDHE has implemented several activities aimed at increasing parental motivation to immunize children on time, including the *Immunize and Win a Prize* initiative, in which parents whose children are immunized on time can compete for prizes, some of them of substantial

value. *Immunize and Win a Prize* is an unusual approach, one that has enjoyed broad support among providers and parents. In addition, absent a formal evaluation of the initiative, anecdotal evidence (as well as immunization trends among Medicaid children in the state) suggests that it may have had a positive effect on immunization rates.

Strategy # 4.1 — Develop a campaign that involves all stakeholders and targets providers with messages about their importance in assuring timely immunizations, as well as about the importance of participating in the immunization registry.

Strategy # 4.2 — Identify existing educational material about immunization, or develop new material as needed, that targets parents of newborns. These materials should stress the importance of timely immunizations, preferably obtained in a medical home, and offer parents immunization alternatives for children for whom the medical home is not a viable option.

Strategy # 4.3 — Continue the KDHE Immunize and Win a Prize initiative.

Goal 5: Continue to research factors likely to affect the success of the strategies described in this document. With stakeholder input, perform ongoing assessment and evaluation of the strategies and their success, and modify them based on the results.

Each state or community is different. The most successful immunization programs combine multiple strategies and tailor the combination to a particular set of local challenges. This report proposes, therefore, that Kansas adopt multiple strategies to raise immunization rates, using those that, according to the best available evidence, are most likely to succeed. Wide support for the multiple-strategy approach is essential, as is assessment of results. Strategies should be evaluated carefully, preferably by researchers and other stakeholders supporting the IKK project, who should recommend continuing or discontinuing strategies based on what they learn.

Strategy # 5.1 — Assure that agencies and organizations with primary responsibility for the implementation of the strategies recommended in this report develop and execute implementation plans and conduct post-implementation evaluation using measurable indicators of success.

Strategy # 5.2 — Create an immunization advisory panel. A panel of representatives from organizations with a role in implementing or supporting the strategies in this report should be convened by the secretary of KDHE and should receive the administrative support necessary to perform its activities.

Crucial to achieving and sustaining high immunization rates is recognizing groups of children who are missing some or all of their immunizations and employing specific interventions with those groups. The present state of knowledge about such groups in Kansas is insufficient. School retrospective studies, the WIC electronic information system and the immunization registry can all be used to improve our level of information on this subject.

Strategy # 5.3 — Conduct research to identify and describe the groups of children in Kansas that are at higher risk of missing some or all of their immunizations. The research should be designed to allow the aggregation of data at the county level, should be updated regularly and should produce information timely enough to be used for course corrections.

CONTEXTS FOR ENACTMENT OF STRATEGIES

The strategies listed in the sections above have been grouped in Appendix E by their primary context of impact. The contexts for enactment of strategies are:

- Strategies related to cost, financing and reimbursement
- Strategies related to the VFC program and providers
- Strategies related to office-based interventions
- Strategies related to the registry and other data management systems
- Educational and marketing strategies
- Strategies related to program management, evaluation and quality improvement

STRATEGIES OF PARTICULAR SIGNIFICANCE

The goal of this report is to present broad strategies that, if implemented, should assist in achieving and sustaining high immunization rates. Stakeholders will have to assess the strategies proposed, establish priorities and develop implementation plans reflecting those priorities. The immunization advisory committee that will be established could lead this process.

Some strategies appear to be particularly important for the success of this plan, either because of the impact they'll have on their own or because their implementation will aid the execution of other strategies. The broad interventions of greatest significance are creating an oversight group that monitors the effectiveness of the strategies and activities; improving access to free or low-cost vaccine by finding means to raise the reimbursement to providers of administering vaccinations and to lower the cost of vaccines; accelerating the implementation of the KSWebIZ system; and conducting rigorous research and evaluation activities to monitor the success of the plan and fill gaps in our knowledge.

We recommend that the following 10 strategies receive consideration for accelerated implementation.

- Create an immunization advisory panel. A panel of representatives from organizations with a role in implementing or supporting the strategies in this report should be convened by the secretary of KDHE and should receive the administrative support necessary to perform its activities. (Strategy 5.2)
- Raise the number of VFC providers in the state, particularly in urban and semi-urban areas with a higher concentration of uninsured and underinsured children. (Strategy 1.5)
- Prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them. (Strategy 2.2)
- Review the groups of users that should be allowed to access registry information. Develop data-user agreements and policies consistent with state laws and regulations to clarify the extent to which each group of users can access registry information to perform the functions that they are responsible for. Particular attention should be given to the need of local health departments for access to registry data. (Strategy 3.4)

- Explore centralized, high-volume vaccine purchase and distribution, through a voluntary public-private partnership of provider organizations, health insurance companies and KDHE. This should be a voluntary partnership funded primarily with private resources rather than state tax revenues. (Strategy 1.2)
- Establish uniform and higher reimbursement rates from private insurance for vaccine administration. (Strategy 1.3)
- Raise Medicaid reimbursement for vaccine administration in the VFC program to the maximum allowed by the federal Medicaid program. Work to persuade the federal government to review the actual costs of administering vaccines and raise allowable Medicaid reimbursement rates for vaccine administration to reflect those costs, including the expense of administering multiantigen vaccines. (Strategy 1.4).
- Support and expand assessment and feedback initiatives for private providers such as the Maximize Office Based Immunizations (MOBI) project. These initiatives are more likely to have a positive impact if they target clinics and providers statistically most in need of improving their immunization rates, such as large practices in urban areas and counties with lower rates of coverage. (Strategy 1.10)
- Continue the KDHE *Immunize and Win a Prize* initiative. (Strategy 4.3)
- Conduct research to identify and describe the groups of children in Kansas that are at higher risk of missing some or all of their immunizations. The research should be designed to allow the aggregation of data at the county level, should be updated regularly and should produce information timely enough to be used for course corrections. (Strategy 5.3)

BUDGET CONSIDERATIONS

A detailed budget for the execution of the strategies discussed in this report can be prepared only after each agency involved prepares an implementation plan. The workgroups prepared preliminary projections of the cost range for some of these strategies. This work can serve as a starting point for the development of more detailed budgets. The preliminary projections appear in Appendix F.

SUMMARY

Smallpox has been contained. In the near future, the same may be true of polio and other diseases preventable through vaccination. To this end, we have stressed the importance of seeing that 90 percent of our state's children are immunized, on time, against 11 childhood diseases. We have stressed the importance of the consistent achievement of that level of success.

Even in our best year we've fallen short of that goal, and while the overall trend in immunizations statewide is upward, the advance has been inconsistent. That can change, if highest priority is given to the following:

- The state's private providers need to be more deeply involved in immunization. The way to increase involvement is to work systematically to improve the cost-to-return ratio of immunization activities.
- The state's immunization registry — KSWebIZ — should be fully implemented, with different groups of users having the level of access to its records that they need in order to perform their functions.
- Interest among parents should continue to be leveraged.
- The KDHE secretary should convene an oversight committee to check the results of implementing this report's strategies and changing course as necessary.

The immunization challenges that our state has faced will not be solved by a wave of a wand. Evidence from the 11 states identified in our research as most successful in raising immunization rates is that a bundle of strategies is required. Equally important is the involvement of many agents.

This report represents only a blueprint. The structure it describes has yet to be built. The next step is for the organizations whose representatives teamed to conduct this project and draft this report to incorporate what they've learned into their institutional planning. The circle of those involved in the effort must enlarge, and a collective effort sustained and disciplined, to accomplish a goal that has so far eluded us.

APPENDIX A

LIST OF ORGANIZATIONS THAT PARTICIPATED IN THE IMMUNIZE KANSAS KIDS STEERING COMMITTEE

IMMUNIZE KANSAS KIDS STEERING COMMITTEE

Blue Cross & Blue Shield of Kansas
Eagle Community Programs
Evaluation Insights
Kansas Academy of Family Physicians
Kansas Action for Children
Kansas Association of Local Health Depts.
Kansas Association for the Medically Underserved
Kansas Association of Child Care Resources & Referral Agencies (KACCRRRA)
Kansas Association of Osteopathic Medicine
Kansas Chapter of American Academy of Pediatrics
Kansas Children's Cabinet
Kansas Department of Health & Environment
Kansas Department on Aging
Kansas Foundation for Medical Care
Kansas Head Start Association
Kansas Health Foundation
Kansas Health Institute
Kansas Health Policy Authority
Kansas Insurance Department
Kansas Medical Society
Kansas Public Health Association
Kansas State Nurses Association
Kansas University School of Medicine — Wichita
KC CareLink
Marian Clinic
Mid America Immunization Coalition
Parents As Teachers
Preferred Health Systems
Project Eagle/Healthy Start
Seaman School District, USD 345
University of Kansas Medical Center — Kansas City
Washburn University School of Nursing

APPENDIX B

ACTION ITEMS RECOMMENDED BY THE IMMUNIZE KANSAS KIDS WORKING GROUPS

ACCESS WORKGROUP ACTION ITEMS

ACTION ITEM 1: LARGE-VOLUME VACCINE PURCHASE

Description

Common childhood vaccines will be purchased in large volumes by a unique, voluntary public-private partnership. Large-volume purchasing through a centralized source should help reduce vaccine costs for both third-party payers and providers, reinforcing the ability of private health providers to continue offering office-based immunization services.

Rationale

Physicians are concerned about fiscal losses in providing office-based vaccination services. One source of loss is when reimbursement for vaccine products from third-party payers does not match the cost of the vaccine product itself (exclusive of administration charges) to private providers. The ongoing financial burden is causing some private health care providers to reconsider the viability of providing office-based immunization services. Loss of these services within private offices disrupts the concept of the “medical home” and may lead to delayed immunizations because children are being immunized by multiple providers. Decreasing availability of immunization services in the private sector will place an excessive burden on local health departments.

Strategies supported

- Expand opportunities for children to receive immunizations through a “medical home.”
- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

A formal working group will be established to develop a model plan. This will lead to a public-private partnership between provider organizations, health insurance companies and KDHE that will provide large-volume purchasing services for common childhood vaccines. While the exact structure, funding and operational schemes are to be determined by the stakeholders, it is presumed that the partnership will be voluntary, funded with private resources rather than state tax revenues and involve a centralized ordering and distribution system.

Proposed evaluation methods

The program will be evaluated by monitoring number of vaccine doses ordered, number of providers participating, number of children served and estimated cost savings over current purchasing plans.

Challenges

- Establishing the total cost of immunizations and potential cost savings
- Finding a formula that supports using combination vaccines to reduce missed opportunities
- Securing participation of both providers and insurers in a new system
- Designing a system that minimizes administrative burden

Resource Requirements

Resource requirements include the time commitment with stakeholders to form an organizational structure to perform large-volume purchasing and provide oversight for the program; financial commitments from private third-party payers for the purchase and to support infrastructure or contracted services; support from other state agencies for this unique public-private partnership; and support from professional organizations to promote the program to their members.

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Blue Cross and Blue Shield of Kansas
- Private health insurance carriers operating in Kansas
- Kansas Association of Osteopathic Medicine
- Kansas Medical Society
- Kansas Academy of Family Physicians
- Kansas Association of Local Health Departments
- Kansas Chapter of the American Academy of Pediatrics

Suggested Organization and Name

- Kansas Insurance Department
- Kansas Health Institute
- Kansas Health Policy Authority
- Pharmaceutical Manufacturers Association

ACTION ITEM 2: DEFINING THE UNIMMUNIZED POPULATION

Description

KDHE, in collaboration with their partners in immunization programs, will use newly available data to define the characteristics of unimmunized and under-immunized children in

Kansas. The immunization registry (KSWebIZ) and the new WIC registry are two important sources of data that will become increasingly useful in coming years. Data on unimmunized children will be used to design strategies to improve immunization coverage and timeliness of immunization in these hardest-to-reach populations.

Rationale

Information currently available to immunization policymakers and program managers is insufficient to accurately define the high-risk unimmunized and under-immunized populations in Kansas. Designing specific strategies to reach the children at highest risk for being unimmunized or under-immunized is essential to improving immunization rates in Kansas.

Strategies supported

- Expand opportunities for clients of health department programs (e.g., WIC, Family Planning) to obtain referrals to, and more easily access, immunization services for their children.

Expected Outcomes

By the end of 2008, KDHE will have profiles of unimmunized and under-immunized children using data from the immunization registry, the WIC immunization system and retrospective school entry surveys. KDHE may coordinate with academic centers, foundations, KHI and other organizations concerned with immunization in Kansas to conduct the necessary studies.

Proposed evaluation methods

- An assessment of the validity of the data based on completeness of the registry and WIC system
- Immunization coverage rates for the state as a whole and defined high-risk populations

Challenges

- Enrolling more providers to fully populate the immunization registry
- Defining how other existing data sets might be used or other surveys modified to provide reliable information

Resource Requirements

Review of immunization registry and WIC immunization system data should be an ongoing responsibility of KDHE. Additional funding will be needed to support studies conducted by other institutions.

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Medicaid
- Kansas Health Institute
- Kansas Health Policy Authority
- Kansas Public Health Association
- Kansas Health Foundation
- Kansas Association of Local Health Departments

Suggested Organization and Name

ACTION ITEM 3: MAXIMIZE MEDICAID REIMBURSEMENT FOR VACCINE ADMINISTRATION

Description

Kansas Medicaid rates will be raised to the maximum permitted by the federal Medicaid program. Kansas Medicaid will request the federal government to review the actual costs of administering vaccines and raise federal reimbursement rates to reflect current costs. The federal review should include a specific review of reimbursement rates for administration of combination vaccines.

Rationale

Financial disincentives for immunization providers are growing to the point where pediatricians are getting out of the immunization business because they are losing money. This trend is manifested both in Kansas and at the national level. If this trend continues, immunization coverage is almost certain to fall significantly in Kansas in the coming years. The fees paid by the Kansas Medicaid program for vaccine administration are below the federally maximum permitted rate. Medicaid reimbursement rates may not cover the full cost of providing vaccines, including storage, wastage, cost of maintaining inventory, insurance, capital equipment costs, utilities, supplies, nursing time and administrative time. In addition to this acute crisis over

vaccine reimbursement rates, Kansas has a chronic problem with an insufficient number of private clinics providing immunization services to Medicaid patients.

Increasing the Kansas rate to the federal maximum will provide additional financial incentives for private clinics to provide immunization services to Medicaid clients and stay in the immunization business, supporting the concept of a “medical home” for Medicaid children. It may also increase the number of VFC providers in the state. In addition, raising Medicaid reimbursement rates will increase financial support for immunization programs at local health departments throughout Kansas. Increasing Kansas Medicaid reimbursement rates may help create an environment for private health insurers to increase their reimbursement rates for vaccine administration.

Despite the introduction of combination vaccines (which help increase immunization coverage rates) and many new, expensive vaccines as well as the rising costs of providing immunization services, the federal Medicaid program has not raised rates for many years. One reason for this is that many states are not paying the maximum permitted rate and few states have requested an increase in rates. Raising Medicaid rates in Kansas and requesting a formal review of federal vaccine reimbursement rates will be a step forward in solving the national immunization crisis. If the national crisis is not resolved, immunization rates may fall nationally, increasing the probability that the incidence rates of vaccine-preventable diseases will rise nationally and be brought into Kansas from elsewhere in the country. Falling immunization rates in Kansas will increase the chance of outbreaks of vaccine-preventable diseases in Kansas, increasing the cost of acute health care for both Medicaid and private health insurance companies. Children with blindness, deafness and mental handicaps from rubella, measles and meningitis will increase costs for state programs.

A federal review supporting increased reimbursement rates for combination vaccines may increase utilization of these vaccines, which should then help raise immunization coverage rates both nationally and in Kansas.

Strategies supported

- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

The Kansas Medicaid program will increase reimbursement rates to the federal maximum permitted rate. The Kansas Medicaid program will request a formal review of the cost of vaccine administration.

Proposed evaluation methods

- The number of physicians/clinics in Kansas providing immunization to Medicaid clients
- Immunization coverage rates

Challenges

The principal challenge will be securing the commitment of Medicaid to increasing reimbursement rates in Kansas, which has the potential to either increase their needs from the state or shift resources from other priorities.

Resource Requirements

- Staff time at Medicaid
- Additional state funding for Medicaid to pay for vaccine administration
- Support from the organizations that represent immunization providers in Kansas

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Kansas Medicaid
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Association of Osteopathic Medicine
- Kansas Association of Local Health Departments
- Kansas Health Policy Authority
- Kansas Medical Society

Suggested Organization and Name

ACTION ITEM 4: ESTABLISH UNIFORM REIMBURSEMENT RATES FOR VACCINE ADMINISTRATION

Description

KDHE will work with the Kansas Insurance Department, health insurance providers, physicians and local health departments to establish uniform, adequate reimbursement rates for vaccine administration. One model that could be used is the "Kansas Uninsurable Health Insurance Plan Act." All companies providing health insurance would contribute to a pool that would then reimburse providers at set rates for administering vaccines. Participation in the fund would be voluntary to allow ERISA plans to participate.

Rationale

Financial disincentives for immunization providers are growing to the point where pediatricians are getting out of the immunization business because they are losing money. If this trend continues, immunization coverage is almost certain to fall significantly in Kansas in the coming years. Reimbursement for vaccine administration from insurance companies is highly variable and does not cover the full cost of providing vaccines, including storage, wastage, cost of maintaining inventory, insurance, capital equipment costs, utilities, supplies, nursing time and administrative time.

Strategies supported

- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

KDHE will approach the Kansas Insurance Department to establish if that agency has the authority to establish a system. As that is clarified, the participating organizations will establish a forum for determining the actual costs of providing immunizations and negotiating uniform, adequate reimbursement rates.

Proposed evaluation methods

Once established, the system will be evaluated by measuring changes over time in the number of physicians and/or clinics providing immunizations in Kansas, and by measuring immunization coverage rates for the state.

Challenges

- Establishing the authority to require uniform rates
- Establishing the total cost of immunizations
- Finding a formula that supports using combination vaccines to reduce missed opportunities
- Securing the cooperation of insurers in negotiating rates that may cost them money
- Securing the participation of ERISA health insurance plans

Resource Requirements

The primary resource requirement is the time commitment by organizations with a stake in negotiating uniform, adequate reimbursement rates. Additional resources will be needed for surveys to establish costs of providing immunizations.

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Medical Society
- Kansas Association of Osteopathic Medicine
- Blue Cross & Blue Shield, FirstGuard Health Plan, other private health insurance providers
- Kansas Health Institute
- Kansas Health Policy Authority
- Kansas Public Health Association
- Kansas Health Foundation
- Kansas Association of Local Health Departments

Suggested Organization and Name

- Kansas Insurance Department
- Pharmacists Organization

ACTION ITEM 5: CREATE A STANDING SECRETARY OF HEALTH AND ENVIRONMENT’S IMMUNIZATION ADVISORY PANEL TO SUCCEED IKK

Description

A group of 12–15 panel members would be appointed by the Secretary of Health and Environment for fixed terms. Members would represent specific stakeholder organizations. Guests would participate in meetings as appropriate for the agenda. The panel would meet 3–4 times per year so that immunization issues are brought promptly to the attention of the Secretary and immunization remains a high priority for state government.

Rationale

The field of immunization is changing constantly. New vaccines are introduced with increasing frequency, recommended immunization practices change often, and new data on immunization rates becomes available at least annually. The status of the complex immunization system in Kansas should be reviewed regularly to proactively respond to issues as they emerge.

Strategies supported

- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

This policy advisory group for KDHE would assess the current status of immunization programs in the state regularly and advise the secretary on actions necessary to optimize immunization services for children in Kansas.

Proposed evaluation methods

- Improving immunization coverage and timeliness of immunization rates as measured by the 2-year-old survey and kindergarten surveys
- Increased numbers of immunization providers and VFC immunization providers
- Improved state funding for immunization programs in Kansas

Challenges

- Funding
- Consensus on the process for appointing members

Resource Requirements

- Expenses for Panel Members
- Support Staff
- Supplies
- Meals
- Meeting Rooms

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
 - Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Association of Osteopathic Medicine
- Kansas Medical Society
- Kansas Association of Local Health Departments
- Kansas Health Institute
- Kansas Public Health Association
- Blue Cross & Blue Shield of Kansas
- Health Insurance Companies with the Medicaid Contract
- Kansas Association of Local Health Departments
- Kansas State Nurses Association
- Kansas Health Policy Authority

Suggested Organization and Name

ACTION ITEM 6: UPDATE DAY CARE IMMUNIZATION REQUIREMENTS

Description

KDHE will issue updated immunization requirements for children enrolled in day care.

Rationale

Unimmunized children enrolled in day care are at high risk of contracting disease and spreading it to others. Day care immunization requirements have not been revised for a decade

and need to be updated in light of newly available vaccines. More stringent requirements will increase the opportunities for children to be immunized and increase coverage.

Strategies supported

- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

New day care immunization requirements will be adopted by the end of 2008, most likely by rule-making rather than legislation. Timeliness and consistency of future revisions of the day care requirements may be facilitated by changing the day care immunization requirements simultaneously with the school immunization requirements.

Proposed evaluation methods

Annual immunization coverage surveys for all 2-year-old children. Coverage and timeliness of immunizations among preschoolers as measured by kindergarten surveys before and after the regulations are implemented. Special studies could also be conducted to measure immunization rates among children enrolled in day care before and after the regulations are promulgated.

Challenges

- Ensuring that requirements can be revised through rule-making
- Securing the support of the day care operators

Resource Requirements

This action item can be accomplished with current KDHE resources.

Commitments for Implementation:

Participant Organization and Name

- Kansas Department of Health and Environment
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Association of Osteopathic Medicine
- Kansas Medical Society
- Kansas Association of Local Health Departments
- Kansas State Nurses Association
- Kansas Department of Education
- Kansas Public Health Association

Suggested Organization and Name

- Day care Operators Organization

ACTION ITEM 7: MAXIMIZING OFFICE BASED IMMUNIZATION

Description

Following evaluation of MOBI by KAAP and KDHE, additional funding should be sought to continue the project. Funding should be available starting in January 2008.

MOBI is a quality improvement continuing education program for Kansas medical offices and clinics that provide vaccines to children. One objective will be to educate providers in the state on measurement and administration of immunizations so that the timeliness of recommended immunizations will increase. This objective will contribute to the overall goal of increasing the state's immunization rate.

The target population is Kansas children through two years of age reached via primary care and other immunization providers. The secondary target population includes physicians, nurses and all office staff in these offices. Local public health immunization nurses and health educators are trained to assess immunization rates current best practices, encourage sites to participate in Vaccine For Children (VFC), provide a continuing education presentation updating immunization issues and identify specific strategies and office system changes that have been proven to increase immunization rates in children. In order to raise immunization rates community-wide and statewide, attention must be paid to maximizing office immunization by avoiding missed opportunities, reducing barriers to immunization and conducting reminders and recalls. MOBI trainers will assist offices to make these improvements before, during and after a MOBI education presentation.

Rationale

Efforts focusing on maximizing office based immunization through use of feedback programs and evidence-based strategies is a cost effective approach to increasing immunization rates in many communities and would lead to sustained improvement. MOBI would reduce the need for more costly immunization outreach activities. Evidence-based office interventions include beneficiary reminder and recall; multi-component interventions with education; reducing out-of-pocket costs; interventions for expanding access; provider reminder and recall; assessment and feedback for providers; and standing orders for influenza vaccine.

Assessment and feedback (i.e. AFIX) and education through MOBI are well established. However practices have difficulty making the changes on their own which sustain improvement. Incentives are challenging. The Vaccine for Children (VFC) Program has not been well received by practices in Kansas for a number of reasons, mostly due to misconceptions regarding financial losses the practices could experience. Improvement and support of the VFC program in office based practices would allow for vaccines to be administered in a medical home, which has been shown to improve vaccination coverage rates. The use of a population-based immunization registry is a powerful tool to accomplish high immunization rates. Community registry use allows for identification of children without a regular source of care as well as neighborhoods that are pockets of need. KSWebIZ is the Kansas registry that is being rolled out and placing this important resource in private practices will be a challenge. These practices need to be educated as to the importance of the registry and that it is easier to use than they anticipate. A minority of immunization providers measure their own rates. With proper evaluation, a solid case can be made for continuing and even expanding the project.

Strategies supported

- Expand opportunities for clients of health department programs (e.g., WIC, Family Planning) to obtain referrals to and more easily access immunization services for their children.
- Expand opportunities for children to receive immunizations through a “medical home.”
- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

It is anticipated this project will be successful in increasing the immunization rates in individual practices in Kansas and, therefore, will improve the overall rate and timeliness of immunizations. The success of the program will encourage practices to expand their immunizations by incorporating the VFC program. In addition, other practices will be encouraged to provide immunization in the medical home.

Evaluation Methods

- AFIX evaluations of individual practices before and after the MOBI intervention
- The number of practices reached by the MOBI program
- The number of practices participating in the VFC program
- The number of practices offering immunizations
- The number of practices participating in the immunization registry

Challenges

- Defining specific outcome measures that show changes in one year
- Securing additional funding

Resource Requirements

- KDHE, Kansas Chapter of the American Academy of Pediatrics (KAAP) staff time
- Consultant nurse and physician
- Educational materials

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Association of Osteopathic Medicine
- MOBI Advisory Board

Suggested Organization and Name

ACTION ITEM 8: IMPROVE VACCINE PRODUCT MANAGEMENT

Description

Currently, physicians and health agencies are expected to segregate and separately store vaccine products purchased via the VFC Program. This means the physician or agency must purchase additional supplies of vaccine products for those patients who are not eligible for VFC products, i.e., patients who are covered by third-party health insurance or other forms of payment. This system requires additional storage capacity and in some situations may result in waste because of the inability to co-mingle and manage inventories.

Rationale

While the product purchased via the VFC Program may be priced lower than the same product purchased directly from a retail distributor, the two products are medically equivalent. There is no reason the physician or agency should not co-mingle inventories in order to efficiently rotate supply and avoid expiration of products. Accountability for VFC products can be based on units rather than lot numbers.

Strategies supported

- Expand opportunities for children to receive immunizations through a “medical home.”
- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

The expected outcomes of this action item are an improved willingness of physicians to offer immunizations to patients and also to participate in the VFC Program.

Proposed evaluation methods

- Measuring the number of VFC providers in Kansas
- Satisfaction surveys of immunization providers conducted after implementation of any changes

Challenges

- Overcoming established negative attitudes about “hassles” associated with vaccine inventory management and the VFC Program
- Ability to elicit support from other state health officials and persuade officials at the CDC

Avenues for bringing the issue to national attention could include The Association of State and Territorial Health Officers (ASTHO), National Association of County & City Health Officials (NACCHO), Association of Immunization Managers (AIM), Council of State and Territorial Epidemiologists (CSTE), American Medical Association (AMA), American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American Osteopathic Association (AOA), American Public Health Association (APHA) and American Nurses Association (ANA). The Kansas Congressional delegation could also be approached.

Resource Requirements

- KDHE staff time

Commitments for Implementation

Participant Organization and Name

- Kansas Department of Health and Environment
- Kansas Medical Society
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas Association of Osteopathic Medicine
- Kansas Public Health Association
- Kansas State Nurses Association

Suggested Organization and Name

IMMUNIZATION REGISTRY WORKGROUP ACTION ITEMS

ACTION ITEM 1: DEVELOP A LONG-TERM KSWebIZ ENROLLMENT AND MANAGEMENT PLAN

Description

- A. Continue to develop a comprehensive and detailed KSWebIZ implementation plan that focuses recruitment and training efforts on high-priority “clusters” of providers and clarifies

additional resource needs. This plan should include:

- Prioritization of clusters using a census survey. The following key characteristics will be collected:
 - Geographic proximity
 - Population density
 - Similar practice size (small) and setting (non-urban)
 - Similar practice type (pediatricians versus family practice)
 - Similar practice-management software, and similar linkage requirements
- A summary of how and by whom all the subsequent Action Items (Action Items 2-4) will be developed and coordinated
- A comprehensive timeline with designated milestones and process indicators/performance measure.

B. Continue to refine KDHE’s *Marketing Plan for the Kansas Immunization Registry Rollout – KSWebIZ*. A step-wise strategy should be developed for enrolling providers that focuses highest-priority efforts on “clusters” of providers that share key characteristics. The marketing plan will differentiate and recruit from the different users of the registry:

- One group of immunization providers populates KSWebIZ directly.
- Another group consists of providers whose immunization data is in a system from which the data can be extracted one time or on an ongoing basis, and imported into KSWebIZ
- The third group is those providers who use an Electronic Medical Record that has varying capacities (depending on the vendor) to do the immunization data management work for the provider.

C. Identification of short- and long-term resource (both financial and professional) needs must be more fully elaborated and potential sources of support secured.

Rationale

A focused, refined enrollment and management plan will help to ensure that the limited resources available to the KSWebIZ Project will be deployed in an efficient and timely manner.

Strategies supported

- Expand opportunities for children to receive immunizations through a “medical home.”
- Accelerate implementation of the statewide immunization registry
- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

The IKK Steering Committee will be provided with focused, detailed action items (see Action Items 2–4) to help further develop and refine the efforts already underway by the KDHE KSWebIZ Project staff. The following are outcomes that can be expected from the implementation of the IKK Registry Workgroup action items:

- A. Incorporation of the proposed action items from the IKK Steering Committee into the KSWebIZ implementation plan
- B. A method of tracking the goals and targets that are laid out by the IKK Steering Committee workgroup action items
- C. A prioritized list of which action items will be implemented along a projected timeline for the proposed strategies
- D. Development of a process (survey, in field data collection) to identify the key characteristics of clinic “clusters”
- E. Continued refinement of the implementation plan to include the prioritized list of “clusters”
- F. Resource needs for the completion of the proposed action items will be identified.
- G. Partner organizations on the IKK Steering Committee will continue to provide support and collaboration to promote and advance the KSWebIZ Project.

Proposed evaluation methods

- 100 percent incorporation of the IKK Registry Workgroup proposed action items into the KSWebIZ Project
- Completed tracking mechanism and updated project timeline
- Completion of the clinic “cluster” survey

- 100 percent retention of the partner IKK organizations during the implementation of the workgroup action items, including continued participation during IKK meetings and conference calls

Challenges

The incorporation and implementation of the IKK Registry Workgroup Action Items will require continued support and funding to ensure success. Due to the limited resources available to the KDHE KSWebIZ Project, implementation of all of these recommendations may not be feasible in a short timeline. Prioritization of which action items are most needed in the short-term will be needed to assist in the actual completion of the recommendations. Additional staff and money is needed to perform all of the suggested registry action items.

Resource Requirements

Detailed listings of resource requirements for each specific action item remain to be fully elaborated. In overview, however, additional resources will be needed by the KDHE KSWebIZ Project to implement the proposed action items from the IKK Registry Workgroup. Additional money and personnel are needed to accelerate the addition of providers onto the KSWebIZ immunization registry.

Commitments for Implementation

Participant Organization and Name

- KDHE KSWebIZ Project

Suggested Organization and Name

- Immunization advisory committee

ACTION ITEM 2: PRIVATE PROVIDER EDUCATION ABOUT THE KSWebIZ IMMUNIZATION REGISTRY

Description

Educate and increase immunization providers' awareness using the following steps:

- A. Continue/expand statewide presentations on the immunization registry's status and future plans to stimulate enrollment, participation and use of the registry.

Specific Strategies

- 1) Kansas Chapter of the American Academy of Pediatrics (KAAP) will conduct surveys/discussions with pediatrician provider members to identify barriers (and solutions) for enrollment in the KSWebIZ.
- 2) KAAP will contact Kansas Chapter of the Academy of Family Physicians (KAFP) to ask them to conduct surveys of their family physician provider members.
- 3) KAAP will send out KSWebIZ informational packets to all providers that request more information.
- 4) Current KAAP members using KSWebIZ will be asked to help promote the registry to their colleagues.
- 5) KDHE will provide educational presentations at statewide conferences: KAAP Annual Meeting, KAFP Annual Meeting, miscellaneous statewide conferences, etc.
- 6) KDHE will provide printed materials, newsletter articles and Web site materials to health care organizations.

- B.** Research options to allow non-contributing providers (i.e., health care providers whose patients receive immunizations elsewhere — e.g., at the local health department) to have access to KSWebIZ data.

Specific Strategies

- 1) In an effort to provide access to a system with robust patient immunization data, registry project resources are currently directed to enrolling those entities that provide KSWebIZ with immunization data. KDHE will work with strategic partners to determine saturation measures that warrant view-only access to KSWebIZ for non-contributing providers.

Rationale

Supply educational materials to private providers across the state to address the barriers of providing immunizations by promoting the KSWebIZ program and its multiple features, reporting, recall, historical data and other advantages. Results of a KAAP survey determined that there was a lack of awareness of KSWebIZ program.

Strategies supported

- Expand opportunities for children to receive immunizations through a “medical home” by promoting the benefits of the KSWebIZ and the many benefits that it provides medical private providers in giving and maintaining childhood immunizations.
- Accelerate implementation of the statewide immunization registry by promoting the features of KSWebIZ to private providers and encouraging their enrollment in the KSWebIZ.

Expected Outcomes

- Increase educational and promotional materials of KSWebIZ to health care private providers across the state.
- Increase the number of private providers giving immunizations, resulting in increased immunizations for children in Kansas.
- Increase the number of immunizations recorded in KSWebIZ.
- Distribute education materials to 85 percent of the private providers (pediatricians and family physicians) in the state.

Proposed evaluation methods

- Track enrollment trends after education/promotion efforts by KAAP and KAFP.
- Document number and percentage of new providers enrolled in KSWebIZ as a result of education/promotion of the system through KAAP and KAFP.

Challenges

- Asking private providers to provide immunizations in the current environment that has high dollar vaccines not covered by insurance companies, low administrative reimbursement rates and slow third-party payer reimbursement
- Private providers will be reluctant to join the KSWebIZ if their office software will not interface or is not easily integrated with KSWebIZ (i.e., no duplicate entering of data).
- Electronic Medical Record (EMR) vendor challenges — working with vendors on their products to interface with KSWebIZ so that future EMR products for private providers will include the capacity to work with KSWebIZ.

Resource Requirements

- KDHE — resources for educational materials for the KSWebIZ.
- KDHE — resources for educational presentations at statewide health care meetings, increased demonstrations to interested private providers and ongoing maintenance (training, follow-up, help desk) of KSWebIZ for private providers
- KDHE — resources for continued work on interfacing with EMR and practice management systems and vendors

Commitments for Implementation

Participant Organization and Name

- KDHE KSWebIZ Project
- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians

Suggested Organization and Name

ACTION ITEM 3: REDUCE PROVIDER DISINCENTIVES FOR KSWebIZ

PARTICIPATION

Description

Immunization providers who are KSWebIZ users fall into three basic groups in the way they access and populate the registry. Identified barriers to KSWebIZ participation will be addressed for each of those groups as follows:

A. One group of immunization providers populates KSWebIZ directly. This group does not have a billing system (Practice Management System) from which immunization data can be extracted. Some vendors for billing systems have communicated to KSWebIZ that either data cannot be extracted from their system, or they are unwilling to create an extract from the provider's version of the system. These providers must use local resources to manually enter immunization histories on their patient charts. For this target provider population, the strategy is to **reduce the perception of the burden of KSWebIZ data entry.**

1) Educate providers about the “value added” for using KSWebIZ. Demonstrate timesavings from utilizing registry functionality, even if updating demographic information and adding immunization history are required.

a) Conduct a time study of manual completion of forms versus electronic completion through KSWebIZ by the end of 2007.

- b) Prepare marketing materials that include the time/cost benefit study results by beginning of the second quarter of 2008.
 - c) Collaborate with partner organizations (ie. Kansas Chapter of the American Academy of Pediatrics, Kansas Chapter of the Academy of Family Practice, Kansas State Nurses Association) to disseminate information.
- 2) Issue Requests for Proposals (RFPs) to make funding available for providers to pay staffing costs for historical data entry. Providers receiving funding will be vetted via size of practice and geographic location resulting in targeted saturation.
- B. The second group consists of providers whose immunization data are in a system from which the data can be extracted one time or on an ongoing basis and imported into KSWebIZ. KSWebIZ has both public and private providers to which this scenario applies. Their legacy data were loaded via an electronic extract and KSWebIZ is used for immunization data management. The only histories entered manually are those that appear on a record the patient presents during a clinic visit. For this and the other target provider populations, the strategy is to **reduce the burden of adding patient immunization histories by populating KSWebIZ with electronic data from as many sources as possible.**
- 1) Issue RFPs to make funding available for development of billing/practice management system data extracts. *Target: Develop and complete one-way data extract/interface with four private provider Practice Management Systems by 12/31/2008. Systems will be vetted via number of users, size of practices and geographic location resulting in targeted saturation.*
 - 2) Access Health Plan data
 - a) Medicaid — this interface has been completed. The one-way interface is ongoing, with all current billing data imported on a regular basis. *Target: Immunizations billed to Medicaid for the last ten years will be imported via HL7 messaging by the end of the third quarter of 2007.*
 - b) Other plans currently participating in the HEDIS advisory group. KSWebIZ has collaborated with this advisory group to define the data set and develop the user agreement. Health plans desiring access to KSWebIZ data for HEDIS reporting

- purposes must also provide immunization-billing data to the system. *Target: Develop and pilot interface with one Health Plan data system by 12/31/2008.*
- 3) School immunization data — School records are a wealth of information for historical immunization data for preschool through adolescent-aged children. School personnel are anxious to access KWebIZ to retrieve and provide immunization data to and from the registry. Accessing school data will help achieve the Healthy People 2010 Goal of 95 percent of children under 6 years of age with two or more immunizations enrolled in KWebIZ. Use of KWebIZ will save immunization provider staff time in producing the Kansas Certificate of Immunizations once schools can access that record directly.
 - a) FERPA requirements regarding the release of school immunization records have been approved by KDHE and KSBE legal staff and have been communicated to school personnel. Schools are currently implementing standardized consent protocols to enable the sharing of school immunization records with KWebIZ.
 - b) A school nurse advisory group has assisted with the design of the School Nurse Application of KWebIZ.
 - c) The application prototype has been developed and was demonstrated at the Annual School Nurse Conference in July 2007.
 - d) *Target: Complete School Immunization Application development, pilot and test with two school sites by the second quarter of 2008. Pilot additional 6–8 sites by the end of 2008. Identify one school health data system for development of an interface based on the number of schools using the system by the end of 2008.*
 - 4) WIC data — KWIC information system. *Target: Develop and test interface with KWIC system in three WIC sites in 2008.*
- C. The third group is those providers who use an Electronic Medical Record (EMR) that has varying capacities (depending on the vendor) to do the immunization data management work for the provider. Those capacities may or may not include inventory management and the creation of forms/immunization documents for the patient. These providers see no advantage to using the registry for data management since their local system is meeting their needs. Health departments using PHClinic or QS Insight for billing, appointments and other functions are an example of this category, as are private providers using systems developed

for their use. The motivation for using KSWebIZ is to share records with others and get immunization histories given by other providers that are not on in-house records. Providers in the third group want a real time, two-way interface that will allow direct access to their own system, allow them to query KSWebIZ for any history, and also give them the ability to update KSWebIZ with any immunization information that is in the provider's system. For this provider population, the strategy is to **target providers utilizing an EMR system with the capacity to electronically store data on all NVAC-approved required core data elements, and establish a real-time two-way HL7 compliant interface to reduce the burden of dual data entry of immunization encounters.**

- 1) Conduct a survey/census of immunization provider practice-management systems currently in use in Kansas
- 2) Target interface development with systems most commonly in use
 - a) Public provider systems
 1. QS Insight (health department system in use in four of the largest counties) — This interface has been completed. The two-way real time HL7 interface is currently operating in the Finney County Health Department, with a three second message exchange time. The initial HL7 historical data load resulted in 4,095 new registry patients and 35,174 additional immunizations. *Target: Complete data cleansing and interface implementation in Riley, Johnson and Wyandotte counties by the end of 2008.*
 2. KIPHS PHClinic (health department system in use in 54+ counties) — This interface is currently being tested, with data cleansing still to be accomplished. *Target: Complete interface testing, data cleansing and implementation in 75 percent (40) of PHClinic users by the end of 2008.*
 - b) Private provider systems. Contact has been made and discussion initiated with two EMR vendors whose systems are in place in a number of provider offices across the state.
- 3) Publicize interface status and functional interface capability for each system *Target: Develop and complete a two-way HL7 interface with two Electronic Medical Record systems by the end of 2008. Systems will be vetted via number of users, size of practices and geographic location resulting in targeted saturation.*

Rationale

Removing barriers will increase provider acceptance of KSWebIZ and facilitate more rapid implementation of the system by users who will add value by populating the registry with immunization data.

Strategies supported

- Expand opportunities for clients of health department programs to obtain referrals to and more easily access immunization services for their children.
- Accelerate implementation of the statewide immunization registry.

Expected Outcomes

- KSWebIZ uptake will increase more rapidly, thereby increasing the robustness of data quantity and quality.
- A child's immunization record will be more accessible and complete.
- Immunization rates will be more accurately and easily assessed.
- Efforts may be targeted to areas with the greatest need.
- State and local immunization rates will increase.
- KSWebIZ will make steady progress toward completion of the Healthy People 2010 Goal of at least 95 percent of children under 6 years of age enrolled in the registry with two or more immunizations.

Proposed evaluation methods

- Stated targets will be met.
- The number of immunization providers populating KSWebIZ with immunization data will be tracked quarterly, with increase documented and reported in KSWebIZ newsletter.
- KSWebIZ usage trends will be monitored for the impact of each of the interventions described.
- KSWebIZ data quantity trends will be monitored for the impact of each of the interventions described.

Challenges

- Personnel and funding resources must be adequate to support each of the interventions proposed.
- The KSWebIZ project will need advocacy among the provider community and its strategic partners to publicize the removal of barriers and promote the benefits of system use.

Resource Requirements

(Listed by interventions in action step description)

- A. Assistance with time/cost study design and implementation. Assistance with development of promotional materials. Grant funds for staffing costs for historical data entry.
- B. Funding for costs associated with extracts from the various sources, including evaluation of data quality.
- C. Funding/assistance with survey design and implementation. Funding to support two-way interface development.

Commitments for Implementation

Participant Organization and Name

- KDHE KSWebIZ Project

Suggested Organization and Name

- Kansas Chapter of American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Kansas State Nurses Association
- Kansas Health Institute
- Current KSWebIZ Providers
- Health Plans
- Kansas School Nurse Organization
- Practice Management and Electronic Medical Record system vendors
- School Health Record system vendors
- Kansas Health Foundation

ACTION ITEM 4: PROVIDE INCENTIVES FOR KSWebIZ PARTICIPATION

Description

- A. Develop a targeted program of incentives for vaccination providers needing one-time assistance to make a long-term commitment to participation in KSWebIZ. Incentives include:

- Funding for computers for provider use in data entry. *Target: Computers will be provided to 25 new providers during 2008.*
- Funding for printers for KSWebIZ generated forms. *Target: Printers will be provided to 20 new providers during 2008.*
- Funding for service fee for Internet access for additional computer. *Target: 5 providers will be assisted with Internet connectivity service fee during 2008.*
- Funding to immunization providers for fees charged by billing system vendors for one time data extract of legacy immunization data for import into KSWebIZ. *Target: 5 providers will be provided funding for legacy data extract during 2008.*
- Funding to immunization providers for fees charged by Electronic Medical Record (EMR) system vendors for software upgrades that would facilitate two-way HL7 data exchange with KSWebIZ. *Target: 5 providers will be provided funding for HL7 EMR software upgrades during 2008.*

Providers receiving funding will be vetted via size of practice and geographic location resulting in targeted saturation.

B. Develop a comprehensive plan to retain existing KSWebIZ participants. Retaining current KSWebIZ participants is as important as soliciting new KSWebIZ participants. In order to assure the continued participation of current KSWebIZ users and to maximize the use and usefulness of the database, efforts must be ongoing to:

- 1) Provide effective and efficient training approaches for providers on managing and using KSWebIZ.
- 2) Expand end-user groups to discuss their uses of the registry, identify problems, and advise KDHE on problem-resolution and ongoing development of the KSWebIZ. *Target: User conference calls will be held quarterly.*
- 3) Continue the distribution of a newsletter to end-users. *Target: Newsletter will be distributed once each quarter.*
- 4) Continue to solicit and incorporate user requests into future updates of KSWebIZ.
- 5) Convene an ongoing advisory group of stakeholders to review KSWebIZ use and advise on ongoing KSWebIZ development. *Target: KSWebIZ Advisory group will meet at least quarterly, with ongoing written communication.*

- 6) Continue annual user satisfaction/suggestion surveys, reporting results and resulting action plans to all current/potential end-users.
- 7) Monitor KSWebIZ help desk usage to insure that KDHE has adequate staffing to address end user requests.
- 8) Explore and implement technology solutions to help KSWebIZ users convene and share experiences/solutions/uses through list-servs, teleconferences, Web conference, etc.
- 9) Provider accounts will be assessed biannually for frequency and quantity of data submission, with follow-up with those providers not adding immunization data during the previous period. *Target: 95 percent of all provider accounts will remain in active status.*

C. Facilitate use of KSWebIZ data by strategic partners.

- 1) Assure completeness, timeliness and accuracy of data in KSWebIZ. *Target: KSWebIZ staff will work with system vendor to: 1) define measures of completeness and develop query to quantify, 2) develop report that documents the length of time between vaccine administration and data submission by provider or geographic area, 3) develop method for evaluation of de-duplication efforts by end of 2008.*
- 2) Measure registry participation saturation by geographic area to determine statistical significance of geographically measured immunization rates. *Target: Report will be developed by May 2008.*
- 3) Survey immunization providers without direct KSWebIZ access to determine reporting needs for immunization information.
- 4) Survey public health users of immunization data to determine the types of data reports needed for Community Health Assessments and other public health activities. Specifics will include data elements, report formats and electronic formats needed for export.
- 5) Facilitate data reporting based on survey/suggestions/requests while legally protecting confidentiality and ensuring security of medical information.
- 6) Establish public access to aggregated geographic reports on immunization registry participation and coverage rates thru the Kansas Information for Communities Web site. *Target: Report contents will be defined by March 2008. Collaboration with KSWebIZ and KIC will produce report access by July 2008.*

- 7) Work with KSWebIZ vendor and KDHE GIS to build interface between KSWebIZ and GIS system by the end of 2008.

Rationale

- A. Strategic providers would be identified based on type and geographic location of population covered, and number of historical records introduced into the registry. Giving a one-time monetary incentive could be a catalyst to bring additional records into the registry, with expected long-term commitment to participation. All providers who agree to accept an incentive must commit contractually to participation in the registry for a specified time period.
- B. End user retention and satisfaction is essential to continue to populate the registry with up-to-date and accurate information.
- C. Proposed activity will assist KSWebIZ in meeting three of the National Vaccine Advisory Committee functional Standards for Immunization Information Systems:
 - Protects the confidentiality of medical information
 - Ensures the security of medical information
 - Automatically produces immunization coverage reports by providers, age groups and geographic areas

Access to statistically significant immunization data reports will encourage immunization provider participation in KSWebIZ and would help county health departments fulfill their function as a local public health agency.

Strategies supported

- Accelerate implementation of the statewide immunization registry.
- Promote policies, regulations and environmental changes that increase access to and utilization of immunization services.

Expected Outcomes

- A. Additional providers will participate in the registry, bring valuable history to populate it and commit to an ongoing update of immunization records to the registry.

- B. Progress will be made towards CDC stated target of 100 percent participation of immunization providers in KSWebIZ.
 - Providers will utilize data from KSWebIZ for analysis and improvement of their immunization services.
 - Parties interested in community health assessments will be able to access community health data.
 - Local health departments will analyze aggregated de-identified community level data to improve their community's health.
 - Local health departments will work within the suggested framework of NACCHO's Operational Definition of a Functional Local Health Department and CDC's National Public Health Performance standards to monitor health status of their community.

Proposed evaluation methods

- Stated targets will be met.
- 100 percent of providers receiving incentives will continue contributing data for at least one year after enrollment.
- 95 percent of all provider user accounts will remain in active status over a one-year period.
- Report usage statistics will be documented annually, with trends monitored long term.
- Conduct KSWebIZ user satisfaction survey annually to identify areas for improvement or additional development; communicate results to KSWebIZ users.

Challenges

- Personnel and funding resources must be adequate to support each of the interventions proposed.
- Provider perception of contractual demands placed on receipt of incentives may result in resistance to KSWebIZ implementation.

- KDHE immunization program staff time required to monitor agreements and address provider contract non-compliance will be a challenge given the current limited staff resources.
- Assembling functional and committed advisory group to help guide KSWebIZ development

Resource Requirements (Listed by interventions in action step description)

A.

- Funding for listed incentives
 1. Computers: 25 @ \$1200ea = \$30,000
 2. Printers: 20 @ \$500ea = \$10,000
 3. Internet service installation fee: 5 @ \$360 = \$1800
 4. Data extract fee: 5 @ \$10,000 = \$50,000
- HL7 Software upgrade fee: 5 @ \$10,000 = \$50,000
 - Total \$141,800

B.

- Funding to support end user convening activities (expenses related to onsite meetings, teleconferencing, Web conferencing expenses, steering committee meeting expenses).
- Funding for cost of token renewal.

C.

- Funding for costs associated with conducting provider survey/focus groups regarding needed reports.
- Funding for developer costs associated with enhanced reporting capability.

Commitments for Implementation

Participant Organization and Name

- IKK Steering Committee
- KDHE KSWebIZ Project

Suggested Organization and Name

- Kansas Chapter of the American Academy of Pediatrics
- Kansas Academy of Family Physicians
- Local Health Departments
- Kansas State Nurses Association
- Kansas School Nurse Organization
- KSWebIZ end users
- EMR/PMS/CMS vendors
- Health plan representatives

References

Centers for Disease Control and Prevention. (2007). *2008–2012 Immunization Program Operations Manual (IPOM)*. Retrieved from <http://www.cdc.gov/nip/policies/ipom>

Centers for Disease Control and Prevention. *National Public Health Performance Standards Program: The Essential Public Health Services*. Retrieved from <http://www.cdc.gov/od/ocphp/nphsp/EssentialPHServices.htm>

National Association of County & City Health Officials (NACCHO). (2005). *Operational Definition of a Functional Local Health Department*. Retrieved from <http://www.naccho.org/topics/infrastructure/documents/OperationalDefinitionBrochure.pdf>

APPENDIX C
SUMMARY OF STRATEGIES AND THEIR RELATIONS TO GOALS

APPENDIX C STRATEGIES AND THEIR RELATIONS TO GOALS

Goal statements (full text):

1. Increase children’s access to timely immunization in every possible venue, whether at the physician’s office, the local health department or elsewhere.
2. Accelerate implementation of the statewide immunization registry.
3. Promote policies, regulations and environmental changes to increase immunization rates.
4. Stimulate community and parental demand for, and provider involvement in, immunization services.
5. Continue to research factors likely to affect the success of the strategies described in this document. With stakeholder input, perform ongoing assessment and evaluation of the strategies and their success, and modify them based on the results

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
1.1 — Work to increase the number of private primary care providers offering immunizations. These efforts should focus primarily on urban counties and on other counties with more than 600 children from birth to 5 years old.	√		√		
1.2 — Explore centralized, high-volume vaccine purchase and distribution, through a voluntary public-private partnership of provider organizations, health insurance companies and KDHE. This should be a voluntary partnership funded primarily with private resources rather than state tax revenues.	√		√		
1.3 — Establish uniform and higher reimbursement rates from private insurance for vaccine administration.	√		√		

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
1.4 — Raise Medicaid reimbursement for vaccine administration in the VFC program to the maximum allowed by the federal Medicaid program. Work to persuade the federal government to review the actual costs of administering vaccines and raise allowable Medicaid reimbursement rates for vaccine administration to reflect those costs, including the expense of administering multiantigen vaccines.	√				
1.5 — Raise the number of VFC providers in the state, particularly in urban and semi-urban areas with a higher concentration of uninsured and underinsured children.	√		√		
1.6 — Encourage the federal government to simplify vaccine product management for providers enrolled in the VFC program.	√		√		
1.7 — Explore ways to expand the provision of free vaccine to underinsured children beyond the scope of the VFC program.	√		√		
1.8 — Increase the opportunities for newborn babies to start their immunizations on time by strengthening the referral system to a medical home at the time of discharge from the hospital.	√				
1.9 — Educate, inform and motivate parents when their newborns are discharged from the hospital, or soon after, to assure that the first immunizations to their baby are on time.	√		√		

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
1.10 — Support and expand assessment and feedback initiatives for private providers such as the Maximize Office Based Immunizations (MOBI) project. These initiatives are more likely to have a positive impact if they target clinics and providers statistically most in need of improving their immunization rates, such as large practices in urban areas and counties with lower rates of coverage.	√		√		√
1.11 — Increase activities that provide assessment and feedback to public and private clinics offering immunization services, in order to minimize missed opportunities for vaccine administration and maximize the adoption of best practices effective in sustaining high rates of timely immunizations.	√		√		√
2.1 — Gather input from private and public stakeholders to maintain a long-term KSWebIZ business plan (with yearly updates) that meets CDC standards.		√			√
2.2 — Prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them.		√			√
2.3 — Prepare a reasonable, accelerated timeline for implementing the electronic data interfaces with local health department data management systems in every county.		√	√		

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
2.4 — Rapidly gather information about the types and characteristics of electronic information systems used in private clinics in Kansas through a survey of clinics that offer immunizations.		√	√		√
2.5 — Facilitate the development of electronic data interfaces with selected data management systems used by immunization providers to store electronic information about immunizations. This should involve both providers and vendors of the systems used by providers. Criteria should be developed to set priorities related to the transfer of information from existing data management systems into the registry. The criteria should maximize the impact of the interfaces on the number of immunization records added to the registry.		√	√		√
2.6 — Determine the degree of support given to transferring into the registry historical data from clinics without electronic data management systems, particularly in the case of small practices. Develop criteria, including the cost-benefit ratio, for establishing priorities among such transfers.		√	√	√	
2.7 — Provide basic equipment and technical support to selected private clinics as an incentive to enroll in the immunization registry. Criteria for prioritizing clinics should be developed. The expense of this activity, particularly in the case of small practices, requires that consideration be given to the benefits to the registry of such an investment.		√	√		

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
2.8 — Educate providers about the benefits of joining the registry and obtain provider feedback about the program once they participate in it.		√	√		
2.9 — Build features into the registry that simplify administrative processes and workflow in private practices when they are immunizing children.		√	√		
2.10 — Expand efforts to strengthen the linkage of WIC to immunization programs at the local and state levels, including the development of an electronic interface between the WIC information system and KSWebIZ.	√	√	√		
3.1 — Develop consistent immunization-schedule regulations for all child-education programs, including Head Start, child care, preschool and grade school programs.			√		
3.2 — Review and amend (if necessary) statewide immunization mandates for schools, day care centers and other educational facilities for young children within a specified period following the release of national recommendations.			√		
3.3 — Review laws and regulations pertaining to the immunization registry in Kansas. Consider updating state laws so as to remove legal barriers and ensure statewide uniformity in the process of collecting, storing and sharing information on immunizations.			√		√

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
3.4 — Review the groups of users that should be allowed to access registry information. Develop data-user agreements and policies consistent with state laws and regulations to clarify the extent to which each group of users can access registry information to perform the functions that they are responsible for. Particular attention should be given to the need of local health departments for access to registry data.			√		
4.1 — Develop a campaign that involves all stakeholders and targets providers with messages about their importance in assuring timely immunizations, as well as about the importance of participating in the immunization registry.				√	
4.2 — Identify existing educational material about immunization, or develop new material as needed, that targets parents of newborns. These materials should stress the importance of timely immunizations, preferably obtained in a medical home, and offer parents immunization alternatives for children for whom the medical home is not a viable option.				√	
4.3 — Continue the KDHE <i>Immunize and Win a Prize</i> initiative.				√	√
5.1 — Assure that agencies and organizations with primary responsibility for the implementation of the strategies recommended in this report develop and execute implementation plans and conduct post-implementation evaluation using measurable indicators of success.					√

GOAL STATEMENT (ABBREVIATED)					
Strategy:	1. Increase access	2. Implement registry	3. Policies	4. Stimulate demand	5. Research & evaluation
5.2 — Create an immunization advisory panel. A panel of representatives from organizations with a role in implementing or supporting the strategies in this report should be convened by the secretary of KDHE and should receive the administrative support necessary to perform its activities.					√
5.3 — Conduct research to identify and describe the groups of children in Kansas that are at higher risk of missing some or all of their immunizations.. The research should be designed to allow the aggregation of data at the county level, should be updated regularly and should produce information timely enough to be used for course corrections.					√

APPENDIX D
NUMBER OF CHILDREN
AGE 0 TO 5 YEARS OLD RESIDENT IN EACH COUNTY

COUNTY	# OF CHILDREN
Sedgwick.....	35697
Johnson	33641
Wyandotte	12759
Shawnee	11492
Douglas	5568
Leavenworth	4775
Finney	4248
Reno	4138
Butler.....	4131
Saline.....	3713
Riley	3586
Ford.....	3035
Geary.....	2635
Lyon	2473
Crawford	2446
Cowley	2312
Montgomery.....	2189
Harvey.....	2167
Seward.....	2156
Miami	1944
Barton.....	1793
McPherson	1747
Sumner	1725
Franklin.....	1688
Ellis	1582
Cherokee	1561
Labette.....	1412
Pottawatomie.....	1351
Jefferson	1178
Dickinson	1103

COUNTY	# OF CHILDREN
Osage.....	1082
Atchison	1068
Neosho	1018
Bourbon.....	945
Jackson.....	874
Allen.....	850
Nemaha	765
Marion.....	730
Grant	688
Brown.....	684
Rice	627
Linn.....	603
Wilson.....	601
Pratt.....	570
Thomas.....	548
Marshall	543
Kingman.....	528
Coffey	525
Doniphan.....	525
Cloud.....	506
Anderson.....	503
Clay.....	475
Gray.....	459
Stevens	447
Wabaunsee	428
Greenwood.....	420
Sherman	411
Pawnee	407
Kearny.....	400
Haskell	392

COUNTY	# OF CHILDREN
Russell.....	372
Harper	369
Meade.....	368
Washington.....	367
Mitchell.....	352
Ottawa.....	349
Morris.....	347
Phillips	332
Rooks	321
Scott	310
Norton	285
Morton.....	283
Ellsworth.....	274
Stafford	274
Barber.....	268
Republic	264
Wichita.....	210
Osborne.....	205
Edwards.....	202
Chautauqua	195
Logan	195
Smith.....	194
Stanton	189
Woodson.....	188
Lincoln	185
Hamilton	184
Gove.....	182
Chase.....	182
Kiowa.....	181
Ness.....	177

COUNTY	# OF CHILDREN
Jewell	173
Rush	172
Trego	168
Decatur	157
Cheyenne.....	149
Clark.....	146
Sheridan	140
Elk.....	138
Rawlins	134
Graham.....	133
Lane.....	114
Comanche	111
Greeley	103
Hodgeman.....	101
Wallace	98

APPENDIX E
STRATEGIES AND THEIR CONTEXT OF IMPACT

APPENDIX E STRATEGIES AND THEIR RELATIONS TO CONTEXT

Strategies and primary context of impact (full text):

1. Strategies related to cost, financing and reimbursement.
2. Strategies related to the VFC program and providers.
3. Strategies related to office-based interventions.
4. Strategies related to the registry and other data management systems.
5. Educational and marketing strategies.
6. Strategies related to program management, evaluation and quality improvement.

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
1.1 — Work to increase the number of private primary care providers offering immunizations. These efforts should focus primarily on urban counties and on other counties with more than 600 children from birth to 5 years old.		√			√	

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimbursement	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
1.2 — Explore centralized, high-volume vaccine purchase and distribution, through a voluntary public-private partnership of provider organizations, health insurance companies and KDHE. This should be a voluntary partnership funded primarily with private resources rather than state tax revenues.	√		√			√
1.3 — Establish uniform and higher reimbursement rates from private insurance for vaccine administration.	√					√
1.4 — Raise Medicaid reimbursement for vaccine administration in the VFC program to the maximum allowed by the federal Medicaid program. Work to persuade the federal government to review the actual costs of administering vaccines and raise allowable Medicaid reimbursement rates for vaccine administration to reflect those costs, including the expense of administering multiantigen vaccines.	√	√				√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
1.5 — Raise the number of VFC providers in the state, particularly in urban and semi-urban areas with a higher concentration of uninsured and underinsured children.		√			√	√
1.6 — Encourage the federal government to simplify vaccine product management for providers enrolled in the VFC program.		√				√
1.7 — Explore ways to expand the provision of free vaccine to underinsured children beyond the scope of the VFC program.	√	√				√
1.8 — Increase the opportunities for newborn babies to start their immunizations on time by strengthening the referral system to a medical home at the time of discharge from the hospital.			√		√	
1.9 — Educate, inform and motivate parents when their newborns are discharged from the hospital, or soon after, to assure that the first immunizations to their baby are on time.					√	

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimbursement	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
1.10 — Support and expand assessment and feedback initiatives for private providers such as the Maximize Office Based Immunizations (MOBI) project. These initiatives are more likely to have a positive impact if they target clinics and providers statistically most in need of improving their immunization rates, such as large practices in urban areas and counties with lower rates of coverage.			√		√	
1.11 — Increase activities that provide assessment and feedback to public and private clinics offering immunization services, in order to minimize missed opportunities for vaccine administration and maximize the adoption of best practices effective in sustaining high rates of timely immunizations.			√		√	
2.1 — Gather input from private and public stakeholders to maintain a long-term KSWebIZ business plan (with yearly updates) that meets CDC standards.				√		√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
2.2 — Prioritize completion of electronic interfaces between KSWebIZ and data management systems. Identify the major remaining technical and policy barriers, as well as the resources and strategies required to remove them.				√	√	√
2.3 — Prepare a reasonable, accelerated timeline for implementing the electronic data interfaces with local health department data management systems in every county.				√		√
2.4 — Rapidly gather information about the types and characteristics of electronic information systems used in private clinics in Kansas through a survey of clinics that offer immunizations.				√		√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
2.5 — Facilitate the development of electronic data interfaces with selected data management systems used by immunization providers to store electronic information about immunizations. This should involve both providers and vendors of the systems used by providers. Criteria should be developed to set priorities related to the transfer of information from existing data management systems into the registry. The criteria should maximize the impact of the interfaces on the number of immunization records added to the registry.				√	√	√
2.6 — Determine the degree of support given to transferring into the registry historical data from clinics without electronic data management systems, particularly in the case of small practices. Develop criteria, including the cost-benefit ratio, for establishing priorities among such transfers.				√	√	√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
2.7 — Provide basic equipment and technical support to selected private clinics as an incentive to enroll in the immunization registry. Criteria for prioritizing clinics should be developed. The expense of this activity, particularly in the case of small practices, requires that consideration be given to the benefits to the registry of such an investment.				√	√	√
2.8 — Educate providers about the benefits of joining the registry and obtain provider feedback about the program once they participate in it.				√	√	√
2.9 — Build features into the registry that simplify administrative processes and workflow in private practices when they are immunizing children.				√		
2.10 — Expand efforts to strengthen the linkage of WIC to immunization programs at the local and state levels, including the development of an electronic interface between the WIC information system and KSWebIZ.				√		√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
3.1 — Develop consistent immunization-schedule regulations for all child-education programs, including Head Start, child care, preschool and grade school programs.						√
3.2 — Review and amend (if necessary) statewide immunization mandates for schools, day care centers and other educational facilities for young children within a specified period following the release of national recommendations.						√
3.3 — Review laws and regulations pertaining to the immunization registry in Kansas. Consider updating state laws so as to remove legal barriers and ensure statewide uniformity in the process of collecting, storing and sharing information on immunizations.				√		√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimbursement	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
3.4 — Review the groups of users that should be allowed to access registry information. Develop data-user agreements and policies consistent with state laws and regulations to clarify the extent to which each group of users can access registry information to perform the functions that they are responsible for. Particular attention should be given to the need of local health departments for access to registry data.				✓		✓
4.1 — Develop a campaign that involves all stakeholders and targets providers with messages about their importance in assuring timely immunizations, as well as about the importance of participating in the immunization registry.				✓	✓	✓

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimbursement	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
4.2 — Identify existing educational material about immunization, or develop new material as needed, that targets parents of newborns. These materials should stress the importance of timely immunizations, preferably obtained in a medical home, and offer parents immunization alternatives for children for whom the medical home is not a viable option.					√	
4.3 — Continue the KDHE <i>Immunize and Win a Prize</i> initiative.					√	√
5.1 — Assure that agencies and organizations with primary responsibility for the implementation of the strategies recommended in this report develop and execute implementation plans and conduct post-implementation evaluation using measurable indicators of success.						√

PRIMARY CONTEXT OF IMPACT (ABBREVIATED)						
Strategy:	1. Cost, financing & reimburse- ment	2. VFC program & providers	3. Office-based interventions	4. Registry & other data management systems	5. Educational & marketing strategies	6. Program management, evaluation & quality improvement
5.2 — Create an immunization advisory panel. A panel of representatives from organizations with a role in implementing or supporting the strategies in this report should be convened by the secretary of KDHE and should receive the administrative support necessary to perform its activities.						√
5.3 — Conduct research to identify and describe the groups of children in Kansas that are at higher risk of missing some or all of their immunizations.. The research should be designed to allow the aggregation of data at the county level, should be updated regularly and should produce information timely enough to be used for course corrections.				√	√	√

APPENDIX F

**RESOURCE REQUIREMENTS FOR THE
IMPLEMENTATION OF THE ACTION ITEMS**

IKK WORK GROUP RESOURCE REQUIREMENTS

ACCESS WORK GROUP ACTION ITEMS RESOURCE REQUIREMENTS

Action Item 1: Large-Volume Vaccine Purchase

- Stakeholder time commitment to form an organizational structure and provide oversight
- Financing from private third-party payers for vaccine purchase and infrastructure
- Support from professional organizations to promote the program to their members
- \$30,000 (0.5 FTE) for administrative staff time
- Potential Savings: \$3.1 – 6.0 million

Action Item 2: Defining the Unimmunized Population

- Review of immunization registry, school retrospective and WIC immunization system data by KDHE
- Additional funding will be needed to support specific, “non-routine” studies conducted by KDHE or other institutions (estimated \$50,000 for 2 studies)

Action Item 3: Maximize Medicaid Reimbursement for Vaccine Administration

- Staff time at Medicaid, provider support
- Additional state funding for Medicaid to pay for vaccine administration: ~\$120,000

Action Item 4: Establish Uniform Reimbursement Rates for Vaccine Administration

- Time commitment by organizations with a stake in negotiating uniform rates
- Additional resources may be needed for surveys to establish costs of providing immunizations
- Cost estimate based on VFC rates = \$560,000

Action Item 5: Create a Standing Secretary of Health and Environment’s Immunization Advisory Panel to Succeed IKK

- Expenses for panel members, support staff, supplies, meals, meeting rooms
- Estimated \$15,000

Action Item 6: Update Day Care Immunization Requirements

- Can be accomplished with current KDHE resources

Action Item 7: Maximizing Office Based Immunization

- Following evaluation of MOBI by KAAP and KDHE, additional funding should be sought to continue the project.
- Financing for second year contract and beyond (\$165,000)
- KDHE, KAAP staff time, consultant nurse and physician, educational materials

Action Item 8: Improve Vaccine Product Management

- KDHE staff time

COSTS FOR ACCESS WORKING GROUP RESOURCE REQUIREMENTS

Action Item	Estimated Cost
1: Large-Volume Vaccine Purchase	\$30,000
2: Defining the Unimmunized Population	\$50,000
3: Maximize Medicaid Reimbursement for Vaccine Administration.....	\$120,000
4: Establish Uniform Reimbursement Rates for Vaccine Administration.....	\$560,000
5: Create a Standing Immunization Advisory Panel.....	\$15,000
6: Update Day Care Immunization Requirements	\$0
7: Maximize Office Based Immunizations	\$165,000
8: Improve Vaccine Product Management	\$ 0

Potential savings from Large-Volume Vaccine Purchase

- \$3,100,000: All vaccines required for school attendance
- \$6,000,000: All ACIP recommended childhood vaccines

IMMUNIZATION REGISTRY WORK GROUP ACTION ITEMS RESOURCE REQUIREMENTS

Action Item 1: Develop a Long-Term KSWebIZ Enrollment and Management Plan

Contracted services for a six month time period to conduct a survey of immunization providers and provide results to KDHE for further completion of activities.

- 1,040 hrs (~6 months) @ \$19.25 + \$5,000 benefits = \$25,200
- Indirect costs = \$5,054

This Action Item will be completed by the end of 2008

Total Estimated Cost = **\$30,074**

Action Item 2: Private Provider Education about the KSWebIZ Immunization Registry

Professional services by KAAP staff to complete additional work.

- 100 hrs @ \$25 / hr = \$2,500

Travel and conference fees for KAAP and KDHE staff to attend conferences.

- Travel and fees to eight meetings = \$11,536

Extra expenses (i.e. supplies, postage, indirect costs)

- \$6,321

Activities will continue into 2011

Total estimated cost for 2008 = **\$20,357**

Action Item 3: Reduce Provider Disincentives for KSWebIZ Participation

Providers without the means to import data electronically will benefit from a legacy data entry assistance.

- Data-entry clerk at \$15 / hr + \$10,000 benefits = \$41,200 / year

Providers with electronic data in billing management systems will benefit from funding for data extracts.

- Data imports for six participants @ \$3,000 each = \$18,000

Providers with an EMR that want to utilize an interface will benefit from interface development as well as data cleansing assistance.

- Professional Staff will be hired for data cleansing for local health department rollout thru HL7 = \$52,000 / year
- KSWebIZ vendor time for cleanup = \$72,000 (36 HDs x 20 hrs x \$100)
- LHD allowance for data cleansing. \$1,200 / LHD x 36 = \$43,200
- HL7 interface development for two vendors @ \$5,000 = \$10,000

Extra expense (travel, equipment, indirect costs, etc)

- \$90,104

Activities will continue into 2011

Total Estimated Cost for 2008 = **\$326,504**

Action Item 4: Provide Incentives for KSWebIZ Participation

One-time incentives will include:

- 25 computers @ \$1,200 = \$30,000
- 20 printers @ \$500 = \$10,000
- 5 HL7 software upgrades @ \$10,000 = \$50,000
- 5 Internet installation fees @ \$360 = \$1,800

End user retention

- Four regional meetings / yr @ \$25 each = \$200
- Token renewal costs for providers: 650 users @ \$55 = \$35,750

Facilitate data use

- In order to insure data quality based on geographic location, GIS software will be needed to validate address coding and create mapping capabilities. Estimated costs incorporate address validation process with in-line geocoding Web service for real-time spatial conversion process to produce visual map reporting. Costs for 2008 = \$305,000

Extra expenses (indirect costs) = \$87,416

Activities will continue into 2011

Total Estimated Cost = **\$520,166**

REGISTRY WORKGROUP TOTAL COST

Action Item:	2008	2009	2010	2011	Total
Action Item 1	\$30,074	\$0	\$0	\$0	\$30,074
Action Item 2	\$20,357	\$20,117	\$19,516	\$19,275	\$79,265
Action Item 3	\$326,504	\$298,137	\$33,656	\$33,656	\$691,953
Action Item 4	\$520,166	\$127,051	\$100,607	\$90,390	\$838,214
Total	\$897,101	\$445,305	\$153,779	\$143,321	\$1,639,506