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CDC Billables Project Evaluation Report



**Centers for Disease
Control and Prevention**
National Center for Immunization
and Respiratory Diseases



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Acroynms

ACA	Affordable Care Act
ARRA	American Recovery and Reinvestment Act
BCBS	Blue Cross Blue Shield
CDC	Centers for Disease Control and Prevention
CEB	Communication and Education Branch
CHIP	Children's Health Insurance Plan
ISD	Immunization Services Division
LHDs	Local Health Departments
NCIRD	National Center for Immunization and Respiratory Diseases
NIH	National Institutes of Health
PPHF	Prevention and Public Health Fund
UHC	United Health Care
US	United States



Glossary*

Awardee – CDC recognizes 64 immunization programs (awardees), which include the 50 states, six large urban areas, and eight US territories and freely associated states eligible to receive CDC funding (see <https://www.cdc.gov/vaccines/imz-managers/guides-pubs/qa-317-funds.html>).

Balance billing – the practice of a provider billing you for all charges not paid by your insurance plan.

Claim – a payment request to the health plan for covered services provided to an individual enrolled in the health plan.

Clinical coding – the process of translating a doctor's notes from a patient visit into the appropriate ICD-10 codes for diagnosis and Current Procedural Terminology (CPT) billing codes for medical treatment or services.

Contract – an agreement between parties that sets out each party's rights and obligations (including financial obligations).

Cooperative agreement – an agreement between a federal awarding agency and a non-federal entity that provides for substantial involvement between the two parties in carrying out the activities described under the award.

Credentialing – the process by which an insurance plan or third-party payer reviews a health care professional's credentials to determine whether the professional meets the requirements to participate in a payer's provider network.

Fee schedule – a list of costs associated with each medical treatment or service that corresponds with a CPT billing code.

Hardship policy – a policy specifying how to work with an individual whose intention is to pay for necessary medical services received, but who doesn't have the financial capability to do so, in whole or in part.

Health care insurance – insurance to cover the cost of preventive services and medical care needed to prevent, diagnose, or treat illness or injury. May be an individual policy or family policy that also covers the beneficiary's family members. Specific benefits provided differ by insurance plan.

Health plan – written promise of health insurance coverage given to an individual, family, or group of covered individuals.

Health care provider – typically a physician, hospital, nursing facility, or laboratory that provides medical care services (not an insurance provider or organization that provides insurance coverage).

In-network provider – health care provider that has contracted with an insurance company to accept certain negotiated rates for providing treatment or services to that insurer's beneficiaries.

Medicaid – a federal-state program that provides health coverage to low-income Americans, including eligible adults <65 years old, children, pregnant women, elderly adults, and people with disabilities. Each state administers its own Medicaid program within broad federal parameters regarding eligibility and benefits.

Medicare – a federal health insurance program for people who are 65 or older, certain younger people with disabilities, and people with End-Stage Renal Disease.

Out-of-network provider – health care provider that has not contracted with an insurance company for reimbursement at a negotiated rate.

Private payer – a health insurance plan provided through an employer or union; a plan purchased by an individual from an insurance company; or military health coverage (including plans purchased through the ACA-established Health Insurance Marketplace).

Public payer – includes Medicare, Medicaid, and other medical assistance programs; Veterans Affairs Health Care; the Children's Health Insurance Program (CHIP); and individual state health plans.

Sliding scale – a written approach to adjusting fees for medical services for individuals who are unable to pay, in whole or in part, for the services they will or have received. Based on the individuals' ability to pay, the scale provides for the reduction or possible waiver of fees.

Typically requires some form of financial evaluation, a signed acknowledgment, and acceptance of the adjustment.

Third-party payer – any public or private payer billed for health care services.

*Some definitions are from: http://www.naic.org/consumer_glossary.htm;
<http://myhealthplan.guide/category/glossary/>; <https://www.cigna.com/glossary/>;
https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2015_ACSSubjectDefinitions.pdf;
<https://blog.grants.gov/2016/07/19/what-is-a-cooperative-agreement/>; <https://www.cms.gov/apps/glossary/>

Executive Summary

The Centers for Disease Control and Prevention (CDC) Billables Project was a response to the fact that even though a proportion of patients seeking immunization services at local health departments (LHDs) were insured, most LHDs were not requesting and receiving reimbursement for providing services to those patients. The project was designed to provide resources and technical assistance to assist LHDs in billing public and private third-party payers for immunization services provided to insured patients.

The Billables Project objectives were as follows:

1. Increase the ability of LHDs to begin, expand, or continue collection of reimbursements for in-network immunization services.
2. Increase the number of LHDs that have self-sustaining billing programs and immunization services.
3. Increase the capacity of LHDs to provide immunization services to the entire community—not just to those without insurance.

The objectives of this evaluation were to assess whether the Billables Project strengthened the capacity of LHDs to effectively bill third-party payers for immunization services; to identify activities, resources, and stakeholder partnerships that helped or hindered LHDs' ability to bill; to describe the steps taken by LHDs to plan and implement a billing program and the barriers they encountered; and to describe trends seen in awardees' billing programs.

Awardees took part in a variety of activities to facilitate planning and/or implementation of their billing programs. Many of the activities were related to training staff in insurance processes, clinical coding, reimbursements, and other major billing subject areas. Awardees encountered and were able to overcome a variety of barriers throughout the planning and implementation phases of their billing programs. The experiences of predecessors and stakeholders helped awardees to overcome barriers they encountered.

Of the 11 implementation awardees funded in 2014, five awardees reported that more than 50% of their immunization visits were being billed to a third-party payer compared to four at the beginning of data collection. Three awardees reported increases in the percentage of insured patients and three awardees reported decreases in the percentage of uninsured patients seen at LHDs. The percentage of immunization visits billed to public vs. private payers varied by awardee. However, over time, awardees reported an increase in the overall number of payers being billed.

The Billables Project has shown how important it is to work with partners, including third-party payers and community stakeholders, to improve capacity to provide services to the community and sustain immunization programs. The Billables Project has also shown how the landscape of immunization billing in public health settings is changing and evolving. Knowledge gained through this evaluation can be used to inform future immunization billing policies and efforts by state health departments and LHDs. Lessons learned through billing for immunization services have already been used to inform and expand programs to bill for other covered services (e.g., HIV screening and counseling, family planning, and laboratory services) offered by LHDs to insured patients.



Introduction

Background

Immunization is one of the most effective ways to prevent serious diseases.¹ There are currently more than 75 vaccines licensed for use in the United States that protect against 23 diseases.^{2,3} Vaccination coverage varies by state due to differing state vaccination requirements for school entry and exemptions allowed, physician communication/recommendation, and socioeconomic status of individuals seeking vaccination.^{4,7} With passage of the Affordable Care Act (ACA) in 2010, recommended immunizations became available at little to no cost* for those covered by non-grandfathered health insurance plans.⁸



Because vaccines are available in many different locations including doctors' offices, school-based clinics, pharmacies and worksite clinics, the U.S. has been able to achieve high vaccination levels, resulting in low vaccine-preventable disease prevalence nationwide. Though many health care locations provide immunization services, this evaluation focuses on local health departments (LHDs). LHDs are an important source of immunization and other health care services for the communities they serve. While they are often perceived as a place to receive free or low-cost services,⁹ LHDs operate and employ health care professionals just as any private health care facility does. The number of staff at LHDs is determined by budgets, population data, and, in some cases, revenue collected from charges for services.¹⁰ Reimbursement from health insurance plans (also known as "third-party payers") for services provided to covered patients can be an important source of revenue to sustain the services that LHDs offer. However, planning and implementing a program to enable billing for immunization and other services can often require a significant investment of time and money up front, in addition to being fraught with obstacles that LHDs must overcome. To bill third-party payers for immunization services, LHDs must negotiate and establish a contract with each payer and staff must be credentialed according to each payer's standards.[†] The processes for contracting and credentialing can be long and complex, taking weeks or months.

Program Description and Goals

CDC's Billables Project was a response to the fact that even though a proportion of patients seeking immunization services at LHDs were insured, most LHDs were not requesting and receiving reimbursement for providing services to those patients.^{11,12} The project was designed to provide resources and technical assistance to assist LHDs in billing public and private payers for immunization services provided to insured patients.

To plan and implement a billing program, state immunization programs (referred to as "awardees") needed to develop relationships with third-party payers, establish, update, or maintain systems for claims processing, add new or train existing staff to handle billing tasks, and communicate new billing policies to patients. These awardees were eligible through a competitive selection process to receive funding for billing activities through the Billables Project. Awardees used funding provided through the Billables Project to facilitate establishing contracts with third-party payers, complete the required credentialing of health care professionals, update or gain access to systems that support claims processing, and train LHD staff. By establishing and implementing a sustainable billing program, it was expected that state health departments and LHDs would have an increased capacity to begin or expand programs for collecting reimbursements in the short term, and greater reach and sustainability of immunization services in the long term.

*Grandfathered plans that were created or purchased prior to March 23, 2010 are exempt from changes required under the ACA (<https://www.healthcare.gov/glossary/grandfathered-health-plan/>). According to Kaiser Family Foundation's 2016 Employer Health Benefit Survey, 23% of employers offer at least one grandfathered plan and 23% of covered workers are enrolled in a grandfathered plan (<http://kff.org/report-section/ehbs-2016-summary-of-findings/>).

[†]Each third-party payer has its own requirements for credentialing.

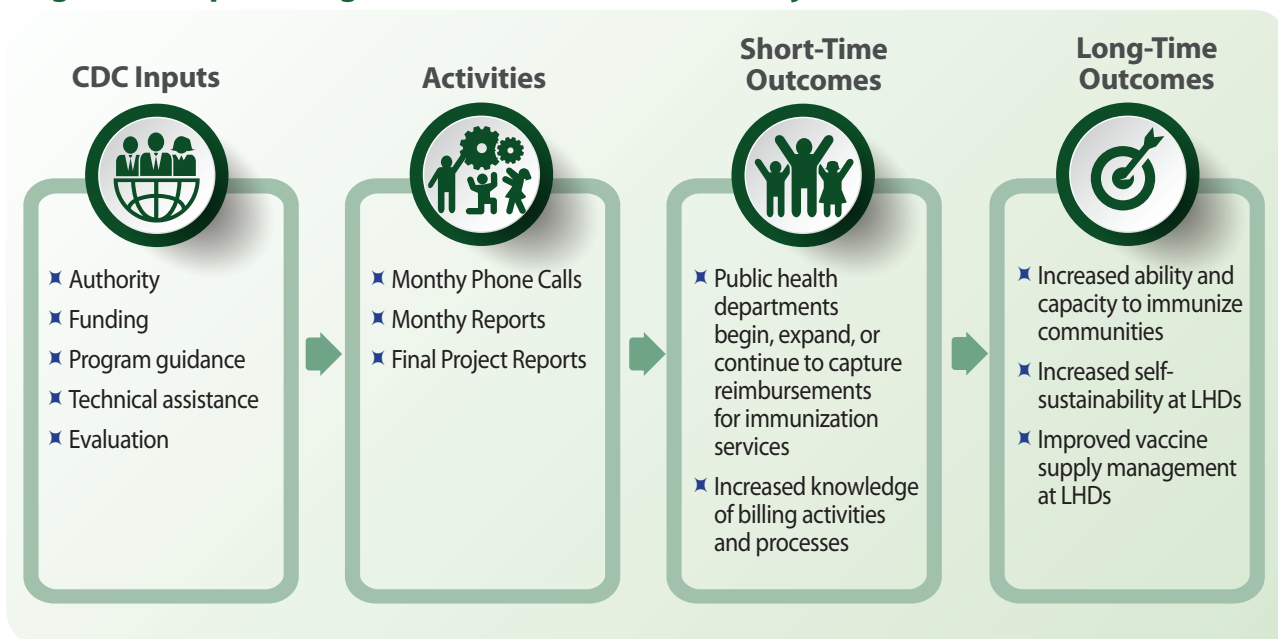
The Billables Project objectives were as follows (also see Figure 1):

1. Increase the ability of LHDs to begin, expand, or continue collection of reimbursements for in-network immunization services.
2. Increase the number of LHDs that have self-sustaining billing programs and immunization services.
3. Increase the capacity of LHDs to provide immunization services to the entire community—not just to those without insurance.

CDC’s National Center for Immunization and Respiratory Diseases (NCIRD) assembled a team to provide guidance and technical assistance to awardees as they sought to plan, implement, and/or sustain improvements to their billing programs. This report contains findings from an evaluation of the Billables Project conducted by staff in the Communication and Education Branch (CEB) in NCIRD’s Immunization Services Division (ISD). The project evaluation was conducted between September 2016 and January 2017 with the following objectives:

1. Assess whether the Billables Project strengthened the capacity of LHDs to effectively bill third-party payers for immunization services.
2. Identify activities, resources, and stakeholder partnerships that helped or hindered LHDs’ ability to bill.
3. Describe the steps taken by LHDs to plan and implement a billing program and the barriers they encountered.
4. Describe immunization billing trends seen in LHDs’ billing programs.

Figure 1: Simplified logic model for CDC Billables Project



Funding and Budget

Since 2009, CDC has awarded more than \$32.9 million to 38 state immunization programs to plan and implement billing for immunization services (see Table 1 and Appendix A and B).^{*} Funding from CDC for the Billables Project was provided through the federally legislated American Recovery and Reinvestment Act of 2009 (ARRA) and the Prevention and Public Health Fund (PPHF), which was established through the ACA.^{13,14} All funding awards were made through cooperative agreements that allowed CDC program staff and awardees to interact more directly, including regular communications and technical assistance for awardees when requested.

Planning

In 2009, the initial 14 awardees received more than \$6.6 million in funding from CDC. In 2011, a second round of funds, totaling more than \$6.3 million, was awarded to 14 additional awardees. In 2012, seven additional awardees received more than \$2.8 million.

Implementation

In 2011, seven of the initial awardees received a total of more than \$6.6 million to implement their strategic billing plans. In 2012, seven implementation awardees received more than \$5.4 million for implementation.

In 2014, 11 awardees, all of which had previously been awarded planning grants, received a total of more than \$5 million for implementation. One of the final 11 awardees completed its project at the end of 2016, while the remaining 10 have expected completion dates throughout 2017.



Table 1 : FY16 Achievements vs Targets:

	2009		2011		2012		2014		Total
Planning	\$6,653,680	n=14	\$6,319,225	n=14	\$2,852,607	n=7	\$0	n=0	\$15,825,512
Implementation	\$0	n=0	\$6,672,308	n=7	\$5,414,765	n=7	\$5,002,104	n=11	\$17,089,177
Total	\$6,653,680	n=14	\$2,991,533	n=21	\$8,267,372	n=14	\$5,002,104	n=11	\$32,914,689

^{*} As displayed in Table 1 and Appendix B, awardees were funded during separate funding waves to participate in CDC's Billables Project.

Evaluation Description

The project evaluation was undertaken to examine Billables Project processes and outcomes. The evaluation was designed to assist CDC in assessing and determining the extent to which awardee programs operated as intended and the extent to which LHDs were impacted by the Billables Project. Findings of this evaluation can be used to inform future decisions related to planning or implementing billing programs at LHDs.

Evaluation Questions

This evaluation was guided by the following questions:

1. Planning Awardee Evaluation Questions

- a. What activities, resources, and stakeholders were involved in developing strategic billing plans and to what extent? Identify activities, resources, and stakeholder partnerships that helped or hindered LHDs' ability to bill.
- b. What activities, resources, and stakeholders were involved in developing strategic billing plans and to what extent? Identify activities, resources, and stakeholder partnerships that helped or hindered LHDs' ability to bill.

3. Implementation Awardee Evaluation Questions

- a. What activities, resources, and stakeholders were employed to increase capacity for billing and to what extent?
- b. What barriers and facilitators to billing were identified by awardees?
- c. To what extent did awardees increase rates of reimbursement throughout the program period?
- d. To what extent did number of immunization visits change throughout the program period?
- e. How did patient demographics change throughout the program period?

Evaluation Tools

A variety of methods, including content analysis, document review, a mixed-methods questionnaire, and a quantitative survey,* were used to evaluate both the planning and implementation projects. Methods and data sources used to answer evaluation questions are detailed in Table 2.



*Quantitative surveys were only distributed to the 11 implementation awardees funded in 2014 due to changes in award requirements.



Table 2: Evaluation questions for planning and implementation

Evaluation Question	Indicator	Data Sources	Analysis Methods
Planning Awardee Evaluation			
What activities, resources, or stakeholders were involved in developing strategic billing plans and to what extent?	Descriptions of activities, third-party relationships, and payer contracts	Final reports and monthly reports and calls	Quantitative analysis, qualitative analysis, and document review
What barriers and facilitators to billing were identified by awardees?	Descriptions of successes and challenges during the program period	Final reports, monthly reports and calls, and program staff	Content analysis and telephone follow-up (if needed)
Implementation Awardee Evaluation			
What activities, resources, or stakeholders were employed to increase capacity for billing and to what extent?	Descriptions of activities, third-party relationships, and payer contracts	Final reports and monthly reports and calls	Quantitative analysis, qualitative analysis, and document review
What barriers and facilitators to billing were identified by awardees?	Descriptions of successes and challenges during the program period	Final reports, monthly reports, program staff, and questionnaires	Content analysis and telephone follow-up (if needed)
To what extent did awardees increase rates of reimbursement throughout the program period?	Net collection rate and claims processing data	Questionnaires, program staff, and monthly reports	Quantitative analysis and qualitative analysis
To what extent did number of immunization visits change throughout the program period?	Total immunization visits data, payer and claims data	Questionnaires	Quantitative analysis
How did patient demographics change throughout the program period?	Insurance status data	Questionnaires	Quantitative analysis

Data Collection and Sources

Final Reports

All awardees that completed planning or implementation projects submitted written final reports to CDC program staff. These reports included information on project barriers, facilitators, third-party payers, and other topics related to planning or implementation. As of January 2017, all 35 planning awardees have completed the planning phase and submitted final reports. Of the 25 implementation awardees, 15 have completed the implementation phase and submitted final reports.

Awardees were given a broad set of guidelines and questions to aid in writing final reports. The guidelines and questions varied based on project type(s) – planning, implementation or both – or year(s) in which the awardee participated. Questions were reviewed by CDC project leaders and refined throughout the course of the project.

Final reports were reviewed for accuracy and completion. Data collected included total number of LHDs, training needed, stakeholders, insurance companies, barriers, benefits of billing, and other information specific to an awardee's project. Data were independently coded by one evaluator and a spreadsheet of emergent themes and topics was created for analysis. Once main themes were established, subthemes and supporting data were categorized in order to best answer evaluation questions.* Themes, subthemes and supporting data were reviewed for accuracy and consensus by three CDC project leaders.

Questionnaires

The Billables Project receives ongoing evaluation updates from awardees who are still currently in the implementation phase of their projects.† These include monthly reports and calls, which monitor awardee progress toward goals, as well as questionnaires, which requested more detailed information on insurance claims, number of health plans the LHDs work with, and number of LHDs sending and collecting data. Questionnaires were collected for the following time periods‡:

1. October 1, 2014 – March 31, 2015 (Q1)
2. April 1, 2015 – September 30, 2015 (Q2)
3. October 1, 2015 – March 31, 2016 (Q3)
4. April 1, 2016 – September 30, 2016 (Q4)

Qualitative and quantitative data were taken from responses to questionnaires that were completed by seven of the final 11 Billables Project awardees. Quantitative data were analyzed using an Access database (Microsoft Corp., Redmond, Washington) and SAS statistical software (version 9.4; SAS Institute Inc., Cary, North Carolina) for descriptive statistical analyses.

Monthly Reports and Calls

For the duration of their projects, awardees submitted monthly reports and participated in monthly calls. The reports and calls gave CDC project leaders updates on awardee project status, as well as any other issues or project related topics that may have occurred. Reports and calls often included some specific details that were not included in the final reports.

Program Staff

Awardee program staff were contacted, by phone or email, as needed to gain further explanations of project details or updates presented in reports or on monthly calls.

*Monthly reports and call notes were used to gain further insight and details related to specific themes or topics if needed throughout the report findings.

†These awardees are set to finish their implementation projects in 2017.

‡For simplicity, the data collection periods will be referred to as Q1, Q2, Q3, and Q4 in tables and graphs describing results.

Methods

Design

A non-experimental, retrospective, descriptive evaluation design was used to analyze data. Descriptive evaluation designs are used to explore and describe experiences and outcomes, as well as compare outcomes achieved to planned outcomes.¹⁵ Non-experimental designs have several noted limitations, one of which is the lack of a comparison or control group.¹⁶ However, non-experimental designs offer an easy and inexpensive way to conduct useful evaluations of longitudinal studies.

Limitations

Although all awardees who completed a project submitted a final report, these reports did not include the same types or amounts of information. For some sections of data analysis and evaluation, some awardees were excluded due to missing information in final reports.

Data from questionnaires were requested only from the final 11 implementation awardees. Eight of the 11 awardees returned questionnaires. This limited the amount and type of analysis that could be conducted for evaluation questions examined with questionnaire data. Questionnaire data collected by awardees were sometimes taken from LHD data, which could have led to inconsistencies and errors in data reporting due to varying data collection procedures at each LHD. In addition, since questionnaires were only required of the final 11 Billables Project awardees,* the data collected cannot be generalized and compared to those of awardees who participated previously.

Fidelity and Potential Bias

CDC program staff maintained program fidelity through regularly scheduled all-awardee meetings, conference calls, and webinars. These provided effective channels of communication to discuss new and revised vaccine recommendations and policies and their impact on billing. All members of the CDC Billables Project staff participated in these activities to ensure reliability of data discussed.

Findings

Data and findings from final reports (planning and implementation) and questionnaires (implementation) were reported separately due to differences in data required for submission by awardees participating in the planning vs. the implementation phase. In addition, only the final 11 implementation awardees collected data for questionnaires.

Final Reports

Final reports from 35 awardees in the planning phase and 15 awardees in the implementation phase were reviewed and analyzed. Data from final reports for this evaluation included information on activities, resources, stakeholders, and barriers.

*Some awardees were not able to respond with all data that was requested in the questionnaires due to the structure of their state health department and LHDs.

Activities, Resources, and Stakeholders

Awardees took part in a variety of activities to facilitate planning and/or implementation of their billing programs. Many of the activities related to training staff on insurance processes, coding, reimbursements, and other major billing topics. Other activities included:

- Working and meeting with local organizations, immunization coalitions, or other health agencies
- Detailing and outlining billing procedures for development of guides/manuals
- Developing communication plans and strategies for establishing billing of third-party payers
- Negotiating new contracts and establishing partnerships with payers
- Developing materials (e.g., claim submission tools and sample forms) for LHD staff
- Creating plans and processes for streamlining data and record-keeping
- Working with IT departments to develop or implement billing software systems

Resources from internal and external sources, such as funding, software, and personnel, were an important part of planning and implementing a billing program. CDC funding from the Billables Project enabled many LHDs to purchase software or equipment they were lacking, as well as pay for additional staff needed to aid in the billing process. Software helped many awardees improve their billing processes by reducing the number of claims that were miscoded and denied. Some awardees used funding to pay for claim submission services provided by clearinghouses (e.g., vendors such as Health-e-Web, TransactRx, Upp Technology, Emdeon One, VaxCare, and Availity^{*)}, which offered staff and expertise to improve reimbursement rates and reduce the number of denied and rejected claims. LHD staff also benefited from coding and claims processing guidance provided by billing training manuals and personnel.[†]

Strong partnerships with local stakeholders were one of the most important elements identified by awardees in building a strong, self-sustaining billing program. Types of stakeholders varied by state and included:

- Immunization coalitions
- Governor's offices
- State insurance commissioners
- Attorneys general
- State and local public health officials
- Public health boards and medical associations (e.g., the American Academy of Pediatrics)
- Hospitals
- Vaccine manufacturers and pharmaceutical company representatives
- State Medicaid and managed care programs
- Medicare
- Third-party payers
- Universities

Some stakeholders participated in monthly calls and other meetings with awardees throughout the planning and implementation processes and assisted awardees with building relationships with third-party payers; negotiating contracts or creating contract templates; developing strategic plans; credentialing; covering costs of clearinghouse services; analyzing fees; selecting software; and developing training resources such as guides and manuals.

*Clearinghouses listed are selected examples. The listing does not constitute CDC endorsement of a particular company.

†Selected resources are listed in Appendix C.

Sustainability

Many awardees discussed the impact the Billables Project had on long-term infrastructure of their LHDs billing abilities, as well as the ability to increase immunization offerings to the community.

When discussing program sustainability, one awardee stated, “The CDC Billing Implementation grant gave [the state immunization coalition] the ability to provide support for all health care organizations in order to strengthen the overall vaccine delivery system, decreasing the potential cost to public health safety net service programs by keeping disease rates down and immunization rates high.” Another awardee discussed their increased ability to train and update policies related to billing, stating “We are now prepared to bill 3rd party payers for immunizations. . . We have updated policies and procedures as needed and trained new staff that may be involved in the billing process.”

Barriers

Barriers encountered by awardees and solutions to overcoming those barriers were described extensively in final reports (see Tables 3 and 4).

Barriers were noted in six categories: (1) funding and costs, (2) staff, (3) health department characteristics, (4) third-party payers and insurance plans, (5) software, and (6) patient insurance status. Solutions for overcoming those barriers included: (1) using supplemental funds (e.g., grants) and clearinghouse services to overcome funding and cost barriers; (2) creating billing guides and modules to aid in staff training and ensuring all staff had sufficient knowledge of billing processes; (3) subcontracting work or using clearinghouse services if staffing levels were not adequate; (4) creating consistent, streamlined workflow processes at LHDs to bill accurately for immunization services; (5) establishing strong relationships with third-party payers to ensure open communication; (6) requesting assistance with contracting from state insurance commissioners and attorneys general; (7) modifying, developing, or purchasing new software to accommodate billing practices; and (8) capturing the patient data needed to bill by updating and modifying current clinic workflows/processes and patient/medical record systems.

Table 3: Most commonly reported barriers

Most commonly reported barriers by project phase	
Planning	Implementation
Credentialing and contracting	Credentialing and contracting
Lack of or limited knowledge and understanding of processes for billing	Cost to acquire private stock of vaccines
Gaps in current software system	Lack of or limited training/resources
Staff levels/turnover	Structure of state health department system
Cost to acquire private stock of vaccines	Payments for vaccine doses/reimbursement
Lack of or limited training/resources	Gaps in current software system



Table 4: Barriers identified by awardees in final reports for planning and implementation

Barrier Topic	Supporting Themes	Examples of Possible Solutions Given by Awardees	Planning (N)	Implementation (N)
Funding and Costs				
	Large start-up funding costs (including clearinghouse costs and software and equipment needs)	<ul style="list-style-type: none"> ■ Use grant funds to purchase equipment and software ■ Negotiate with companies for discounts 	8	3
	Cost to acquire private stock of vaccines	<ul style="list-style-type: none"> ■ Use revenue from billing to purchase ■ Work with manufacturers 	11	5
Staff				
	Lack of or limited knowledge and understanding of processes for billing	<ul style="list-style-type: none"> ■ Create a billing guide ■ Training modules ■ Contact subject matter experts for assistance 	15	3
	Leadership resistance	<ul style="list-style-type: none"> ■ Repeated messages regarding benefits of billing to leadership 	4	3
	Clinical coding errors	<ul style="list-style-type: none"> ■ Have a staff contact in finance department ■ Attend training on coding 	4	3
	Staff levels/turnover	<ul style="list-style-type: none"> ■ Use subcontractors 	14	—
	Lack of or limited training/resources	<ul style="list-style-type: none"> ■ Create billing manuals ■ Have mentors from LHDs assist in training 	11	5
	No on-site physician/provider	<ul style="list-style-type: none"> ■ Educate third-party payers on the role of public health nurses in providing immunization services 	3	—
	Large time requirements	<ul style="list-style-type: none"> ■ Use billing clearinghouses to help streamline processes 	7	2
Health Department Characteristics				
	Structure of state health department system	<ul style="list-style-type: none"> ■ Centralize operations if possible 	7	4
	Inadequate volume/needs for establishing a billing protocol	<ul style="list-style-type: none"> ■ Conduct a cost-benefit analysis ■ Partner with other LHDs to bill 	5	1
	Fees for services applied inconsistently/changes to fees	<ul style="list-style-type: none"> ■ Establish policies and procedures to simplify application of fees for services for an efficient, consistent implementation of billing practices 	3	—
	Liability insurance coverage	<ul style="list-style-type: none"> ■ Increase coverage amount 	2	—
	Claim submission issues	<ul style="list-style-type: none"> ■ Create more consistent processes for submission ■ Training in accurate submission 	8	3
	Varied front-end processes	<ul style="list-style-type: none"> ■ Modify and streamline processes to accommodate billing 	9	1

Barrier Topic	Supporting Themes	Examples of Possible Solutions Given by Awardees	Planning (N)	Implementation (N)
Third-Party Payers and Health Plans				
	Payments for vaccine doses/reimbursement	<ul style="list-style-type: none"> Try to renegotiate fees or rates 	4	4
	Credentialing and contracting	<ul style="list-style-type: none"> Seek help from immunization coalitions or partners Develop contract templates Ask attorneys general for assistance 	23	7
	Difficulty with Medicare credentialing and application process	<ul style="list-style-type: none"> Seek state assistance with Medicare application fees 	5	2
	Difficulty negotiating or communicating	<ul style="list-style-type: none"> Be persistent in working to develop relationships and lines of communication 	6	3
	Lack of recognition of public health model	<ul style="list-style-type: none"> State legislation to support recognition of public health model 	3	1
Software				
	Gaps in current system	<ul style="list-style-type: none"> Change workflow to accommodate new billing mechanisms Modify current system to fill gaps 	15	4
Patient Insurance Status				
	Insurance information/status unavailable at time of service	<ul style="list-style-type: none"> Immunization coalition developed independent insurance verification process Infrastructure and technology changes to capture insurance information 	8	3



Questionnaires

As previously mentioned, questionnaire analyses were limited as only eight of the 11 awardees returned the questionnaire with required data. Findings for this section are discussed as Q1 vs. Q4, unless otherwise noted.*

Quantitative Results

The number of LHDs reported by each awardee remained the same throughout the project for all awardees except Mississippi (MS) and New Mexico (NM). MS reported a decline of 11 LHDs (-11%) and NM reported a decline of two LHDs (-4%) due to closures.

Immunization Visits

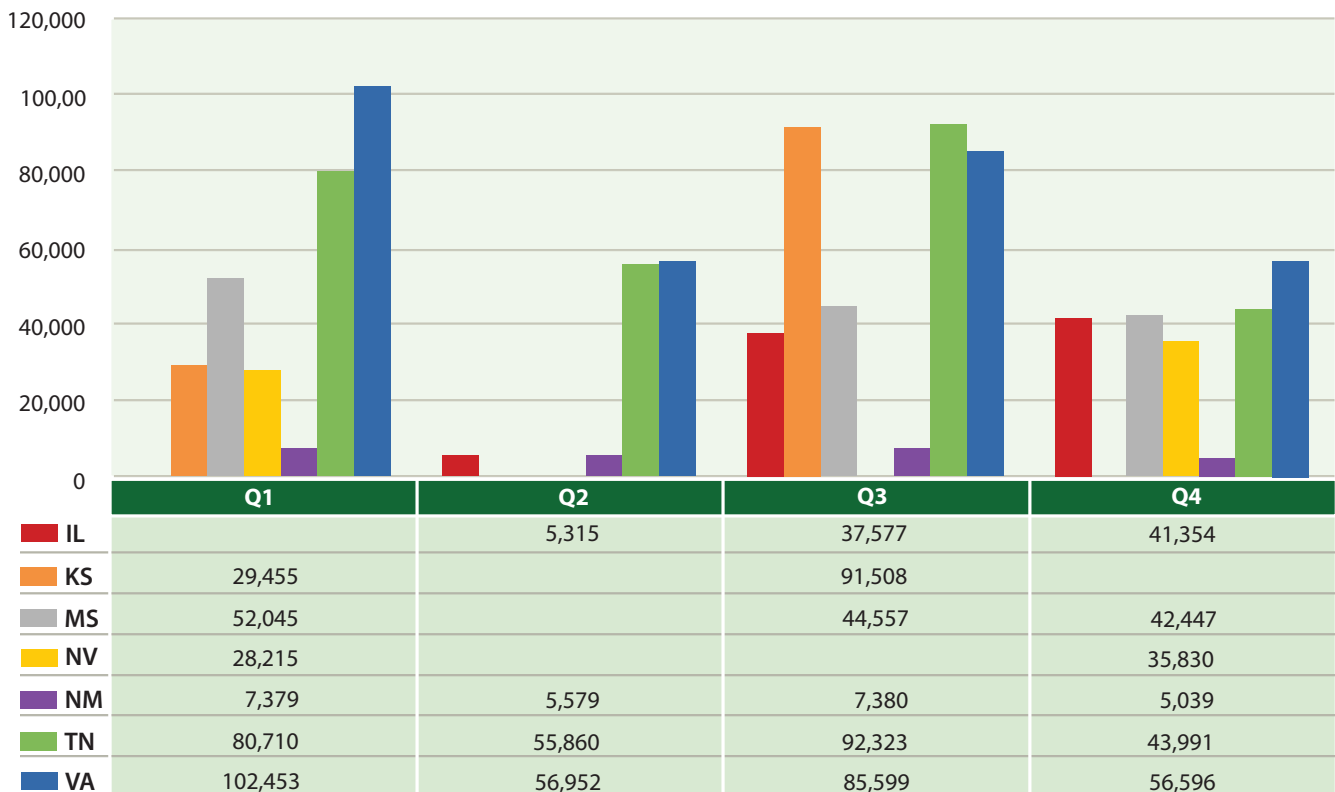
The number of immunization visits varied across time (see Figure 2). Overall, Tennessee (TN) and Virginia (VA) had the highest average number of immunization visits during the data collection period. NM, TN, and VA experienced a decline in total immunization visits in Q2 and Q4. The specific reason for those declines (Figure 2) is not known, but could be related to the seasons that correspond with the data collection period or natural flow of patients visiting LHDs (i.e., there are increases in visits to LHDs during back-to-school and flu season). In Q3, VA reported 100% of immunization visits were being billed. Illinois (IL), MS, and TN billed for 100% of immunization visits in all data collection periods (see Figure 3).

Other notable trends included:

- Kansas' (KS) (Q1 vs. Q3) and IL's (Q2 vs. Q4) number of immunization visits more than doubled.
- From Q1 to Q4, Nevada's (NV) total number of immunization visits increased by 7,615 (+27 percentage points) from 28,215.
- From Q1 to Q4, MS' total number of immunization visits decreased by 7,488 (-14 percentage points) from 52,045.

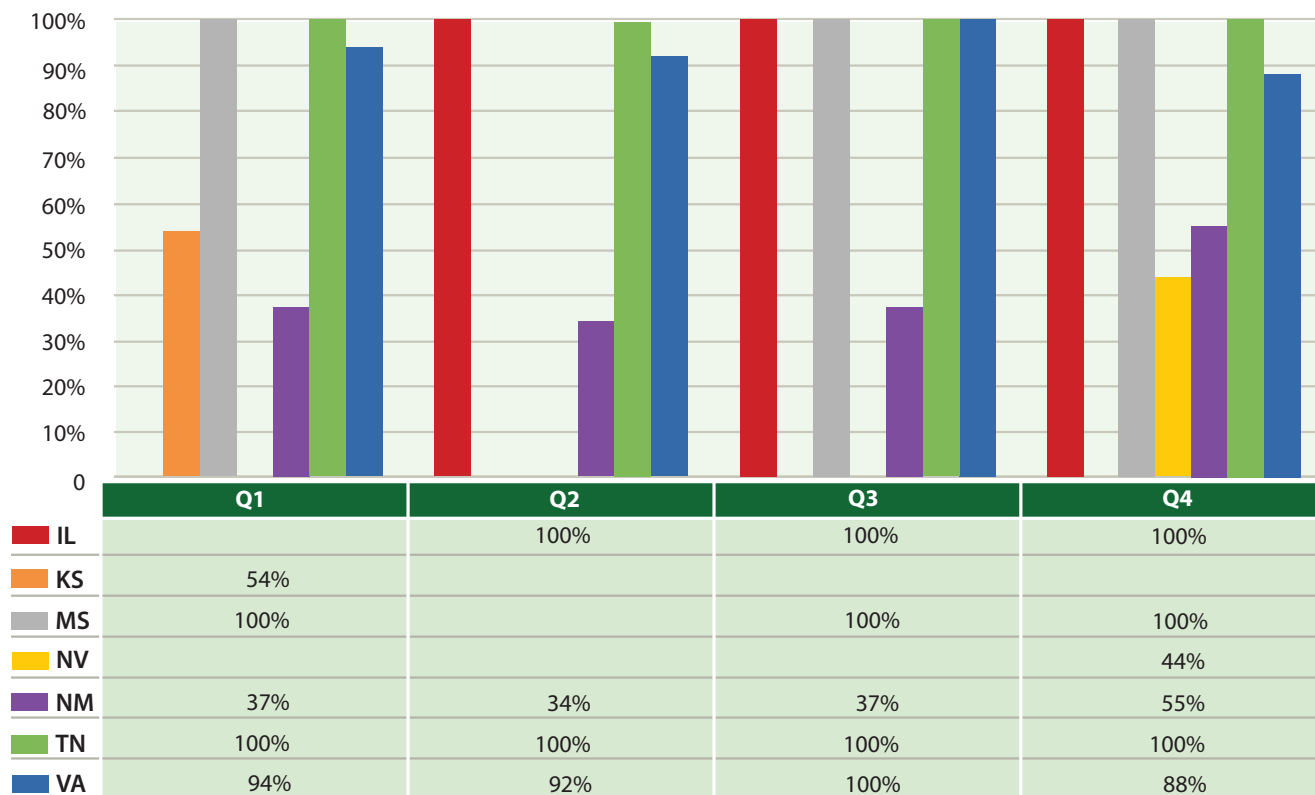
Figure 2: Total number of immunization visits

(note: IL did not provide data for Q1, KS and MS did not provide data for Q2, NV did not provide data for Q2 and Q3, and MO did not provide any data on total number of immunization visits)



*Questionnaire time periods: October 1, 2014 – March 31, 2015 (Q1), April 1, 2015 – September 30, 2015 (Q2), October 1, 2015 – March 31, 2016 (Q3), April 1, 2016 – September 30, 2016 (Q4).

Figure 3: Percentage of immunization visits that were billed
(total immunization visits billed/total immunization visits)



Patient Insurance Status

Patient insurance status data were collected from each awardee to determine to some degree the demographics of those receiving services at state or LHDs. An insured patient is defined as “anyone with insurance that covers the cost of vaccination even if the insurance plan has a high deductible or co-pay.” An uninsured patient is defined as one without health insurance. An underinsured patient is defined as one with health insurance but has health insurance, but it doesn’t cover vaccines, or doesn’t cover certain vaccines, or covers vaccines but has a fixed dollar limit or cap for vaccines.*†

The percentages of insured and uninsured patients seen at awardee health departments are shown in Figures 4 and 5:

- For five awardees, 50% of patients or more were insured.
- IL had a 22 percentage point decrease in insured patients (Q2 vs. Q3), but the percentage of insured patients increased again in Q4.
- NV had an increase in insured (+16 percentage points) and uninsured (+7 percentage points) patients.
- NM had a decrease (-4 percentage points) in the percentage of insured patients and a decrease (-8 percentage points) in the percentage of uninsured patients.
- TN had an increase (+20 percentage points) in insured patients and a decrease (-19 percentage points) in uninsured patients.
- VA had a decrease (-26 percentage points) in insured patients and an increase (+33 percentage points) in uninsured patients.

Missouri (MO) and KS reported data for only one reporting period; thus, trends for patient insurance status were not captured.

*Definitions for “insured”, “uninsured” and “underinsured” were adapted from the definitions created for the Vaccines for Children program (<https://www.cdc.gov/vaccines/programs/vfc/parents/qa-detailed.html> and <https://www.cdc.gov/vaccines/imz-managers/guides-pubs/qa-317-funds.html>).

† Underinsured individuals are not depicted in the figures below.

Figure 4: Percentage of patients who were insured
 (note: KS only provided data for Q1 and MO only provided data for Q4)

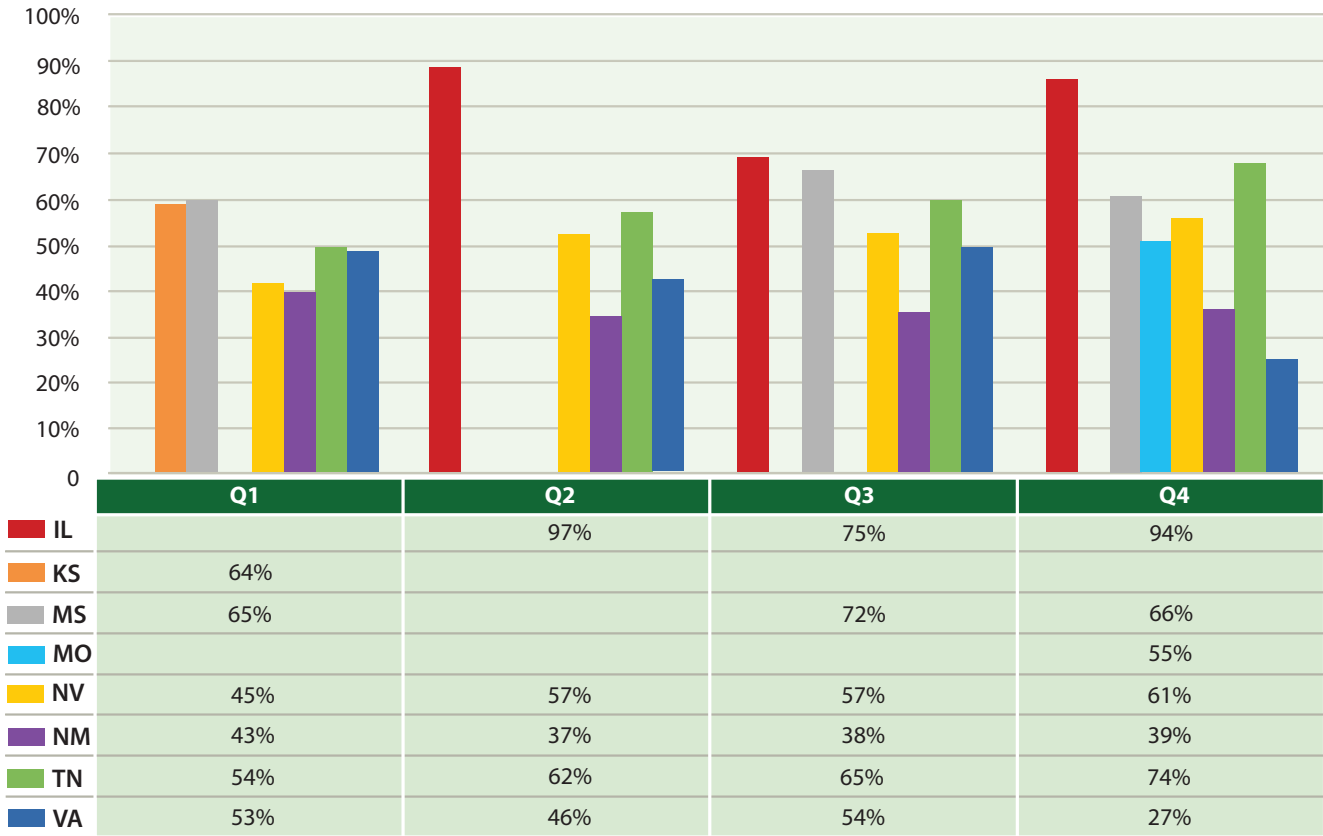
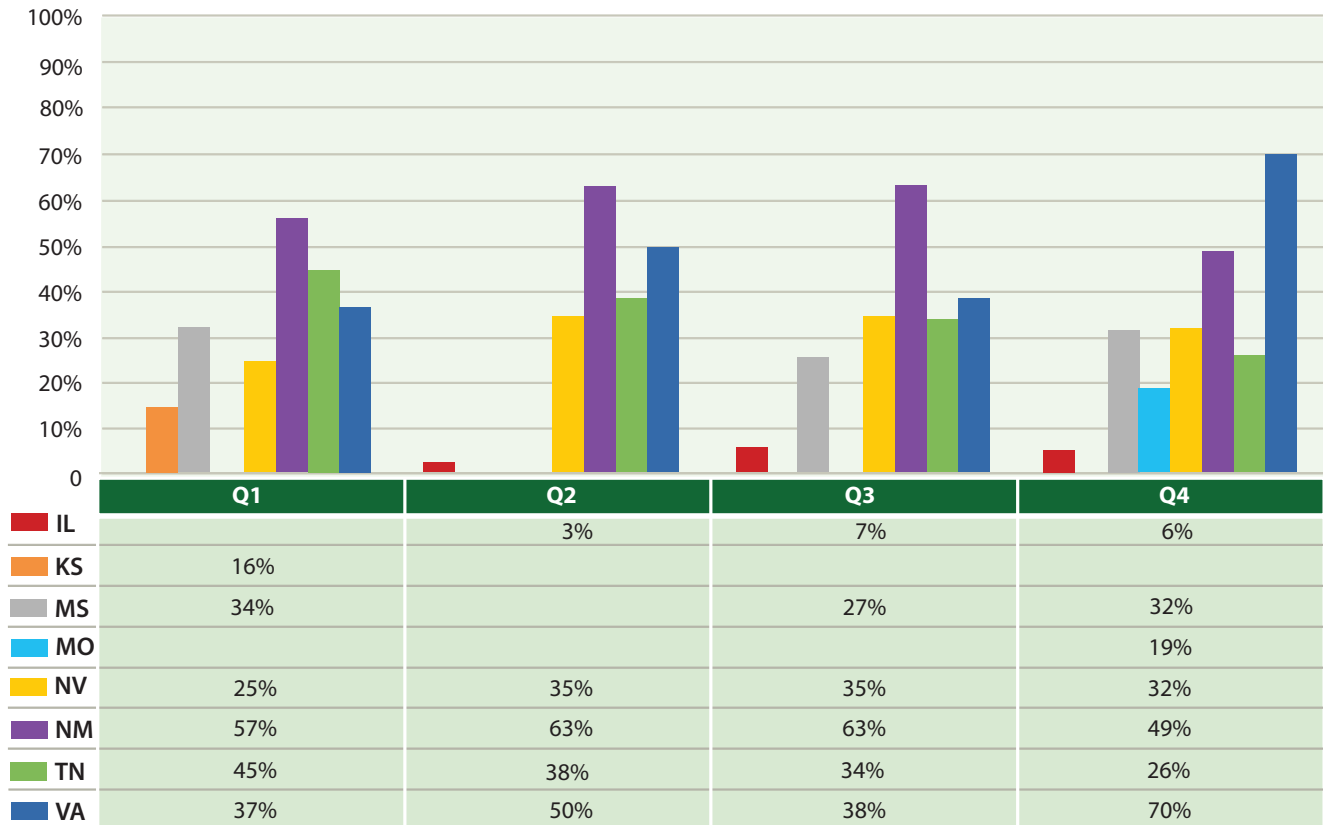


Figure 5: Percentage of patients who were uninsured
 (note: KS only provided data for Q1 and MO only provided data for Q4)



Public, Private, and Patient Billing for Immunization Visits

By Q4, eight of the final 11 implementation awardees reported more than 50% of LHDs in their state were billing third-party payers for immunization visits. Of those eight, five awardees reported 100% of LHDs in their state were billing third-party payers for immunization visits.

In addition to general information on immunization visits billed, awardees were asked to give further details on the percentage of visits billed to private and public insurance (see Figures 6 and 7). Awardees also reported on the number of immunization visits for which the patient was billed directly (data not displayed due to low response rates on questionnaires). IL (+3 percentage points) and VA (+10 percentage points) reported an increase in the percentage of patients billed, while MS (-2 percentage points) and TN (-22 percentage points) reported decreases in the percentage of patients billed.

Findings from Figures 6 and 7 include:

- IL and KS billed more than 50% of immunization visits to private insurance.
- MS, MO, NV, NM, and TN billed 50% or more of immunization visits to public insurance.
- IL had a decrease (-22 percentage points) in immunization visits billed to private insurance and an increase (+32 percentage points) in immunization visits billed to public insurance (Q2 vs. Q4).
- MS had an increase (+12 percentage points) in immunization visits billed to private insurance.
- NM billed 100% of immunization visits to public insurance.
- TN had an increase (+43 percentage points) in immunization visits billed to private insurance.
- VA had a decrease (-8 percentage points) in immunization visits billed to private insurance.

Figure 6: Percentage of immunization visits billed to private insurance
(note: KS only provided data for Q1 and MO only provided data for Q4)

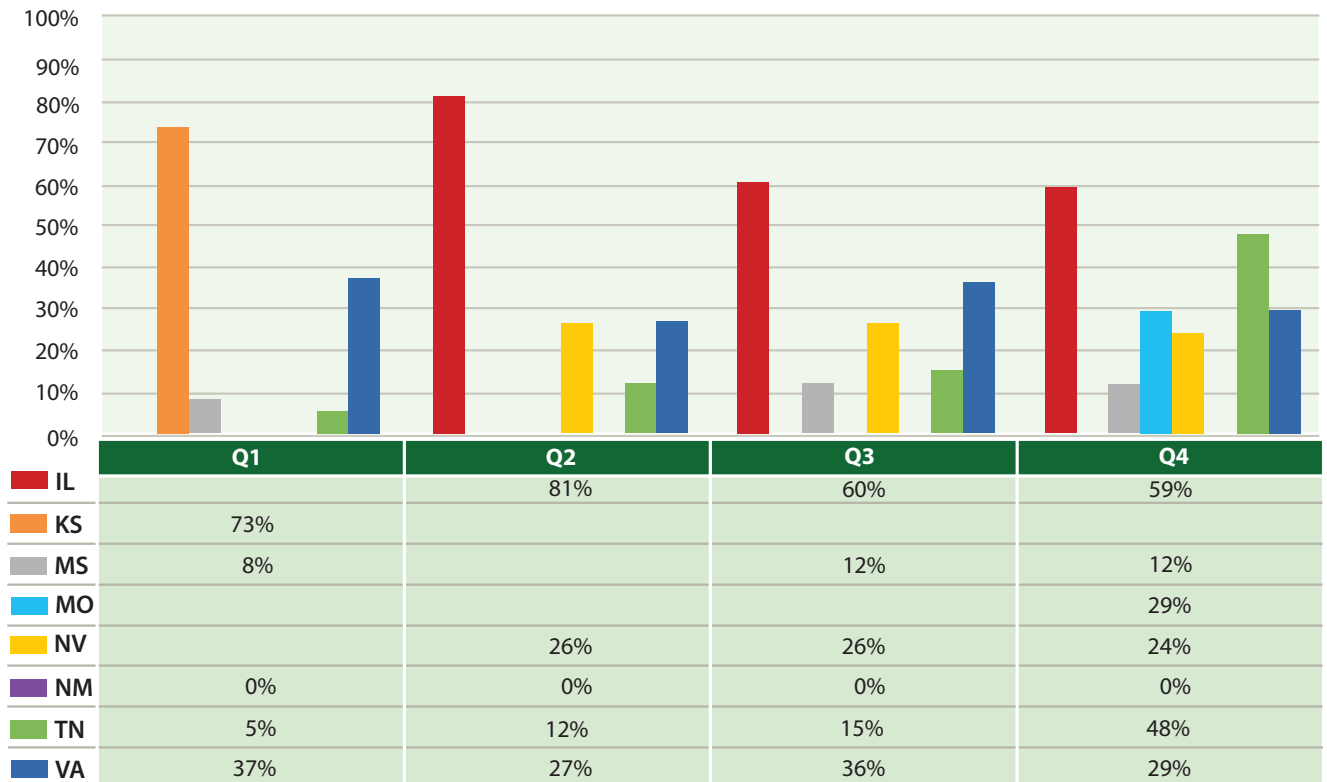
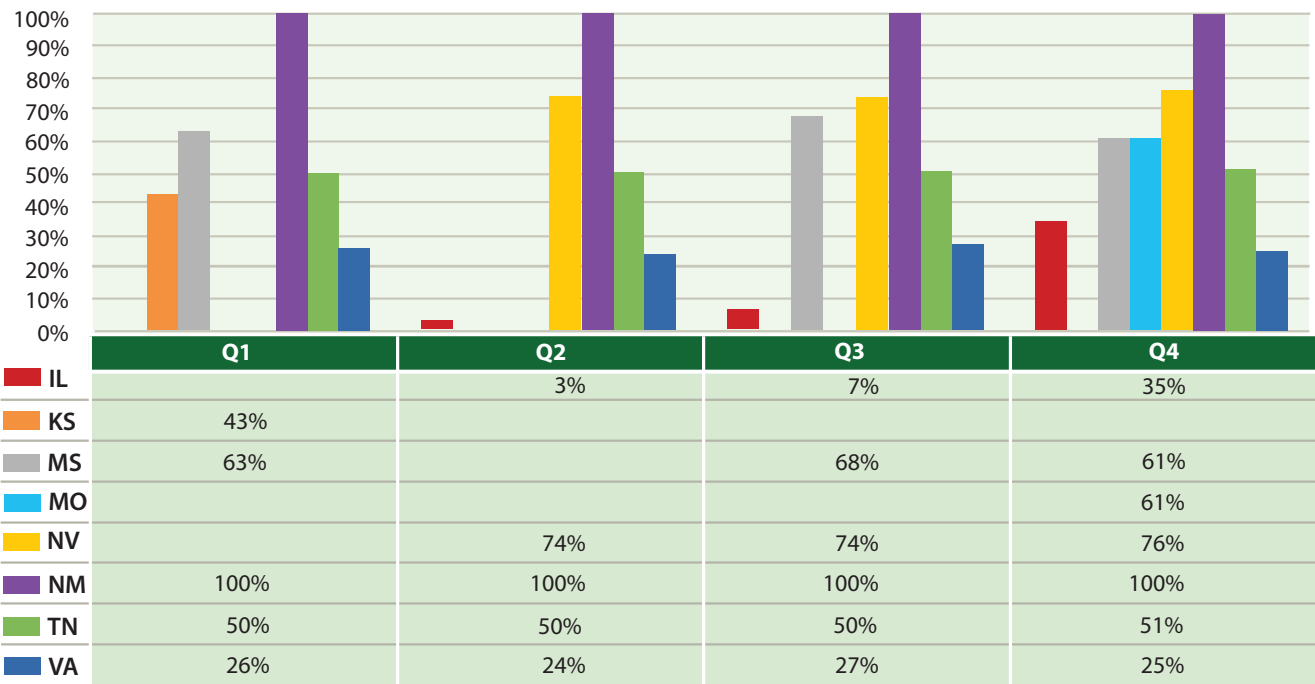


Figure 7: Percentage of immunization visits billed to private insurance
 (note: KS only provided data for Q1 and MO only provided data for Q4)



Claim and Payer Data

Of the four awardees that reported data for claim acceptance rates, all reported an acceptance rate of 90% or greater in all data collection periods. Other claim data, such as denials, were requested, but response rates for those data on our questionnaire were too low to present and compare.

Over time, there were three awardees that reported an increase in the number of payers being billed. The largest of those increases occurred in IL, with an increase from 10 to 38 payers being billed (see Table 5).

Two awardees indicated a decrease in the number of payers being billed (see Table 5).

The payers most commonly billed as of Q4, as well as the number of LHDs billing each payer, are listed in Table 6.



Table 5: Number of payers currently being billed as of Q4, by awardee

	Q1					Q4				
	# of Payers	# Public	# Private	# of In-Network Payers	# of Out-of-Network Payers	# of Payers	# Public	# Private	# of In-Network Payers	# of Out-of-Network Payers
Illinois	10	3	7	10	0	38	4	34	38	0
Kansas	10	3	7	10	0	10	3	7	10	0
Mississippi	76	12	64	13	63	76	12	64	13	63
Missouri	18	2	16	18	0	14	2	12	11	— ^d
Nevada	37	6 ^a	32 ^a	31 ^b	10 ^b	43	6 ^a	38 ^a	31 ^b	16 ^b
New Mexico	4	UNK	UNK	4	0	5	5	0	5	0
Tennessee	10	6	4	9	1	9	6	3	7	2
Virginia	10	4	6	9 ^c	6 ^c	10	4	6	9 ^c	6 ^c

a: 1 payer listed as both public and private

b: 4 payers listed as both in-network and out-of-network

c: 5 payers listed as both in-network and out-of-network

d: 3 payers not listed as in-network or out-of-network

UNK: Unknown

Table 6: Top 5 payers most commonly billed as of Q4 by awardee
(number of health department clinics billing payer in parentheses)

	1	2	3	4	5
Illinois	IL Medicaid (79)	Medicare (73)	BCBS of IL (51)	Health Alliance Medical Plans (41)	Coventry (39)
Kansas	UHC (100)	Sunflower (100)	Amerigroup (100)	BCBS KS (87)	UHC – Private (87)
Mississippi	MS Medicaid (87)	MS CAN (87)	CHIP (87)	Medicare (87)	UHC – Commercial (87)
Missouri	MO Healthnet (107)	Medicare (82)	UHC (14)	Humana (13)	Aetna (11)/Cigna (11)
Nevada	Cigna (22)	Anthem BCBS (22)	Medicaid (22)	Medicare (22)	NV Checkup (22)
New Mexico	BCBS Medicaid (36)	Presbyterian Medicaid (36)	United Health Group (36)	Molina Health Plan (36)	Medicare (36)
Tennessee	UHC – TennCare (101)	Amerigroup (101)	BCBS – TennCare (101)	BCBS – Private (101)	Cigna (101)
Virginia	State Medicaid (131)	Medicaid MCOs (131)	Anthem (131)	Medicare (126)	UHC (126)

BCBS: Blue Cross Blue Shield

CHIP: Children’s Health Insurance Program

MCOs: Managed Care Organizations

MS CAN: Mississippi Coordinated Access Network (includes United Health Care Community plan and Magnolia Health plan)

UHC: United Health Care

Activities and Billing Practices

Awardees reported a variety of billing activities and practices within LHDs. An increase in billing activities and practices was expected for all awardees to indicate program growth and trends toward sustainability. Billing activities included training in billing and coding, hiring staff, developing new contracts with payers, developing new partnerships with health care providers, holding stakeholder and/or advisory board meetings, attending and/or presenting at professional meetings, and improving health information systems. Billing practices included balance billing, sliding scales, hardship policies, fee schedules, and administration fees. More than half of awardees reported that sliding scales, hardship policies, fee schedules, and administration fees were used in all or some clinics. From Q1 to Q4, there was an increase in the number of awardees indicating that all or some LHDs had sliding scales and hardship policies in place.

Qualitative Results

Free-response questions related to each billing project were important to show situations and barriers that quantitative data could not capture. These questions were also designed to capture how barriers encountered were overcome and gave each awardee an opportunity to discuss milestones for its projects.

Awardees were also given the opportunity to further explain responses to questions on tracking and managing claims, claims rejection, barriers, and other issues. A sample of responses to each free-response question is listed below each corresponding topic (see Table 7).



Table 7: Summary of open responses from questionnaires

Topic	Question	Selected Response(s)
Tracking and managing claims	What methods or systems do the local health department clinics in your service area use to track or manage claim submissions, claim denials, or other billing activities?	<ul style="list-style-type: none"> ■ “For the 23 LHDs utilizing CDP* as of this reporting period, the billing team at ezEMRx† is responsible for tracking and managing all claim submissions and denials. Those that are not contracted with CDP, or another billing provider, are tracking and managing billing activities in-house via spreadsheets and clearinghouse reports.” ■ “Billing is done at each local health district, and the total number of invoices is reported on the billing event summary report. These data are not collected from the districts at this time, and it would have to be a manual reporting process. Claims denials are not tracked in our system, but we are looking at modifications to implement a tracking process that would be initiated as staffs are posting payments. We plan to use the standard CARCs and RARCs‡ if system modifications are possible.”
Claims rejection	To what extent do local health department clinics in your city or state follow up on claims rejections, and how?	<ul style="list-style-type: none"> ■ “Each health department receives their payments directly and posts those payments to the clients’ accounts. The remittance that comes with the payments is reviewed for denials or other issues, and these claims are researched, corrected and resubmitted if appropriate. The guideline we have issued to the local health districts is to turn these claims around in 10 business days or less.”
Barriers	Describe barriers to reporting patients, visits, and claims processing data in this section. What factors, if any, will make it easier to capture this information in the future?	<ul style="list-style-type: none"> ■ “Providing the claims processing data is difficult. While we can provide the number of immunization claims submitted, we do not capture the breakdown of the number of claims accepted, denied, rejected, pending, and unsubmitted. Our claims are submitted in multiple ways – commercial claims through Navicare, Blue Cross through Relay Health, Medicaid directly to Medicaid, Medicare directly to Medicare, and MS CAN, CHIP, and some Medicare Advantage plans through Availity. The claims processing data (accepted, denied, and rejected) is not available from all of these sources. Also, we are unsure if these numbers are for what occurred throughout the reporting period or for the status at the end of the reporting period.”
Other (activities, successes, challenges, or information)	What important information about your billing program or activities during this reporting period would you like to share?	<ul style="list-style-type: none"> ■ “Implemented patient registration forms to capture current/accurate patient demographics; placed scanners and dual screens at clerical workstations to allow proficiency in workflow; and implemented a Superbill.§

*CDP provides data management systems and services to public health clients.

†ezEMRx provides products such as electronic medical record and practice management systems, as well as claims cleaning and management services.

‡CARCs (claim adjustment reason codes) and RARCs (remittance advice remark codes) are used to explain financial adjustments to payment.

§A superbill is an itemized list of services used to create and submit a health care claim.

Discussion

Through CDC’s Billables Project, state and local health departments received funding and technical assistance that have allowed them to set up billing programs and begin billing insurance plans for immunization services provided to insured patients. Revenue collected from reimbursement for covered services has enabled LHDs to hire nurses and health educators, begin billing for other services (e.g., screening and testing for sexually transmitted infections), and become self-sustaining. In a few cases, the revenue from billing actually helped to prevent clinics from closing.

The number of awardees that encountered barriers to billing decreased during the implementation phase, which was expected since awardees were able to overcome many of those barriers during the planning phase. It is possible that some barriers were not encountered in implementation because awardees were able to benefit from the experiences and knowledge of other awardees with billing programs already up and running. One barrier that remains for some awardees—and is difficult to overcome—is health department structure (i.e., centralized vs. decentralized).¹⁷ Throughout the Billables Project, many awardees in states with a decentralized structure noted how difficult it was to have everyone “on the same page” when each LHD has its own authority.

The Billables Project has shown how important it is to work with partners, such as third-party payers and community stakeholders, to improve capacity to provide services to the community and sustain immunization programs. Knowledge gained through this evaluation report can be used to inform future immunization billing policies and efforts by state and LHDs. Lessons learned through billing for immunization services have already been used to inform and expand programs to bill for other covered services offered by LHDs to insured patients (e.g., HIV screening and counseling, family planning, and laboratory services).

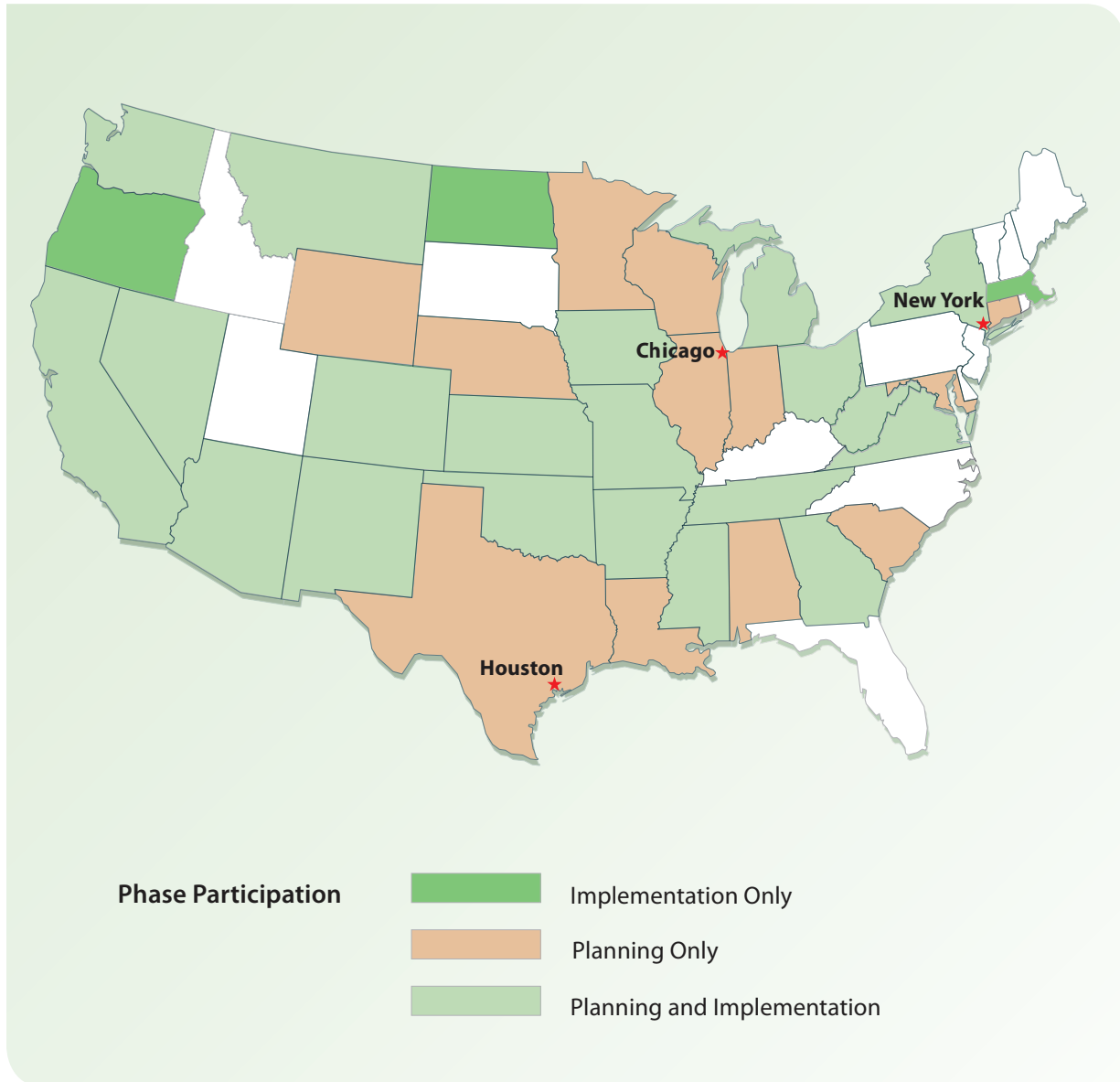
Lessons Learned

1. Billing for immunization services provided to insured patients is feasible for local health departments and can be integrated as a standard practice.
2. Planning for contracting and communication with a variety of payers and organizations may be helpful to state and local health departments. Open communication with third-party payers helped reduce the number of issues and delays when developing contracts for Billables Project awardees.
3. State and LHDs may wish to develop specific plans for implementing or increasing billing. Taking steps to plan and specify billing expectations and processes helped decrease the number of mistakes made for Billables Project awardees and can help ensure all LHDs within an area are following the same procedures.
4. State and LHDs may utilize revenue generated through billing to increase vaccine supply and add billing staff, which can help to increase vaccination rates and reduce the impact of vaccine-preventable diseases.

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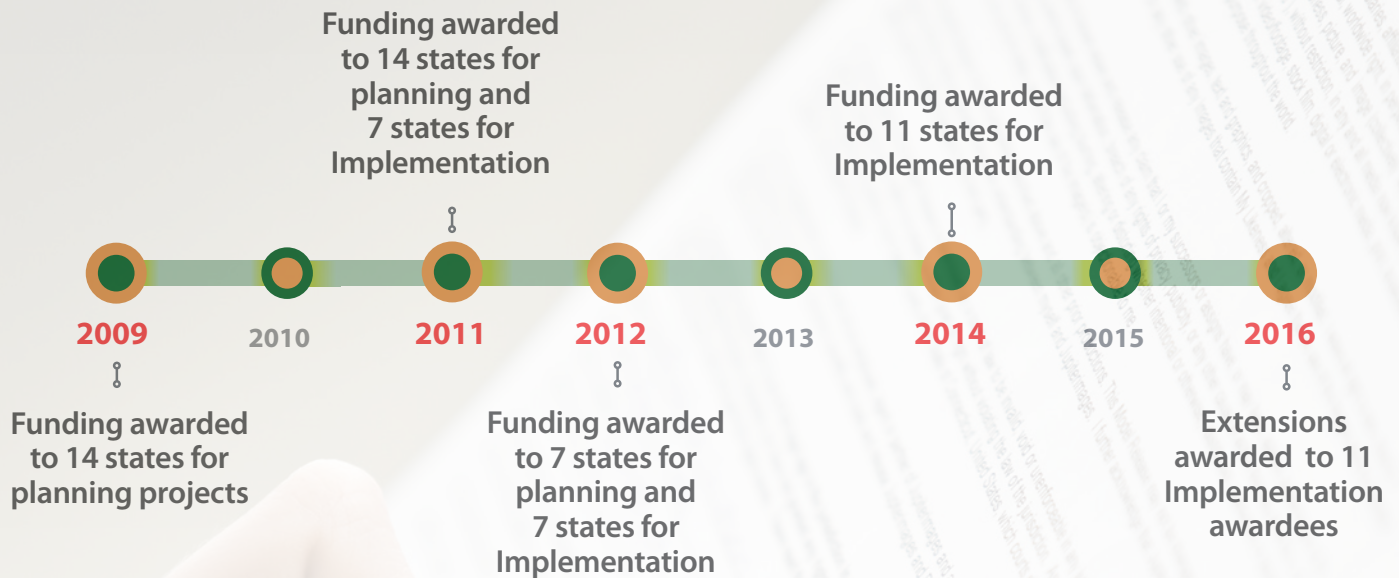
Appendix A: CDC Billables Project Awardees*



*City awardees were as follows: Chicago – planning and implementation; Houston – planning only; New York City – planning only.

CDC Billables Project Awardees. Map of project awardees. Massachusetts, North Dakota, and Oregon participated only in the implementation phase of the Billables Project. Alabama, Connecticut, Houston, Indiana, Louisiana, Maryland, Minnesota, Nebraska, New York City, South Carolina, Texas, Wisconsin, and Wyoming participated only in the planning phase of the Billables Project. Arizona, Arkansas, California, Colorado, Chicago, Georgia, Illinois, Iowa, Kansas, Massachusetts, Michigan, Mississippi, Missouri, Montana, Nevada, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Tennessee, Virginia, Washington, and West Virginia participated in both the planning and implementation phases of the Billables Project.

Appendix B: Project Timeline



Project Timeline. In 2009, funding was awarded to 14 states for planning projects. In 2011, funding was awarded to 14 states for planning and to 7 states for implementation. In 2012, funding was awarded to 7 states for planning and to 7 states for implementation. In 2014, funding was awarded to 11 states for implementation. In 2016, extensions were awarded to 11 implementation awardees.

Appendix C: Figures

- **Figure 1: Simplified logic model for CDC Billables Project.** CDC provided authority, funding, program guidance, technical assistance, and evaluation throughout the Billables Project. CDC's inputs helped with activities such as monthly phone calls, monthly reports, and final project reports. The short-term outcomes for the Billables Project were that public health departments began, expanded, or continued capture of reimbursements for immunization services and increased knowledge of billing activities and processes. The long-term outcomes for the Billables Project were increased ability and capacity to immunize communities, increased self-sustainability at LHDs, and improved vaccine supply management at LHDs.
- **Figure 2: Total number of immunization visits.** Illinois did not provide data for Q1 (questionnaire 1), Kansas and Mississippi did not provide data for Q2 (questionnaire 2), Nevada did not provide data for Q2 and Q3 (questionnaire 3), and Missouri did not provide any data on total number of immunization visits. Illinois reported 5,315 immunization visits on questionnaire 2; 37,577 immunization visits on questionnaire 3; and 41,354 immunization visits on questionnaire 4. Kansas reported 29,455 immunization visits on questionnaire 1 and 91,508 immunization visits on questionnaire 3. Mississippi reported 52,045 immunization visits on questionnaire 1; 44,557 immunization visits on questionnaire 3; and 42,447 immunization visits on questionnaire 4. Nevada reported 28,215 immunization visits on questionnaire 1 and 35,830 immunization visits on questionnaire 4. New Mexico reported 7,379 immunization visits on questionnaire 1; 5,579 immunization visits on questionnaire 2; 7,380 immunization visits on questionnaire 3; and 5,039 immunization visits on questionnaire 4. Tennessee reported 80,710 immunization visits on questionnaire 1; 55,860 immunization visits on questionnaire 2; 92,323 immunization visits on questionnaire 3; and 43,991 immunization visits on questionnaire 4. Virginia reported 102,453 immunization visits on questionnaire 1; 56,952 immunization visits on questionnaire 2; 85,599 immunization visits on questionnaire 3; and 56,596 immunization visits on questionnaire 4.
- **Figure 3: Percentage of immunization visits that were billed (total immunization visits billed divided by total immunization visits).** Illinois reported 100% of immunization visits billed on questionnaires 2–4. Kansas reported 54% of immunization visits billed on questionnaire 1. Mississippi reported 100% of immunization visits billed on questionnaires 1, 3, and 4. Nevada reported 44% of immunization visits billed on questionnaire 4. New Mexico reported 37% of immunization visits billed on questionnaire 1; 34% on questionnaire 2; 37% on questionnaire 3; and 55% on questionnaire 4. Tennessee reported 100% of immunization visits billed on questionnaires 1–4. Virginia reported 94% of immunization visits billed on questionnaire 1; 92% on questionnaire 2; 100% on questionnaire 3; and 88% on questionnaire 4.
- **Figure 4: Percentage of patients who were insured. Kansas only provided data for Q1 (questionnaire 1) and Missouri only provided data for Q4 (questionnaire 4).** Illinois reported 97% of patients were insured on questionnaire 2; 75% on questionnaire 3; and 94% on questionnaire 4. Kansas reported 64% of patients were insured on questionnaire 1. Mississippi reported 65% of patients were insured on questionnaire 1; 72% on questionnaire 3; and 66% on questionnaire 4. Missouri reported 55% of patients were insured on questionnaire 4. Nevada reported 45% of patients were insured on questionnaire 1; 57% on questionnaires 2 and 3; and 61% on questionnaire 4. New Mexico reported 43% of patients were insured on questionnaire 1; 37% on questionnaire 2; 38% on questionnaire 3; and 39% on questionnaire 4. Tennessee reported 54% of patients were insured on questionnaire 1; 62% on questionnaire 2; 65% on questionnaire 3; and 74% on questionnaire 4. Virginia reported 53% of patients were insured on questionnaire 1; 46% on questionnaire 2; 54% on questionnaire 3; and 27% on questionnaire 4.

- **Figure 5: Percentage of patients who were uninsured.** Kansas only provided data for Q1 (questionnaire 1) and Missouri only provided data for Q4 (questionnaire 4). Illinois reported 3% of patients were uninsured on questionnaire 2; 7% on questionnaire 3; and 6% on questionnaire 4. Kansas reported 16% of patients were uninsured on questionnaire 1. Mississippi reported 34% of patients were uninsured on questionnaire 1; 27% on questionnaire 3; and 32% on questionnaire 4. Missouri reported 19% of patients were uninsured on questionnaire 4. Nevada reported 25% of patients were uninsured on questionnaire 1; 35% on questionnaires 2 and 3; and 32% on questionnaire 4. New Mexico reported 43% of patients were uninsured on questionnaire 1; 37% on questionnaire 2; 38% on questionnaire 3; and 39% on questionnaire 4. Tennessee reported 54% of patients were uninsured on questionnaire 1; 62% on questionnaire 2; 65% on questionnaire 3; and 74% on questionnaire 4. Virginia reported 53% of patients were uninsured on questionnaire 1; 46% on questionnaire 2; 54% on questionnaire 3; and 27% on questionnaire 4.
- **Figure 6: Percentage of immunization visits billed to private insurance.** Kansas only provided data for Q1 (questionnaire 1) and Missouri only provided data for Q4 (questionnaire 4). Illinois reported 81% of immunization visits were billed to private insurance on questionnaire 2; 60% on questionnaire 3; and 59% on questionnaire 4. Kansas reported 73% of immunization visits were billed to private insurance on questionnaire 1. Mississippi reported 8% of immunization visits were billed to private insurance on questionnaire 1 and 12% on questionnaires 3 and 4. Missouri reported 29% of immunization visits were billed to private insurance on questionnaire 4. Nevada reported 26% of immunization visits were billed to private insurance on questionnaires 2 and 3 and 24% on questionnaire 4. New Mexico reported 0% of immunization visits were billed to private insurance on questionnaires 1–4. Tennessee reported 5% of immunization visits were billed to private insurance on questionnaire 1; 12% on questionnaire 2; 15% on questionnaire 3; and 48% on questionnaire 4. Virginia reported 37% of immunization visits were billed to private insurance on questionnaire 1; 27% on questionnaire 2; 36% on questionnaire 3; and 29% on questionnaire 4.
- **Figure 7: Percentage of immunization visits billed to public insurance.** Kansas only provided data for Q1 (questionnaire 1) and Missouri only provided data for Q4 (questionnaire 4). Illinois reported 3% of immunization visits were billed to public insurance on questionnaire 2; 7% on questionnaire 3; and 35% on questionnaire 4. Kansas reported 43% of immunization visits were billed to public insurance on questionnaire 1. Mississippi reported 63% of immunization visits were billed to public insurance on questionnaire 1; 68% on questionnaire 3; and 61% on questionnaire 4. Missouri reported 61% of immunization visits were billed to public insurance on questionnaire 4. Nevada reported 74% of immunization visits were billed to public insurance on questionnaires 2 and 3 and 76% on questionnaire 4. New Mexico reported 100% of immunization visits were billed to public insurance on questionnaires 1–4. Tennessee reported 50% of immunization visits were billed to public insurance on questionnaires 1–3 and 51% on questionnaire 4. Virginia reported 26% of immunization visits were billed to public insurance on questionnaire 1; 24% on questionnaire 2; 27% on questionnaire 3; and 25% on questionnaire 4.

Appendix D: Selected Billing Resources and Manuals

- American College of Physicians. Billing and Coding Adult Immunizations. Available at https://www.acponline.org/system/files/documents/running_practice/payment_coding/coding/billvaccines.pdf
- Local Health Department Vaccination Billing Manual, Pomperaug (Connecticut) Health District, Part 2–Billing Manual, How to Bill for Vaccinations. Available at http://www.ct.gov/dph/lib/dph/infectious_diseases/immunization/vax_billing_part_2_complete.pdf
- Georgia Department of Public Health. Billing Resource Manual. Available at <http://dph.georgia.gov/sites/dph.georgia.gov/files/Georgia%20DPH%20Billing%20Resource%20Manual%20December%202013.pdf>
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