Assessment, Feedback, Incentives eXchange (AFIX) Program

Policies and Procedures Guide

First Edition

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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Immunization Services Division

Table of Contents

Acknowledgments…….. X

Introduction……. 1

AFIX Standards

Program Operations……..... 5

Assessment…… 7

Feedback…… 22

Incentives…… 27

eXchange of Information…….. 32

Program Evaluation…….. 38

Appendices

Appendix A: Suggestions for Providers to Improve Immunization Practices 43

Appendix B: AFIX Site Visit Questionnaire…….. 45

Appendix C: CoCASA Assessment Reports Recommended for Sharing With Providers……. 48

Appendix D: AFIX Annual Report Template……. 57

Appendix E: Selecting a Random Sample…… 67

Appendix F: AFIX Resources……..... 72

Appendix G: Why Is the AFIX Childhood Assessment Age Cohort 24-35 Months?..... 74

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Introduction

"You can have all the innovations, tools, methods, and standards you want, but they are only as effective as the level of commitment that we all bring to quality improvement in immunization services and delivery."

What is CQI in Public Health?
A continuous and ongoing effort to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes and other indicators of quality services or processes which achieve equity and improve the health of the community.
Riley, W.J., Moran, J.W., Corso, L.C., Beitsch, L.M., Bialek, R., & Cofsky, A. (2010). Defining quality improvement in public health. *Journal of Public Health Management and Practice*, 16(1), 5-7.

Continuous Quality Improvement (CQI) is an approach to quality management that builds upon traditional quality assurance methods by emphasizing organization and systems. It focuses on the process of conducting business and promotes the need for objective data to analyze and improve processes.

CQI usually involves a common set of characteristics, including:

- A quality improvement team
- Training
- Mechanisms for selecting improvement opportunities
- A process for analysis and redesign
- A link to an organization's strategic plan
- An organizational culture that supports continual learning systems and process improvement

AFIX (Assessment, Feedback, Incentives, and eXchange) is a continuous quality improvement process informed by research and used for improving immunization rates and practices at the immunization provider level. The structure of the program components strongly recommends a face-to-face interaction with provider staff involved in immunization. Such an interaction is a very important and unique opportunity for education, outreach, and consensus toward improved immunization services and the attained benefits of QI. The AFIX components once understood and implemented by providers, can assist practices in meeting immunization coverage goals for a variety of standards, including but not limited to Healthy People 2020 and HEDIS (Healthcare Effectiveness Data and Information Set) measures.

When implementing AFIX, it is important to understand the basic steps of how QI works and define the parameters that can be best addressed through AFIX implementation:

- State the problem and desired result
- Use data to understand the problem
- Identify and select strategies to improve (i.e., strategies to reduce missed opportunities)

- Implement solution(s) on a small scale
- Test the selected solution(s)
- Expand scope and spread throughout an organization or system
- Evaluate the outcomes of QI

There is strong evidence that assessment and feedback, along with other elements such as incentives and exchange, are effective in increasing vaccination rates. In 2008, the Task Force on Community Preventive Services updated its original 1999 literature review on the topic and reaffirmed its earlier recommendation of using assessment and feedback "based on strong evidence of its effectiveness across a range of settings and populations." In addition, the task force recommends assessment and feedback for their effectiveness in improving immunization rates in adults and children when used alone or with additional components (such as incentives). This same review is cited in CDC's Advisory Committee on Immunization Practices (ACIP) 2011 *General Recommendations* in its endorsement of assessment and feedback.

Timeline

The history of the program unfolded in this way:

1986 Georgia Department of Public Health implements a statewide program to assess immunization records annually in all public clinics. This program is shown to be effective.

1989 – 1991 Measles epidemic. Major cause is missed opportunities for vaccination.

1991 National Vaccine Advisory Committee (NVAC) issues white paper about the problems that led to the measles epidemic. NVAC's recommendations for immunization standards included simultaneous administration and "projects to improve immunization coverage."

1993 To remedy the situation, the Department of Health, Education, and Welfare (now Department of Health and Human Services) responds by announcing a nationwide Childhood Immunization Initiative (CII) on April 6, 1977. The major goal of the initiative is to achieve 90% immunization coverage for preschool children. CII contained six components, including the creation of the VFC Program and AFIX in 1993.

1995 Congress directs CDC to develop guidelines for assessing immunization rates in public clinics.

1996 ACIP recommends assessment and feedback at all provider offices. CDC programs are required to conduct annual assessments in public clinics to improve immunization practices and coverage rates.

1999 NVAC report in the *Journal of the American Medical Association* (JAMA) recommends assessment and feedback. After review of the evidence, by the Task Force on Community Preventive Services strongly recommends assessment and feedback. NVAC recommends that all immunization providers, both public and private, should have vaccination coverage levels assessed annually, and that state and local health departments should assist private providers in this effort. This recommendation provides support to implement AFIX in private provider settings, in addition to public health clinic settings where AFIX is primarily conducted.

2000 CDC establishes VFC - AFIX.

2003 Task Force on Community Preventive Services lists assessment and feedback as one of the 17 "Standards for Child and Adolescent Immunization Practices."

2008 Task Force on Community Preventive Services updates 1999 review and affirms previous recommendation.

2011 ACIP reaffirms its 1996 endorsement of assessment and feedback in its 2011 *General Recommendations*.

AFIX Objective

The AFIX objective for calendar years (CY) 2013-2017:

Using AFIX components as appropriate, work with VFC providers to implement quality improvement processes that can increase immunization coverage levels and decrease missed vaccination opportunities. The goal is to move toward the use of Immunization Information Systems (IIS) as the primary source of data for provider coverage level assessment by the end of the project period (Objective B3, Section B: Assessing Program Performance, Immunization Program Operations Manual [IPOM]).

Healthy People 2020 Objectives and Targets

For a list of the Healthy People 2020 objectives and targets, visit the following website: http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23.

The AFIX objective is number IID-17 (provider IIS assessment) with the following definition and targets:

IID-17: Increase the proportion of providers who have had vaccination coverage levels among children in their practice population measured within the past year.

IID-17.1 Target is 50% of public health providers
IID-17.2 Target is 50% of private providers

Note: *The word "providers" in the written objective does not specifically refer to VFC providers since AFIX can be applied to any type of provider, however, the objective is specifically intended for the AFIX Program*.

AFIX Policies and Procedures Guide Overview

This guide is a compilation of AFIX materials that programs can use in conjunction with the 2013-2017 Immunization Program Operations Manual (IPOM) to execute and deliver:

- The required objective for AFIX
- Recommended activities for AFIX
- Required and recommended performance measures for AFIX
- Healthy People 2020 objective and goals for AFIX (IID-17)

This guide is to be used as the reference document for developing and updating all immunization program AFIX Policies and Procedure Guides.

The AFIX Standards outlined in this guide are organized into six components:

- Program Operations
- Assessment
- Feedback
- Incentives
- eXchange of Information
- Program Evaluation

The following pages list the Standard Policies and Procedures recommended for all program components.

If you have questions regarding this AFIX Guide, please contact Hanan Awwad at wqn5@cdc.gov or 404.718.4623.

Required AFIX Program Standards – Program Operations

An AFIX program must include the following program operation standards, which should be available to AFIX field staff at all times:

1. Clearly written AFIX Policies and Procedures guide. The guide to include:
    a. A clear definition of the AFIX program, its purpose, and its four components (Assessment, Feedback, Incentives, and eXchange).
        i. A clearly defined standard and process for conducting an assessment, which includes purpose, timing, objective, preparation, logistics, participants, implementation, documentation, and list of handouts.
            1. Clearly defined methods for identifying eligible providers (e.g., all VFC-enrolled sites or a subgroup of VFC-enrolled sites) and selecting and prioritizing those providers to receive AFIX visits. Selection and prioritization of providers should include those with a high volume of patients, low coverage levels (measured by either the program Immunization Information Systems (IIS) or a previous AFIX visit), or other local characteristics that indicate that participation in the AFIX process would be of value. CDC currently recommends selecting at least 25% of VFC-enrolled providers to receive annual AFIX visits.
            2. If different assessment procedures are used for different situations (for example, provider types), each situation should be described and included in the Assessment Protocol.
        ii. A clearly defined standard and process for providing feedback that includes purpose, timing, objective, preparation, logistics, participants, implementation, documentation, and list of handouts.
        iii. A clearly defined standard and process for providing incentives that includes purpose, objective, form, timeline, implementation, and documentation.
        iv. A clearly defined standard and process for conducting eXchange of information that includes purpose, time intervals, objective, participants, implementation, and documentation.
        v. Checklists that will assist assessors in 1) getting ready for the visit, 2) conducting the visit, ensuring they cover all standards defined by their program.

    b. Defined, measurable short- and long-term program objectives which align with federal and state quality improvement goals, including the federal Healthy People 2020 goals. Objectives should be specific, measurable, achievable, realistic, and time-phased (SMART).

c. Clearly defined procedures for AFIX staff members to follow when issues beyond the scope of AFIX are discovered. These procedures should include which staff members should be informed of which issues.

d. Clearly defined procedures for management review and approval of AFIX work to ensure quality AFIX is conducted.

e. Clearly defined plan for training AFIX staff members, including curriculum for training new employees and periodic training updates for existing employees.

Required AFIX Program Standards - Assessment

Assessment provides a standardized method for collecting and analyzing data and information. It provides valuable opportunities to understand practice patterns that may encourage or unintentionally discourage the delivery of immunizations to the practice's patient population.

The purpose of an assessment is to quantify a provider's vaccination coverage and evaluate a provider's immunization practices. The process incorporates both quantitative and qualitative components.

Policies for Implementing Assessment

1. Policies are based on a pool of VFC-enrolled providers identified as eligible to receive AFIX visits during a calendar year.
    a. Eligible providers are identified for a calendar year based on criteria established by the immunization program. Recommended criteria for consideration:
        i. Practice serves a large population (30 or more patients in the assessment age group – see section 5a). Smaller provider sites (29 or fewer patients in the assessed age group) are equally as eligible for AFIX as larger providers; however, if your time and/or resources require a choice between a smaller provider and a larger one, and if all other eligibility criteria are equal, the larger provider should be prioritized for an earlier visit and the smaller provider for a later one. Improved coverage and immunization practices resulting from the AFIX process have a larger public health impact when applied to providers that serve a larger population.
        ii. Practice had low immunization coverage during a prior assessment. Low immunization coverage may be based on:
            1. A prior AFIX assessment completed through a chart-pull audit.
            2. An Immunization Information Systems (IIS)-generated report that shows the coverage for VFC-enrolled providers. It is recommended that an IIS coverage report be run in advance of planning AFIX visits. Providers showing low immunization coverage in the report should be prioritized for visits.
        iii. Practice expresses an interest in improving their coverage and immunization practices.
        iv. Practice has new staff involved in immunization practices and would benefit from an AFIX visit.
        v. Provider is newly enrolled in the VFC program and would benefit from AFIX based on immunization program's consideration criteria.

2. Policies establish clearly defined practices for contacting providers, scheduling site visits, and documenting communication with providers.

3. Policies clearly define assessment parameters, including:
    a. Assessment methodology
    b. Number of records to be included (applies to chart audits only)
    c. Age range of children to be assessed
    d. Inclusion criteria/patient status (active/inactive – it is recommended that the same definition be used for all AFIX activities)
    e. Immunization series/antigens to be assessed
    f. Demographic data fields to be collected

4. An assessment must cover a quantitative component when running the list of reports recommended under Section **A.5: "**Assessment reports to share with provider" for chart-based audits or IIS/CoCASA-based audits". Some information on the data elements to review when conducting IIS-only audits are listed under section **B.4:** "Assessment reports to share with provider."

    It is important to note that both single-antigen rates and series rates for a single assessment are to be reported when performing a childhood visit. This will enable reviewers to determine the weight of individual antigen rates and how they impact the rate for a series. For adolescent assessments, only single antigen rates (no series) are to be reported and analyzed.

    An assessment must also include a qualitative component specific to the quality of services at the provider office; this qualitative assessment is completed through the use of the **AFIX site visit questionnaire** for assessing the quality of immunization services and discussing ways to improve it. (See **Appendix B** for a copy of the AFIX site visit questionnaire).

5. AFIX standards for implementing the quantitative portion of an assessment when utilizing either of the two listed methods (chart-based or IIS-based) are:

    a. Assessment ages:

        i. 0-3 years (24-35 months) (childhood)
        ii. 13-18 years (adolescent)
        iii. Combination(s) of the above

    b. Chart-based method -- if the immunization program (program) uses the chart-pulling method, the following are CDC's <u>recommendations</u> for this method:

        i. The number of charts to be reviewed in a chart-based assessment is 50 to 200 for the same age group.

        ii. If a provider has fewer than 50 charts for the same age group, the review to include all available charts for the assessment age group. The review of all charts provides accurate assessment results and eliminates the error margin for the coverage results.

iii. If VFC eligibility screening is to be performed using the AFIX assessment charts during a combined VFC/AFIX visit; a subset of the sample selected for the AFIX assessment can be used to screen for VFC eligibility documentation if the charts are not pulled in advance of the visit by the provider *(see more information under chart selection section)*.

iv. Charts to not be pulled in advance of the visit by the provider.

c. Immunization Information Systems (IIS)-based – this method is one in which all data come from an IIS. All children and/or adolescents in the provider practice should be selected for this assessment rather than a sample of children and/or adolescents.

i. If the immunization program relies on the IIS for completing assessments, then it is strongly recommended that coverage assessments be run for all VFC-enrolled providers for the pre-defined population before planning visits for the calendar year. A program can do this multiple times throughout the year if the selection of visits is determined on a rolling basis; this method ensures having the most recent provider data.

ii. Coverage data run through IIS can be used as one of the criterion for selecting and prioritizing AFIX eligible providers. The added benefit in using the IIS for pre-determining the selection of visits is having the most recent provider data to assist in making the selection. This option is not available without IIS and the selection of visits will rely on historical assessment rates rather than recent coverage data.

iii. In selecting the number or percentage of providers to visit from the eligible priority list, programs are encouraged to consider CDC's recommendation to select at least 25% of VFC-enrolled providers to receive annual AFIX visits, as well as Healthy People 2020's AFIX objective (IID-17) with a target of 50% annual visits to public and private providers.

6. The progression of the program is toward IIS-based AFIX coverage assessments. Beginning in 2014, CDC will consider IIS-based coverage assessments the standard for AFIX even though the timeline for implementing it extends beyond 2014.

a. CDC plans on issuing a standard logic guidance to assist programs in the development and programming of standard queries for AFIX assessment reports. After the logic guidance document is made available and in preparation for it, programs should complete the following steps.

b. Before the release of the logic guidance, a communication strategy should be developed and implemented to inform provider sites of the change in AFIX assessment processes. This will give providers an opportunity to work with the IIS to ensure their data are as complete as possible before site visits begin. This activity may need to be ongoing.

c. A working relationship with the IIS team should be established to explore how the IIS can meet AFIX assessment needs.
d. A written plan should be developed with the IIS team that outlines how the IIS will provide the recommended AFIX reports for the assessment of immunization practices. The reports may contain elements such as IIS system enhancements (if needed), report content and format, timeline for completion, and details on how AFIX and IIS staff will coordinate to support provider sites with poor IIS data quality.
e. Assessment queries should be programmed in IIS using standards to be provided by CDC's supported logic guidance.
f. Use of IIS data should be implemented for assessment in public and private provider offices.

    i. Written protocols should be developed and implemented to assess provider sites using IIS data.
    ii. Written protocols should be developed and implemented for continuous monitoring of the completeness and accuracy of IIS data used for AFIX assessments.

7. Policies for documenting assessment information and sharing it with providers should be developed (see the feedback section of this document for more information).

Procedures for Implementing Assessments

I. Methodology

The prior hybrid and qualitative only assessment methods are no longer acceptable by CDC standards. Only two assessment methods are supported by CDC:

A. Chart-based (the standard method prior to CY2014):
The chart-based assessment method involves randomly selecting a number of patient charts and calculating vaccination coverage based on information obtained from the charts. Different methods can be used for selecting a random sample of charts (See Appendix E).

A.1. <u>Assessment Parameters</u>
The following parameters should be determined before conducting any assessment:

- **Definition of "active patient"**
  The definition of "active patient" is at the discretion of the program conducting the assessment. The program may wish to use the number of office visits within a given time period to determine the definition. An alternative is to ask the clinic manager to provide a definition of "active patient." Definitions may not be consistent across practices.

- **Age range to be assessed – pediatric (childhood and adolescent)**
  Age ranges to be assessed can vary. The AFIX-recommended age ranges for assessment are:

  - 0-3 years (24-35 months) (childhood)
  - 13-18 years (adolescent)
  - Combination(s) of the above

- **Sample size – pediatric (childhood and adolescent)**

  - If using a chart-based assessment method, it is recommended to review 50 to 200 charts for patients in the same age group (0-3 years (24-35 months) or 13-18 years).
  - If the sample size is fewer than 50 charts for the same age group, it is recommended that all patients in that age group be selected as the sample size. For example, if a provider has only 10 charts for patients in the 24-35 month age group then all 10 charts would comprise the assessment sample.
  - The AFIX processes, as defined in this document, should be implemented based on the sample size available.
  - The prior hybrid and qualitative only assessment methods are no longer acceptable by CDC standards.

- **Chart selection**
  Methods for selecting patient charts to review include:
  1. Pre-selection – the sample is selected from a computer-generated list of patients.
  2. Shelf selection – if computerized lists of eligible patients are not available, the shelf selection method may be the only method appropriate for selecting a sample of patients. Several options for using the shelf selection method can be found in Appendix E.
  3. If VFC eligibility screening is to be performed using the AFIX assessment charts during a combined VFC/AFIX visit; a subset of the sample selected for the AFIX assessment can be used to screen for VFC eligibility documentation *if the charts are not pulled in advance of the visit by the provider*. Randomly select 30 charts from the sample selected for the AFIX assessment (>50 charts). The sample should be limited to the age group selected for the purposes of AFIX; however, since these records have already been selected for an assessment, a random numbers table or a systematic random sample can easily be used to select 30 charts from the original AFIX sample. Use these 30 charts to determine eligibility screening using the protocol in the VFC Operations Guide.

- **Define flu season of interest**
  Influenza vaccine is among the vaccines of interest for AFIX assessments. A flu season is typically defined as July 1 through June 30, but these dates may be different based on the provider's situation, the assessment date, or the season of interest for an assessment.

  Using CoCASA as the assessment tool for flu coverage provides the ability to assess patients as up to date (UTD) for the most recent complete season, while unvaccinated patients in a current season will appear in a "quick count" report with their list of names as unvaccinated without a defined status. For example, if the assessment occurs between January and June 2014 for UTD patients, the assessment would include the 2012-2013 season. If the assessment occurs between July and December 2014 for UTD patients, the assessment would include the 2013-2014 season.

A.2. <u>Identify Data Fields</u>

Identify data fields to be collected during assessments as determined by the program. Standardizing the variable order may increase the speed and accuracy of data entry over time. Data fields may include:

1. Patient demographic information (gender, race/ethnicity, etc.)
2. Insurance status
3. Disease/medical history (e.g., varicella, heart disease, asthma, etc.)
4. Social/behavioral risk factors, if applicable
5. Other variables of interest to enhance data collection and reporting of additional information (e.g., zip code, dates of first and last visits), if applicable
6. Type of vaccine
7. Date of vaccine
8. Comments and observations: (issues with chart organization, problems with documentation, etc.) A space on the data abstraction form (or a separate form) should be designated for documenting comments and observations.

A.3. <u>Choose Data Collection Method</u>

Choose the method of data collection that will be used. Options include:

1. Laptop computer – extracting data from a chart and entering directly into CoCASA to generate the standard site visit reports (see list of recommended standard reports under A.5. below).
2. Paper and pencil – extracting data from a chart and recording onto a data abstraction form will require entering the site visit data into CoCASA later to generate reports and manage data.

A.4. <u>Data Extraction</u>

The following guidelines will assist in developing a method of extracting data from the charts:

1. Review all sections of the first few charts completely to become familiar with the office's system. If more than one person is extracting data, there must be agreement on how to interpret immunization issues.
2. Ask office staff for clarification of documentation procedures for immunizations.
3. If documentation is inadequate, follow up to verify doses were given. This may include further chart review or office staff consultation.
4. Note problems for office staff to correct and put records aside for review.
5. Perform the quality assurance review, whereby spot checks are performed to assure data were correctly extracted.

A.5. Assessment Reports to Share with Providers

The following CoCASA-generated reports and their interpretation represent the standard list of reports recommended for sharing with providers:

Interpretation of CoCASA AFIX Reports	
Report	***Brief Description***
Adolescent Coverage (*to be used if assessing adolescent coverage*)	• The purpose of this report is to analyze the total number and percentage of patients complete and UTD based on the report criteria for overall selected antigens along with number and percentage complete and UTD breakdown by antigens. • Section II analyzes those patients who are not complete, how many could be UTD with one additional visit, and the doses needed to be complete and UTD in a single visit.
Diagnostic Childhood Report (*to be used if assessing childhood coverage*)	• The purpose of this report is to analyze the total number and percentage of patients complete and UTD based on the report criteria for overall series/antigens along with number and percentage complete and UTD breakdown by doses selected. • **Section II** evaluates the percentage difference between patients who started on time and completed vs. those who started late and completed by assessment date. • **Section III** evaluates the drop-off information for DTaP and HepB for patients: i) 24 months and older who received DTaP 1 and HepB 1 by 6 months of age ii) 24 months and older who received DTaP 1 and HepB 1 by 6 months of age and received DTaP 4 and HepB 3 by 24 months of age iii) Patients who didn't return for immunization for DTaP 4 and HepB 3 by 24 months of age. • **Section IV** analyzes those patients who missed opportunity to be immunized based on their last immunization visit to be UTD by assessment date. • **Section V** assesses the accelerated immunization schedule for late immunization starter patients who are not UTD with selected antigens by 12 months of age and patients who received their first immunization after 12 months of age.

Invalid Dose	• The purpose of this report is to analyze and list all patients with date of birth, invalid dose, invalid dose date, and a reason why the dose is invalid based on user-selected report criteria.
Missed Opportunities	• The purpose of this report is to analyze and list all patients with date of birth, name of vaccine missed, number of dose missed, and vaccination date based on user-selected report criteria.
Need One Dose	• The purpose of this report is to analyze and list patients with date of birth and name of dose/antigen needed based on user-selected report criteria.
Not Up-to-date	• The purpose of this report is to analyze and list all patients with date of birth who are not up-to-date based on user-selected report criteria.
Single Antigen Childhood (*to be used if assessing childhood coverage*)	• The purpose of this report is to evaluate the count and percentage of patients who are immunized by age intervals between 3 and 24 months and the dose based on user-selected report criteria. This report does not take being UTD into consideration.
Summary Report	• The purpose of this report is to analyze and report the number and percentage of patients complete and UTD by the assessment date. The number and percentage of patients NOT complete are shown by immunization status. The report also shows how many doses are needed for the patient to be complete and UTD with one additional visit.

(See Appendix C for examples of these reports. New reports will be added to this section from version 9.0 once the tool is available).

A.6. AFIX Site Visit Questionnaire

The site visit questionnaire is a requirement with every AFIX assessment. The questionnaire constitutes the qualitative portion of AFIX assessments. It also aids in the QI discussion with providers (See **Appendix B** for a copy of the AFIX site visit questionnaire). The following are the standards for using the questionnaire:

1. The questionnaire may be mailed to providers prior to the site visit OR filled out during the visit.
2. Answers to the questionnaire may be entered into CoCASA.
3. The assessor and the provider to select QI strategies to implement from the questionnaire and an implementation timeline. The selection of the strategies will be dependent on a provider's capabilities and needs and should be incorporated in their QI plan.
4. The follow-up process for implementation should be clearly explained to providers.
5. The goal of this questionnaire is to reach a 100% implementation status for as many QI strategies as possible by end of CY2017. This statement indicates that our overarching goal for the site visit questionnaire is to work with providers to introduce, encourage, and support (through technical assistance) the implementation of evidence-based QI strategies for improving coverage rates. Through the follow-up

process, you will work with providers on completing the implementation of the selected QI strategies agreed upon during your site visit/s. Meeting this goal will vary among programs depending on several factors such as the frequency by which a program conducts AFIX visits to the same providers, current immunization service strategies at provider offices, and provider-specific factors such as resources, interest in QI, and staff capabilities.

6. CDC requires that the standard provided questions not be changed and be all used in their provided text (See Appendix B for a copy of the AFIX questionnaire).

A.7. <u>Supplies</u>

The supplies for staff to take to an AFIX provider site visit may include:

1. Laptop, if applicable
2. Data abstraction forms, if applicable
3. Reference sheets
4. Sampling instructions/tally sheets, if applicable
5. Post-it notes
6. Pens/pencils
7. Calculator
8. Information for providers (e.g., VISs, vaccination outreach materials)

B. IIS-based (the standard method beginning CY2014):

An IIS-based assessment is one in which data come from an IIS. This method generally assesses the entire population of children or adolescents within a specified age range at a provider site rather than a sample of that population.

Beginning in CY2014, CDC will consider IIS-based assessments the standard for AFIX even though the timeline for implementing this method extends beyond CY2014.

B.1. <u>Assessment Parameters</u>

The following parameters should be determined prior to conducting any assessment:

- **Definition of "active patient"**

  The definition of "active patient" for AFIX purposes should be consistent with the IIS community's recommended criteria for defining an active patient at a provider site. "Active patient" is defined as "an individual who (1) has received an immunization from a provider, (2) or whom a health plan has identified as a patient of a provider, (3) or a provider has identified as a patient, (4) other medical information has identified as a patient of a provider."

  Note: This is the current definition published in the MOGE document titled "Management of Moved or Gone Elsewhere (MOGE), Status and other Patient Designations in Immunization Information Systems, 2005." More detailed information about this will be included in the logic guidance to be developed.

- **Age range to be assessed – pediatric (childhood and adolescent)**
  Age range to be assessed can vary. The AFIX recommended age ranges for assessment are:
  - 0-3 years (24-35 months) (childhood)
  - 13-18 years (adolescent)
  - Combination of the above

- **Sample size – pediatric (childhood and adolescent)**
  The sample size should include all patients in the assessment age group that belong to the provider site being assessed. For example, if a practice has 100 children in the age group of 24-35 months, the assessment should include all 100 patients and not a sample of them.

- **Assessment population selection**
  When doing an IIS-based assessment, it is crucial to first define the clinic population to be assessed so that the IIS can generate the appropriate report. Programs will need to know the provider site name or ID number in the IIS and the date of birth range that includes the children to be assessed. Depending on the IIS functionality, the program will use this information to generate the recommended reports or will submit a request to the IIS to generate the AFIX reports.

- **Assessment data completeness and accuracy**
  When doing an IIS-based assessment, if there are doubts about the accuracy and completeness of a provider's data in the IIS, a method should be developed for ensuring a more accurate overview of a provider's assessment data. Suggestions for such methods include:
  1. Send the assessment data to the provider in advance the visit. Request that the provider update the data in the IIS.
     - Print a more accurate list of reports to share/discuss during the visit.
  2. Take this step with every IIS-enrolled provider who has a poor track record of submitting complete and accurate data to the IIS. If it is not possible to address data completeness and accuracy prior to a site visit, dedicate part of the visit time with the provider to 1) acknowledge awareness of inaccuracy in the assessment data 2) acknowledge the need for the provider to assist in ensuring a more accurate data through the submission of timely and complete data to the IIS 3) inform and educate providers about the IIS and the direction of AFIX assessments through the use of IIS.
  3. If a provider is not enrolled in the IIS, develop plans to get them enrolled and get their data submitted. For newly enrolled providers that don't have an EHR that can submit historical data to IIS, AFIX will initially only include newly submitted data.
  4. If the program's IIS allows providers to generate their own reports to review their data, encourage providers to review these reports to ensure that the data they

have submitted is complete and accurate. This check may be monthly or as frequently as the program determines necessary.

- **Define flu season of interest**
  Influenza vaccine is among the vaccines of interest for AFIX assessments. A flu season is typically defined as July 1through June 30, but these dates may be different based on the provider's situation, the assessment date, or the season of interest for an assessment.

  Using CoCASA for assessing flu coverage through importing IIS data provides the ability to assess patients as UTD for the most recent complete season, while unvaccinated patients in a current season will appear in a "quick count" report with their list of names as unvaccinated without a defined status. For example, if the assessment occurs between January and June 2014 for UTD patients, the assessment would include the 2012-2013 season. If the assessment occurs between July and December 2014 for UTD patients, the assessment would include the 2013-2014 season.

  On the other hand, if IIS has the ability to provide flu coverage rates based on available data and functionality in the IIS, then it is recommended that your program's current criteria for assessing flu coverage continue to be used until more guidance becomes available in the CDC supported logic guidance.

B.2. Identify Data Fields

The standard data elements for IIS-based assessments will be defined in the logic guidance. Until that document is available; programs will identify those elements to be used in generating the assessment reports. Some points to consider in identifying the data points include:

- Age group being assessed. The birth cohort should be in line with the standard AFIX age ranges to be assessed.
- AFIX data required for the AFIX Annual Report. Assessment data generated should fulfill the CDC annual data requirement for reporting.

If using IIS and CoCASA to generate assessment reports, guidance on identifying the data elements for generating IIS/CoCASA assessment reports is available in the following document:
http://www.cdc.gov/vaccines/programs/cocasa/downloads/cocasa_import_specs.pdf

B.3. Choose Data Collection Method

Choose the method of data collection that will be used. Options include:

1. Generate provider coverage directly from IIS OR import data from IIS or electronic patient information system into CoCASA to generate the provider coverage.

2. Laptop or tablet computer or any portable computer: Connect to the AFIX Online Tool and enter site visit information directly into the tool. Site visit information can also be entered in the CoCASA tool.

B.4. Assessment Reports to share with providers

The coverage reports generated from the IIS for AFIX are not currently standardized, however, more standard specifications will be provided in the logic guidance. If your program generates the assessment reports using IIS only, it is recommended that you continue generating the reports specified by your program until further guidance is available from CDC. The data elements required for the AFIX Annual Report include:

- Childhood coverage level results (ACIP recommended vaccines (single antigens [0-3 years]).
- Childhood coverage level results (series [0-3 years])
- Adolescent vaccine coverage level results (ACIP recommended vaccines (single antigens [13-18 years]).
- Missed opportunities outcome measures (childhood series and adolescent single antigens)

More detailed information about required data elements is available in the AFIX data collection and reporting tools.

B.5. AFIX Site Visit Questionnaire

The site visit questionnaire is a requirement with every AFIX assessment. The questionnaire constitutes the qualitative portion of AFIX assessments. It also aids in the QI discussion with providers (See **Appendix B** for a copy of the AFIX site visit questionnaire). The following are the standards for using the questionnaire:

1. The questionnaire may be mailed to providers prior to the site visit OR filled out during the visit.
2. Answers to the questionnaire may be entered into CoCASA.
3. The assessor and the provider to select QI strategies to implement from the questionnaire and an implementation timeline. The selection of the strategies will be dependent on a provider's capabilities and needs and should be incorporated in their QI plan.
4. The follow-up process for implementation should be clearly explained to providers.
5. The goal of this questionnaire is to reach a 100% implementation status for as many QI strategies as possible by end of CY2017. This statement indicates that our overarching goal for the site visit questionnaire is to work with providers to introduce, encourage, and support (through technical assistance) the implementation of evidence-based QI strategies for improving coverage rates. Through the follow-up process, you will work with providers on completing the implementation of the selected QI strategies agreed upon during your site visit/s. Meeting this goal will vary among programs depending on several factors such as the frequency by which a program conducts AFIX visits to the same providers, current immunization service

strategies at provider offices, and provider-specific factors such as resources, interest in QI, and staff capabilities.

6. CDC requires that the standard provided questions not be changed and be all used in their provided text (See Appendix B for a copy of the AFIX questionnaire).

B.6. Supplies

The supplies for staff to take to an AFIX provider site visit may include:

1. Laptop, if applicable
2. Data abstraction forms, if applicable
3. Reference sheets
4. Post-it notes
5. Pens/pencils
6. Information for providers (e.g., updated VIS statements, vaccination outreach materials)

C. Provider selection

Identify providers that your program would like to target for AFIX activities. Provider selection may be based on a variety of variables. Some of the strategies for choosing providers are listed under (Policies for Implementing Assessment, page 7).

D. Confidentiality

The confidentiality of a provider's patients is an important issue for the provider.

1. Be prepared to discuss concerns providers have about patient confidentiality. Some providers may ask for documentation showing that assessors have the right to extract information from their patients' medical records and that assessments will maintain the confidentiality of the information. Others may ask about state or federal regulations such as the Health Insurance Portability and Accountability Act (HIPAA). For more information on HIPAA, please visit ***http://www.cms.hhs.gov/hipaa***. Additionally, CDC's *Morbidity and Mortality Weekly Report (MMWR)* has published information on the privacy rule at ***http://www.cdc.gov/mmwr/preview/mmwrhtml/su5201a1.htm***
2. Address the issue of confidentiality with those conducting the assessments. Assessors should sign an oath of confidentiality to be kept on file in the program office.
3. Establish and follow procedures for distribution, handling, and disposal of confidential information.
4. In addition, though it is not considered a confidentiality issue, some providers might ask about regulations or policies that do or do not require them to report to the IIS, as well as about other mechanisms that support/encourage reporting such as vaccine ordering through the IIS (VTrckS, ExIS) and Meaningful Use. Assessors should be prepared to address those issues and/or provide resources for more information.

Assessment checklist:

1. Eligible providers are identified for a calander year based on criteria established by the immunization program. CDC's currently recommends selecting at least 25% of VFC-enrolled providers to receive Annual AFIX visits. Review recommended selection criteria under **Policies for Implementing Assessment**.
2. The progression of AFIX is towards IIS-based coverage assessments.
3. AFIX assessments include a quantitative (numeric) component (provider coverage reports) and a qualitative component (site visit questionnaire).
    a. The site visit questionnaire is a requirement for every AFIX visit.
    b. The questionnaire aids in the QI discussion with provider staff.
    c. Review the CDC standards for using the questionnaire.
4. Review and familiarize yourself with the tool/s you will use for collecting and managing site visit information. All required fields in the tools are required for annual reports to CDC.
5. Follow the AFIX standards for assessment ages; childhood, adolescent, or both.
6. If using IIS only or IIS/CoCASA to generate the assessment reports:
    i. Generate a sufficient number of copies to share with provider staff. The reports should be generated ahead of the visit.
    ii. If there is uncertainty about the accuracy and/or completeness of the IIS data, send the assessment reports to the provider before the visit for data updates/checks.
        1. If data are updated by the provider office, be sure to re-run the updated assessment data and use it for the AFIX visit.
    iii. Identification and assessment information needs to be clearly displayed in the coverage reports (e.g., provider name and pin number, provider coverage, date, other).
        1. Request feedback on the assessment reports from the provider.
        2. Document all information received.
7. If using the chart-based method to generate the assessment reports:
    i. Randomly select the charts during the visit. Follow the procedures listed above to determine sample size.

ii. Following data entry into CoCASA, the coverage reports need to be shared with the provider.

iii. Identification and assessment information needs to be clearly displayed in the coverage reports (e.g., provider name and pin number, provider coverage, date, other).

1. Request feedback on the assessment reports from the provider.
2. Document all information received.

8. If data is not directly entered into the reporting tools (AFIX Online Tool or CoCASA) during the visits, it is important to enter it shortly after the visit for review completeness purposes (time frame to be determined by the immunization program).

Required AFIX Program Standards - Feedback

Feedback is the process of informing immunization providers and staff about observations and results from the assessment, and is a very important component of the AFIX process. Feedback provides a forum for discussing a provider's immunization delivery system and ways to improve its quality, as well as a provider's coverage and missed opportunities and ways to improve rates and reduce missed opportunities to immunize.

Feedback should be a two-way conversation which results in the development of quality improvement activities that are clear, achievable, and agreed upon by the provider and the program. The list of quality improvement activities will form the basis for all follow-up work to confirm the implementation of the quality improvement activities.

Feedback processes may vary depending on the assessment method used and the provider's immunization coverage rates.

Policies for implementing feedback

1. CDC recommends sharing feedback with the provider from their assessment as soon as possible, whether assessment reports are generated through pulling charts or using IIS immunization data. CDC recommends that no longer than one week pass between assessment and feedback to ensure that the data generated presents an accurate picture of a provider's coverage.

2. CDC recommends that feedback be completed in person. The one-on-one feedback process with the provider office staff allows for a personal and positive environment to provide education and work collaboratively. The assessment standard for AFIX also recommends that an assessor observe any immunization practices or systems that could be addressed and improved upon during the feedback session, this is best achieved through a site visit. For example, when visiting the provider to discuss their immunization coverage rates, an assessor may notice that immunization schedules are not clearly displayed for patients/parents and may bring that to the provider staff's attention.

3. CDC recommends that you invite all immunization office staff to attend the feedback session. The feedback session is, in part, an educational session that immunization staff, regardless of their role, will benefit from. As a result of feedback sessions, immunization staff should be knowledgeable about current ACIP recommendations, including minimum intervals and contraindications. For example, if the front desk and scheduling staff attend the feedback session, an assessor should ensure they are familiar with the national immunization schedule in order to schedule immunization appointments during appropriate times. AFIX protocols have always encouraged as much staff participation in feedback as possible.

4. It is also recommended that feedback be scheduled according to a date and time that works for the provider office.

5. In planning for the AFIX visit, it is recommended that providers be sent the following list of information for clarification and planning purposes:

    a. Information about the AFIX Program

    b. Information about the purpose of feedback

    c. Information about what providers should expect during the feedback session.

    d. Information about what providers should expect as a result of the feedback encounter.

    e. A request that the feedback session be attended by all staff that has decision-making authority and/or immunization-related work responsibilities (for example, physicians, physician assistants, nurses, scheduling staff, quality improvement [QI] personnel).

    f. Information about efforts by the immunization program to improve immunization coverage, reduce missed opportunities, and improve provider immunization practice.

    g. A request for any items the assessor will need for the feedback session such as copies of handouts, easel, flip chart, overhead projector, and transparencies.

6. As part of the feedback process, assessors are required to share the following pieces of information with providers:

    a. AFIX coverage assessment reports generated for the practice. The reports should cover the quantitative elements of the assessment for either childhood or adolescent groups (or both).

    b. Results of the completed AFIX site visit questionnaire if filled out before the visit. If the questionnaire is filled out during the visit, the results should be shared with the provider.

    c. Date of previous AFIX visit. This item would not apply to providers receiving an AFIX visit for the first time.

    d. Immunization coverage rates based on the previous AFIX visit or the previous AFIX assessment. This item would not apply to providers receiving an AFIX visit for the first time.

    e. A copy of the Quality Improvement Plan for this provider office.

7. It is also recommended that assessors share any other information that might be useful for improving immunization delivery services, including translated materials:

        i. Vaccine Information Statements (VIS)

ii. Most current ACIP schedule

iii. Vaccine-oriented educational materials for providers and patients

Procedures for implementing feedback

1. A feedback session should be planned for a mutually convenient time for the provider and assessor.
2. When conducting a feedback session, assessors need to introduce themselves, their program, and the AFIX program. It is necessary to make sure all involved understand the purpose of AFIX.
3. Visual aids may be used to present data, especially key points.
4. As part of the feedback process, assessors are required to share the information provided under **point 6** of the **policies for implementing feedback** section. A few more details about the above mentioned list:
    a. Make sure that immunization coverage levels for the practice are explained, as well as missed opportunities, invalid doses, not up-to-date and other coverage issues that can help a provider understand the status of their coverage.
    b. It is strongly recommended that feedback reports include data and graphs depicting a provider's immunization rates as it compares to national standards (Healthy People 2020 goals) and immunization program standards. It would also be helpful for providers to review their progress as it compares to others in their jurisdiction.
    c. The feedback session should focus, in part, on providing more information about the ACIP immunization schedule, the catch-up schedule, and the importance of timing immunization appointments.
    d. Results of the completed questionnaire should be discussed. Assessors may utilize the AFIX Site Visit Questionnaire answer guide provided by CDC for this purpose.
        i. The QI strategies in the questionnaire should be defined and explained.
    e. A quality improvement plan is to be developed by the immunization program to address provider needs and program priorities. General recommendations on what to include in this plan for AFIX purposes:
        i. Incorporate your assessment findings into the QI Plan.
        ii. Incorporate the quality improvement initiatives selected for the practice. This list should include but not be limited to initiatives listed in the AFIX Site Visit Questionnaire.

iii. A strategy for evaluating and summarizing the progress made towards implementing the selected initiatives.

5. Observations of office practices should be discussed and opportunities for improvement should be identified.
    a. Opportunities for improvement might focus both on enhancing clinic strengths and/or improving areas of weakness.
6. Discussion among provider staff should be encouraged throughout the session.
7. Areas of strength should be highlighted.
8. The program's follow-up process should be explained, along with the timeline for following up with the provider to check the implementation status of QI initiatives.
9. The program's incentives process should be explained. It is also recommended that a handout be provided with information about the incentives and the process for rewarding them.
10. The feedback session should be documented in the AFIX Online Tool or in CoCASA or a similar database.
11. The session should be completed within the time limit allowed.
12. When concluding the feedback session, assessors should:
    a. Thank the staff for their participation in the program
    b. Leave the office work area clean and neat
    c. Summarize key findings of the assessment
    d. Review agreed upon follow-up activities

Feedback checklist:

1. Feedback session to be scheduled at an appropriate time for provider and assessor.
2. It is recommended that all immunization staff be invited to participate in the feedback session.
3. Provide an overview of the feedback process, its purpose, and the length of time expected to discuss all issues.
4. It is recommended that the list of items under **point 5** of **policies for implementing feedback** be sent in advance of the visit.
5. It is required that the list of items under **point 6** of **policies for implementing feedback** be shared with provider staff. Furthermore:
    a. Coverage levels for specific vaccination series and individual antigens should be discussed, as well as missed opportunities, invalid doses, and late up-to-date.
        i. Assessors should ask the provider staff questions that test their understanding of the assessment reports.
    b. Results of the completed questionnaire should be discussed and QI strategies in the questionnaire should be defined and explained.
    c. The QI plan for a provider to incorporate the list of QI initiatives to be implemented.
        i. A clear timeline should be provided for when the activities are expected to be 100% completed.
6. Visual aids may be used to present data, especially key points.
7. Other observations of office practices should be discussed and opportunities for improvement identified.
8. Discussion among clinic staff should be encouraged throughout the session.
9. Areas of strength should be highlighted.
10. The program's follow-up process (both initial and subsequent follow-up) should be explained, along with the timeline for following up with the provider.
11. The program's incentives process should be explained.
12. All feedback sessions should be documented in the AFIX Online Tool <u>or</u> in CoCASA.
13. Before leaving the provider's office, make sure:

    a. The provider staff understands the information presented.
    b. All required data fields have been completed in CoCASA or AFIX Online Tool.
    c. The provider office received clear and sufficient assessment, QI, outreach, and reference materials.
    d. The provider staff is aware of the follow-up process and has a list of follow-up action items.

Required AFIX Program Standards - Incentives

Incentives are used to motivate providers or immunization staff to develop more effective immunization delivery systems and ultimately improve immunization coverage levels.

Purpose of incentives

Incentives promote change and reward achievement. Incentives should be used to assist or motivate a provider to make practice-based changes and to recognize improved quality in performance. Incentives should focus on quality improvement progress rather than simply outcomes such as high coverage rates.

Incentives alone are not enough to encourage long-term QI among providers. Therefore, incentives should be used in combination with the immunization educational aspects covered during the feedback session to promote learning, long-term change, and encourage:

- Participation in the AFIX process.
- Recognition of positive progress toward the long-term outcome of incorporating QI measures, improving vaccine coverage rates, and reducing missed opportunities.
- Recognition of each provider's individual plan.
- Reward for improved performance.
- Accomplishment of goals and QI plans agreed upon during provider visits.

Incentives should be established strategically to:

1. Encourage positive competition toward improvement in immunization practices.
2. Provide helpful tools that can assist in improving the quality of immunization services and subsequently improve coverage rates at provider offices.

When establishing incentives, programs should:

- Determine which incentives are valuable enough to encourage provider involvement.
- Ensure that positive involvement and effort is acknowledged. For example, if a provider takes the initiative to improve immunization services and does not immediately report improved coverage rates, the immunization program may select to acknowledge this initiative while also encouraging further improvement.

Selecting incentives

The purpose of incentives is to motivate and encourage all staff to accept improving immunization coverage levels as "part of their job." Public recognition of positive changes, as well as acknowledging high performing practices, is encouraged.

Incentives may be informal or formal. Informal incentives can be as simple as providing contact names and numbers for local, state, and federal immunization resources. Formal incentives

may be as elaborate as providing funding to send office staff to training at state or national immunization conferences.

When deciding which types of incentives to include in the program, factors should be considered that would facilitate or impede provider buy-in. The following tips can help in determining incentives:

- Identify the incentives that providers value most.
- Identify the incentives the program can provide. Know the conditions and allowable expenses of existing grants and seek other funding sources that may be less restrictive.
- Consider whether to offer incentives for both QI initiation and goal achievement.
- Consider how incentives can be offered that meet different goals and provide a win-win situation for both the program and the provider office. For example, consider providing educational materials to provider offices that can reduce printing costs for providers and expand community outreach and education.

When considering the following examples of incentives, it is important to consider that provider type, size, and location can influence whether incentives are effective, relevant, and genuinely motivating to the provider.

I. Informal incentives

- Free immunization materials
- Educational in-services for staff
- Ongoing immunization updates
- Assistance with developing an immunization quality improvement plan for the office
- Letters of recommendation

II. Formal incentives

- Temperature monitors/thermometers/data loggers
- Certificates of participation, improvement, and collaboration
- Promotion of clinics/offices as “Immunization Champions” or role models
- Recognition of clinics/offices with significant improvement or high coverage levels at local or state conferences, educational seminars, professional meetings
- Recognition of clinics and offices in feature articles of various state and local professional newsletters and journals
- Grants to improve immunization delivery services using evidence-based strategies
- Scholarships to attend local, state, and/or national immunization conferences

III. Funding and partnering for incentives

To fund some of the more involved and/or costly incentives, consider partnering with other agencies or organizations with similar goals. Explore non-traditional partners as well. If unable to provide financial support, seek support to promote incentives. Potential funding sources include:

- Immunization coalitions
- State chapters of professional organizations
- Health maintenance organizations
- Pharmaceutical manufacturers
- State medical societies

Policies for implementing incentives

Once incentives have been selected, the next step is to develop policies for their use. It's important to make sure the system for distributing incentives is clear, fair, and easy to track. It's also important to continuously evaluate the incentive component of the AFIX program to ensure that it's encouraging QI initiatives in practices and resulting in improved performance.

The following is a list of recommended policies/guidelines that can help drive the incentives process:

1. Clearly defined informal incentives (for example, printed immunization resources).

2. Clearly defined formal incentives (for example, a letter of recognition signed by the governor) that acknowledge providers with improved processes and/or outcomes

3. Clearly defined policies describing how both formal and informal incentives are implemented, including who is eligible to receive an award and/or recognition and how the award recipients are determined, and the nature of the incentives; participation incentives vs. incentives for improved processes and outcomes.

4. Clearly defined policies for tracking the incentives process that identifies responsible personnel and reporting elements for tracking provider performance and ensuring a fair and open reward process.

5. Clearly defined policies for evaluating incentives which can help determine the effectiveness of this process and guide any changes necessary to keep providers and immunization staff motivated to reward improved performance.

Procedures for implementing incentives

Before implementing incentives, it is important to identify the procedures and protocols for their implementation.

1. It is recommended that all program staff receive a copy of the incentive policies and be familiar with them.

2. It is recommended that clearly defined processes be put in place to determine how formal and informal incentives are implemented, including eligibility to receive an award and/or recognition and how award recipients are determined.

a. Procedures for incentives generally include:
   i. List of the incentives and their funding sources
   ii. List of personnel responsible for updating the incentives policies and procedures
   iii. List of personnel responsible for tracking process implementation
   iv. List of personnel responsible for evaluating and making necessary changes to the incentives process
   v. Process for identifying eligible providers
   vi. Process for determining frequency of offering incentives
   vii. Process for matching the list of incentives with meeting pre-determined thresholds for QI.
   viii. Process for distributing incentives, including the type of incentive, method of distribution, method of reporting the distribution, method of announcing the distribution, and method of tracking the distribution and ensuring that all eligible providers receive the incentive in a timely manner.

3. The incentives process should be explained to providers as part of the feedback process. A handout with information about incentives and how they are earned should be offered during the feedback process.

4. Clearly defined incentives should be implemented to assist low-performing offices in improving their immunization coverage levels.

5. It is recommended that external and internal partners be identified to assist with incentives.

6. Develop an ongoing evaluation process for incentives. Make process changes as necessary to ensure the success of incentives in encouraging QI initiatives and improving immunization practices and coverage rates.

Incentives checklist:

1. Select the program's formal and informal incentives.
2. Develop documentation listing/explaining the incentives and the standards for their implementation. Make sure the system for distributing incentives is clear, fair, and easily tracked.
3. Make sure to define your program's incentives process during AFIX provider visits. It is helpful to provide documentation that clarifies the process, its intent, and its implementation protocols.
4. Develop an ongoing evaluation process for incentives to help make process changes that sustain the success of this process.

Required AFIX program standards – eXchange of information (X)

The eXchange of information is a component of the AFIX program aimed at following up with providers to monitor and support progress toward implementing the quality improvement strategies discussed during the feedback process. This exchange is necessary to ensure that quality improvement in standards and practices is taking place at the provider level. This process should have clear, written guidelines and be used to help implement change at provider offices.

The follow-up (X) process ensures not only continuous quality improvement, but that providers also have the necessary resources and information to improve the quality of their immunization services. The eXchange of information is a two-level process:

Level 1 - Initial eXchange of information (X):

Every provider that receives an AFIX visit receives an initial follow-up no later than six months following the feedback session. The purpose of this follow-up is to discuss and document a provider's progress in implementing the agreed upon QI strategies and to provide any clarifications and technical assistance. The discussion should be based on findings from the latest AFIX visit and the agreed upon QI strategies.

Policies for implementing initial eXchange and subsequent eXchange

- Initial eXchange to be implemented within six months of the feedback session.
- Subsequent eXchange to be implemented in an agreed upon time frame for completion (100% complete) of QI strategies implementation.
- Clear standards need to be defined for the following:
    - Initial "eXchange" and subsequent "eXchange"
    - A follow-up process that includes timing, preparation, participants, action items, and progress towards implementation of follow-up action items
    - Assignment of personnel to implement and supervise the process, approve it, and provide training
    - Documentation of the follow up (X) communication as performed by the implementing program
        - Suggested forms to prepare for the process:
            - A follow-up checklist and progress template that reflects the implementation status of QI strategies and any changes in coverage rates and missed opportunities. Changes may also reflect on issues not included in the standard questionnaire (i.e. additional QI recommendations and/or observations at the practice that were addressed during feedback).
            - A list of criteria used to determine if a provider qualifies for subsequent follow-up
    - A strategy for sharing the follow-up documentation with providers

        - The documentation shared with providers needs to be clear in content and expectations.
        - It is also recommended that a progress form be transmitted to providers for their submission once they fully incorporate (100% completion) the QI strategies into their practice.

Procedures for implementing initial eXchange

If using CoCASA only or a similar database for recording and managing site visit information:

- Contact the provider to communicate progress in implementing the QI strategies selected during the feedback process and any other QI strategies undertaken by providers since the feedback session.
- If requested by provider or determined necessary by immunization program, provide further guidance and technical assistance on achieving quality improvement
- Document the follow-up communication for reporting and future reference
    - Progress <u>should</u> be documented as follows:
        - Fully implemented (100% complete)
        - Progress to full implementation (> 50% complete)
        - Partially implemented (< 50% complete)
        - No implementation (0%)
    - For progress reported at less than 100% complete, request an estimated due date for 100% completion and inform the provider of the subsequent follow-up process to check on completion status
- Send the provider a written summary of the follow-up status via fax, e-mail, or mail. The summary should include the following:
    - An overview of the provider's completion status
    - An estimated due date for 100% completion
    - Notification that provider will be contacted on that agreed upon date for confirmation of 100% completion (providers should also have the option of contacting the program to provide their 100% completion status)
        - Note: Regardless of who makes the contact for reporting/confirming the 100% completion status, this process should be reported as "***Level 2: Subsequent eXchange of Information**, **Strategy: AFIX visit follow-up telephone call***"
- If program doesn't use the required AFIX site visit questionnaire, make sure to document reasons for that.

If assessment data is generated through IIS only or IIS/CoCASA while the AFIX Online Tool is used for recording and managing site visit information:

- Re-run the assessment rates for the same age group for the same provider and keep a record of the new rates and the change in rates since the initial assessment
- Notify providers of this reassessment process during the feedback visit to motivate change and achieve quality improvement

- Contact the provider to communicate progress in implementing the QI strategies selected during the feedback process and any additional QI strategies undertaken by the provider since the feedback
- If requested by provider or determined necessary by immunization program, provide further guidance and technical assistance on achieving quality improvement
- Document the follow-up communication for reporting and for future reference
    - Progress should be documented as follows:
        - Fully implemented (100% complete)
        - Progress to full implementation (> 50% complete)
        - Partially implemented (< 50% complete)
        - No implementation (0%)
    - For progress reported at less than 100% complete, request an estimated due date for 100% completion and inform the provider of the subsequent follow-up process to check on 100% completion status
- Send the provider a written summary of the follow-up status via fax, e-mail, or mail. The summary should include the following :
    - An overview of the provider's completion status and a copy of the follow-up assessment results
    - An estimated due date for 100% completion
    - Notification that provider will be contacted on that agreed upon date for confirmation of 100% completion (providers should also have the option of contacting the program to provide their 100% completion status)
        - Note: Regardless of who makes the contact for reporting/confirming the 100% completion status, this process should be reported as "***Level 2: Subsequent eXchange of Information, Strategy: AFIX visit follow-up telephone call***"

Level 2 - Subsequent eXchange of information:
This is a continuation of the initial follow-up process and requires that additional contact be made with providers to continue assessing QI progress resulting from the latest AFIX visit.

Procedures for implementing subsequent eXchange
Subsequent eXchange of information consists of three different strategies. Selecting the appropriate strategy or strategies for a provider depends on the intention of the contact and the level of assistance that best meets the needs of the program and the provider.

1. **AFIX visit follow-up telephone call**
    - **Definition**: This process involves contacting the provider after the initial follow-up conversation to discuss further progress toward meeting the 100% completion point of selected QI strategies. The frequency and dates of the calls should be determined by the program based on reported progress.
    - **When to select this method**:

        - If there is no noted improvement in rates based on the initial eXchange of information and/or less than 100% completion reached in implementing the QI strategies based on the initial eXchange of information

    - **Implementation of this method**:
        - Document the rate of completion on progress made toward implementing QI strategies
        - Document subsequent follow-up communication(s) for future reference
        - Send the provider a summary of the subsequent follow-up information for their record and reference
        - You are not required to re-run the coverage rates as part of the subsequent follow-up process; the only requirement is to mark status toward implementation of selected QI strategies. Your program may however choose to re-run the rates a 3rd time, which is up to your programs to decide.

2. **AFIX follow-up visit**
    - **Definition**: This process involves visiting the provider to conduct additional follow-up and to assess progress made in implementing QI strategies. This visit may also include conveying similar information to that discussed during the feedback visit. In certain situations, a face-to-face interaction is more effective than a telephone call.
    - **When to select this method**:
        - If a face-to-face visit might be more effective than a telephone call
        - If the provider had a change in staff and an in-person follow-up visit would help engage the new provider staff and inform them of processes and expectations
        - If the provider requests it and the program can facilitate it
        - If necessary, in addition to following up on QI progress, plan on repeating previous information discussed during the feedback session, such as provider coverage, AFIX questionnaire results, and QI plan. An in-person visit may be more effective for this purpose.
    - **Implementation of this method**:
        - Have available for the visit copies of the assessment data, QI plan, and assessment questionnaire, which may be necessary to trace the process leading up to the current meeting
        - Request from the provider the rate of completion on progress made toward implementing QI strategies
        - Document the subsequent follow-up process for future reference
        - Provide the practice copies of the subsequent follow-up documents for their record and reference.

3. **AFIX educational visit**
    - **Definition**: This process involves visiting the immunization practice to provide more education about items covered during the feedback session. The educational visit is not limited to following up on QI strategy progress, but is also considered an opportunity to offer enhanced technical assistance for providers that need or request it.
    - **When to select this method**:
        - If the provider or provider's immunization staff express the need for such a visit for reasons such as staff turnover
    - **Implementation of this method**:
        - This visit should be handled in 2 ways:
            1. Conducting additional follow-up as described under the AFIX visit follow-up telephone call or visit described above to assess progress made in implementing QI strategies
            2. This visit should also be handled as an opportunity to provide enhanced technical assistance and education about:
                - The AFIX program's structure, history, processes, goals, and program standards
                - The ACIP recommendations, national immunization standards, the QI strategies in the site visit questionnaire, other.
                - The official catch-up schedule, and vaccine contraindications
                - Assessment reports and assessment data interpretation.
                - The importance of improving immunization services and streamlining immunization data in protecting lives
                - Training opportunities for nurses and other immunization staff
                - Any other relevant issues selected by the immunization program.

eXchange of information checklist:

Initial eXchange

1. Re-run the assessment rates for the same age group for the same provider no later than six months after the feedback session and keep a record of the new rates (*this step is required if the program uses IIS only or IIS/CoCASA as the main source of provider coverage data and uses the AFIX online tool for recording and managing site visit data*).
2. Contact provider to discuss progress made in implementing the agreed upon QI strategies and other developments for improving coverage rates and the quality of immunization services.
3. If requested, provide further guidance and technical assistance on achieving quality improvement.
4. Document the follow-up communication for future reference.
5. Send the provider a summary of the follow-up communication along with the follow-up assessment rates.
    a. If a provider requests more time to incorporate the QI measures into their practice, record their status as “in progress” for selected QI strategies and request written confirmation once fully incorporated.

Subsequent eXchange

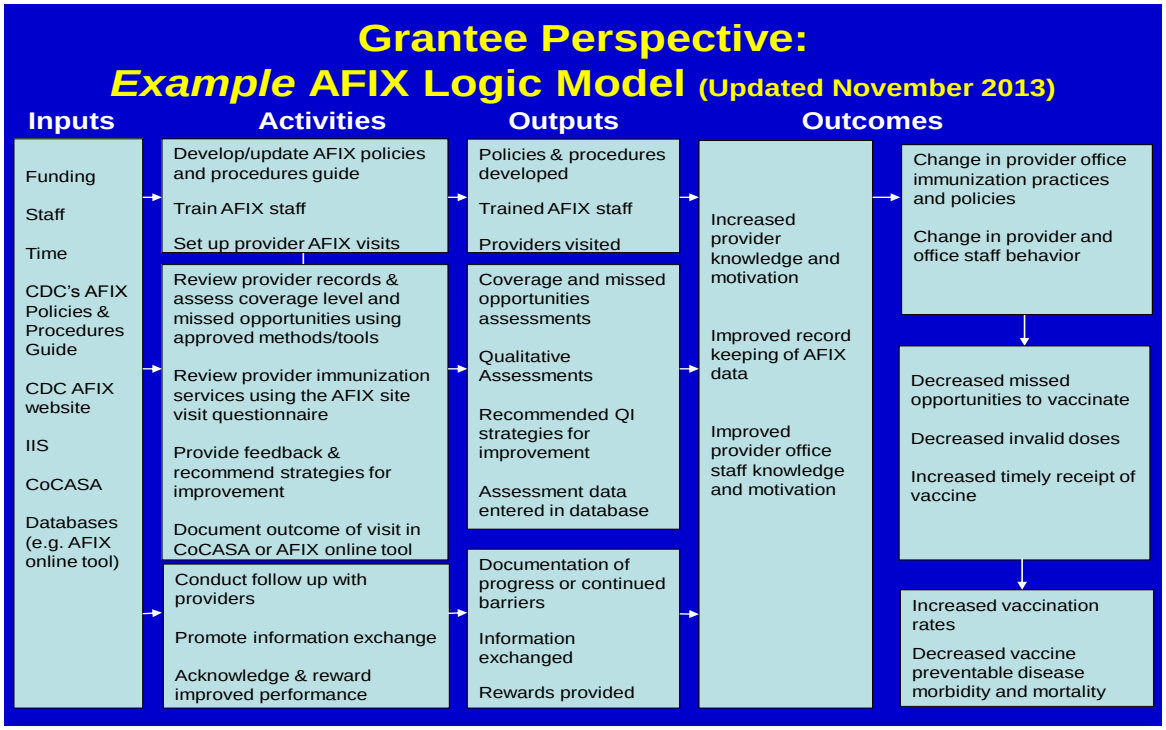
1. Select the appropriate subsequent eXchange strategy.
2. Follow the implementation guidelines specified for each of the strategies.
3. Document the subsequent follow-up process for future reference.
4. Provide the practice copies of the subsequent follow-up documents for their official record and reference.

Program evaluation

Program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of a program to make judgments about that program, improve program effectiveness, and/or inform decisions about future program development. Program evaluation is an important component of the AFIX initiative.
Independent of the Program Evaluation Requirement (IPOM, B5, pages X), programs are recommended to evaluate their AFIX program. Just as AFIX is designed to help providers improve immunization delivery practices, program evaluation will help programs improve the implementation and outcomes of the AFIX program.

The AFIX Logic Model

A logic model is a graphic that describes a program's activities and expected outcomes. An AFIX Logic Model can be used for planning, designing, implementing, and evaluating projects.



This generic example of an AFIX logic model can be used by programs to plan and evaluate their AFIX activities. We encourage programs to update this example to match the context and attributes specific to their AFIX program. We strongly encourage programs to gain stakeholder input for updating the logic model as well as utilizing it because it helps build a shared understanding and consensus about the program and its goals and objectives.

CDC's Framework for Program Evaluation

CDC recommends using the CDC Framework for Program Evaluation. While the framework's six steps are systematic in nature, they are also dynamic and interactive. A program may start with any of the first three steps, but should strive to complete all three of the initial steps before moving on to the fourth step (gathering credible evidence/data collection).

Program staff interested in learning more about the CDC Framework for Program Evaluation should review the Program Evaluation presentation and related materials shared during the 2013 VFC in Action trainings conducted by CDC; these items are available within the VFC Documents library in SAMS (https://sams.cdc.gov).

The following step-by-step checklist for CDC's Framework for Program Evaluation will help programs stay on track with evaluation:

Step 1: Engage Stakeholders

_____Decide which persons or groups need to be part of the design and implementation of the evaluation for it to make a difference

_____Decide when and how you will engage them

Step 2: Describe the Program

_____Draw a roadmap of the program you want to evaluate (NOT the evaluation itself)

Step 3: Focus the Evaluation Design

_____Decide which evaluation questions are the key ones

_____Decide on evaluation design

REMINDER: Don't proceed with Step 4 until you have completed Steps 1, 2, and 3.

Step 4: Gather Credible Evidence

_____Develop new or "find" existing indicators
_____Choose and implement data collection sources and methods
_____Discuss issues related to data quality and data quantity and divide up different tasks

Step 5: Justify Conclusions

_____Analyze data and synthesize findings
_____Interpret data/evidence to determine success or failure
_____Discuss with stakeholders

Step 6: Ensure Use and Share Lessons Learned

_____Use evaluation results to make program changes
_____Disseminate findings to stakeholders

CDC's Framework for Program Evaluation is guided by four evaluation standards. These four standards should be used as a guide to help make informed decisions at each step of the CDC Framework for Program Evaluation:

- Utility: Who needs the information from this evaluation and what information do they need
- Feasibility: How much time, money, and effort can be put into the evaluation
- Propriety: How can we ensure that the evaluation is ethical
- Accuracy: What evaluation design will lead to accurate information

<u>The following is a list of recommended questions that may be used for evaluating program AFIX Programs during 2014-2017:</u>

1. What is the impact of the AFIX site visit questionnaire on the provider personnel in regards to:
    a. Understanding AFIX
    b. Understanding the ACIP schedule
    c. Improving quality of immunization services
    d. Reducing missed opportunities
    e. Improving IIS functionality and data quality
2. How effective is the incentives component of your AFIX program in improving the quality of immunization services?

3. How efficient (e.g., time and cost) are AFIX visits when implementing IIS-based coverage assessments (not CoCASA) and using the AFIX Online Tool for reporting site visit information?
4. Is the AFIX follow-up process effective in motivating providers to implement QI strategies and subsequently improving childhood/adolescent coverage?
5. What is the impact of assessment and feedback in improving provider coverage and strengthening the quality of immunization services?

APPENDICES

Appendix A

Suggestions for Providers to Improve Immunization Practices

Suggestions to Improve Your Immunization Services

Following are several ideas that healthcare professionals and practices can use to improve their efficiency in administering vaccines and increase their immunization rates. Read each idea and check the response that applies to your work setting.

Yes = We already practice this.
No = We don't like this idea, or it couldn't work in our practice setting.
Partly = We do some of this (or do it sometimes); we will consider it.

	Yes	No	Partly
1. In all exam rooms, we post the current, official U.S. immunization schedule for children and/or adults or variations thereof (for example, the official schedule of a medical society or of a state health department).	○	○	○
2. We use the official "catch-up" schedule for children for advice on how to bring children up to date on their vaccinations when they have fallen behind.	○	○	○
3. We are familiar with special vaccination recommendations for high-risk patients (e.g., special groups who need hepatitis A, hepatitis B, pneumococcal, influenza vaccines).	○	○	○
4. When scheduling appointments, we remind patients/parents to bring along their (or their child's) personal immunization record. We also confirm the address and phone number in case we need to contact them.	○	○	○
5. We've trained our nursing and office staff (e.g., receptionist, scheduler) to know how to determine valid and invalid contra-indications to vaccinations, as well as the minimum intervals permissible between vaccinations. This training ensures that our clinic staff miss no opportunity to vaccinate.	○	○	○
6. Our staff are trained to administer multiple vaccinations to patients who are due for multiple vaccinations.	○	○	○
7. Our nurses can give vaccinations under standing orders (i.e., they can independently screen patients and administer vaccines under pre-existing signed physician's orders).	○	○	○
8. We maintain a comprehensive immunization record in a visible location in each patient's chart (e.g., the front of the chart).	○	○	○
9. Prior to patient visits, we review the immunization record for each patient and flag charts of those who are due or overdue.	○	○	○
10. We provide vaccination services during some evening and/or weekend hours.	○	○	○
11. Patients can walk in during office hours for a "nurse only" visit and get vaccinated.	○	○	○
12. We use all patient encounters (including acute-care and follow-up visits) to assess and provide vaccinations.	○	○	○
13. Whenever a patient comes in, the staff routinely asks to see his/her immunization record to determine if the patient received vaccinations at another healthcare site.	○	○	○
14. If a patient tells us "I'm up to date with my vaccinations," or "my child's vaccinations are up to date," we are not convinced. We must have written documentation.	○	○	○
15. We ask patients/parents to complete a simple screening questionnaire for contra-indications to determine if the vaccinations they need can be given safely on the day of their visit. To save time, we have them complete it prior to seeing the clinician (e.g., in the waiting room or exam room).	○	○	○
16. Before the clinician sees the patient, a staff member completes an immunization assessment and gives Vaccine Information Statements (VISs) to the patient/parent to read. If they need a VIS in another language, we give it, if it is available.	○	○	○
17. We can call on translators when we need to communicate with patients who speak little or no English.	○	○	○

(continued on next page)

Technical content reviewed by the Centers for Disease Control and Prevention, June 2008.

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Appendix B

AFIX Site Visit Questionnaire

Assessment, Feedback, Incentives, eXchange (AFIX)
2014 Provider Site Visit Questionnaire
Childhood and/or Adolescent Visits

General notes:
Questionnaire may be filled out prior to the AFIX visit or during the visit. The assessor, along with the provider, should select 2-3 strategies to incorporate into the QI plan for implementation and follow-up.

- If questionnaire is filled out during the visit and using CoCASA, the provider's demographic information should be entered in the **provider set-up** tab
- If questionnaire is filled out during the visit and using AFIX online tool, the provider's demographic information should be entered in the **General Site Visit Information** tab
- If questionnaire is mailed out prior to the AFIX visit, the following provider demographic questions should be added to the top:

  Assessment date: _____ Assessment name: _____
  Assessor's name: _____
  Provider site name: _____
  Provider address: _____
  Contact person: _____ Telephone/fax: _____
  E-mail: _____ VFC pin number: _____
  Type of medical records the provider uses: Electronic (type) _____ Paper _____
  Method of reporting to the IIS: _____

Strategies to improve the quality of immunization services

1. Do you have a reminder/recall process in place for pediatric/adolescent patients? (y/n)
2. Do you offer walk-in or immunization only visits? (y/n)
3. Do you routinely measure your clinic's pediatric/adolescent immunization coverage levels and share the results with your staff? (y/n)
4. Do you schedule the next vaccination visit before the patients/parents leave the office? (y/n)
5. Do you contact patient/parents within 3-5 days when a "well child" or "immunization only" visit is a "no show" and reschedule it for as soon as possible? (y/n)
6. Do you have a system in place to schedule wellness visits for patients at 11-12 years of age? (y/n)
7. Do you have an immunization champion at this practice that focuses on QI measures, reducing barriers, and improving coverage levels? (y/n)
8. Do you regularly document vaccine refusals and reasons for refusals (parent choosing to delay, parent has vaccine safety concern, medical contraindication, etc.)? (y/n)

Strategies to decrease missed opportunities

1. Does your immunization staff educate parents about immunizations and the diseases they prevent, even when the parents refuse to immunize? (y/n)
2. Do you have immunization information resources to help answer questions from patients/parents? (y/n)

3. Is your immunization staff knowledgeable and comfortable with current ACIP recommendations, including minimum intervals, contraindications, etc.? (y/n)
4. Do you train front desk/scheduling staff so they know when it's appropriate to schedule immunization appointments? (y/n)
5. Do you have standing orders for registered nurses, physician assistants, and medical assistants to identify opportunities to administer all recommended pediatric/adolescent vaccines? (y/n)
6. Is your immunization staff knowledgeable and comfortable with administering all recommended vaccinations to patients at every visit? (y/n)

Strategies to improve completeness and accuracy of immunization information in the IIS

1. Does your staff report all immunizations you administer at your clinic (or practice) to your state/city IIS? (y/n)
2. Does your staff report immunizations previously administered to your patients by other providers to the IIS (e.g., official shot record, other IIS report, copy of medical record)? (y/n)
3. Do you inactivate patients in the IIS who are no longer seen by your practice? (y/n)
4. Do you use your IIS to determine which immunizations are due for each patient at every visit? (y/n)

Appendix C

CoCASA Assessment Reports Recommended for Sharing with Providers

Report Title: **AFIX SITE VISIT SUMMARY** Date Generated: 12/05/2013

REPORT CRITERIA

Provider site name: Test Provider Name (12345) VFC Pin: 12345

Provider type: Public health department operated clinic

Assessment Name: Akash Dongol Assessment date: 4/19/2012

Ages Assessed: From 24 to 35 months as of 12/31/2011

Number of Age Eligible (children/adolescents): 50 Number of Charts Analyzed: Childhood 0 Adolescent 0

Selected series/antigens: HepA, HIB, Flu, PanFlu, PCV, DTaP, Polio, MMR, Var, HepB, RTV

Assessment Questionnaire: Adolescent Assessment age cohort:

AFIX Visit: AFIX Only Type of VFC visit conducted: N/A

AFIX Assessment method used: Imported Data (Standard)

SITE VISIT QUESTIONNAIRE

Strategies to improve the quality of immunization services	Childhood	Adolescent	Selected QI
1 - Do you have a reminder/recall process in place for pediatric/adolescent patients?			
2 - Do you offer walk-in or immunization only visits?			
3 - Do you routinely measure your clinic's pediatric/adolescent immunization coverage levels and share the results with your staff?			
4 - Do you schedule the next vaccination visit before the patients/parents leave the office?			
5 - Do you contact patient/parents within 3-5 days when a "well-child" or "immunization only" visit is a "no show" and reschedule it for as soon as possible?			
6 - Do you have a system in place to schedule wellness visits for patients at 11-12 years of age?			
7 - Do you have an immunization champion at this practice that focuses on QI measures, reducing barriers and improving coverage levels?			
8 - Do you regularly document vaccine refusals and the reasons for the refusal (parent choosing to delay, parent has vaccine safety concern, medical contraindication, etc.)?			

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Page 1 of 5 v9.0 Beta

COMPREHENSIVE CASA

Report Title: **SUMMARY REPORT**

Date Generated: 07/19/2012

REPORT CRITERIA — Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period ☐ Limited by

Missed opportunities are defined as: On LAST immunization visit

IMMUNIZATION STATUS (based on user-selected criteria) Note: For a report listing specific patients, choose Lists under the Standard Reports tab.

	50	# of patient records selected
(minus)	1	# of patients moved or gone elsewhere (MOGE)
	49	Total # of Patient Records Assessed

Total # of Patient Records Assessed 49

Immunizations Complete

Immunization Status		# of patients	% of patients
Received immunizations by assessment date:	04/19/2012	47	96%
Late up-to-date - received immunizations but NOT by:	04/19/2012	0	0%
Up-to-date and complete by:	**04/19/2012**	**47**	**96%**

Immunizations NOT Complete

Immunization Status	# of patients	% of patients
Missed opportunities to administer vaccine (as defined in report criteria)	2	4%
No missed opportunities but **NOT eligible for immunization** as of assessment date	0	0%
No missed opportunities; eligible; **last visit <12 months ago**	0	0%
No missed opportunities; eligible; **last visit >= 12 months ago**	0	0%
Total patients not complete by assessment date	2	4%

Bring Patients Up-To-Date

Of patients NOT complete, # of patients who could be brought up-to-date with 1 additional visit: 2 of 2

Immunizations Needed	# of patients	% of patients
1	1	2%
2	1	2%
3	0	0%
4+	0	0%
Total patients up-to-date with one additional visit	2	4%

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COMPREHENSIVE CASA

Report Title: **ADOLESCENT COVERAGE**

Date Generated: 07/18/2012

REPORT CRITERIA — Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 2Polio, 2MMR

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period ☐ Limited by

Missed opportunities are defined as: On LAST immunization visit

	50	# of patient records selected
— (minus)	1	# of patients moved or gone elsewhere (MOGE)
	49	Total # of Patient Records Assessed

Total # of Patient Records Assessed 49

SECTION I (based on user-selected criteria)

Vaccinations Coverage: Who is up-to-date?

	Selected Antigens	By: 04/19/2012	
		# of patients up-to-date	% of patients up-to-date
1	MMR2 Polio2	0	0%
2	Polio2	49	100%
3	MMR2	0	0%

	# of patients	% of patients
Missed Opportunities to administer vaccines (as defined in report criteria)	39	80%

Bring Patients Up-To-Date

Of patients NOT complete, # of patients who could be brought up-to-date with 1 additional visit: 49 of 49

Immunizations Needed	# of patients	% of patients
1	49	100%
2	0	0%
3	0	0%
4+	0	0%
Total patients up-to-date with one additional visit	49	100%

BEST PRACTICES

Healthy People 2010 has identified immunization as an indicator of the nation's health. One objective is to increase routine vaccination coverage levels for adolescents. The target is 90% coverage for each of the following: 3 doses of HepB, 2 or more doses of MMR, 1 or more doses of Td booster and 1or more doses of Varicella vaccine (excluding children that have had Varicella).

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COMPREHENSIVE CASA

Report Title: **NEED ONE DOSE**

Date Generated: 07/19/2012

REPORT CRITERIA Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period ☐ Limited by

Total # of Records with One Dose Needed 1

RESULTS (based on user-selected criteria)

Patients Who Need One Dose

Patient Name (Last, First MI)	Date of Birth	Dose Needed
9iuRKGMj, Bv3Pczyx o2	03/17/2009	DTaP

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COMPREHENSIVE CASA Report Title: **SINGLE ANTIGEN REPORT (CHILDHOOD)** Date Generated: 07/19/2012

REPORT CRITERIA Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period
☐ Limited by

	50	# of patient records selected
— (minus)	1	# of patients moved or gone elsewhere (MOGE)
	49	Total # of Patient Records Assessed

Total # of Patient Records Assessed 49

RESULTS (based on user-selected criteria)

Single Antigen Coverage

	Months of Age	3		6		7		9		12		13		18		19		24	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1	DTaP1	36	73	48	98	48	98	48	98	48	98	48	98	48	98	48	98	48	98
2	DTaP2			26	53	40	82	41	84	46	94	46	94	47	96	48	98	48	98
3	DTaP3					20	41	32	65	36	73	37	76	45	92	46	94	47	96
4	DTaP4											3	6	14	29	26	53	38	78
5	Polio1	36	73	48	98	48	98	48	98	48	98	48	98	48	98	48	98	48	98
6	Polio2			26	53	40	82	41	84	46	94	46	94	47	96	48	98	48	98
7	Polio3					19	39	31	63	35	71	36	73	43	88	44	90	46	94
8	MMR1											22	45	38	78	42	86	46	94
9	HIB1	35	71	47	96	48	98	48	98	48	98	48	98	48	98	48	98	48	98
10	HIB2			27	55	40	82	41	84	46	94	46	94	47	96	48	98	48	98
11	HIB3					19	39	32	65	36	73	38	78	45	92	46	94	47	96
12	HepB1	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100
13	HepB2	35	71	45	92	46	94	46	94	48	98	48	98	48	98	48	98	48	98
14	HepB3					18	37	27	55	38	78	40	82	46	94	48	98	48	98
15	Var1											21	43	33	67	39	80	45	92
16	PCV1	33	67	46	94	46	94	46	94	47	96	47	96	48	98	48	98	48	98
17	PCV2			27	55	38	78	39	80	44	90	45	92	46	94	46	94	47	96
18	PCV3					21	43	32	65	35	71	35	71	43	88	44	90	45	92
19	PCV4											16	33	25	51	31	63	34	69

Note: The single antigen report reflects the number of doses received at age intervals between 3 to 24 months of age and the percentage of doses received based on the series or number of antigens selected; however, this report does not necessarily reflect completeness (i.e., being up-to-date) and the percents reflected on the single antigen report may differ from that on the summary report. The single antigen report is strictly a count of doses received at specified intervals and does not take into consideration scenarios in which a child could be considered up-to-date with fewer doses.

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COMPREHENSIVE CASA

Report Title: **INVALID DOSES**

Date Generated: 07/19/2012

REPORT CRITERIA

Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period
☐ Limited by

Total # of Records with Invalid Doses 1

RESULTS (based on user-selected criteria)

Patient Name (Last, First MI)	DOB	Antigen	Date given	Reason not valid
+hEn2lhs, uUIFJNxY BI	12/29/2009	DTaP2	03/03/2010	Minimum age of 10 weeks not met, Interval of 4 weeks from previous valid or invalid dose not met
		Polio2	03/03/2010	Minimum age of 10 weeks not met, Interval of 4 weeks from previous valid or invalid dose not met

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Page 1 of 1
v7.1

COMPREHENSIVE CASA

Report Title: **MISSED OPPORTUNITIES**

Date Generated: 07/19/2012

REPORT CRITERIA Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period
☐ Limited by

Missed opportunities are defined as: On LAST immunization visit

Total # of Records with Missed Opportunities 2

RESULTS (based on user-selected criteria)

Patient Name (Last, First MI)	Date of Birth	Vaccine Missed	Dose missed	Date missed
+hEn2lhs, uUIFJNxY BI	12/29/2009	Polio	3	04/13/2011
9iuRKGMj, Bv3Pczyx o2	03/17/2009	DTaP	4	09/02/2011

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Page 1 of 1

v7.1

COMPREHENSIVE CASA

Report Title: **Not Up-To-Date**

Date Generated: 07/19/2012

REPORT CRITERIA Assessment date: 4/19/2012

Provider site name: Test Provider Name (12345)

Age range: From 24 to 35 months as of 12/31/2011

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3Polio, 1MMR, 3HIB, 3HepB, 1Var, 4PCV)

Compliance: ☐ By age: 0 months ☑ By date: 4/19/2012

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period ☐ Limited by

Total Not Up-To-Date Records 2

RESULTS (based on user-selected criteria)

Patient Name (Last, First MI)	Date of Birth
+hEn2Ihs, uUIFJNxY BI	12/29/2009
9iuRKGMj, Bv3Pczyx o2	03/17/2009

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Page 1 of 1

v7.1

Appendix D

AFIX Annual Report Template
Calendar Year 2013 Site Visit Data

ASSESSMENT, FEEDBACK, INCENTIVES, EXCHANGE (AFIX) ANNUAL REPORT
January - December, 2013

Grantee: _____

Preparer information

Name:		**Title:**	
Phone/Ext:		**Email:**	

AFIX Contact/Coordinator

Name	
Address	
Address 2	
City	
State/Zip	Drop-down(state)
Phone	
Fax	
Email	

☑ Check if AFIX Coordinator same as VFC

AFIX Activities

Table 1. Number of FTE's Working on AFIX Project CY2013

Personnel	Program Staff*		Contract Staff**		Total	
	State	Local	State	Local	State	Local
FTEs THAT CONDUCT AFIX AND VFC/AFIX COMBINED SITE VISITS					calculated	calculated
ALL OTHER AFIX FTEs					calculated	calculated
Total	calculated	calculated	calculated	calculated	calculated	calculated

*State Program Staff
state employed staff working on VFC and/or AFIX at the state immunization program level.

*Local Program Staff
local health department staff funded with federal funds that work on VFC and/or AFIX.

**State Contract Staff
staff hired by the state immunization programs through contracts with outside employment agencies with federal funds on VFC and/or AFIX.

**Local Contract Staff
local health department staff hired through contracts with outside agencies with federal funds that work on VFC and/or AFIX.

Section I. Core Activities

Table 2. VFC Provider Enrollment

Type of Provider Site*	Enrolled[1]	Active[2]
Public Health Department Clinic[3]		
IHS Facility[4]		
FQHC/CMHC/RHC[5]		
Other public clinic[6]		
Private provider sites[7]		
Pharmacy sites		
Mass Vaccinator sites		
Total Provider Sites	Calculated total	Calculated total

DEFINITIONS

*Provider Site

A service delivery location (public or private) that maintains permanent records (excluding temporary or mobile immunization clinics, health fairs, etc.). Well-child and immunization-only clinics in the same location should be counted as separate sites ONLY if each maintains separate sets of vaccination records and separate vaccine inventories.

[1]Enrolled provider

Enrolled providers are defined as providers who have signed a VFC provider agreement (enrollment) form)..

[2]Active Provider

Enrolled providers who have received VFC vaccine within the current reporting year.

[3]Public Health Department Clinic

A state, district, county or city public health department-operated clinic where vaccines are administered. Include only those Public Health department clinics that are not Federally Qualified Health Centers (FQHCs) as defined below.

[4]Indian Health Service Facility/Tribal Health Clinic:

Primary care clinics for American Indians and Alaska Natives, including outpatient clinics in IHS hospitals.

[5]Federally Qualified Health Center/Community/Migrant Health Center/Rural Health Clinic:

FQHCs include community, migrant and rural centers, and special health facilities that receive grants under the Public Health Service (PHS) Act, and "look-alikes" which meet the same qualifications but do not actually receive grant funds:

[6]Other Public clinic

Any other public clinic which provides immunization, such as a publicly funded non-profit neighborhood clinic.

[7]Private Provider:

All private provider sites that are not FQHCs.

Table 3. Total number of provider sites eligible to receive a visit during CY2013									
Provider Information	Public[1]	C/MHC[2]	Other Public[3]	Private[4]	Pharmacy (flu)[5]	Pharmacy (flu and other)[6]	Mass vaccinator (flu)[7]	Mass vaccinator (flu and other)[8]	Total
Number of VFC providers eligible to receive an AFIX visit									
Percent of VFC providers eligible to receive an AFIX visit									
Public[1] - Public provider sites include: public health department operated clinics, military health care facilities, and Indian Health Service facilities.									
C/MHC[2] - C/MHC sites include: FQHC-Community Centers, migrant Centers, and Rural Centers.									
Other Public[3] - Other Public sites include: hospital-based clinics, including university/resident clinic-public; Pre-school/headstart/daycare-public; WIC sites, Correctional facilities; HIV/Std clinics; and substance abuse clinics									
Private[4] - Private sites include: private practice; including group, solo, HMO; hospital-based clinic, including university/resident clinic-private; and Pre-school/headstart/daycare-private.									
Pharmacy (flu)[5] - Pharmacy provider sites that administer VFC influenza vaccine, but do not administer any other VFC vaccine.									
Pharmacy (flu and other)[6] - Pharmacy provider sites that administer VFC influenza and other VFC vaccine									
Mass vaccinator (flu)[7] - Mass Vaccinator provider sites that only administer VFC influenza vaccine, but do not administer any other VFC vaccine. To be counted in this category, the mass vaccinator must be an enrolled VFC provider that only administers VFC influenza vaccine during clinics held.									
Mass vaccinator (flu and other)[8] - Mass Vaccinator provider sites that administer influenza and other types of VFC vaccine. To be counted in this category, the mass vaccinator must be an enrolled VFC provider that administers influenza and other VFC vaccine during clinics held.									

Table 3.1 What are your program's eligibility criteria for selecting providers to receive AFIX visits?

a. Please select a provider type:

- Choose ALL Providers if AFIX site visit eligibility criteria is the same for all provider types.
- Choose a specific provider type if your criteria varies based on provider type
- If you choose to enter data by specific provider, you will be allowed to repeat the entry process for each different provider type.
- Entered data will be displayed in a table below.
- Click on Save Eligibility Criteria button save your response(s) for this question

ALL Providers

b. Please enter your eligibility criteria for the selected provider type. Enter as many criteria as applicable to this provider type.

*

If using the CoCASA Software, please run the VFC/AFIX Activities Core Report for the date range 1/1/2013 - 12/31/2013. Please use the printout to complete this section. If your project did not use the CoCASA software, please use your program database to complete this section

Table 4. Total number of provider sites visited at least once during CY2013

					Pharmacy		Mass Vaccinator	
Provider Information	**Public[1]**	**C/MHC[2]**	**Other Public[3]**	**Private[4]**	**Flu**	**Flu/Other**	**Flu**	**Flu/Other**
Number of VFC-Enrolled provider sites visited								

[1]Public

Public provider sites include: public health department operated clinics, Military health care facilities, and Indian Health Service facilities.

[2]C/MHC

C/MHC sites include: FQHC-Community Centers, Migrant Centers, and Rural Centers

[3]Other Public

Other Public sites include: hospital-based clinics, including university/resident clinic-public;Pre-school/headstart/daycare-public;WIC sites;Correctional facilities;HIV/Std clinics; and Substance Abuse clinics

[4]Private

Private sites include:private practice;including group, solo, HMO;hospital-based clinic, including university/resident clinic-private; and Pre-school/headstart/daycare-private.

[5]Pharmacy (flu only)

Pharmacy provider sites that administer VFC influenza vaccine, but do not administer any other VFC vaccine

[6]Pharmacy (flu + other)

Pharmacy provider sites that administer VFC influenza and other VFC vaccine

[7]Mass Vaccinator (flu only)

Mass Vaccinator provider sites that only administer VFC influenza vaccine, but do not administer any other VFC vaccine. To be counted in this category, the mass vaccinator must be an enrolled VFC provider that only administers VFC influenza vaccine during clinics held

[8]Mass Vaccinator (flu only)

Mass Vaccinator provider sites that administer influenza and other types of VFC vaccine. To be counted in this category, the mass vaccinator must be an enrolled VFC provider that administers influenza and other VFC vaccine during clinics held

Table 5. Completed provider contacts by activity for CY2013

Type of Visit	Public VFC Enrolled	Public Non-VFC	C/MHC VFC Enrolled	C/MHC Non-VFC	Other Public VFC Enrolled	Other Public Non-VFC	Private VFC Enrolled	Private Non-VFC	Pharmacy	Mass Vacc	Total
AFIX Only (all ages)*	calc	x	calc	x	calc	x	calc	x	calc	calc	calc
--(0-3)		x		x		x		x			calc
--(4-12)		x		x		x		x			calc

--(13-18)		x		x		x		x			calc
--(0-3/4-12)		x		x		x		x			calc
--(0-3/13-18)		x		x		x		x			calc
--(4-12/13-18)		x		x		x		x			calc
--(0-3/4-12/13-18)		x		x		x		x			calc
VFC/AFIX Combined (all ages)**	calc	x	calc	x	calc	x	calc	x	calc	calc	calc
--(0-3)		x		x		x		x			calc
--(4-12)		x		x		x		x			calc
--(13-18)		x		x		x		x			calc
--(0-3/4-12)		x		x		x		x			calc
--(0-3/13-18)		x		x		x		x			calc
--(4-12/13-18)		x		x		x		x			calc
--(0-3/4-12/13-18)		x		x		x		x			calc
x=no textbox/not collected											
* The number of AFIX only (all ages) visits should not be different than the sum total of visits in the age categories (0-3, 4-12, 13-18).											
**The number of VFC/AFIX Combined (all ages) visits should not be different than the sum total of visits in the age categories (0-3, 4-12, 13-18).											

Table 6. AFIX Assessment method used

AFIX Assessment method	Public Provider Sites	Private Provider Sites
-- Enter the number of sites receiving each AFIX assessment method type		
CHART-BASED - STANDARD		
CHART-BASED - HYBRID		
IMMUNIZATION INFORMATION SYSTEM (IIS)		
AFIX QUALITATIVE VISIT*		

*Qualitative assessments are done when there are not a sufficient number of patients in the designated age cohort to conduct a quantitative assessment. All components of the AFIX site visit are conducted based on findings from individual charts.

AFIX - Childhood Assessment Activities (0-3 years)

Age Range of children sampled

- ❍ 12-23 months
- ❍ 19-35 months

- ❍ 24-35 months
- ❍ 12-23 months and 24-35 months
- ❍ Other, (specify)_____

UTD status evaluated at age:

- ❍ 12 months
- ❍ 19 months
- ❍ 24 months
- ❍ 12 and 24 months
- ❍ Age at time of assessment
- ❍ Other, (specify) _____

What criteria do you use for determining "active patients" (patients that you include) for your AFIX Assessments?

- ❍ At least 1 well-child visit
- ❍ At least 1 well-child visit within the past 12 months
- ❍ At least 1 visit (of any type) to this provider
- ❍ At least 1 visit (of any type) to this provider in the past 12 months
- ❍ 2 visits (of any type) to this provider
- ❍ 2 visits (of any type) to this provider within the last 12 months
- ❍ Other (please specify)_____

What tool or combination of tools do you use for assessment?

- ❍ Immunization Information System (IIS) only (CoCASA not used)
- ❍ IIS combined with CoCASA (IIS data loaded into CoCASA)
- ❍ CoCASA (IIS not used)
- ❍ Other (please specify)_____

AFIX - Adolescent Assessment Activities (13-18 years)

Did you perform any adolescent AFIX visits in CY2013?

❍ Yes
❍ No

If you answered yes:

A. What age range did you measure?_____
B. How did you define "active patients"?_____
C. Utd status evaluated at age _____years

Table 7 should be completed to provide childhood coverage assessments. 1) Select each single vaccine and complete the appropriate fields if you have this data, the single antigen tables are optional to fill out using 2013 data. 2) Select each vaccine series (4:3:1:3:3:1 and 4:3:1:3:3:1:4) and complete the appropriate fields. In each table, you are responsible for entering data into the "#" columns for public and private providers. All percentages and totals will be calculated.
Please note that the single antigen tables are optional to fill out but the series table is required to fill out.

Table 7. Childhood Coverage level results (single antigens) - CY2013
Single antigen tables are optional for 2013 data

4 DTAP	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
3 Polio	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
1 MMR	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
3 HIB	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
3 HepB	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
1 Varicella	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc
4 PCV13	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

Childhood coverage level results (series) - CY2013
Series table is required for 2013 data

431331	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

4313314	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

Table 8. Hybrid assessment results CY2013

	Public Provider Sites		Private Provider Sites	
Vaccine series measured	Drop-down	431331	Drop-down	431331
		4313314		4313314
Number of providers assessed				
Pre-determined threshold level	Drop-down	60	Drop-down	60
		65		65
		70		70
		75		75
		80		80
		85		85
		90		90
		95		95
Number of providers who met the threshold level				
Number of providers who did not meet the threshold level				

Table 9 should be completed if Adolescent Assessments were conducted in CY2013. Select each vaccine coverage level, and complete the appropriate fields. In each table, you are responsible for entering data into the "#" columns for public and private providers. All percentages and totals will be calculated

Table 9. Adolescent Vaccine Coverage Level Results CY2013

3 HepB doses	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

2 MMR doses	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

2 Varicella doses	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

1 Td/Tdap dose	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

1 MCV4 dose	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

3 HPV doses	<50%		50-59%		60-69%		70-79%		80-89%		90-100%		Total	
Provider Type	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Public		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Private		Calc		Calc		Calc		Calc		Calc		Calc	Calc	Calc
Total	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc	Calc

Table 10. AFIX Feedback method used

Type of Feedback	Public Provider Sites	Private Provider Sites
-- Enter the number of sites receiving each AFIX feedback method type		
FACE-TO-FACE		
MAIL		
OTHER		

Appendix E

Selecting a Random Sample

Methods on how to select a random sample

A. Census or complete enumeration

If a clinic has a computerized data system, it is relatively easy to do a census or complete inventory of the records in the system. Assessment becomes a simple matter of accessing the computer files, selecting all eligible two-year-olds, and counting the number of these children who are up-to-date on vaccinations at their second birthday and at earlier age markers. Similarly, if a clinic has fewer than 50 two-year-olds, the time spent doing a complete inventory may not be much more than the time it would take to do a survey. In either scenario, sampling error is no longer be an issue -- an advantage that a complete inventory has over a sample survey. However, a census could still be subject to non-sampling error.

In other clinics, it is difficult, time-consuming, and expensive to do a complete account. A sample survey needs to be done. This involves deciding on a sampling procedure, calculating sample sizes, selecting the sample, and computing the appropriate estimates and the corresponding sampling error. The following are options for the sampling procedure:

B. Simple random sampling

With simple random sampling (SRS), every possible sample of n children from a population of size N has the same chance of being chosen. Conceptually, SRS is the simplest type of sampling plan. At the implementation stage, however, SRS may present some problems. In some clinics, it may be difficult to construct a list of all N children before sampling and to train personnel to generate n random numbers. In these situations, systematic sampling may be easier to implement. Following are the steps to be taken when selecting a simple random sample:

- **Step 1:** Label the children in the survey population from 1 to N.
- **Step 2:** Take n random numbers between 1 and N. The selection must be done without replacement (i.e., if a number is the same as any one of the previous numbers selected, discard it and continue until n <u>different</u> numbers between 1 and N have been chosen). (Use either a table of random numbers such as those in Table 1 or a computerized random number generator.)
- **Step 3:** Select the children corresponding to the n numbers generated in step 2.

Example: Suppose that we need to select 10 records from a collection of 100 clinic records. We number the records in the sampling frame from 1 to 100. Then, using a table of random numbers such as in Table 1, we pick 10 random numbers. Because we want numbers between 1 and 100, we read off three digits at a time. Reading from left to right and from top to bottom, the first two numbers (332 and 767) are discarded because they are larger than 100. The next number, 099, is chosen. The second

number selected is 034. All numbers read that fall between 1 and 100 are in boldface (Table 1). Note that 099 is selected twice, but we include it only once. The number 34 is also read twice, but is included only once. Hence, the 10 numbers selected are 99, 34, 15, 81, 43, 25, 1, 5, 85, and 100. We then pull out the 1st, 5th, 15th, 25th, 34th, 43rd, 81st, 85th, 99th, and 100th records from our files.

Table 1. Portion of a Table of Random Numbers

33276	7**099**7	79936	56865	05859	90106
03427	49626	69445	18663	72695	52180
92737	88974	33488	36320	17617	30**015**
85689	48237	52267	67689	93394	01511
08178	77233	13916	47564	81056	97735
51259	77452	16308	60756	92144	49442
60268	89368	19885	55322	44819	01188
949**04**	**3**1273	04146	18594	29852	71685
58586	23216	14513	83149	98736	23495
09998	42698	06691	76988	13602	51851
14346	09172	30163	90229	04734	59193
741**03**	**4**707**0**	**25**306	76468	26384	58151
242**00**	**1**3363	38**005**	94342	28728	35806
873**08**	**5**873**1**	**00**256	45834	15398	46557
07351	19731	92420	60952	61280	50001

C. Systematic sampling

Systematic sampling is easy to apply because it simply involves taking every k^{th} child after a random start. The following are steps to be taken when selecting a 1-in-k systematic sample:

- **Step 1:** Divide the population size N by the required sample size n to get the sampling interval k (k=N/n). If k is not an integer, round it down to the nearest integer.

- **Step 2:** Take a random number between 1 and k to determine the first child to be included in the sample.
- **Step 3:** Add into the sample every k^{th} child after the random start in the preceding step.

Example: Suppose that we need a sample of 5 out of 28 records. Then k=28/5=5.6, not an integer, and hence, we round it down to the nearest integer, 5. Using a table of random numbers, select a number between 1 and 5; in this example, we'll choose 2. The random start is 2, and the second record is selected first. Starting with the third record, count from 1 to 5 and pull the last record (i.e., the seventh record from the file is selected). Repeat the procedure until 5 records are selected or the end of the file is reached. Thus, with a random start of 2 and a sampling interval of 5, the 2nd, 7th, 12th, 17th, 22nd, and 27th records are selected. Note that because we rounded the sampling interval down to the nearest integer, we get a sample size of 6 instead of the intended size of 5. This process is illustrated in Table 2. Note that the 1-in-k systematic sampling essentially divides the population into groups of k (k=5 in our example) and one record is selected from each group. The random start fixes the position of the record selected within each group; in our example, every 2nd record in a group of 5. If the selection process is interrupted, it is helpful to know that the jth selection is determined by the formula j^{th} selection = (random start) + (j-1)(sampling interval). For example, the third selection will be 2+(3-1)(5)=12 and the 6th selection will be 2+(6-1)*5=27.

D. Cluster sampling (shelf method)

Systematic sampling is impractical in certain practices (for example, a practice with no computerized database of patients). IIt may be necessary, for example, to sample records of 100 two-year-olds from a file room with 50 shelves filled with records for clients of all ages. A practical alternative is to first sample "clusters" of records from the filing system and then sample individual records from each cluster.

- **Step 1:** First, divide the filing system into relatively large number of groups. In our example, each half of a shelf might represent a cluster for a total of 100 clusters. Next, select a sample of approximately 30 clusters, either a simple random sample or a systematic sample (for example, pick a random start between 1 and 4, then take every 4 clusters for a total of 25 clusters).

- **Step 2:** Estimate the total number of eligible children in the practice. Select one cluster; determine how many charts in that cluster meet the eligibility criteria, and multiply that number by the total number of clusters. For example, cluster 31 is randomly selected from the 100 total clusters, and 12 eligible charts are found in that half shelf of records. The estimate of the total number of eligible charts in the practice would be 1,200 (12 eligible charts per cluster * 100 clusters).

- **Step 3:** Select individual charts from each cluster. First, divide the total sample size by the number of clusters to determine how many charts to select from each cluster. For example, if you want a sample of 100 charts, and in Step 1, you drew a sample of 25 clusters; you would select four charts from each cluster. To select individual charts, simply start at the beginning of each cluster selected in Step 1 and go through the charts one at a time until you have four charts that meet the eligibility criteria.

Appendix F

AFIX Resources

Centers for Disease Control and Prevention (CDC), Vaccines and Immunizations
http://www.cdc.gov/vaccines/

AFIX
http://www.cdc.gov/vaccines/programs/afix/

Centers for Disease Control and Prevention (CDC), Vaccines and Immunizations for Program Managers
http://www.cdc.gov/vaccines/program-mgrs.htm

2013-2017 Immunization Program Operations Manual (IPOM)
http://www.cdc.gov/vaccines/vac-gen/policies/ipom/default.htm

Guide to Community Preventive Services: Vaccines
http://www.thecommunityguide.org/vaccines/index.html

Online Tool for Reporting AFIX Site Visits
https://sams.cdc.gov
Program Annual Reports (PAPA): https://csams.cdc.gov/PAPA/papaHome.aspx
AFIX ONLINE TOOL: https://csams.cdc.gov/PAPA/AFIX/afix.aspx

Comprehensive Clinic Software Application (CoCASA)
http://www.cdc.gov/vaccines/programs/cocasa/index.html

Vaccines for Children (VFC Program)
http://www.cdc.gov/vaccines/programs/vfc/index.html

Immunization Information Systems (IIS)
http://www.cdc.gov/vaccines/programs/iis/index.html

National Immunization Survey (NIS)
http://www.cdc.gov/vaccines/stats-surv/imz-coverage.htm#nis

IIS Operational Best Practice Guidelines
http://www.immregistries.org/pubs/mirow.html

Appendix G

Why Is the AFIX Childhood Assessment Age Cohort 24-35 Months?

Why do the AFIX Standards use "24-35 months, at 24 months" rather than the 19-35 months used by the National Immunization Survey (NIS)?

The CDC AFIX Standards use the assessment criteria "24-35 months of age at 24 months" because of its precision, its ease of interpretation, and its adherence to national standards.

Both the 19-35 and 24-35 month age ranges are valid and useful ways of looking at "two-year olds." However, their usefulness depends on the purpose of the data and the situations in which they are applied. There are important reasons that the National Immunization Survey (NIS) uses a 19-35 month age range, but the purposes for doing a national survey are very different than the purposes of a clinic-specific assessment. The use of the 24-35 month age range is a common measure in the field of immunizations. Similarly, it is well recognized that the 2nd birthday is a key milestone. A key message in yearly National Infant Immunization Weeks (NIIW) is to make sure that children are immunized "before age two," and the timeliness of vaccines has been increasingly recognized as a critical part of immunization practice. The important HEDIS childhood immunization measurement (of the National Committee for Quality Assurance) assesses children at 24 months of age, and many publications are based on a 24-35 month age group or children at 24 months of age.

Including all children between the ages of 19-35 months in a clinic-based assessment creates great difficulty in interpreting the results. Since the age range spans a period of 16 months including the critical 24-month mark, it is not possible to know when, during that span, those children became up-to-date. Assessing this large time span provides no indication regarding the percent of children immunized early, on-time or late, yet knowing those details is important to understanding the system issues and clinical reasons that the children were or were not up-to-date. The timeliness of vaccine administration is critical and the difference between children receiving a vaccine at 19 months vs. 35 months is not unimportant. Assessing children at 24 months of age from a 24-35 month range provides a clear measurement at an important milestone, and it can be a starting point for greater dialogue about immunization practices.

The most common reason that people want to use the 19-35 month range in their AFIX assessments is to compare their rates to NIS rates. However, care should be taken when making comparisons between the NIS rates and CoCASA generated rates for AFIX. There are many methodological differences between the NIS and CoCASA, but two of the most significant are that NIS is a population-based survey while CoCASA is usually clinic-based. And, secondly, the NIS counts all doses while CoCASA looks only at valid doses.