



# CDC Immunization Quality Improvement Program: Leveraging IIS Functionality

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- Introducing CDC's national program for immunization quality improvement
- Launched July 1, 2019, replacing CDC's AFIX program
- **Promotes and supports implementation of provider-level strategies designed to increase on-time vaccination among children and adolescents**
- **Features IIS-based assessments and offers technical assistance to providers to leverage and improve IIS functionality**

# Outline

- Background on the AFIX to IQIP transition
- Overview of IQIP and Its Use of IIS Data
- Leverage IIS Functionality: A Core IQIP Strategy
- Importance of IIS Data to IQIP Program
- Conclusions

# Background on the AFIX to IQIP Transition

# The AFIX process

- **Assessment:** Awardee-run reports of provider's vaccination coverage and missed opportunity (MO) percentage (required)
- **Feedback (site visit):** Review of coverage and MO reports, and selection of quality improvement (QI) strategies
- **Initial eXchange (3–6 months after site visit):** Follow-up coverage and MO assessments, and review of QI strategy implementation status
- **Subsequent eXchange:** Additional follow-up, repeated until QI strategies are judged to be “fully implemented”

# AFIX assessment requirements

- Childhood

- 8 measures: 4:3:1:3:3:1:4 series and its 7 component vaccines
- Age cohort: 24–35 months
- Evaluated at: 2nd birthday

- Adolescent

- 3 measures: 1 Tdap, UTD MenACWY, and UTD HPV
- Age cohort: 13–17 years
- Evaluated at: assessment date

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\* Measures catch-up as opposed to on-time vaccination

# The 19 QI strategies covered during AFIK site visits

- |    |  |    |   |
|----|--|----|---|
| 1  | Reminder/recall process in place             | 11 | Immunization resources for patients/parents   |
| 2  | Walk-in or "immunization only" visits        | 12 | Staff knowledgeable about ACIP recs           |
| 3  | Routinely measure coverage, share with staff | 13 | Train staff on scheduling immunizations       |
| 4  | Schedule next visit before patient leaves    | 14 | Standing orders for vaccine administration    |
| 5  | Contact parents within 3–5 days of "no show" | 15 | Staff knowledgeable/comfortable vaccinating   |
| 6  | Wellness visits for 11–12 year-olds          | 16 | Report all administered doses in the IIS      |
| 7  | Strong HPV vaccine recommendation            | 17 | Report previous doses in the IIS              |
| 8  | Have an immunization champion                | 18 | Inactivate patients in the IIS no longer seen |
| 9  | Document refusals and reasons for refusals   | 19 | Use the IIS to determine which doses are due  |
| 10 | Educate parents about immunization           |    |   |



# AFIX site visit challenges

- Difficult to review assessment results and discuss 19 QI strategies within the typical 1-hour duration of site visits
- Disproportionate amount of time spent on assessment reports instead of QI strategies and technical assistance
  - Common for providers contest the accuracy of IIS-based measures
  - Can lead to name-by-name review of the provider's patients to identify those whose IIS status should be changed from “active” to “inactive”
- Approximately 1/3 of site visits end without the provider selecting *any* of the 19 QI strategies for implementation

## AFIX 3–6-month follow-up

- For some providers, the 3–6-month timeline is too short to know if the strategies selected for implementation are sustainable
- The 3–6-month follow-up window is too wide for comparative evaluations of impact
  - 6 months of QI is very different from 3 months
  - A uniform interval is necessary
  - Seasonality of vaccine uptake can confound analyses

# Rethinking CDC's immunization QI program

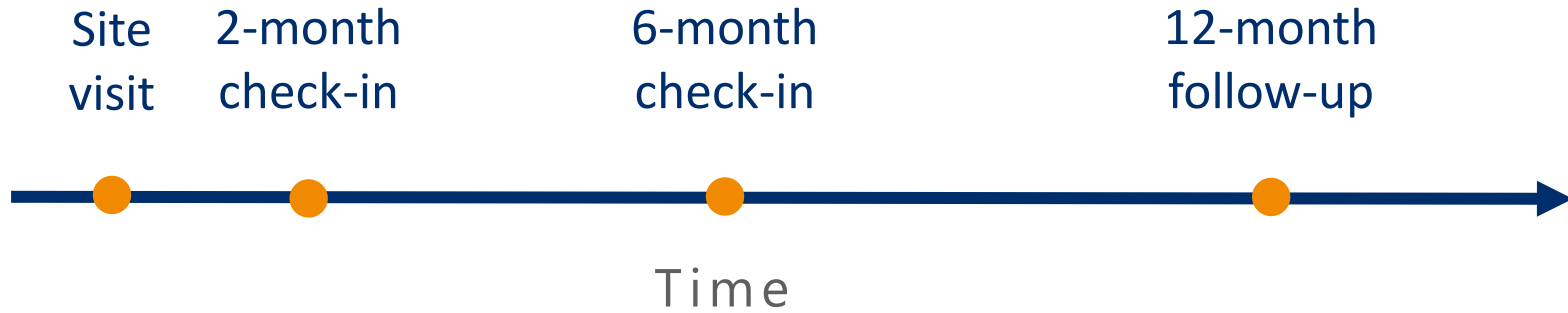
- Objectives
  - Prioritize strategies to improve routine provider vaccination workflow
  - Streamline the program, then consider additions
- This meant making decisions that sacrificed existing elements
  - Focus primarily on on-time vaccination vs. catch-up
  - Roll out a few priority QI strategies but cover them in greater detail
  - Emphasize technical assistance and motivation over strict assessment criteria and deadlines

# Overview of IQIP and Its Use of IIS Data

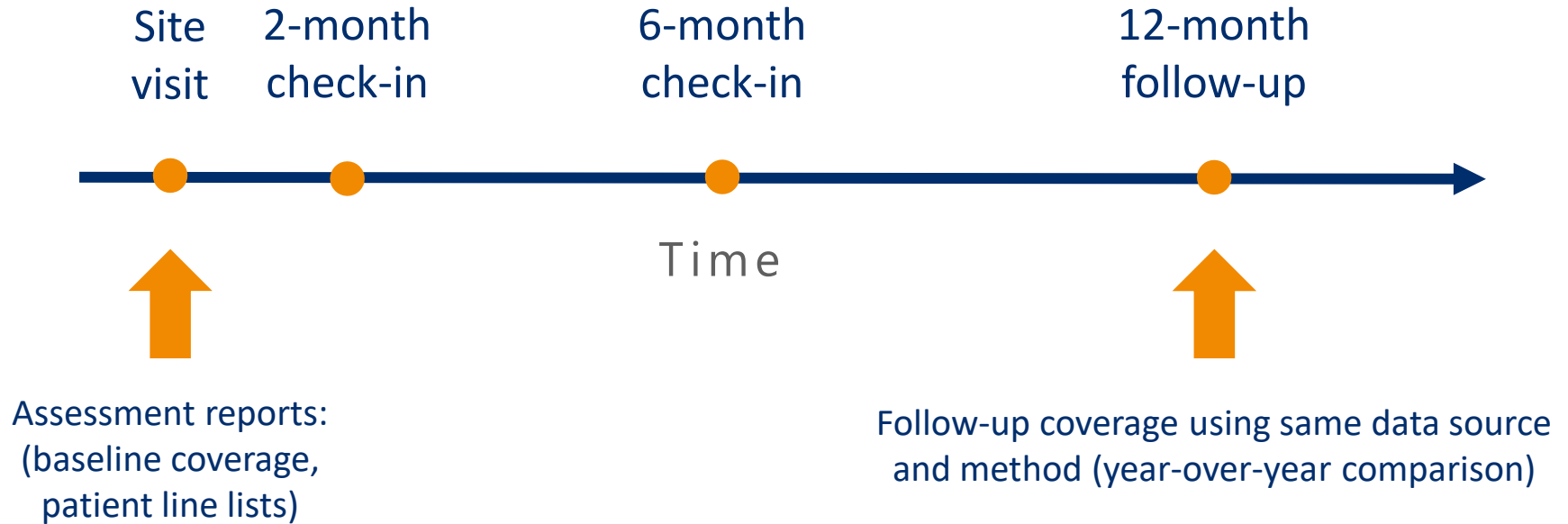


*The purpose of IQIP is to promote and support the implementation of provider-level quality improvement strategies designed to increase vaccine uptake among childhood and adolescent patients in adherence to the ACIP-recommended routine schedule*

# The 12-month IQIP process



# The 12-month IQIP process



## Site visit (conducted by IQIP consultant)

- Observe provider workflow (high-level walkthrough or description)
- Review initial coverage assessment and (recommended) patient line lists
- Select QI strategies and agree upon workflow changes for implementation
- Provide technical assistance
- Create a Strategy Implementation Plan of strategy-specific action items



# Running and interpreting assessment reports

- Assessments (coverage and patient line lists) may be run by the IQIP consultant, though ideally the provider will run them on their own or the consultant will teach them how
- Use initial coverage reports to target areas for improvement by identifying patterns or outliers (usually possible even with imperfect IIS data)

# IQIP assessment criteria

- Childhood
  - Same as AFIX
- Adolescent
  - 3 measures: 1 Tdap, 1 MenACWY, and complete HPV
  - Cohort 13 years
  - Evaluated at: 13th birthday

# IQIP assessment criteria

- Childhood
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# IQIP assessments focus on on-time vaccination

- Childhood
    - Same as AFIX
  - Adolescent
    - 3 measures: 1 Tdap, 1 MenACWY, and complete HPV
    - Cohort 13 years \*
    - Evaluated at: 13th birthday
- Recommended, not required

\* Changed from 13–17 years to assess on-time vaccination, the primary IQIP objective

# Addressing provider concerns about IIS data

- If providers are skeptical of IIS-based assessment results
  - Acknowledge the calculations may be imperfect
  - Emphasize they can improve their data by choosing the “Leverage IIS” strategy and focusing on data quality
- EHR-based assessment data may be used for IQIP if the provider prefers, so long as the provider (not the consultant) runs the reports

## IQIP assessments—patient line lists

- IQIP recommends generation and review of patient lists with providers (i.e., patients not UTD, missed opportunities, invalid doses, etc.)
- Use to demonstrate performance gaps and opportunities for improvement
- Encourage providers to generate line lists periodically for monitoring and self-assessment

# IQIP strategies

- **Three core strategies** (CDC-defined)
  - Schedule next immunization visit before the patient leaves the office
  - Leverage IIS functionality to improve immunization practice
  - Give a strong vaccine recommendation (include HPV vaccine if the provider has adolescent patients)
- **One custom strategy** (awardee-defined)
  - Optional
  - Based on state or local public health priorities

# Promotion and support of IQIP strategies

- Collaborate with provider to select appropriate QI strategies based on current facility processes, and provide needed TA and resources
- Record the following information in the IQIP Database for each selected strategy after the site visit, check-ins, and follow-up
  1. Current implementation status
  2. Existing gaps or limitations
  3. Technical assistance provided by the consultant
  4. Action items to support strategy implementation (assigned to appropriate personnel)



## 2- and 6-month check-ins (by phone)

- Review progress toward strategy implementation
- Provide technical assistance
- Update the Strategy Implementation Plan with new or revised action items

## 12-month follow-up (by phone)

- Review progress toward strategy implementation
- Evaluate year-over-year coverage changes using same data source and method as used for site visit
- Provide technical assistance
- Update the Strategy Implementation Plan with new or revised action items

# **Leverage IIS Functionality: A Core IQIP Strategy**

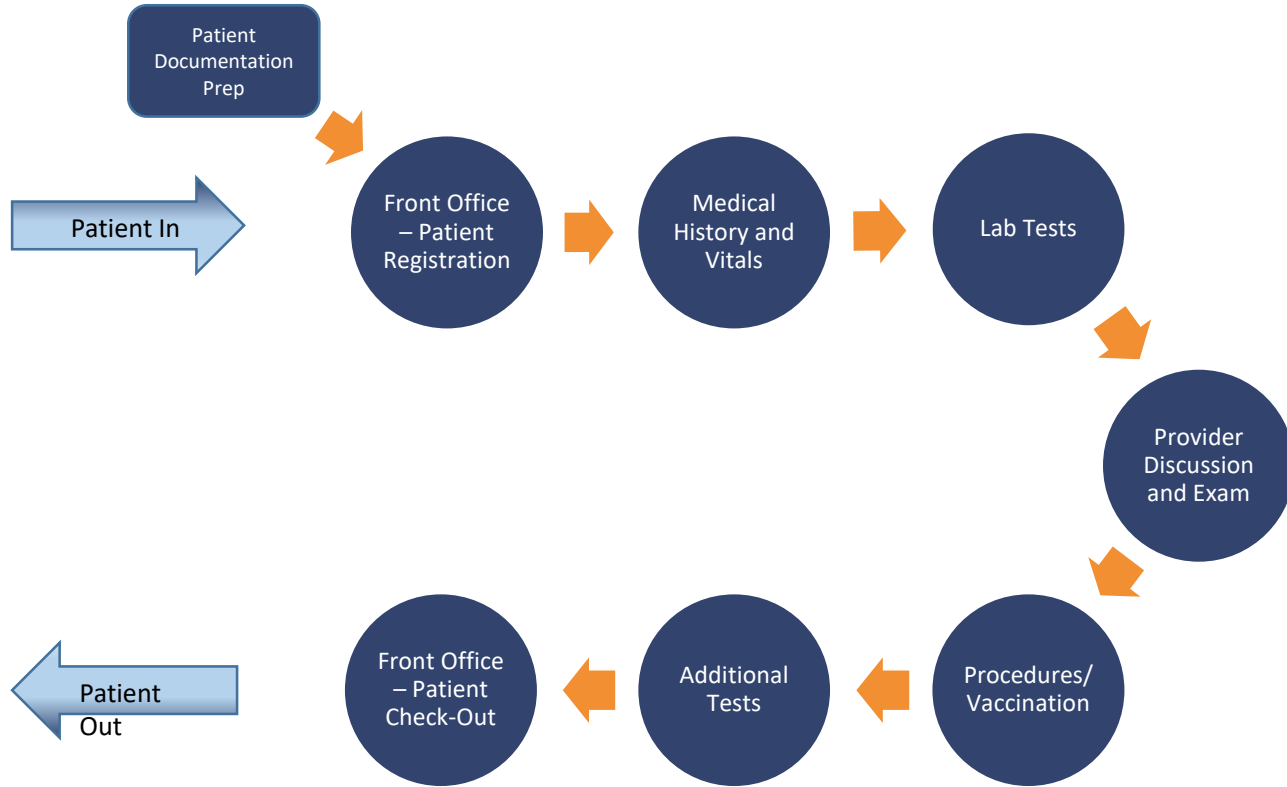
# Leverage IIS functionality to improve immunization practice

- Multiple opportunities to leverage IIS during patient visit
  - Look up immunization history for scheduled and unscheduled patients
  - Doses due/overdue for scheduled patients
  - Report historical vaccinations
  - Vaccine forecasting
  - Reminder/recall
  - Official immunization record
  - Offer consumer access portal

# Provider vaccination workflow assessment

- IQIP focuses on provider's vaccination workflow
  - IQIP consultant captures current workflow
  - Assesses current workflow against IQIP strategies
- Immunization Workflow Template
  - Aids capture of current workflow
  - Supports identification of candidate IQIP strategies and at what point during the visit the provider chooses to update workflow to implement the strategy

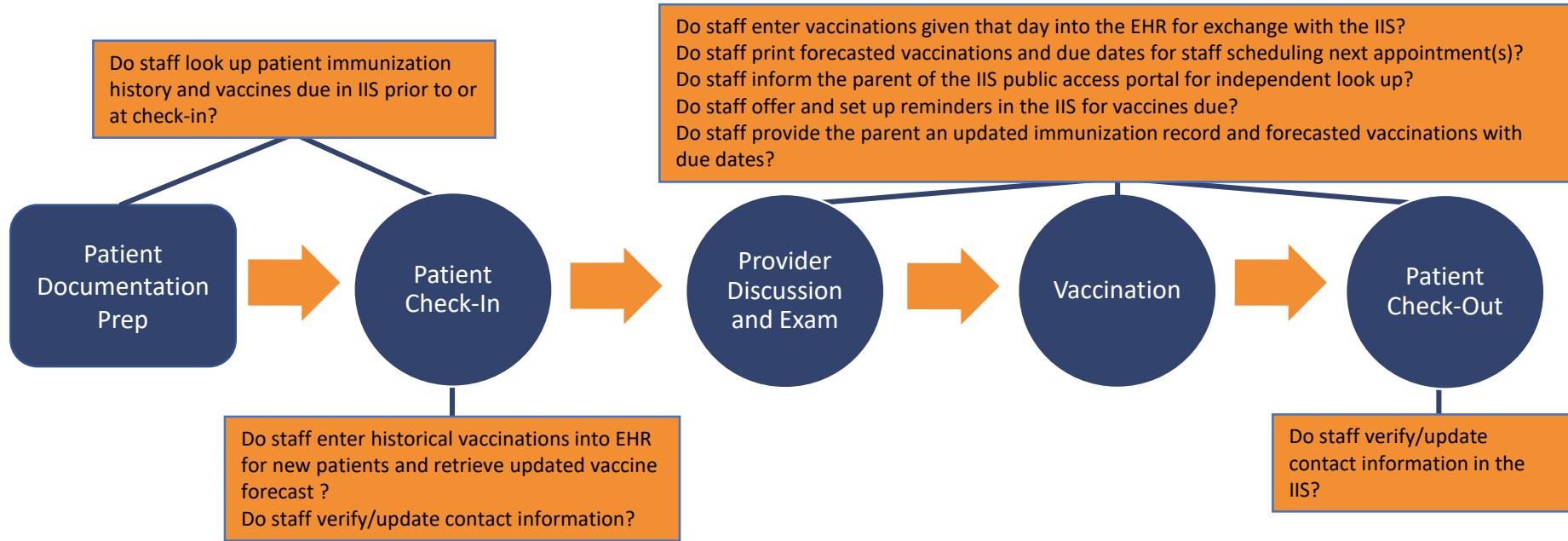
# Immunization Workflow Template



## Points to consider:

1. Who reviews the patient's vaccination history and determines needed vaccines? When is this done? What source is used (IIS or EHR)?
2. Who discusses vaccines with the patient/parents? When is this done?
3. Which staff can play a part in making or reinforcing a strong vaccine recommendation?
4. When are vaccination data documented in the IIS or EHR?
5. When and by whom are the due dates for future vaccination discussed?
6. When and by whom is the next immunization appointment made? Are there patient reminders before the next visit?

# Assessing Processes for Leveraging the Immunization Information System (IIS)



## Data quality issues to consider:

1. Do staff review the IIS acknowledgement report to ensure all reported vaccinations were received by the IIS?
2. Do staff routinely check to ensure the clinic is recording vaccinations in the EHR in a timely manner?
3. Do staff routinely review coverage or patient lists from the IIS for missed opportunities, invalid doses, and patients not UTD?
4. Do staff regularly check patients' active/inactive status in the IIS and update when needed?
5. Do staff perform spot checks for completeness and accuracy of clinic immunization records in the EHR?

# Immunization Workflow – Example Opportunities for IIS

Patient  
Documentation  
Prep

Patient  
Check-In

Provider  
Discussion  
and Exam

Vaccination

Patient  
Check-Out

Immunization record lookup and vaccines due for scheduled and unscheduled patients

Enter historical vaccinations brought by parent

Generate revised forecast

Verify and/or update contact information

Enter vaccinations given that day into the EHR for reporting to the IIS

Print forecasted vaccinations and due dates for staff scheduling the next appointment(s)

Inform the parent of the IIS public access portal for independent look up

Offer and set up reminders in the IIS for vaccines due

Provide the parent an updated immunization record and forecasted vaccinations with due dates

Verify and/or update contact information



# When provider selects “Leverage IIS” strategy

- Hands-on demonstration, technical assistance, training, and troubleshooting
  - Encourage providers to run own coverage assessments, patient line lists
- Promote IIS data quality, timeliness, and completeness
  - HL7 interface
  - Reinforce routine reporting, checking status of electronic data submissions
  - Update patient active/inactive status (PAIS)
  - Referral to IIS staff for more involved TA

# **Importance of IIS Data to IQIP Program**

# The importance of IIS data to IQIP

- IIS are the recommended data source for IQIP assessment reports
  - Will inform QI strategy selection
- Assessment results will be reported to the IQIP Database
  - Baseline: Identify performance gaps, inform selection of QI strategies
  - 12-month follow-up: year-over-year comparison and findings discussed during 12-month follow-up with provider
    - Inform overall success of the project

The screenshot displays the REDCap web application interface. At the top, the REDCap logo is visible, followed by a navigation bar indicating the user is logged in as '19760' with a 'Log out' link. Below this, there are links for 'My Projects' and 'Project Home', and a status indicator for 'Development'. The main content area is divided into two primary sections: 'Data Collection' and 'Reports'. The 'Data Collection' section includes a 'Record Status Dashboard' (with a sub-link to view data collection status) and a 'View / Edit Records' option (with a sub-link to view or edit existing records). It also lists various data collection instruments such as 'Provider Information', 'Initiation and Initial Coverage', 'Coverage Goals', 'Site Visit', 'Check-In (2-Month)', 'Check-In (6-Month)', 'Follow-Up (12-Month)', 'Synopsis', and 'Notes'. The 'Reports' section features a search bar and a list of 12 report types, including 'All Essential Data', 'Initiated', 'Initiated But Not Complete', 'Complete', 'Uninitiated', 'Status Tracker--IQIP', 'Status Tracker--Alt QI', 'Overdue Tracker--IQIP', 'Overdue Tracker--Alt QI', 'YOY Coverage Data', 'Selected Strategies', and 'Lost To Follow-Up'.

# The importance of IIS data to IQIP

- Consultants will need to explain coverage assessment results in order to support QI strategy selection and assess the success of the strategy in increasing on-time immunization
- CDC creating job aids and resources to help IQIP consultants interpret coverage reports
  - May need additional support at awardee level

# Comparing year-over-year coverage for adolescents

- Due to variability in AFIX-IIS Integration tools and implementation status, IIS have varying capacity to perform the recommended IQIP coverage assessment for adolescents.
- IQIP will accept standard AFIX assessment parameters, but encourage awardee IQIP programs to identify the coverage assessment their IIS can perform that best measures on-time vaccination.
- IQIP's recommended adolescent coverage assessment provides an advantage
  - A new group of adolescents will have aged into the assessment age range, revealing more clearly how successful the provider was in vaccinating on time over the 12-month period

# Conclusions

## Summary—key IQIP objectives

- Cover fewer QI strategies in greater detail
- Use immunization workflow assessment to identify opportunities for improvement
- Prioritize technical assistance and motivation of provider staff over extended discussion of coverage reports during visits and check-ins
- Focus on on-time vaccination over catch-up

## Summary – need IIS and IQIP program collaboration

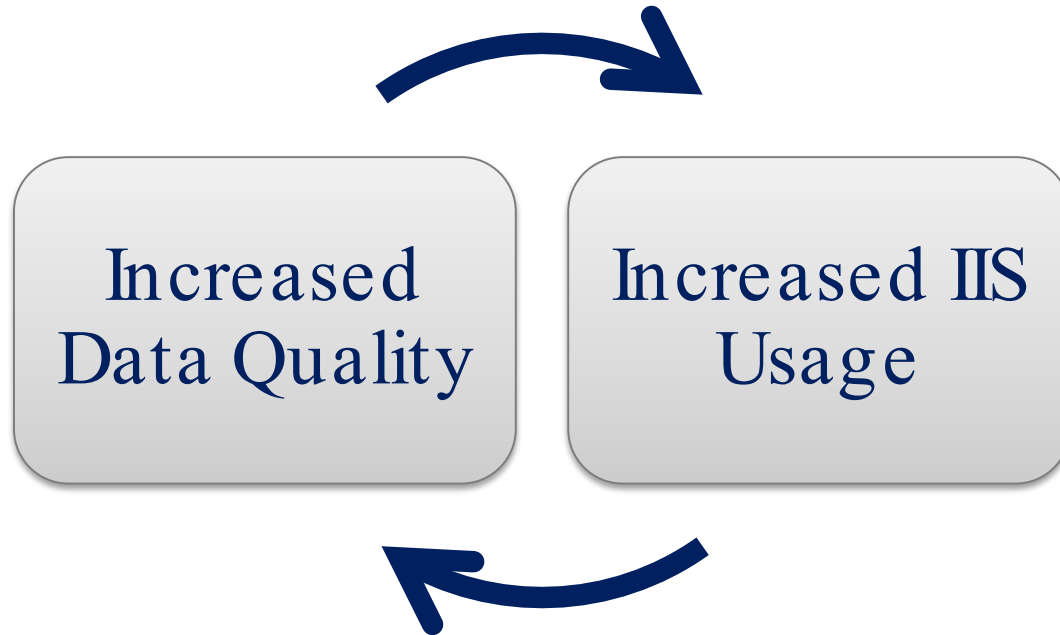
- Partner with IQIP to identify key functionalities to feature during IQIP visits and train IQIP consultants.
- Identify coverage assessments and patient line lists for IQIP
  - IQIP-recommended adolescent coverage measure, standard AFIX, or best available option for on-demand measurement of on-time vaccination.
- Assist in the developing IIS training resources or job aids for IQIP
- Stay in contact with the IQIP program to ensure IQIP consultants remain up to date on IIS functionality and can provide quality TA



## Summary – IIS role in IQIP success

- As the featured tool in one of CDC's three IQIP strategies, IIS will play a central role in immunization programs' collaboration with providers to ensure children are immunized appropriately and on time.
- IQIP will support direct application of IIS data to immunization practice at the provider level

## The “Virtuous Cycle”



When providers report to and use the IIS, immunization programs can better identify opportunities to improve vaccine uptake

# Parting thoughts

- For the virtuous cycle to accelerate and gain momentum, we need to be able to provide data that providers are interested in seeing
- That means assessment tools should have use-case capabilities beyond only IQIP

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# Thank you.

Visit <https://www.cdc.gov/vaccines/programs/iqip/index.html> or contact the IQIP Help Desk at [IQIP@cdc.gov](mailto:IQIP@cdc.gov) for additional information.

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

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