



# Immunization Strategies for Health Care Practices and Providers

# Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-Preventable Diseases

Disease	20th Century Annual Morbidity <sup>†</sup>	2017 Reported Cases <sup>††</sup>	Percent Decrease
Diphtheria	21,053	0	100%
Measles	530,217	122	> 99%
Mumps	162,344	5,629	97%
Pertussis	200,752	15,808	>92%
Polio (paralytic)	16,316	0	100%
Rubella	47,745	9	> 99%
Congenital Rubella Syndrome	152	2	99%
Tetanus	580	32	95%
<i>Haemophilus influenzae</i>	20,000	22	> 99%
Total	999,159	24,493	97%

<sup>†</sup>JAMA. 2007;298(18):2155-2163

<sup>††</sup>CDC. *National Notifiable Diseases Surveillance System, Week 52, 2017 Weekly Tables of Infectious Diseases*. Atlanta, GA: CDC Division of Health Informatics and Surveillance, 2018. Available at: [www.cdc.gov/nndss/infectious-tables.html](http://www.cdc.gov/nndss/infectious-tables.html). Accessed on January 4, 2018.

\* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 11 cases of Hib are estimated to have occurred among the 237 notifications of Hib (< 5 years of age) with unknown serotype.

# Estimated Vaccination Coverage among Children Aged 19–35 Months, NIS 2017

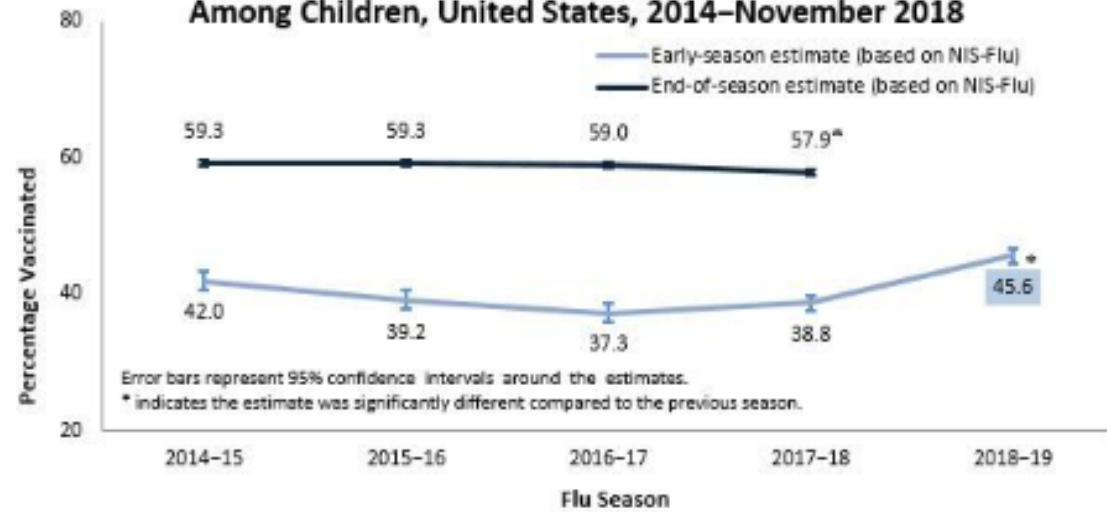
State/Area	Combined Series* 4:3:1:3:3:1:4
United States	70.4%

\*The combined (4:3:1:3:3:1:4) vaccine series includes  $\geq 4$  doses of DTaP,  $\geq 3$  doses of poliovirus vaccine,  $\geq 1$  dose of measles-containing vaccine, full series of Hib vaccine ( $\geq 3$  or  $\geq 4$  doses, depending on product type),  $\geq 3$  doses of HepB,  $\geq 1$  dose of varicella vaccine, and  $\geq 4$  doses of PCV

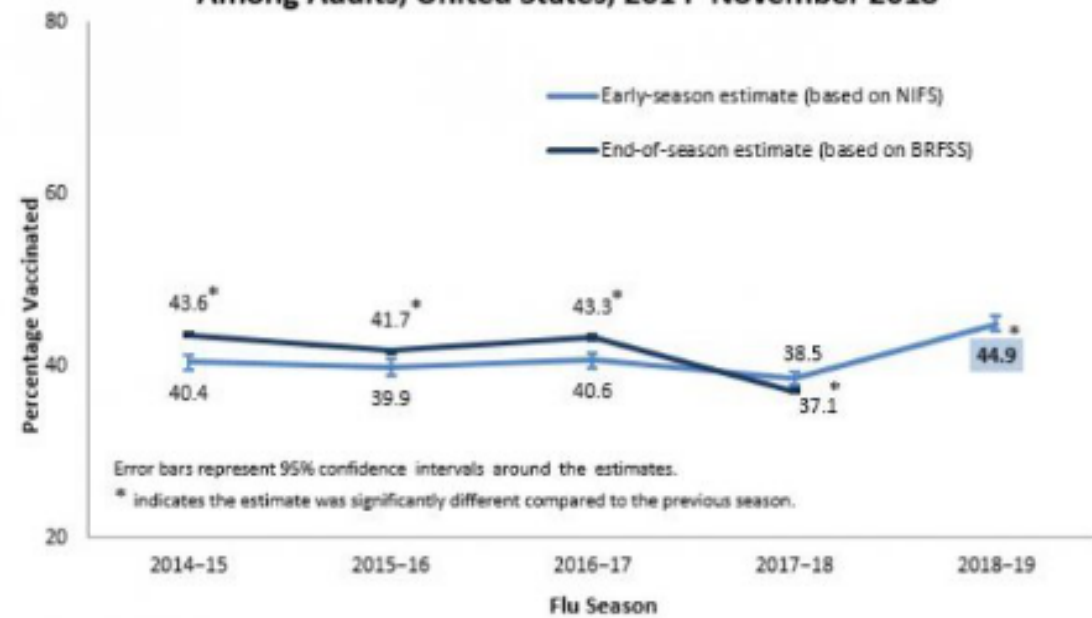
# Estimated Vaccination Coverage among Adolescents Aged 13–17 Years, NIS-Teen, 2017

Vaccine	United States	
≥1 Tdap	88.7%	
≥1 HPV (M and F)	65.5%	
UTD HPV (M and F)	48.6%	
≥1 MenACWY	85.1%	

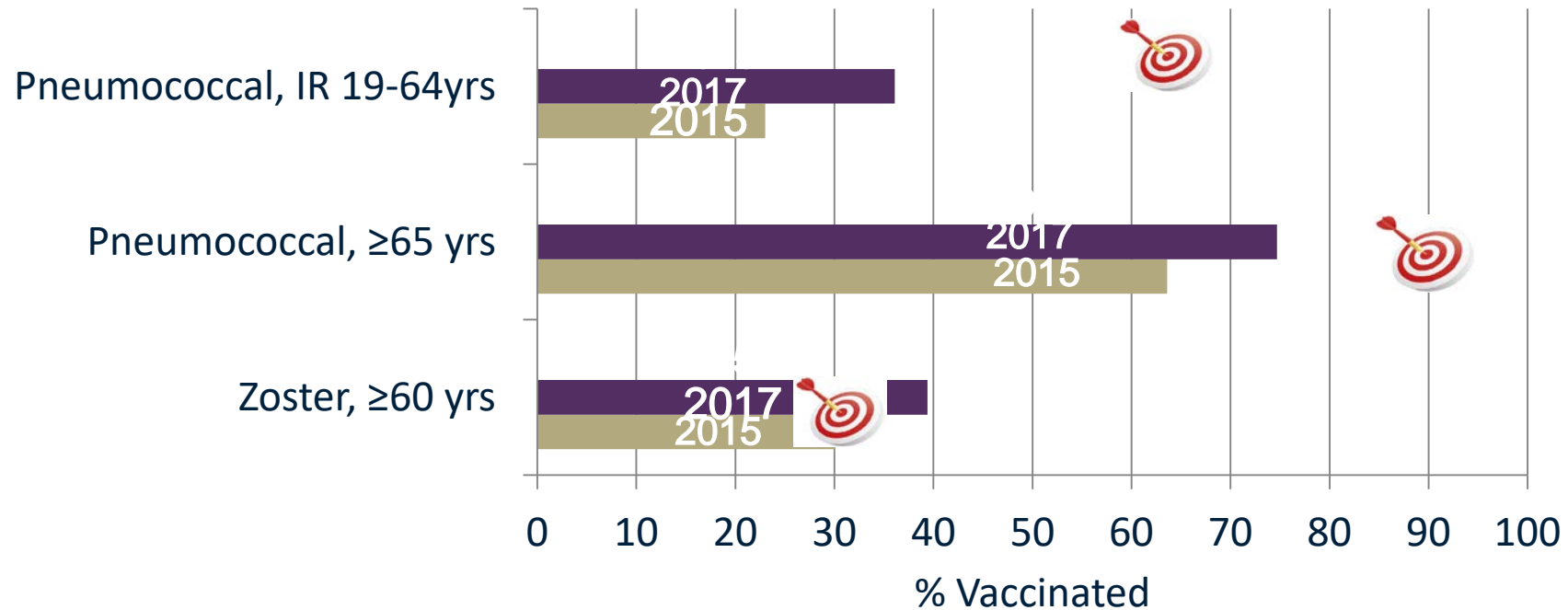
**Figure 1. Early and End-of-Season Flu Vaccination Coverage Among Children, United States, 2014–November 2018**



**Figure 2. Early and End-of-Season Flu Vaccination Coverage Among Adults, United States, 2014–November 2018**



## Adult Immunization Coverage, Selected Vaccines by Age and Increased-risk Status, 2013-2015, United States



HP2020 Targets: 90% PPV ≥65 yrs, 60% PPV IR 19-64 yrs, 30% zoster ≥60 yrs

Data Source: 2015 NHIS, Surveillance of Vaccination Coverage Among Adult Populations — United States, 2015 MMWR Surveillance Summaries / May 5, 2017 / 66(11);1–28, 2017 Behavioral Risk Factor Surveillance System

# Strategies Overview

- ❑ Many available strategies
- ❑ Some targeted to public and/or non-health care settings
  - School immunization requirements
  - Women Infant and Children (WIC) services
  - Home visits
- ❑ Match strategy to the problem and population
- ❑ Today's focus on health care settings



- ❑ **Immunization Quality Improvement for Providers (IQIP)**
- ❑ **IQIP is designed by CDC and implemented by CDC's 61 state and local immunization program awardees.**
- ❑ **IQIP promotes and supports implementation of provider-level strategies designed to increase on-time vaccination among children and adolescents**



# **IQIP Promotes On-Time Vaccination**

- On-time vaccination provides maximum protection against vaccine-preventable diseases for children and adolescents by ensuring they are getting the vaccines they need when they need them**
- IQIP uses a 12-month technical assistance process to support VFC providers in applying quality improvement strategies to increase on-time vaccination**

# **IQIP Promotes Three (Sometime Four) Strategies**

- ❑ Schedule the next vaccination visit before the patient leaves the office**
  - ❑ Leverage immunization information system (IIS) functionality to improve immunization practice**
  - ❑ Give a strong vaccine recommendation (including effective responses to vaccine hesitancy)**
- 
- ❑ The immunization program awardees may choose to promote a fourth, custom strategy to address local priorities**

# IQIP Timeline

- Site visit
- 2-month check-in
- 6-month check-in
- 12-month follow-up

# **IQIP Site Visit**

- Observe the provider's vaccination workflow**
- Review vaccination coverage and set 12-month coverage goals**
- Select appropriate quality improvement strategies**
- Provide technical assistance to support strategy implementation**
- Create a Strategy Implementation Plan with action items that are tailored to best meet the provider's needs**

# **IQIP Check-Ins (2-Month and 6-Month)**

- Review progress made on the action items in the Strategy Implementation Plan**
- Provide technical assistance for each strategy as needed**
- Update the Strategy Implementation Plan with new or revised action items for each strategy selected**

# **IQIP Follow-Up (12-Month)**

- Review progress made on the action items in the Strategy Implementation Plan**
- Review year-over-year changes in vaccination coverage and compare to the coverage goals set 12 months earlier**
- Provide technical assistance for each strategy as needed**
- Update the Strategy Implementation Plan with new or revised action items for each strategy selected**

# Benefits of IQIP for Providers

- ❑ Help ensure that more child and adolescent patients get the vaccines they need when they need them
- ❑ Save time and money by reducing the need for catch-up appointments and follow-up for patients who are not vaccinated on time
- ❑ Assist in meeting childhood and adolescent HEDIS measures

# Strategies for High Immunization Levels

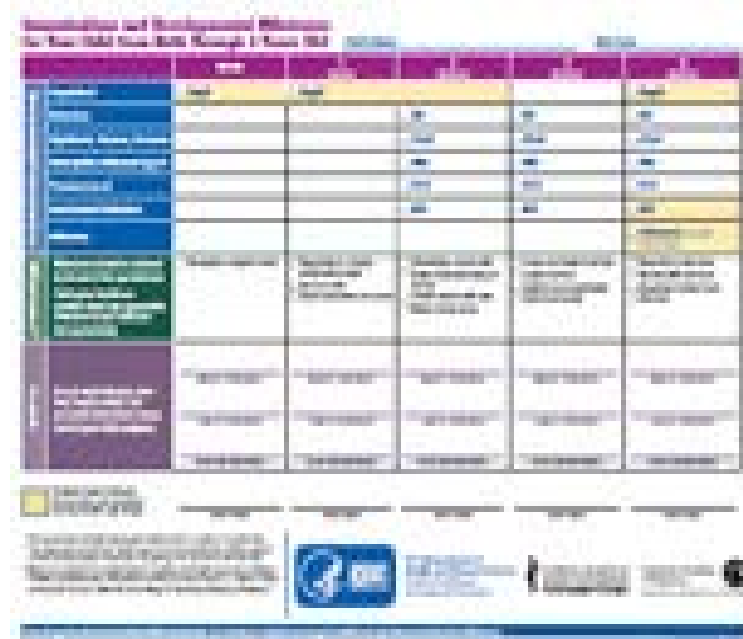
- ❑ Recordkeeping
- ❑ Immunization Information Systems (IIS)
- ❑ Recommendations and reinforcement
- ❑ Schedule next immunization visit before patient leaves the office
- ❑ Reminder and recall to patients
- ❑ Reminder and recall to providers
- ❑ Reduction of missed opportunities
- ❑ Reduction of barriers to immunization





# Records

- ❑ Available for inspection
- ❑ Easy to interpret
- ❑ Accurate, up-to-date, and complete
  - reflect current patient population
  - Reflect all vaccines given



The image shows a screenshot of a vaccine record system interface. The interface features a table with columns for patient information and vaccination status. The table is organized into sections with colored headers: a blue header for patient details, a green header for vaccination history, and a purple header for additional information. The table contains several rows of data, including patient names, ages, and vaccination dates. Below the table, there are navigation buttons and a search bar. The interface is designed to be user-friendly and easy to interpret.

# Immunization Information Systems (IIS)

- ❑ Single data source for all providers
- ❑ Reliable immunization history
- ❑ Produce records for patient use
- ❑ Increase vaccination rates



<http://www.cdc.gov/vaccines/programs/iis/index.html>

# Recommendations and Reinforcement

## □ Recommend the vaccine

- powerful motivator
- patients likely to follow recommendation of the provider

## □ Reinforce the need to return

- verbal
- written
- link to calendar event



# Reminders and Recall to Patients

- **Reminder**—notification that immunizations are due soon
- **Recall**—notification that immunizations are past due
- **Content of message and technique of delivery vary**
- **Reminders and recall have been found to be effective**



<https://www.whyimmunize.org/product/reminder-postcards-baby-bilingual/>

# Reminders and Recall to Providers

□ **Communication to healthcare providers that a patient's immunizations are due soon or past due**

## □ **Examples**

- computer-generated list
- stamped note in the chart
- "Immunization Due" clip on chart
- electronic reminder in an electronic medical record

# Missed Opportunity

- A healthcare encounter in which a person is eligible to receive vaccination but is not vaccinated completely



# Reasons for Missed Opportunities

- ❑ Lack of simultaneous administration
- ❑ Unaware child (or adult) needs additional vaccines
- ❑ Invalid contraindications
- ❑ Inappropriate clinic policies
- ❑ Reimbursement deficiencies

# Strategies for Reducing Missed Opportunities

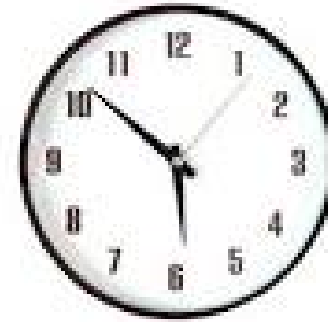
- ❑ Standing orders
- ❑ Provider education with feedback
- ❑ Schedule the next immunization visit before the patient leaves the office
- ❑ Provider reminder and recall systems



# Reduction of Barriers to Immunization

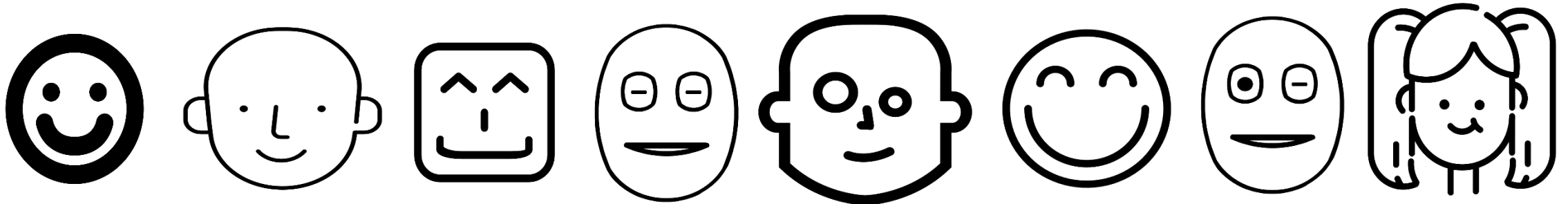
## □ Physical barriers clinic hours

- waiting time
- distance
- cost



## □ Psychological barriers

- unpleasant experience
- vaccine safety concerns



# Costs of Implementing Strategies

Intervention Strategy	Median Intervention Group Size	Median cost per person per year	Median cost per vaccinated person (US\$)
Home visits	575	56	786
Client/family incentive, reducing costs	774	209	399
<b><u>Vac in schools, child care</u></b>	<b><u>5,840</u></b>	<b><u>22</u></b>	<b><u>29</u></b>
Vac in WIC settings	4,967	16	66
<b><u>Client reminder/recall</u></b>	<b><u>654</u></b>	<b><u>2.13</u></b>	<b><u>15</u></b>
Community based strategies in combination	429	54	15
Provider reminders/assessment/fdback	2,705	4	111
<b><u>Standing Orders</u></b>	<b><u>11,813</u></b>	<b><u>6</u></b>	<b><u>29</u></b>
<b><u>Healthcare system strategies in combination</u></b>	<b><u>20,000</u></b>	<b><u>4</u></b>	<b><u>12</u></b>

# Provider Resources

- ❑ **Conversations with parents:**
  - <https://www.cdc.gov/vaccines/parents/vaccine-decision/index.html>
  
- ❑ **Vaccines for Children Program**
  - <https://www.cdc.gov/vaccines/programs/vfc/index.html>
  
- ❑ **The Guide to Community Preventive Services**
  - <https://www.thecommunityguide.org/>
  
- ❑ **National Vaccine Advisory Committee. Standards for child and adolescent immunization practices. Pediatrics 2003;112:958-63.**
  
- ❑ **National Vaccine Advisory Committee. Recommendations from the National Vaccine Advisory Committee: Standards for Adult Immunization Practice. Public Health Reports 2014;129:115-123.**
  - <https://journals.sagepub.com/doi/pdf/10.1177/003335491412900203>