Vaccine Adherence in Kids Program:
A Pfizer Vaccines Resource
• Importance of Pediatric Immunization Adherence
• Approaches to Improve Pediatric Adherence
• Pfizer Solutions to Support Pediatric Adherence
• Summary / Key Takeaways
Key Takeaways

- Pediatric vaccination has demonstrated proven value in reducing the rate of vaccine-preventable diseases

- However, improving vaccine adherence remains a challenge in pediatric health care delivery

- Pfizer’s Vaccine Adherence in Kids (VAKs) program can help support vaccination and overall health care for your pediatric patients

- The program includes a reminder recall program with a variety of outreach options that span multiple communication channels

- These resources are customizable and can be initiated in collaboration with your Pfizer Vaccine Account Manager
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• Summary / Key Takeaways
Vaccines have significantly reduced infectious disease morbidity in the United States

Morbidity of Vaccine-Preventable Diseases (VPDs) in Children <5 Years of Age

<table>
<thead>
<tr>
<th>Disease</th>
<th>Prevaccine Era Cases</th>
<th>Most Recent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pertussis</td>
<td>200,752 (1934-1943)</td>
<td>20,874</td>
</tr>
<tr>
<td>Hib</td>
<td>20,000 (1980s)</td>
<td>17</td>
</tr>
<tr>
<td>Invasive pneumococcal disease (IPD)</td>
<td>63,067 (1997-1999)</td>
<td>687†</td>
</tr>
<tr>
<td>Polio</td>
<td>16,316 (1951-1954)</td>
<td>0</td>
</tr>
<tr>
<td>Tetanus</td>
<td>580 (1947-1949)</td>
<td>19</td>
</tr>
</tbody>
</table>

Hep B=hepatitis B; Hib=Haemophilus influenzae type b.
*Estimated annual average number of cases.
†Provisional cases reported through September 27, 2014.
‡Cases in children <5 years of age.

A successful pediatric vaccination program is estimated to lead to reduced disease burden and cost.

### Estimated Disease and Cost Reductions of US Childhood Vaccination Program in 2009 Birth Cohort

<table>
<thead>
<tr>
<th>Disease</th>
<th>Societal Costs Saved</th>
<th>Cases Prevented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotavirus</td>
<td>$595 Million</td>
<td>1.6 Million</td>
</tr>
<tr>
<td><em>Pneumococcus</em>-related diseases*</td>
<td>$2.7 Billion</td>
<td>2.3 Million</td>
</tr>
<tr>
<td>Hep B</td>
<td>$1.8 Billion</td>
<td>239,993</td>
</tr>
<tr>
<td>Measles</td>
<td>$8.9 Billion</td>
<td>3.8 Million</td>
</tr>
<tr>
<td>Hib</td>
<td>$3.8 Billion</td>
<td>19,606</td>
</tr>
<tr>
<td>Pertussis</td>
<td>$7.0 Billion</td>
<td>2.9 Million</td>
</tr>
</tbody>
</table>

### Cases Prevented:

- 1 Million
- 2 Million
- 3 Million
- 4 Million

Decision analysis was conducted using population-based vaccination coverage, published vaccine efficacies, historical data on disease incidence before vaccination, and disease incidence reported during 2005 to 2009. Costs were estimated using the direct cost and societal (direct and indirect costs) perspectives. Program costs included vaccine, administration, vaccine-associated adverse events, and parent travel and work time lost. All costs were inflated to 2009 dollars, and all costs and benefits in the future were discounted at a 3% annual rate. A hypothetical 2009 US birth cohort of 4,261,494 infants over their lifetime was followed up from birth through death. Net present value (net savings) and benefit-cost ratios of routine childhood immunization were calculated.

Hep B=hepatitis B; Hib=Haemophilus influenzae type b.

*Included IPD, acute otitis media and pneumonia.

In spite of this, pediatric vaccination rates fall below the recommended levels


While the value of vaccines may be broadly understood, parents may still present barriers to adherence

### Key Barriers to Pediatric Vaccine Adherence

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crowded Vaccine Schedule</strong></td>
<td>- May be overwhelmed by number of vaccines child is receiving&lt;br&gt;- May delay one or more vaccines with the intention of ultimately receiving them&lt;br&gt;- May not realize which vaccines child has missed</td>
</tr>
<tr>
<td><strong>Parental Misconceptions</strong></td>
<td>- May question vaccine safety, efficacy, or urgency&lt;br&gt;- May trust own research more than HCP recommendations&lt;br&gt;- May not understand risks of vaccine-preventable diseases&lt;br&gt;- HCP may not address questions to eliminate misconceptions</td>
</tr>
<tr>
<td><strong>Logistical Obstacles</strong></td>
<td>- May struggle to make appointment (time off work, coordinating child care, travel)&lt;br&gt;- May face cost or access hurdles&lt;br&gt;- May prioritize other health services above vaccination</td>
</tr>
</tbody>
</table>

HCPs=health care professionals.

Both undervaccination and vaccination refusal can prompt the resurgence of preventable diseases

• Parents who choose to delay or refuse vaccines for their children put them at risk for vaccine-preventable diseases (VPDs)

• Recent VPD outbreaks demonstrate that children who do not receive common vaccinations are at risk for subsequent disease and infection

• In California, where some of the most lenient immunization laws in the country exist, the parental choice not to vaccinate has led to the highest rate of measles outbreaks since 2000

The likelihood of children coming back to the office for well visits also drops significantly after their first year. The average number of well visits in children under 2 years of age is shown in the graph.

Average Number of Well Visits in Children <2 Years of Age

- **0-12 Months of Age:** 5.8 visits
- **13-24 Months of Age:** 1.9 visits

Children who miss well visits may not be receiving other important health services, such as developmental milestone assessments.


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National vaccine initiatives provide resources to support pediatric immunization, reducing health care costs\(^1\)

Vaccinations for Children (VFC) Program has shown that vaccines can make substantial impact on health outcomes and costs\(^1\)

- Among 78.6 million children born between 1994 and 2013, routine childhood immunization for vaccine-preventable diseases (VPDs) was estimated to prevent:
  - 322 million illnesses
  - 21 million hospitalizations
  - 732k premature deaths

The net payer savings due to routine childhood immunization was estimated at almost $300 billion

VPDs=vaccine-preventable diseases.

Immunization reminder recall systems can also play an important role in supporting adherence

Overview of Reminder Recall Systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Examples</th>
<th>Potential Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunization reminder recall systems enable health care professionals to identify children in need of vaccination and contact their parents or caregivers</td>
<td>Mail reminders</td>
<td>• Improves recommended vaccination rates and overall child health care</td>
</tr>
<tr>
<td>Help improve pediatric vaccination rates according to the schedule recommended by AAP, CDC, and ACIP</td>
<td>Standing orders</td>
<td>• Supports Meaningful Use objectives</td>
</tr>
<tr>
<td>Chart reviews</td>
<td>Phone calls</td>
<td>• May improve HEDIS and NIS scores</td>
</tr>
<tr>
<td>Reminders during appointment</td>
<td>E-mails</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calendars</td>
<td></td>
</tr>
</tbody>
</table>

Reminder recall systems have demonstrated measurable improvement in vaccination rates across many platforms.

The positive impact of reminder recall systems on adherence rates can increase with the use of multiple intervention types.

Text messaging in particular can drive increased response rates among parents.

Text messaging can result in a 76% improvement over the response rate generated by telephonic-only reminders.

Confirmation and Cancellation Responses by Notification Type

- **Text Message**: 60%
- **Voice Notification**: 34%

Efficient use of vaccine registries and EMR systems can improve the success of reminder recall programs

• Vaccine Registries
  – Confidential computerized information systems that collect vaccination data about all children in a specific area\(^1\)
  – Can be used to send reminders and recall notices and help reduce overvaccination\(^2\)

• EMR Systems
  – Allow health care professionals to help identify children in need of vaccinations\(^3\)
  – Use of the EMR system immunization alerts delivered to clinicians at point of care were associated with an immediate and significant increase in immunization rates\(^3\)
  – The AAP suggests using EMR systems to create computerized vaccination reminders as part of a reminder recall program\(^4\)

References:
Meaningful Use objectives on preventive care encourage full adherence to recommended dosing schedules

**Menu Objective: Patient Reminder**¹ – Send patient reminders per patient preference for preventive follow-up care

**Measure Definition**

**Stage 1**

>20% of all patients aged 5 years or younger were sent an appropriate reminder during the EHR reporting period

**Meaningful Use Core Objective: Preventive Care**² – Identify patients who should receive reminders for preventive/follow-up care and send these patients the reminders, per patient preference

**Measure Definition**

**Stage 2**

>10% of all unique patients who had ≥2 office visits with HCPs within the 24 months before the beginning of the EHR reporting period were sent a reminder, per patient preference, when available

Reminder recall postcards and outbound phone calls can meet Meaningful Use Stage 1 and Stage 2 patient reminder/preventive care objectives

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EHR=electronic health record; HCPs=health care professionals.

HEDIS® scores and NIS measures also track vaccination rates, according to CDC-recommended schedules

### HEDIS®: Childhood Immunization Status†

Percent of children 2 years of age had the following vaccines by their 2nd birthday:

- 4 DTaP
- 3 IPV
- 1 MMR
- 3 *H. influenzae* type B
- 3 HepB
- 1 varicella
- 4 PCV
- 1 HepA
- 2 or 3 rotavirus
- 2 influenza

†The measure calculates a rate for each vaccine and 9 separate combination rates.

### NIS Combination Vaccine Series‡,†

- 4 doses of DTaP vaccine
- 3 doses of IPV vaccine
- 1 dose of MMR vaccine
- 3 doses of Hib vaccine
- 3 doses of HepB vaccine
- 1 dose of varicella vaccine
- 4 doses of PCV

‡Measures estimate the percentage of children who have been administered the above vaccines by age 19-35 months.

HEDIS®=Healthcare Effectiveness Data and Information Set; NIS=National Immunization Survey.

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• **Pfizer Solutions to Support Pediatric Adherence**

• Summary / Key Takeaways
Pfizer offers reminder recall resources to support customers in their adherence efforts

• Pfizer has created **Vaccine Adherence in Kids (VAKs)**, a reminder recall program that includes a variety of ways to reach parents and caregivers, with the goal of increasing pediatric vaccination adherence rates and improving overall pediatric health care.

• This program allows Pfizer to partner with customers to address adherence barriers and to identify additional opportunities for improving vaccination rates.

• Backed by Televox®, the program includes multiple communication platforms to reach appropriate customers.
The VAKs program targets pediatric patients who may not be fully vaccinated, or are approaching critical visits

• Pfizer offers the VAKs Program to eligible customers in order to identify children who may have missed a vaccine dose or are approaching their important 12-month wellness visit
  – Health care professionals can then contact their parents or caregivers to schedule appointments for pediatric vaccinations recommended by the CDC, ACIP, and the AAP

CDC=Centers for Disease Control and Prevention; ACIP=Advisory Committee on Immunization Practices; AAP=American Academy of Pediatrics.
Potential VAKs Users Include:

- Private Insurance and MCOs
- Medicaid plans and MCOs
- Local, city, and state health departments
- Federally Qualified Health Centers (FQHCs)
- Indian Health Service provider
- Integrated delivery networks (IDNs)
- Military facilities
- Hospital clinics

Pfizer Vaccine Account Managers work with these customers to incorporate VAKs into their adherence strategies.
The VAKs reminder recall program spans multiple platforms*, tailored to customers’ needs and capabilities.

- **Text Messages**
  - Include an identifier specific to your organization
  - Available in English and Spanish

- **E-mail**
  - Include your organization’s name and contact information
  - Sent from an e-mail address specific to your organization
  - Available in English, Spanish, Vietnamese, Russian, and Mandarin

- **Phone calls**
  - Include your organization’s name with unique voice messages
  - Can connect recipients to your office for scheduling of appointments
  - Available in English, Spanish, Vietnamese, Russian, and Mandarin

- **Postcards**
  - Provide hard-copy reminders for timely vaccination
  - Available in English, Spanish, Vietnamese, Russian, and Mandarin

*Customers choose at most 2 intervention types, depending on preference and availability of patient information availability and text opt-in.
Text messages and e-mails offer direct contact with parents and caregivers who are away from home.

- **Sample Text Alerts:**
  - “Records show your child may have missed an important vaccine. Please call XXX-XXX-XXXX for an appointment. **Text Help for help.**”
  - “Records show that your child has a recommended visit with a health care professional at age 12 months. Please call XXX-XXX-XXXX for an appointment. **Text Help for help.**”

- **Sample E-mail Alerts:**
  - Missed Dose Alert
  - 12-Month Well-Visit Alert
Example Phone Script for Missed Pediatric Vaccine

- “Hello. I’m calling on behalf of [organization name] with some important information about your child’s health. Our records indicate that your child may have missed a recommended vaccine shot. Please contact your child’s doctor or health clinic to check that your child is up to date with all recommended vaccine shots”

- “If you would like to opt out of this and future vaccine reminder phone calls from [organization name], please press the 9 key”

- “Financial support for this communication has been provided by Pfizer. No patient-specific information has been or will be provided to Pfizer. Again, this call is being placed by [organization name]”

- “Thank you for your time, and have a good day”
Telephonic scripts can be customized depending on customer needs

Hello, I’m calling on behalf of [organization name] with some important information about your health.

<table>
<thead>
<tr>
<th>Optional Language #1</th>
<th>If you would like to hear this message in English, press 1. Hola. Estoy llamando de parte de [organization name] con información importante sobre la salud de su niño. Si desea escuchar este mensaje en espanol, presione 2.</th>
</tr>
</thead>
</table>

“Our records indicate that you may be eligible to receive a recommended vaccine shot. Please contact your doctor or health care clinic to see if you are up-to-date with all recommended vaccine shots. If you would like to opt out of this and future vaccine reminder phone calls from [organization name], please press 9.”

<table>
<thead>
<tr>
<th>Optional Language #2</th>
<th>[Organization name] covers all recommended vaccines to help ensure that you are protected against vaccine-preventable diseases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional Language #3</td>
<td>If you have questions regarding health benefit coverage for adult vaccines, please call [customer service at the number listed on the back of your health plan identification card] or [telephone number].</td>
</tr>
<tr>
<td>Optional Language #4</td>
<td>[Organization name] also covers annual wellness visits.</td>
</tr>
<tr>
<td>Optional Language #5</td>
<td>If you have questions regarding health benefit coverage for adult vaccines or wellness visits, please call [customer service at the number listed on the back of your health plan identification card] or [telephone number].</td>
</tr>
<tr>
<td>Optional Language #6</td>
<td>[Organization name] offers all recommended adult vaccines to help ensure that you are protected against vaccine-preventable diseases.</td>
</tr>
</tbody>
</table>

“Financial support for this communication has been provided by Pfizer. No patient-specific information has been or will be provided to Pfizer. Again, this call is being placed by [organization name]. Thank you for your time, and have a good day.”

Lastly VAKs also includes a postcard option for alerts, with bilingual communication

- Postcards provide a hard-copy vaccination reminder for parents and caregivers
- Offers bilingual communication to remind parents
  - English, Spanish, Vietnamese, Russian, and Mandarin
VAKs is delivered through Pfizer’s trusted partner, TeleVox®

A Valued Partner Resource

- Provides services to 140,000 providers in hospitals, group health networks, and practices
- Enables member interactions for more than 100 health plans
- Extensive network of industry partners and integrations
- Dedicated Compliance Manager and Security Office
- Billions of minutes of voice-related transactions annually

TeleVox® Services & Capabilities

- Complete postcard printing and mailing services
- Recordings by professional voice talent
- Language options
- Caller ID display customization
- Summary and Web reports to monitor campaign success
- HIPAA privacy and security compliant

HIPAA=Health Insurance Portability and Accountability Act.
Implementation of VAKs is a straightforward process, facilitated by TeleVox®

1. **Execute service agreement**
   ✓ Select communication preference and finalize service agreement

2. **Schedule implementation call and training**
   ✓ TeleVox® Implementation Specialist calls to discuss program components, customer adherence goals, and outreach process

3. **Identify communications parameters**
   ✓ Work with TeleVox® to customize calling, mailing, and/or messaging preferences using the immunizations specifications document

4. **Identify children due for recommended vaccines**
   ✓ Use filters to identify the parents and caregivers who will receive reminders

5. **Track the progress**
   ✓ View completed statistics reports to track the outcomes of patient reminders
Common customer questions

What if we don’t have permission to contact our patients/members on their cell phones and landlines, and cell phones are not indicated in our database?

*TeleVox® has the ability through the Cell Phone Scrubbing Program to identify and scrub cell numbers from your data file prior to initiating a calling session, and we can include language to that effect in the agreement.*

The quality of our data is bad, and our population is very transient. What if the phone numbers and addresses are outdated?

*TeleVox® offers the SmartAppend service that can be used to update your data file with the most current landline phone number and address. The appended information will be reported back to you in your reports if you would like to import it into your system.*
Customer testimonials

“The best part of this program, from a managerial perspective, is that the process is electronic and simple. We download the patient data from our registry and then upload the file to TeleVox®. They take care of the rest.”

“Our children’s immunization program is one of our most successful programs, mainly due to the monthly TeleVox® campaign that we have in place. TeleVox® has indeed helped us to reduce costs and improve the health of our members.”

“We have noticed that parents/guardians do reply regarding their child’s immunization record when receiving the call from TeleVox®. When parents/guardians show up at the county clinics, they make statements such as appreciation of telephone reminder calls and reminder postcards in the mail.”
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- However, improving vaccine adherence remains a challenge in pediatric health care delivery
- Pfizer’s Vaccine Adherence in Kids (VAKs) program can help support vaccination and overall health care for your pediatric patients
- The program includes a reminder recall program with a variety of outreach options that span multiple communication channels
- These resources are customizable and can be initiated in collaboration with your Pfizer Vaccine Account Manager