Immunization Strategies for Healthcare Practices and Providers
## Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-Preventable Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>20th Century Annual Morbidity†</th>
<th>2014 Reported Cases † †</th>
<th>Percent Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria</td>
<td>21,053</td>
<td>1</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Measles</td>
<td>530,217</td>
<td>628</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Mumps</td>
<td>162,344</td>
<td>1,151</td>
<td>99%</td>
</tr>
<tr>
<td>Pertussis</td>
<td>200,752</td>
<td>32,971</td>
<td>86%</td>
</tr>
<tr>
<td>Polio (paralytic)</td>
<td>16,316</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Rubella</td>
<td>47,745</td>
<td>8</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Congenital Rubella Syndrome</td>
<td>152</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>580</td>
<td>21</td>
<td>96%</td>
</tr>
<tr>
<td><em>Haemophilus influenza</em></td>
<td>20,000</td>
<td>27*</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Total</td>
<td>999,159</td>
<td>34,799</td>
<td>97%</td>
</tr>
</tbody>
</table>

† JAMA. 2007;298(18):2155-2163
† † CDC. MMWR January 9, 2015 / 63(53);ND-733-ND-746. (MMWR 2014 provisional week 53 data)

* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 12 cases of Hib are estimated to have occurred among the 226 reports of Hi (< 5 years of age) with unknown serotype.
## Estimated Vaccine Coverage Among Children Aged 19-35 Months, NIS 2014

<table>
<thead>
<tr>
<th>State/Area</th>
<th>Vaccine Series*</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>4:3:1:3:3:1:4</td>
<td>71.6%</td>
</tr>
</tbody>
</table>

*Includes ≥4 doses DTaP/DT/DTP, ≥ 3 doses polio, ≥ 1 dose MMR, full series Hib, ≥ 3 doses Hep B, ≥ 1 dose varicella, and ≥ 4 doses PCV

*MMWR. 2015;64(33);889-896*
Estimated vaccination coverage with selected vaccines and doses among adolescents aged 13–17 years, by survey year — National Immunization Survey–Teen, United States, 2006–2014

MMWR, July 31, 2015 / 64(29);784-792
Adult Influenza Vaccination Coverage, by Age, United States

Influenza, ≥19 yrs
- 2013-14
- 2012-13
- 2011-12

Influenza, ≥19 yrs, HCP
- 2013-14
- 2012-13
- 2011-12

HP2020 Targets: 70% ≥19 years, 90% HCP ≥19 years
Adult Immunization Coverage, Selected Vaccines by Age and High-risk Status, United States

HP2020 Targets: 90% PPV ≥65 yrs, 60% PPV HR 19-64 yrs, 30% zoster ≥60 yrs
Data Source: 2012, 2013 and 2014 NHIS
Adult Tetanus-containing Vaccination Coverage by Age and High-risk Status, United States

- Td past 10 yrs, 19-49 yrs: 63%
- Td past 10 yrs, 50-64 yrs: 65%
- Td past 10 yrs, ≥65 yrs: 58%
- Tdap past 9 yrs, ≥19 yrs: 20% (+2.9)
- Tdap past 9 yrs, Living with infant <1 yr, ≥19 yrs: 32%
- Tdap past 9 yrs, HCP ≥19 yrs: 42%

Data Source: 2014 NHIS
Strategies Overview

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

- Assessment
- Feedback
- Incentives
- eXchange
Special Characteristics of AFIX

- Focuses on outcomes
- Focuses on providers
- Blend of advanced technology and personal interaction
Assessment

- Evaluation of medical records to ascertain the immunization rate for a defined group
- Targeted diagnosis for improvement
- Assessment increases awareness
Feedback

- Informing immunization providers about their performance

- Assessment with feedback creates the awareness necessary for behavior change

- How to Provide Feedback
  - With feeling and precision
  - Without judgment
  - With confidentiality as appropriate
Incentives

- Something that incites to action or effort
- Vary by provider and stage of progress
- Opportunities for partnership and collaboration
eXchange of Information

- Allows access to more experience than an individual can accumulate
- Motivates improvement
- Coordinates resources and efforts
VFC/AFIX

- **2000**: Incorporate AFIIX activities during VFC site visits

- **2013**: VFC visits performed separately from AFIIX visits

- **VFC/AFIX visits** may be combined if state has robust IIS, which assists with AFIIX component
Comprehensive Clinic Assessment Software Application (CoCASA)

- VFC and AFIX results
- Immediate assessment results
- Estimate of coverage levels
- Reasons for deficiencies
- Reports on patient subsets

**AFIX Guide to the Core Elements for Training and Implementation**
- Generalizes the AFIX process
- Provides strategies for modifying AFIX methods

http://www.cdc.gov/vaccines/programs/cocasa/index.html
http://www.cdc.gov/vaccines/programs/afix/index.html
Strategies for High Immunization Levels

- Recordkeeping
- Immunization Information Systems (IIS)
- Recommendations and reinforcement
- 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
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
- 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
Provider Resources

- Conversations with parents:

- Vaccines for Children Program

- The Guide to Community Preventive Services
  - http://www.thecommunityguide.org/


  - http://www.publichealthreports.org/issueopen.cfm?articleID=3145