Update on Progress toward achieving Immunization Objectives for Healthy People 2020

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<table>
<thead>
<tr>
<th>Disease</th>
<th>20th Century Annual Morbidity†</th>
<th>2012 Reported Cases† †</th>
<th>Percent Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallpox</td>
<td>29,005</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Diptheria</td>
<td>21,053</td>
<td>1</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Measles</td>
<td>530,217</td>
<td>55</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Mumps</td>
<td>162,344</td>
<td>229</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Pertussis</td>
<td><strong>200,752</strong></td>
<td><strong>48,277</strong></td>
<td>76%</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>9</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Congenital Rubella Syndrome</td>
<td>152</td>
<td>3</td>
<td>98%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>580</td>
<td>37</td>
<td>94%</td>
</tr>
<tr>
<td><em>Haemophilus influenzae</em></td>
<td>20,000</td>
<td>30*</td>
<td>&gt;99%</td>
</tr>
</tbody>
</table>

**Comparison of 20th Century Annual Morbidity and Current VPD Morbidity**

**HP2020 Immunization and Infections Disease (IID) Objectives-1.1 – 1.9**

† JAMA. 2007;298(18):2155-2163

† †CDC. MMWR August 23, 2013;62(33);669-682. (final data)

* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 13 cases of Hib are estimated to have occurred among the 210 reports of Hi (< 5 years of age) with unknown serotype.

HP2020 Objectives: IID-7

* Target is 80% for Rotavirus and 85% for Hepatitis A
† DTP/DTaP (3+) is not a Healthy People 2020 objective. DTaP (4) is used to assess Healthy People 2020 objectives.
§ Reflects 3+ doses through 2008, and Full Series (3 or 4 doses depending on type of vaccine received) 2009 and later
¶ 2 or 3 doses, depending on the type of rotavirus vaccine received

Note: Children in the USIS and NHIS were 24-35 months of age. Children in the NIS were 19-35 months of age.

IID-9: Children 19-35 Months Who Received No Vaccinations, 2008-2012, U.S.

Tracking Measure- Program goal to sustain percentage of <1%

<table>
<thead>
<tr>
<th>Survey Year</th>
<th>% with no vaccinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0.6</td>
</tr>
<tr>
<td>2009</td>
<td>0.6</td>
</tr>
<tr>
<td>2010</td>
<td>0.7</td>
</tr>
<tr>
<td>2011</td>
<td>0.8</td>
</tr>
<tr>
<td>2012</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Source: National Immunization Survey
Estimated Vaccination Coverage, Children 19-35 Months, New Healthy People 2020 Objectives (7.9, 7.10, 7.8)

* HP2020 target for birth dose of HepB is measured by birth cohort. Data shown are estimates from the 2005-2009 birth cohorts.

** 2 or 3 doses, depending on the type of rotavirus vaccine received

Source: CDC, NIS
## Comparison of Pre-Vaccine Era Estimated Annual Morbidity with Current Estimate: Vaccine-Preventable Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Pre-Vaccine</th>
<th>2012 Estimate (unless otherwise specified)</th>
<th>Percent Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis A</td>
<td>117,333†</td>
<td>2,890*</td>
<td>98%</td>
</tr>
<tr>
<td>Hepatitis B (acute)</td>
<td>66,232†</td>
<td>18,800*</td>
<td>72%</td>
</tr>
<tr>
<td>Pneumococcus (invasive)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All ages</td>
<td>63,067†</td>
<td>31,600#</td>
<td>50%</td>
</tr>
<tr>
<td>&lt;5 years of age</td>
<td>16,069†</td>
<td>1,800##</td>
<td>89%</td>
</tr>
<tr>
<td>Rotavirus (hospitalizations, &lt;3 years of age)</td>
<td>62,500††</td>
<td>1,250###</td>
<td>98%</td>
</tr>
<tr>
<td>Varicella</td>
<td>4,085,120†</td>
<td>216,511####</td>
<td>95%</td>
</tr>
</tbody>
</table>

† JAMA. 2007;298(18):2155-2163
†† CDC. MMWR. February 6, 2009 / 58(RR02);1-25
* CDC. Viral Hepatitis Surveillance - United States, 2011
# CDC, Active Bacterial Core Surveillance Provisional Report; S. pneumoniae 2012
## CDC. Unpublished, Active Bacterial Core Surveillance
### New Vaccine Surveillance Network 2012 data (unpublished); U.S. rotavirus disease now has biennial pattern
#### CDC. Varicella Program 2012 data (unpublished)
Between 2008 and 2012:
- 200,000-250,000 hospitalizations prevented among children < 5 years
- > $900 million dollars saved in direct medical costs from averted rotavirus-related hospitalizations and ED visits

Sources: National Respiratory and Enteric Virus Surveillance System and the New Vaccine Surveillance Network
Between 2008 and 2012:

- 200,000-250,000 hospitalizations prevented among children < 5 years
- > $900 million dollars saved in direct medical costs from averted rotavirus-related hospitalizations and ED visits

IID-4: Incidence of Invasive Pneumococcal Disease in Children <5 years old

Cases per 100,000 population

Year

2008 2009 2010 2011 2012 HP2020 Target

PCV13 introduction

<5 Overall

<5 Antibiotic-resistant

CDC Unpublished, Active Bacterial Core surveillance
IID-4: Incidence of Invasive Pneumococcal Disease in Adults ≥ 65 years old

- 65+ Overall
- 65+ Antibiotic-resistant

CDC Unpublished, Active Bacterial Core surveillance
Cumulative Cases of PCV5-type IPD among Children <5 years old, 2006-2008, and 2010-2013

CDC Unpublished, Active Bacterial Core surveillance

Note: Excludes 2009 pandemic year
Cumulative Cases of PCV5-type IPD among Adults >64 years old, 2006-2008, and 2010-2013

Note: Excludes 2009 pandemic year
IID-1.4: Measles, United States, 2001-2013*

*As of August 24, 2013
IID – 4  Reported Measles Incidence
United States, 1992-2013*

*As of August 24, 2013

Measles elimination declared

Incidence 0.18 per 1 million

1 case/million

Year

Cases/100,000

Adolescent Vaccine (13-17 years Old), United States, 2006-2012

MMWR. August 30, 2013; NIS-Teen
IID-11 Vaccination Coverage, Adolescents 13-15 years, 2006-2012 (NIS-Teen)

* Target is 90% for 2 doses of varicella; ≥1 HPV is not an HP 2020 objective.
** Baseline for HP 2020.
Vaccination Estimates among Adolescents by Poverty Status, NIS-Teen, United States, 2012

** statistically different (p<0.05)
Actual and potentially achievable vaccination coverage if missed opportunities were eliminated: NIS-Teen, 2012

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Actual</th>
<th>Potentially Achievable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Td/Tdap</td>
<td>88.5</td>
<td>93.3</td>
</tr>
<tr>
<td>MenACWY Vaccine</td>
<td>74.0</td>
<td>92.6</td>
</tr>
<tr>
<td>HPV-1</td>
<td>53.8</td>
<td>92.6</td>
</tr>
</tbody>
</table>

Healthy People 2020 Objectives

HPV-1 coverage is among females only.
IID-19: Monitoring vaccination coverage at kindergarten entry

- # states collecting kindergarten vax data according to CDC standards:
  - 2009 (Baseline) 13
  - 2011-12 School year 20
  - 2012-13 School year 12

Vaccination Coverage Among Children in Kindergarten — United States, 2011–12 School Year. MMWR August 24, 2012 / 61(33);647-652

Vaccination Coverage Among Children in Kindergarten — United States, 2012–13 School Year. MMWR August 2, 2013 / 62(30);607-612
Vaccination Coverage Among Children in Kindergarten — United States, 2012–13 School Year. MMWR August 2, 2013 / 62(30);607-612
IID-18 Increase the percentage of children under age 6 years of age whose immunization records are in a fully operational, population-based immunization information system (IIS)
IID-17.1: Percentage of public providers who have had vaccination coverage levels among children in their practice population measured in the past year.

Healthy People 2020 Target

Graph showing the percentage of public providers with vaccination coverage levels among children from 2000 to 2012.
IID 17.2: Percentage of private providers who have had vaccination coverage levels among children in their practice population measured in the past year
Formerly Known as IID-12: Influenza Vaccination Objectives Now Consolidated

- Ten influenza vaccination coverage objectives consolidated into four:
  - Six months through 17 years of age (target 70%)
  - Adults 18+ (target 70%)
  - Healthcare Personnel (target 90%)
  - Pregnant Women (developmental pending data source, no target set)

- Approved May 15, 2013 by the HP2020 Federal Interagency Workgroup
  - Not yet updated on main HP2020 website
  - See Immunization and Infectious Disease progress review:

- Will continue to track the various populations (e.g. high-risk adults, 65+, etc.) but will only report out for HP2020 on the four new objectives
Coming Attractions: Influenza Vaccination Coverage

• September 26, 2013
  – MMWR will report influenza coverage among health care personnel and pregnant women from internet panels for 2012/13 flu season
  – 2012/13 influenza vaccination coverage for general population (NIS for 6 mos through 17 years and BRFSS for ≥18 years) will be posted on CDC website
  – Press conference organized by NFID will promote these results and ‘launch’ vaccination season
Summary for 2012/13 HP2020

• Most VPDs low or decreasing
  – Sustained or improved immunization coverage
  – Herd (indirect) effects producing greater than expected impact (e.g., rota, PCV, Hep A, varicella)

• Immunization system monitoring issues
  – IIS expanding, but insensitive metric
  – Kindergarten coverage assessment

• Exceptions are Pertussis disease, HPV vaccine coverage (covered in other NVAC sessions)
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