Presented By

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Disclosure Statement

Dr. Michael Middleton discloses that the content and presentation of the information with which he is involved will promote quality or improvements in healthcare and will not promote a specific proprietary business interest of a commercial interest. Content for this activity will be well-balanced, evidence-based and unbiased.
Learning Objectives

1. Knowledge of latest developments around new vaccine pipelines, changes to ACIP recommendations, vaccine controversies relating to recommendations and products.

2. Insight into state of vaccination rates against Healthy People 2020 objectives.

3. Improved understanding around the assimilation of vaccines and quality metrics.
The Information on Vaccines is Immense and Dynamic
Surveying it Reveals Several Essential Categories

Background

- ACIP
- Flu Update
- Outbreaks
- Legislative
- Vaccine Pipeline
Defining the Essentials

- ACIP
- Legislative
- Flu Update
- Vaccine Pipeline
- Outbreaks
Gardasil – How to Improve Immunizations

Strong Product

- Efficacy of 9-valent: 96.7%

Low Uptake

- Vaccination rate of 13–17 year olds with ≥1 dose of HPV vaccine: 56%

Focus on Cancer is Key

- First dose vaccination rate in Australia since focus on cancer: 83%

There are 30,000 cancer diagnoses and 6,000 fatalities each year.
Gardasil – New CDC Recommendation

- 2-dose vs 3-dose for children starting HPV vaccine series < 15 years old
- If patient receives first HPV dose after 15, then provider will need to follow 3-dose regimen
- Routine immunization for males and females at age 11 or 12 years, although it can be started as early as 9 years

Recommendations expand access to HPV vaccine
Meningococcal – Another Success Story

Meningococcal Disease Incidence, United States, 1970-2015

Rate per 100,000

Year


Meningococcal Disease – Still Room for Improvement

- Meningococcal disease most often caused by 5 serogroups
  - A, C, W, Y – Menactra, Menveo
  - B – Bexsero, Trumenba

- 600–1,000 people contract meningococcal disease in US yearly

- 20% of US teens have not received a dose against A, C, W, Y

- 94.5% of people ages 16–23 in the US have not received a dose against B (based on manufacturer data)

10–15% of meningococcal cases are fatal and 20% leave the victim with some form of disability
Meningococcal B – New CDC Recommendation

Meningococcal B products
- CDC – “No brand preference”
- Products not interchangeable – same brand must be used for full series

Meningococcal B product coverage
- Bexsero – 2-dose series occurring 1 month apart
- Trumenba – New 2017 ACIP recommendation:
  - 2 doses vs original 3 doses
  - 2 doses at 6 months apart for healthy adolescents
  - 3 doses for patients at increased risk
Vaccine Update

2017 Edition

Vaccine Pipeline

Flu Update

Outbreaks

Legislative

Vaccine Pipeline

Flu Update

Outbreaks

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Vaccine Pipeline

TDap – Recommendation History

2005
Cocooning Recommendation

2011
Pregnant Women

2012
EVERY Pregnancy

2017
Timing in 3rd Trimester
Tdap – New CDC Recommendation

**New CDC Recommendation**

Women should get Tdap in 3rd trimester of each pregnancy, preferably during early part of trimester

Originally Tdap was only recommended if the woman had not previously received it

**Why**

Vaccine causes the mother’s body to create antibodies which pass to the baby

Whooping cough antibodies decrease over time so there is a need to vaccinate with each pregnancy
Flu – 2016–2017 Vaccine Effectiveness

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Influenza A &amp; B</th>
<th>Influenza A (H3N2)</th>
<th>Influenza B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>48%</td>
<td>43%</td>
<td>73%</td>
</tr>
<tr>
<td>6mos - 8yrs</td>
<td>53%</td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>9 - 17yrs</td>
<td>32%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>18 - 49yrs</td>
<td>19%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>50 - 64yrs</td>
<td>58%</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>≥ 65yrs</td>
<td>46%</td>
<td>44%</td>
<td></td>
</tr>
</tbody>
</table>

Flu – Product Update

FluMist: Recommended
Afluria: Recommended
Fluzone Quad: Recommended
Fluzone Intradermal Quad: Recommended
Fluzone High Dose: Recommended
Flulaval Quad: Recommended

Age Indication:
- 0 mos, 6 mos, 12 mos, 24 mos, 36 mos, 5 yrs, 18 yrs, 50 yrs, 65+ yrs
Outbreaks

The Latest Information on Outbreaks

- Background
- ACIP
- Flu Update

Legislative

Vaccine Pipeline
Mumps – Making a Comeback

<table>
<thead>
<tr>
<th>Cases of Mumps in the US</th>
<th>CDC Investigating Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to Vaccine (1967)</td>
<td>• Vaccine perhaps doesn’t cover all strains</td>
</tr>
<tr>
<td>186,000</td>
<td>• Disease spreads more easily in crowded settings</td>
</tr>
<tr>
<td>2012</td>
<td>• Protective effect of vaccine decreases over time</td>
</tr>
<tr>
<td>229</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>5,748</td>
<td></td>
</tr>
</tbody>
</table>

ACIP is considering the potential for a booster
Measles – Anti-vaccine Effort Targets Minnesota Community

A plummeting vaccination rate in Minnesota

Rates at 24 months in Minnesota-born children

Source: Minnesota Department of Health

THE WASHINGTON POST

2014

42% Somali American vaccination rate

89% Non-Somali vaccination rate

92%

88%

0 2004 2014

Vaccine Pipeline

Outbreaks

Legislative

ACIP

Flu Update

Background

Vaccine Update

2017 Edition
California Immunization Success

California passed SB 277 in 2015

- Leveraged Disney measles outbreak in 2014
- Ended "personal belief exemption"

Figure 1. Percentage of Kindergarten Students with All Required Immunizations, by School Type and School Year, 2011-2012 to 2016-2017
Non-medical Exemptions are Rising

Nonmedical exemptions for K–12th grade students, TX

Number of exemptions

Data: Self-Reported by Public ISDs and Accredited Private Schools, Annual Report of Immunization Status, DSHS, Immunization Branch

Martin Enserink/Science
California is One of the Few States to Eliminate Non-medical Exemptions
Shift to Value-based Payments is Happening

MIPS/MACRA ruling was released in Oct 2016

- Ambulatory Surgical Center Quality Reporting
- ESRD QIP
- PQRS
- Medicaid CHIPRA
- Health Insurance Marketplace
- MIPS/MACRA
- Hospital Inpatient Quality Reporting
- Inpatient Rehabilitation Facility
- Inpatient Psychiatric Facilities
- Nursing Home Compare Measures
- LTCH Quality Reporting
- Home Health Quality Reporting
- Medicare Shared Saving Program (MSSP)
- Medicare and Medicare EHR Incentive
- Meaningful Use Stage 2 Core
- Medicaid Adult Core
- Medicare Part C
- Outpatient Quality Reporting
- PPS Exempt Cancer Hospitals
Immunizations Represent Real Opportunity to Improve Quality Metrics

- Immunizations matter across many programs
- But keeping track of multiple requirements is complicated
- Providers need process and tools to focus on compliance and reporting

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total Federal Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent IZ Status</td>
<td>4</td>
</tr>
<tr>
<td>Childhood IZ Status</td>
<td>4</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>1</td>
</tr>
<tr>
<td>HPV in females</td>
<td>1</td>
</tr>
<tr>
<td>Influenza</td>
<td>9</td>
</tr>
<tr>
<td>Influenza Healthcare Professionals</td>
<td>8</td>
</tr>
<tr>
<td>Influenza Screening</td>
<td>4</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>6</td>
</tr>
<tr>
<td>Pneumococcal Screening</td>
<td>1</td>
</tr>
<tr>
<td>Registry Submission Capability</td>
<td>1</td>
</tr>
</tbody>
</table>
Vaccine Update

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Pipeline

Upcoming Products Vaccines from Major Manufacturers

Vaccine Pipeline
The Future Vaccines Pipeline is Robust

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Vaccine</th>
<th>Impact</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlaxoSmithKline</td>
<td>Shingles</td>
<td>Improved efficacy, storage &amp; handling</td>
<td>Q3 / Q4 2017</td>
</tr>
<tr>
<td>Merck</td>
<td>Ebola</td>
<td>High initial efficacy (TBD on duration)</td>
<td>Unlicensed but available w/ GAVI partnership</td>
</tr>
</tbody>
</table>